

# Solvent Recycler

*The Chromatography Solvent Recycler for Purists*



- Saves up to 90% of isocratic HPLC solvent consumption
- Unique peak detection algorithm accurately defines peaks; diverts them to waste automatically
- Returns reliably clean solvent to mobile phase reservoir
- Decreases solvent disposal costs
- Compatible with any isocratic liquid chromatography system
- Built-in automatic performance validation for every run
- Reduces environmental impact
- Easy to use . . . no complex programming

# Solvent Recycler

## What is it?

The solvent recycler is a solvent conservation system designed to recycle uncontaminated solvents used in isocratic HPLC systems. In most systems a high proportion of the mobile phase can be recycled and reused, which saves money by reducing solvent consumption and the need for solvent disposal.

## Reliably Accurate

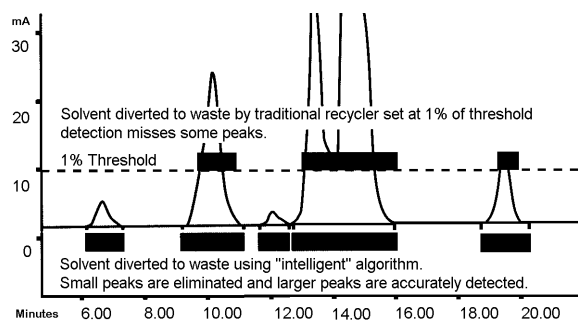
The solvent recycler automatically detects eluting peaks and diverts them to waste while sending clean, uncontaminated solvent back to the reservoir for recycling.

Traditional recycling systems use a fixed voltage level (or threshold above the baseline) which must be exceeded before peaks can be detected. If the baseline changes, new settings must be applied or contaminants may be recycled instead of being sent to waste. Conversely, pure solvent may be sent to waste instead of being recycled.

The solvent recycler incorporates a unique integration algorithm to accurately detect peaks in the eluant to ensure that contaminants are eliminated even if chromatography system conditions cause the baseline to drift up or down.

Solvents are therefore cleaner and can be used longer.

## How the Solvent Recycler Eliminates More Contaminants



## Important Special Features

The solvent recycler can place a peak marker on the output signal to show exactly where peaks have been detected and sent to waste. This is very useful when initially setting up the system and even more important for validation purposes.

Sophisticated circuitry permits the signal to be zeroed automatically via a contact closure, or manually by a button on the front panel.

## How does it work?

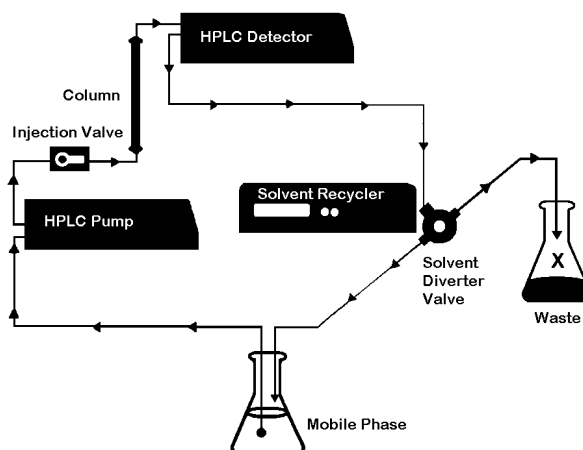
The signal from any HPLC detector is connected to the solvent recycler, which monitors and continuously displays the voltage level on a large, easily readable LED panel located on the front of the instrument. The signal is then connected directly to an integrator or data system.

Peak detection sensitivity may be adjusted by easy-to-set thumb wheel switches which control familiar peak width and peak threshold parameters, similar to those found on most integrators and data systems.

When a peak is identified, an additional delay time may be set to allow for volume between the detector and valve. This further enhances the accuracy and purity of the recycling. An LED indicator as well as a switchable buzzer alert the operator that a peak has been found.

A reliable and inert electrically actuated solvent diverter valve automatically switches mobile phase to waste when peaks are detected. This valve may also be intentionally switched via contact closure if and when required.

## Flow Diagram: Isocratic LC System with Solvent Recycler



*The Solvent Recycler is compatible with any isocratic liquid chromatography system.*

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## Specifications

### Peak Detection

Signal input range: -1.000V to +1.000V  
 Sampling rate: 200 Hz, continuous during operation  
 Number of inputs supported: One  
 Peak width range: User-settable, 1, 5, 15, 30, 45, 60, 75, 90, 105, 120, 150, 180, 210, 240, 270, or 300 seconds

Peak threshold ranges: User-settable, 0 to 99  
 Diverter valve delay timer: User-settable, 0 to 99 seconds, 1 second increments

Peak waste/Valve open marker: Defeatable, duration 0.1 second

Contact closure outputs: Peak Waste/Valve Open, 1 second duration

Contact closure inputs: Enable/Disable Autozero, 1 second duration; Enable Peak Waste/Valve Override, continuous

Peak to Waste/Valve Open indicators: Front Panel LED, 1 second audio beep (defeatable)

Display: Active four-digit voltmeter, switchable for input or output signal

Autozero: Manual push-button switch or contact closure enable (1 second duration)

### Diverter Valve

Type: Solenoid-controlled, 3-way, high efficiency, zero dead volume

Wetted surfaces: All internal Teflon®  
 Flow orifice: 0.062" I.D.  
 Mounting ports: 1/4-28 flat bottom (valve can be mounted in any orientation)  
 Operating pressure: Up to 30 psi/2 bar  
 Response time: Approx. 5 msec

**NOTE:** Contact your distributor for special valve requirements.

### Requirements

Power: 110V/60 Hz or 220V/50 Hz, self-switching  
 Environment: 40 to 90° F (4.4 to 32.2° C), 10% to 60% relative humidity (noncondensing)

### Physical

Size: 10" W x 7.5" D x 3" H (24.9 cm x 18.6 cm x 7.2 cm)

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Weight: 7 lbs. (3.15 kg)

### Ordering information

<b>Description</b>	<b>Part No.</b>
Solvent Recycler	AC-100-200
Includes switching valve, Teflon tubing, fittings, cables, and operation manual	

