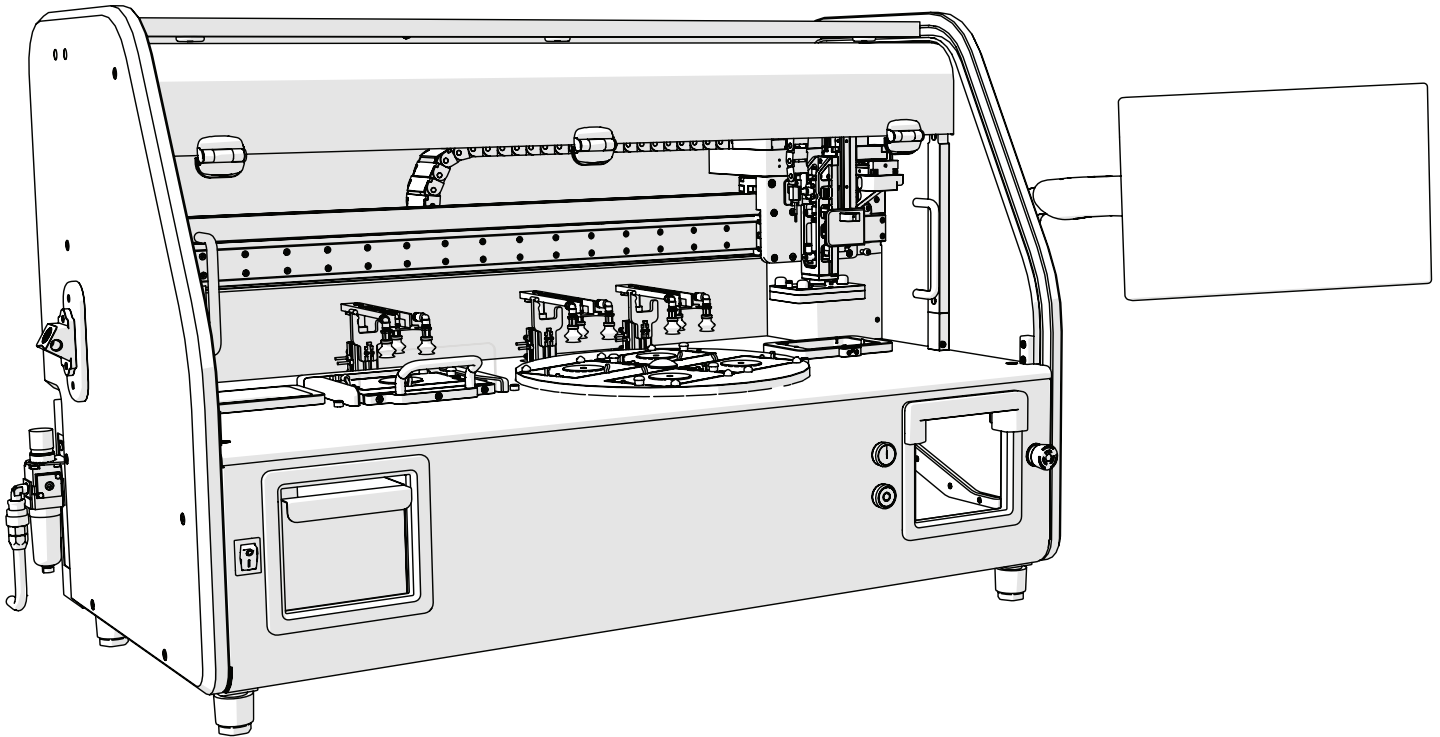




**SINGER  
INSTRUMENTS**  
A RESPONSIBILITY TO SCIENCE!

**ROTOR+™**

QUICK START GUIDE  
v1.7



## BEFORE YOU START!

- **All on-screen instructions MUST be followed.** Straying from the on-screen instructions could cause damage to the machine and the user.
- **Keep transit hardware in a safe place.** These will be required should the ROTOR+ require moving.
- **During Pad Head removal, always ensure the push cylinder is cleared before moving away from the carriage.** The push cylinder runs from the carriage arm into The Stinger/Pad Head. If either are not pulled down far enough during removal, the cylinder will catch and damage the ROTOR+.
- **Always turn power OFF before changing heads.** Leaving the power on can cause a hardware crash. Ensure you follow on-screen instructions when changing heads.



For more support  
resources visit  
**[bit.ly/ROTORhelp](https://bit.ly/ROTORhelp)**

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4	Anatomy
5	RePads™
6	Mechanical overview
8	Software overview
9	Pinning examples
11	Post-experimental procedure

## **ROTOR+™**

The ROTOR+ is a compact benchtop robot for easy, ultra-fast manipulation of high-density arrays of yeast, other fungi and bacteria. Reagent sets such as deletion mutant collections and the complete set of cloned yeast genes can be utilised for high-throughput screens; large-scale 2-hybrid, synthetic genetic array, phenotypic and chemical-genetic analysis. The ROTOR+ uses plastic replica plating pads (RePads™) and supports liquid pinning to and from 96 and 384-well microtitre plates and agar pinning at densities of 96, 192, 384, 768, 1536 and 6144.

The information in this guide relates to software version:  
5.22.0805.1

## **FULL USER GUIDE AVAILABLE HERE**



**[bit.ly/ROTORhelp](https://bit.ly/ROTORhelp)**

# JOIN OUR DISCOVERY COMMUNITY!

**Join our Discovery community and help us to make the product features YOU want.**

The Discovery Community is a group of scientists helping us to understand and solve anything causing frustration in their lab.

