

# Streamlining Multi-Step 6-Well Cell Culture Plate Workflows with the Thomson Universal 4-Position Rack

## Abstract

The Thomson Universal 4-Position Rack for Well Plates (P/N: 1212605-399) enables easy and secure movement of cell culture plates from incubators to liquid handling robots. The rack interfaces with standard incubator-shaker sticky mats to hold plates during shaking (up to 225 rpm), then transfers directly to liquid-handling decks while maintaining consistent plate height and positioning. This application note demonstrates how the rack simplifies multi-step cell culture workflows by reducing manual handling and improving consistency from culture through purification.

## Introduction

Modern cell culture and harvesting workflows often require moving multiple 6-well plates through incubation, liquid handling, and downstream purification or analysis. Each transfer between instruments can introduce inefficiencies, requiring plates to be removed, re-racked, or repositioned, which increases manual handling, slows workflows, and can introduce variability.

The Thomson Universal 4-Position Rack for Well Plates reduces these inefficiencies by providing a single platform to move plates directly between incubator shakers and liquid handlers, maintaining consistent plate positioning while minimizing handling steps.

## Key Features

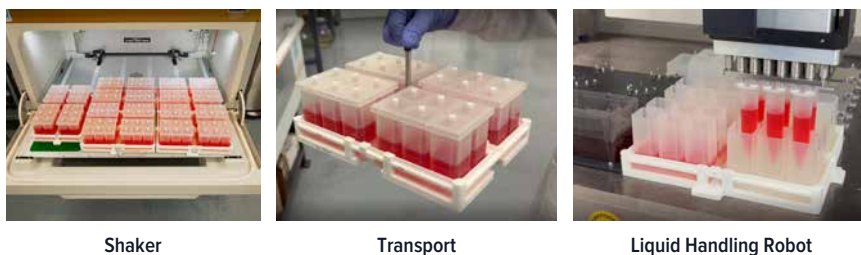
Four-position rack for 6-well plates with oriented magnetic retention to securely hold plates in place during transport, lidding, de-lidding and processing.

Compatible with standard incubator shakers and designed to interface directly with sticky mats for stable shaking during growth without need for bulky plate holders.

Liquid handler-ready design that positions 6-well plates at consistent, standardized locations and heights on automated liquid handler decks.

## Applications

- Cell culturing
- Cell culture screening
- Protein / antibody expression screening
- Automated media exchange and reagent addition
- Cell culture sampling and clarification



**Figure 1** – Thomson Universal 4-position rack is compatible with sticky mats of incubator/shakers (Infors HT shown), and on the deck of liquid handling robots (Dynamic Devices Lynx LM-900 shown). Samples can be easily transported between decks using the included T-bar.

## Methods

### Plate Loading

6-well plates (P/N: 931170, 931167) can be placed into the Thomson Universal 4-Position Rack, where plates are secured by a magnetic collar to prevent movement during handling and processing (Figure 2).



**Figure 2** – Thomson 6-well culture plates are secured with the magnetic collar on the Universal 4-Position Rack for Well Plates.

### Incubation & Shaking

The loaded rack maintains positioning on standard incubator-shaker sticky mats during incubation and shaking of 6-well plates at up to 225 RPM with a 25mm orbit (Figure 3).



**Figure 3** – 6-well plates are securely held during shaking on standard incubator/shakers. Left – Rack on Infors Shaker deck with sticky stuff (mat); Right – Rack on Kuhner deck with sticky strips.

## Transfer to automation platforms

Following incubation, the rack can be moved from the incubator shaker and transferred directly to an automated liquid-handling deck without removing or re-racking the plates using the T-bar (Figure 4).

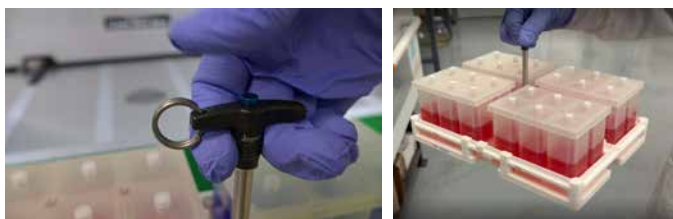


Figure 4 – T-bar-mediated transfer of the 6-Well plates.

## Automated Liquid Handling

Liquid handling steps are performed with the 6-well plates held at consistent locations and heights defined by the rack geometry (Figure 5).

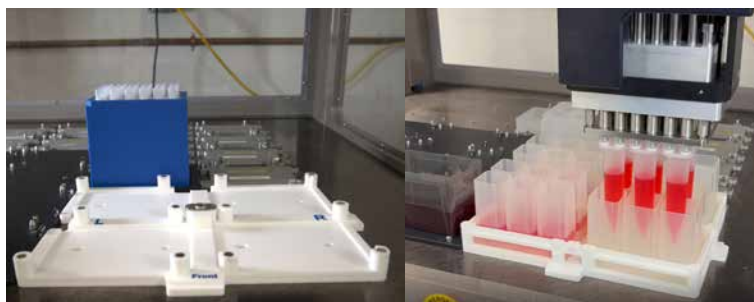


Figure 5 – Thomson Universal 4-position rack for well plates hold plates in standard deck positions on a Dynamic Devices Lynx. Left – Rack places well plates into standard layout for four adjacent positions at appropriate height, matching the standard Lynx deck plates. Right – Liquid dispensing by Mammoth 30 mL Automation Tips into 6-well plates held on-deck by the Universal 4-position rack.

## Discussion

- Single rack solution for incubation, transport and liquid handling
- Secure 6-well plate retention
- Standardized deck-plate positioning across automated platforms
- Reduced manual handling and workflow complexity

## Conclusion

This application note demonstrates how the Thomson Universal 4-Position Rack for Well Plates supports a seamless workflow from incubator and transport to on-deck for automated liquid handling. By maintaining secure plate retention and consistent positioning across each step, the rack enables simplified transfers between different instruments (incubator shakers and automation platforms, and in the future, autosamplers) without the need for re-racking or manual adjustment of plates.

Together, the workflow above highlights how a single, standardized rack can simplify multi-step 6-well plate workflows, reduce handling time, and improve consistency across platforms. This approach helps laboratories move samples more efficiently from cell culture to downstream processing while supporting scalable, automation-ready operations.

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Thomson Instrument Company is not affiliated with Infors, Kuhner or Dynamic Devices.