MICROSOLV

SPE Manifold with 96 Wells Compatibility of the U-2D Micro-Sample Management System - Tech Information

Date: 28-APRIL-2016   Last Updated: 1-FEBRUARY-2026

The U-2D™ Micro-Sample Management System is designed to interoperate with common 96-well solid-phase extraction (SPE) manifolds, filtration plates, and transfer devices that follow ANSI/SLAS microplate standards for footprint and well spacing. In most laboratories, the system integrates smoothly with both benchtop and automated platforms built around these standards.

Standards & Form Factor

- ANSI/SLAS 96-well compatibility: The U-2D plate conforms to standard on-center well spacing and plate footprint, enabling drop-in use with manifold decks and automation fixtures that expect a 96-well microplate.
- Assembly height (Rack + Base):
  - 350 µL and 500 µL formats: ~1.625 in total height.
  - 1 mL format: ~2.0 in total height.
    Confirm that manifold lids, gaskets, and deck clearances accommodate these heights.

Manifold Integration Guidance

- Gravity-assisted elution: The Rack may be used without the Base when you are relying on gravity flow rather than a sealed pressure/vacuum environment.
- Pressurized manifolds (positive or negative):
  - Verify seal integrity before running samples; make gasket adjustments (adding/removing seal adapters) as needed to maintain an airtight fit across the full plate.
  - When a sealed environment is required, mate the Rack to the U-2D Base for mechanical stability and uniform load transfer.

Stacking & Mechanical Load

- The top of the U-2D plate includes four shallow recesses designed to nest subsequent Racks; however, do not allow an SPE/filtration plate to physically contact or load the U-2D plate. Transferring mechanical stress from an over-plate can lead to anomalies or failure. Keep a small clearance to avoid load transfer.

Centrifugation & Vortexing Limits

- For centrifuge use, the Base must be mated to the Rack. The U-2D assembly has been validated to 2,500 × g under normal conditions. Always check rotor/adapter compatibility, especially when placing an SPE/filtration plate above the U-2D; user assumes risk if physical contact occurs during spin.
- For vortex mixing, avoid exceeding ~3,000 RPM to reduce the risk of insert displacement or mechanical stress at the plate/gasket interface.

Automation Notes

- Because the U-2D follows ANSI/SLAS geometry, automation units and manifolds that honor the standard typically integrate without custom adapters. Validate deck height, gantry Z-limits, and gripper clearance**s** using the heights above prior to full-scale runs.

Good-Practice Checklist (SPE & Filtration)

1. Confirm plate height against manifold lid/gasket stack-up (1.625 in for 350/500 µL; 2.0 in for 1 mL).
2. Gravity elution: Base optional; for pressurized operation, use Rack + Base and qualify seal.
3. Keep upper plates off the U-2D (no physical load/pressure transfer).
4. Do not exceed 2,500 × g (centrifuge) and ~3,000 RPM (vortex).
5. Pilot test with water or surrogate matrix to verify seal and flow before committing valuable samples. (Rationale derived from the pressurization/sealing guidance above.)

Click *HERE* for U-2D Micro-Sample management system ordering information and pictures