Help us to shape product development and have a say in future product updates. You'll also get early access to new features and be able to test things before release.

We'll even throw in some cheeky vouchers, Singer discounts and maybe even some cake!

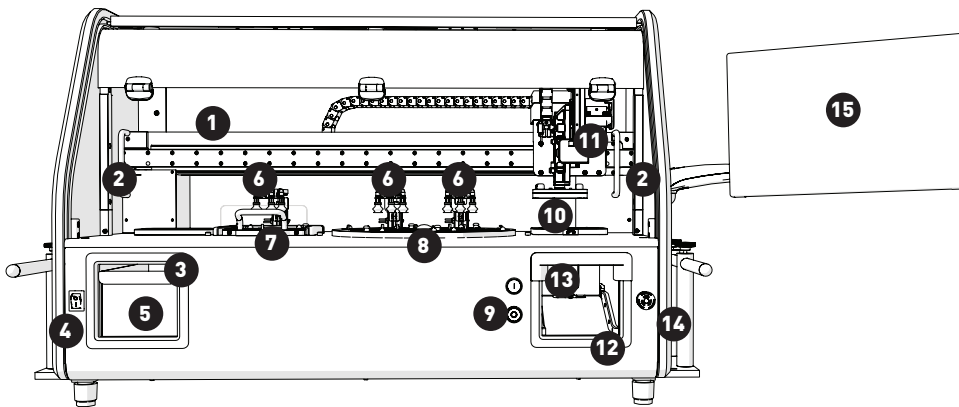
Scan the QR Code or visit [bit.ly/DiscoCommunity](https://bit.ly/DiscoCommunity) to join.



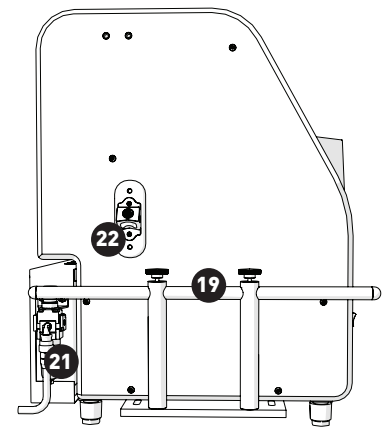
**[bit.ly/DiscoCommunity](https://bit.ly/DiscoCommunity)**

# ANATOMY

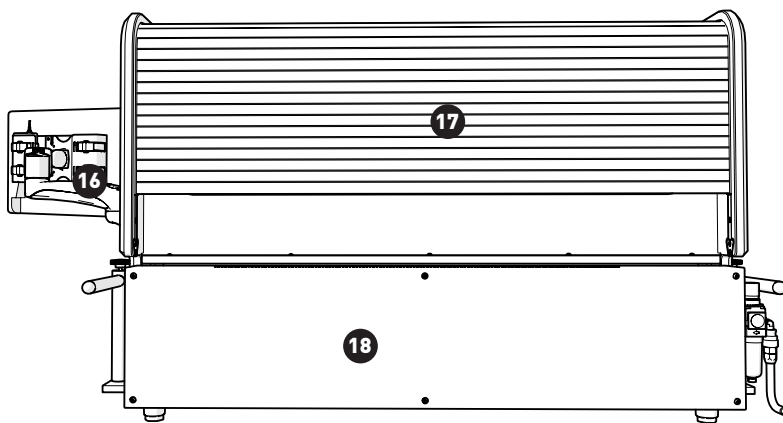
FRONT



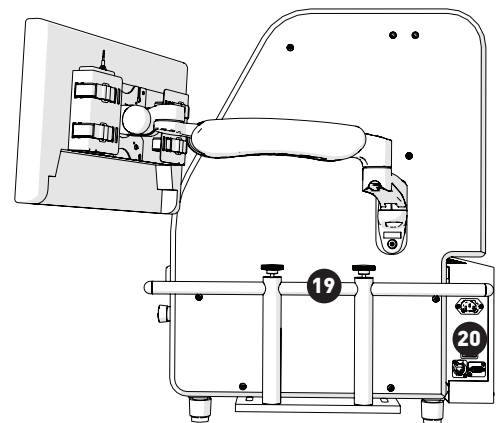
LEFT



BACK



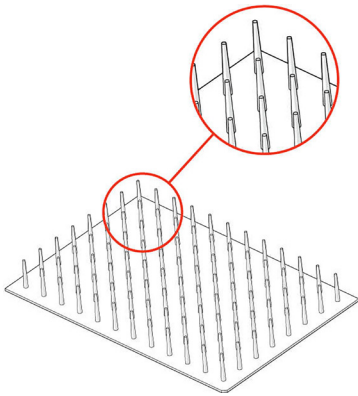
RIGHT



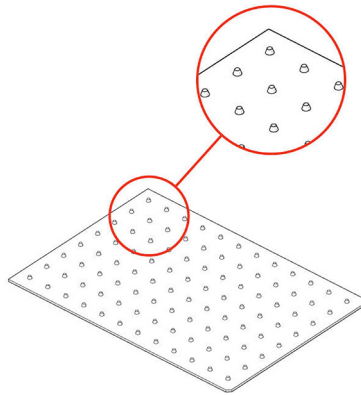
- |                      |                        |                              |
|----------------------|------------------------|------------------------------|
| 1. Protective Screen | 9. Fast Buttons        | 17. UV Decontamination Cover |
| 2. Screen Handles    | 10. Pad Head           | 18. Control Panel            |
| 3. Dump Zone         | 11. Carriage Arm       | 19. Transit Brackets*        |
| 4. Power Switch      | 12. Hopper Loading Bay | 20. Power Socket             |
| 5. Dump Drawer       | 13. Pad Hopper         | 21. Air Line Connection      |
| 6. Lid Lifters       | 14. Emergency Stop     | 22. Bottle Opener            |
| 7. Black Bay         | 15. MCI Touch Screen   |                              |
| 8. Turntable         | 16. MCI Mounting Arm   |                              |

\*Ensure to keep transit Brackets in a safe place should the ROTOR+ ever require moving.

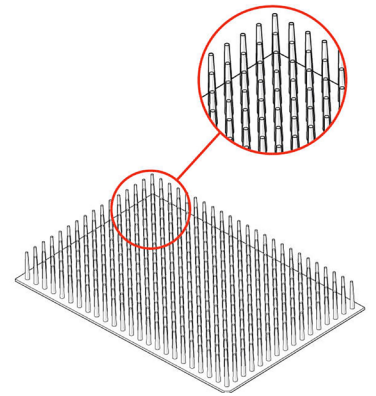
**REPADS™**



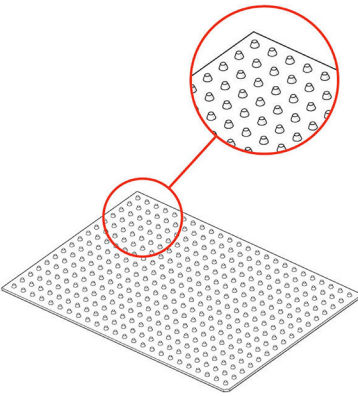
**96 LONG**  
 MEDIA: Solid agar, Liquid  
 PINNING DENSITIES: 96, 192,  
 384, 1536



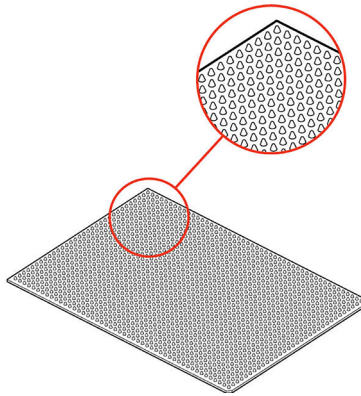
**96 SHORT**  
 MEDIA: Solid agar  
 PINNING DENSITIES: 96, 192,  
 384, 1536



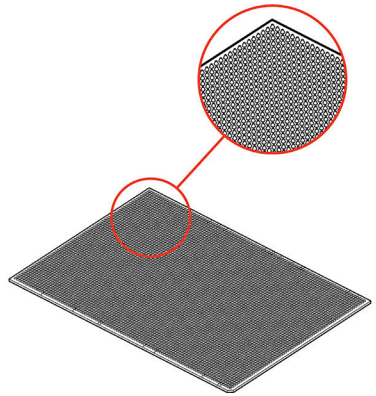
**384 LONG**  
 MEDIA: Solid agar, Liquid  
 PINNING DENSITIES: 384, 768,  
 1536, 6144



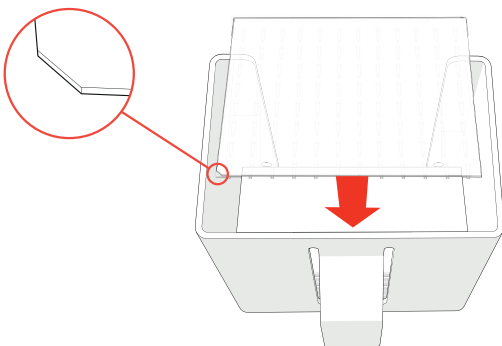
**384 SHORT**  
 MEDIA: Solid agar  
 PINNING DENSITIES: 384, 768,  
 1536, 6144



**1536 SHORT**  
 MEDIA: Solid agar  
 PINNING DENSITIES: 1536,  
 3072, 6144, 24567

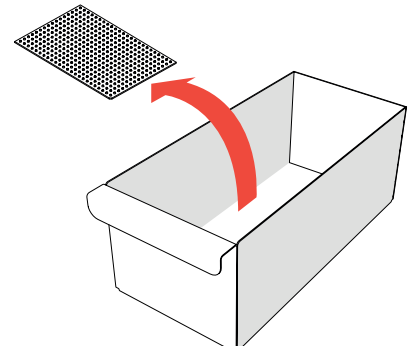


**6144 SHORT**  
 MEDIA: Solid agar, Liquid  
 PINNING DENSITIES: 6144,  
 12288, 24567



**PAD HOPPER**

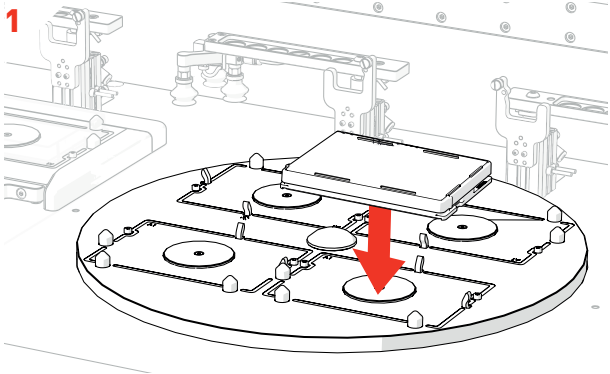
- Load your RePads™ (pins facing down) into the Hopper as shown. The Pad Hopper is fully autoclavable.
- You will be instructed on-screen when to load your RePads.



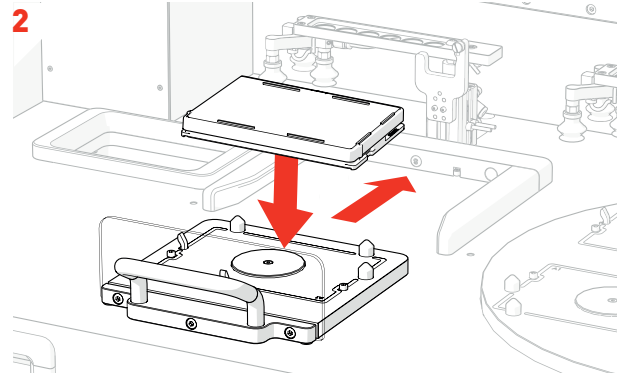
**DUMP DRAWER**

- Used RePads™ are dropped into the Dump Drawer. When a program is finished, it can be removed to dispose of the used RePads™. The Dump Drawer is fully autoclavable.
- New RePads can be purchased from our online shop: [singerinstruments.com/shop](http://singerinstruments.com/shop)

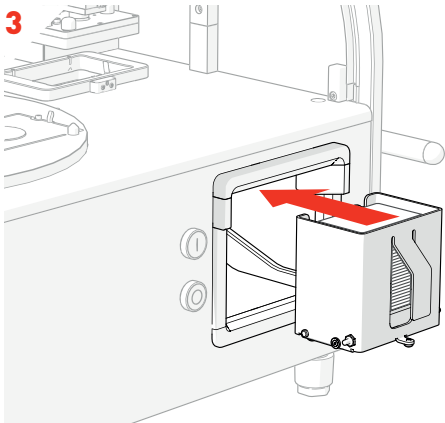
## MECHANICAL OVERVIEW



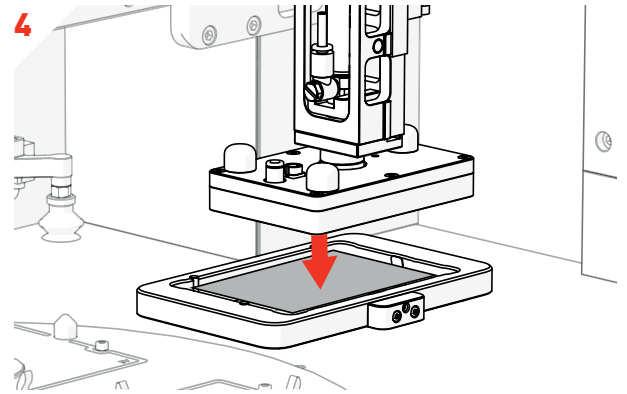
- Plates are loaded (lids on) into the Turntable.
- The front two plates are loaded first. The turntable will rotate to allow you to load two more plates.
- Plates will sit loose in the bays until the program starts. The plates will then be gripped securely in place.



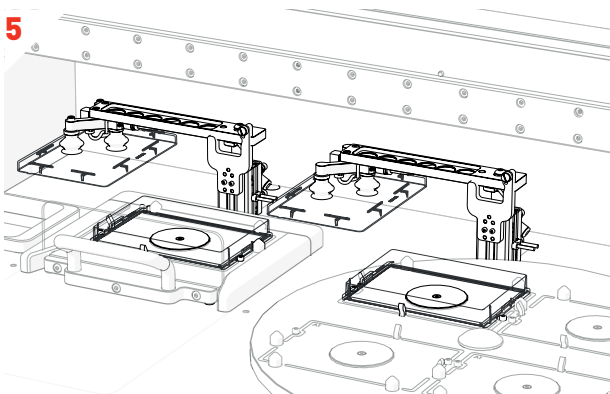
- A plate can also be loaded (lid on) into the Black Bay. This gives the ROTOR+ a 5 plate capacity. The turntable can rotate throughout the program allowing you to swap in new plates, creating a limitless capacity.
- Plate bays are colour coded and the software will tell you where to correctly load your plates.



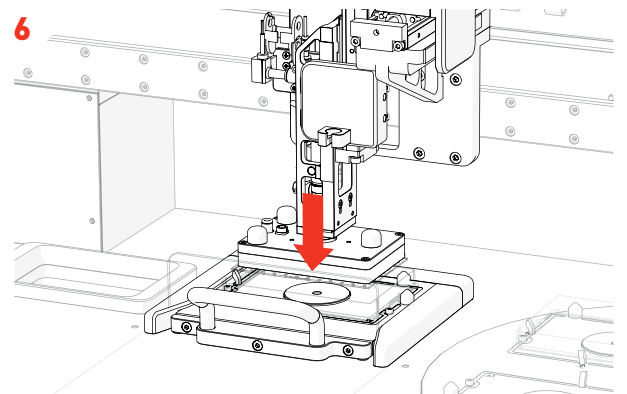
- RePads are loaded (pins facing down) into the Pad Hopper. RePads come in a variety of densities and are used to transfer strains from Source Plates to Target Plates.



- The Pad Head lowers and picks up a RePad.

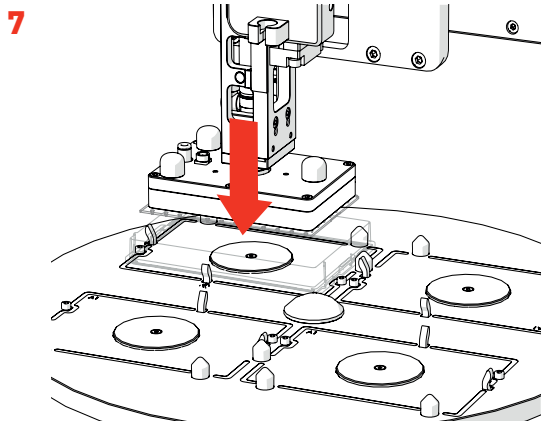


- Plate lids are automatically removed from the plates ready for pinning.

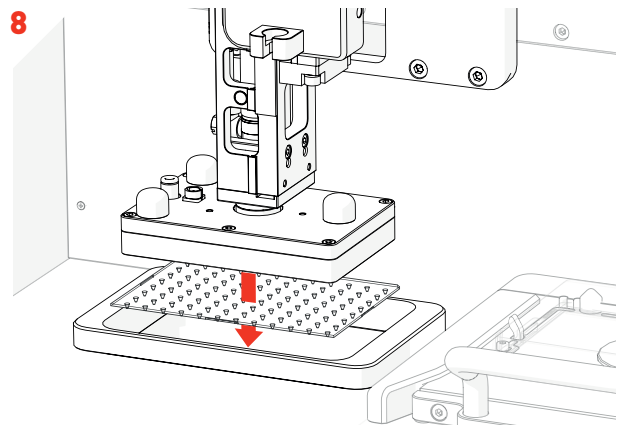


- The Pad Head moves to the Source Plate, lowers and collects a sample of cells.

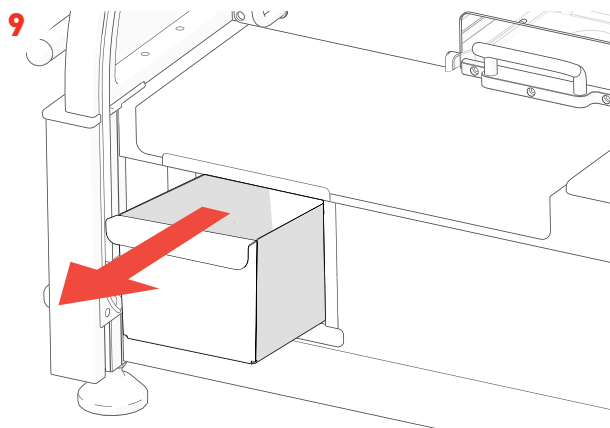
## MECHANICAL OVERVIEW



- The Pad Head moves to a Target Plate and deposits the sample of cells.



- The Pad Head moves to the Dump Zone and drops the used RePad.
- These steps will be repeated until your chosen program is finished.
- The software will guide you through any necessary plate swapping throughout the program.

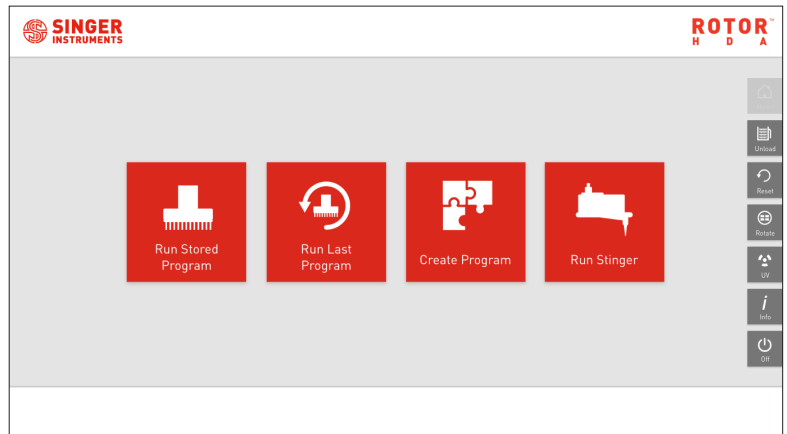


- Used RePads are collected in the autoclavable Dump Drawer ready to be disposed of when you're finished.

## SOFTWARE OVERVIEW

### HOME SCREEN

- There are four main options on the ROTOR+ Home Menu:
- **Run Stored Program** - Select your plate types and choose from a list of compatible ROTOR+ programs.
- **Run Last Program** - Run the last program performed.
- **Create Program** - Create a new ROTOR+ program.
- **Run Stinger** - If you have a Stinger add-on for the ROTOR+, you can run single colony picking programs from here.



### PROGRAM SCREEN

Selected option for previous stage

Current stage

Future stages

Stage instruction

1. Source  
96

2. Target

3. RePads

4. Program

Select target plate

PlusPlates™			MultiWell
96	192	384	96
768	1536	3072	384
6144	12288	24576	

384 x 4  
Hopper Content

Back

Next

Number of RePads in hopper

Previous stage

Selection options

ROTOR+ options

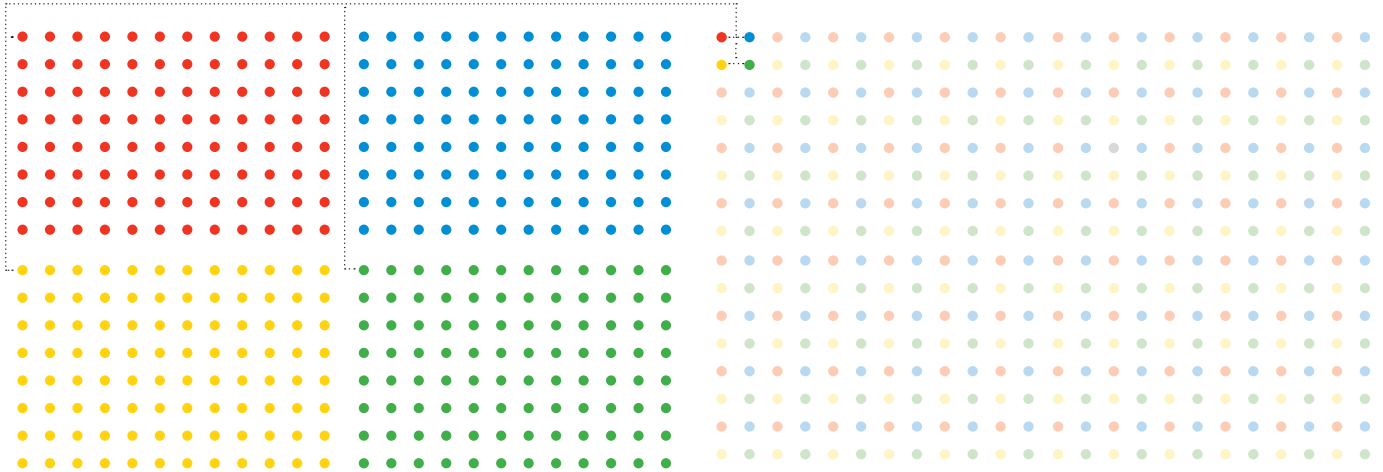
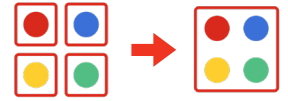


## PINNING EXAMPLES

1

### 1:4 ARRAY

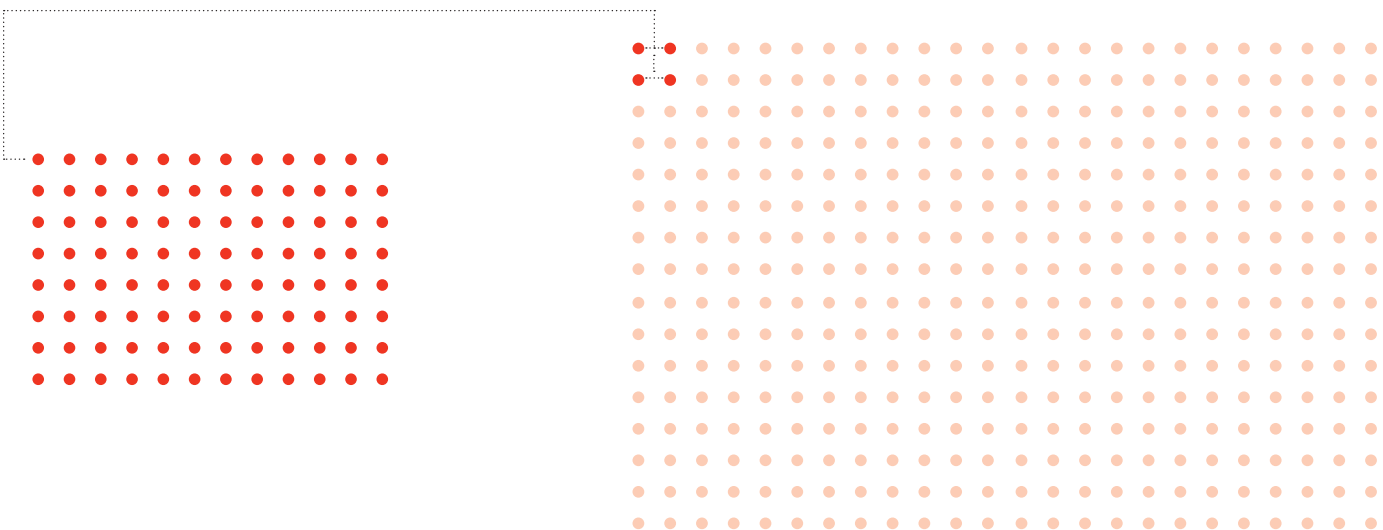
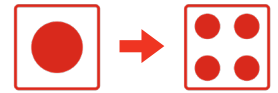
· 4x 96-density plates are combined onto 1x 384-density plate.



2

### 1:4 SINGLE SOURCE

· Each colony from a 1x 96-density plate replicated in quadruplicate to a 1x 384-density plate. These protocols can be applied at all pinning densities.

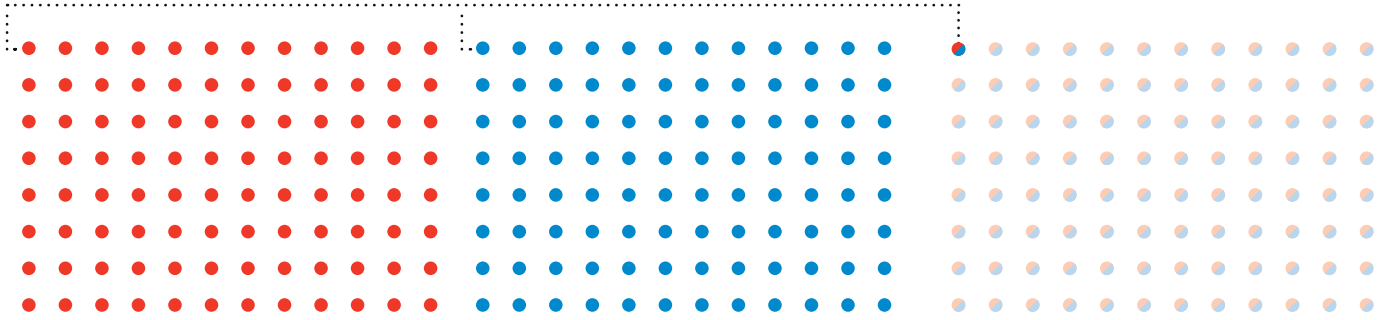


## PINNING EXAMPLES

### 3

#### MATE

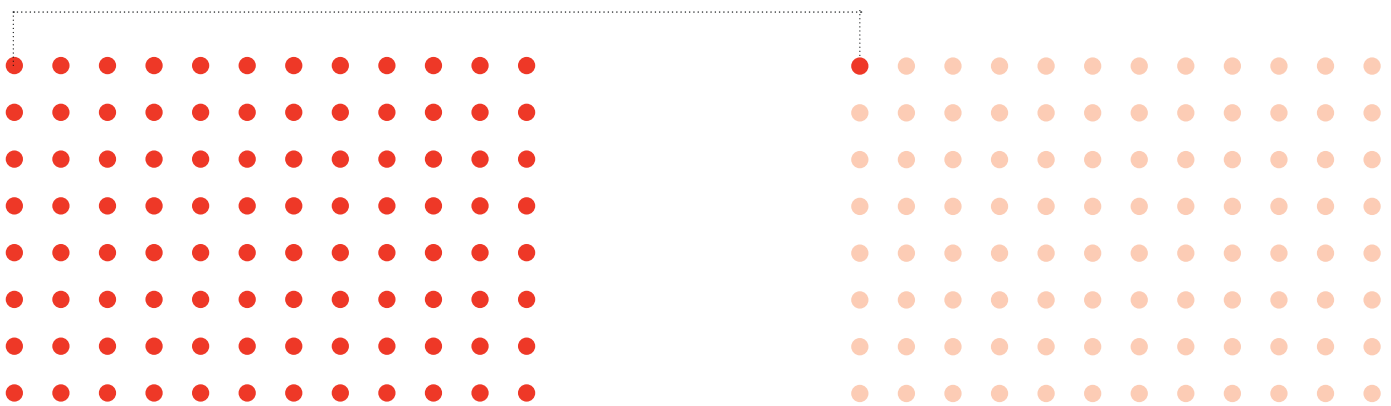
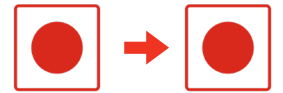
- 2x 96-density plates are mated onto 1x 96-density plate.



### 4

#### REPLICATE

- 1x 96-density plate is replicated onto 1x 96-density plate.

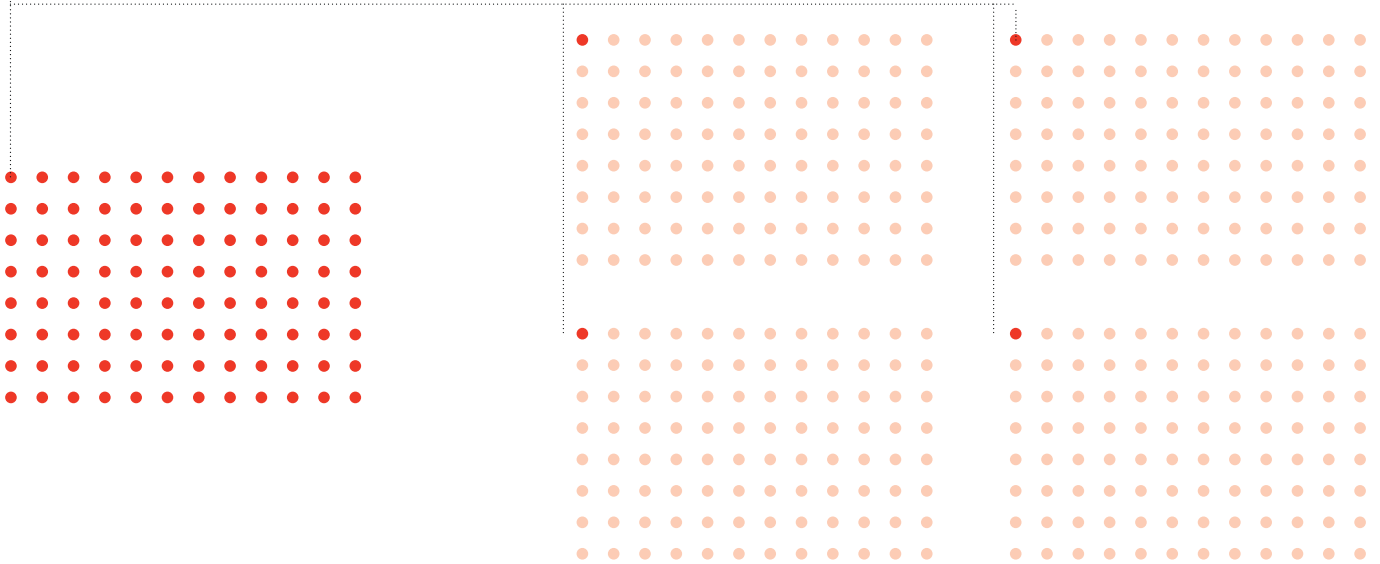
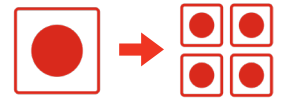


## PINNING EXAMPLES

5

### REPLICATE MANY

· 1x 96-density plate is replicated onto 4x 96-density plates.



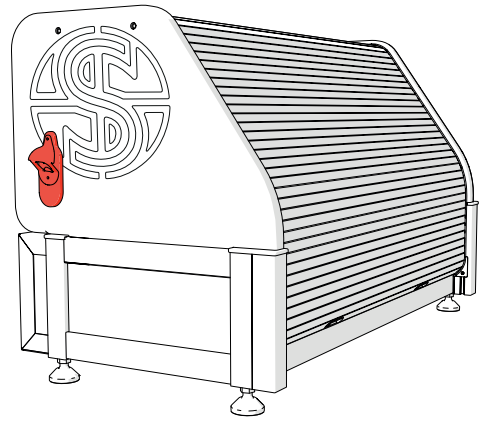
## POST-EXPERIMENTAL PROCEDURE

1



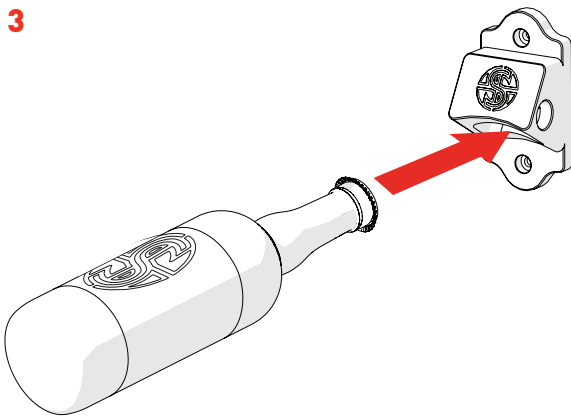
- Select a Delicious Beverage.

2



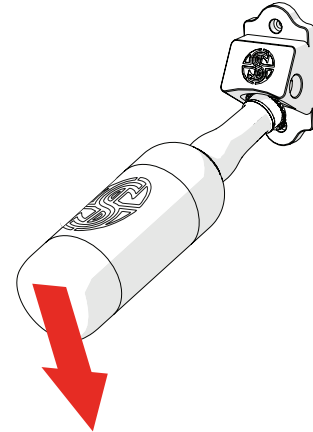
- Locate the Bottle Opener on your ROTOR+.

3



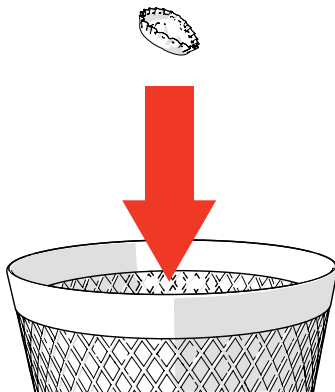
- Insert the Bottle into the Bottle Opener.

4



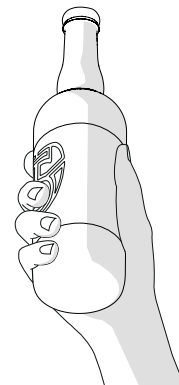
- Lever the Bottle to remove the Bottle Cap

5



- Place the Bottle Cap in the Bin. Nobody likes a litter bug!

6



- Success! Time to enjoy your Delicious Beverage - you've earned it!
- Repeat steps 1-6 until suitably relaxed.



# SINGER INSTRUMENTS

A RESPONSIBILITY TO SCIENCE!

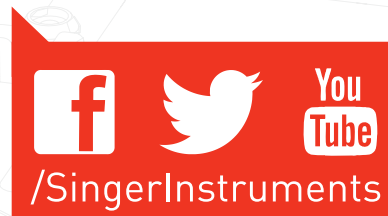
Roadwater  
Watchet  
Somerset  
TA23 0RE  
UK

+44 (0)1984 640226 (tel)  
+44 (0)1984 641166 (fax)

[contact@singerinstruments.com](mailto:contact@singerinstruments.com)  
[singerinstruments.com](http://singerinstruments.com)



**SCAN TO VISIT WEBSITE FOR MORE  
HELPFUL TIPS AND TUTORIALS!**



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At Singer Instruments, we are constantly seeking to improve our products and adapt them to the requirements of modern research techniques and testing methods. This involves modification to the mechanical structure and optical design of our instruments. Therefore, all descriptions and illustrations in these original instructions, including all specifications are subject to change without notice.