

Automated Dissolution Testing - Auto Sampler - Type DSR



The **DSR** Auto Sampler is designed specifically for the sample transfer and sample processing from a 6 to 12 vessel Dissolution Bath. This unique versatile instrument allows samples to be collected over very short time intervals. The DSR can be equipped to collect, dilute or process samples for following UV-Visible or HPLC measurements. It can also be used for dissolution medium replenishment to conform to USP/EP volume loss rules.

Manual sampling from a dissolution test instrument is not only time consuming but also limits the reproducibility and is close to impossible if sustained release products have to be analysed over prolonged time periods. The Pharma Test DSR (Dissolution Sampling Robot) provides a neat solution to this automation procedure.



Automated Sampling...

To offer the highest volume precision, between 6 and 12 Piston Pumps are used for sample removal and media refilling (if required). No time consuming pump calibration is needed. The advanced design of the system means that it is always ready for operation.

The sample preparation station, Z-arm and needle, can be used to dispense into septa sealed HPLC vials or dilute the samples for later UV/VIS analysis. Keeping the samples in sealed vials helps avoid evaporation, specially if sustained release samples are tested.

The DSR can be connected to a Pharma Test PTWS series Dissolution Bath. If the DSR is connected to a

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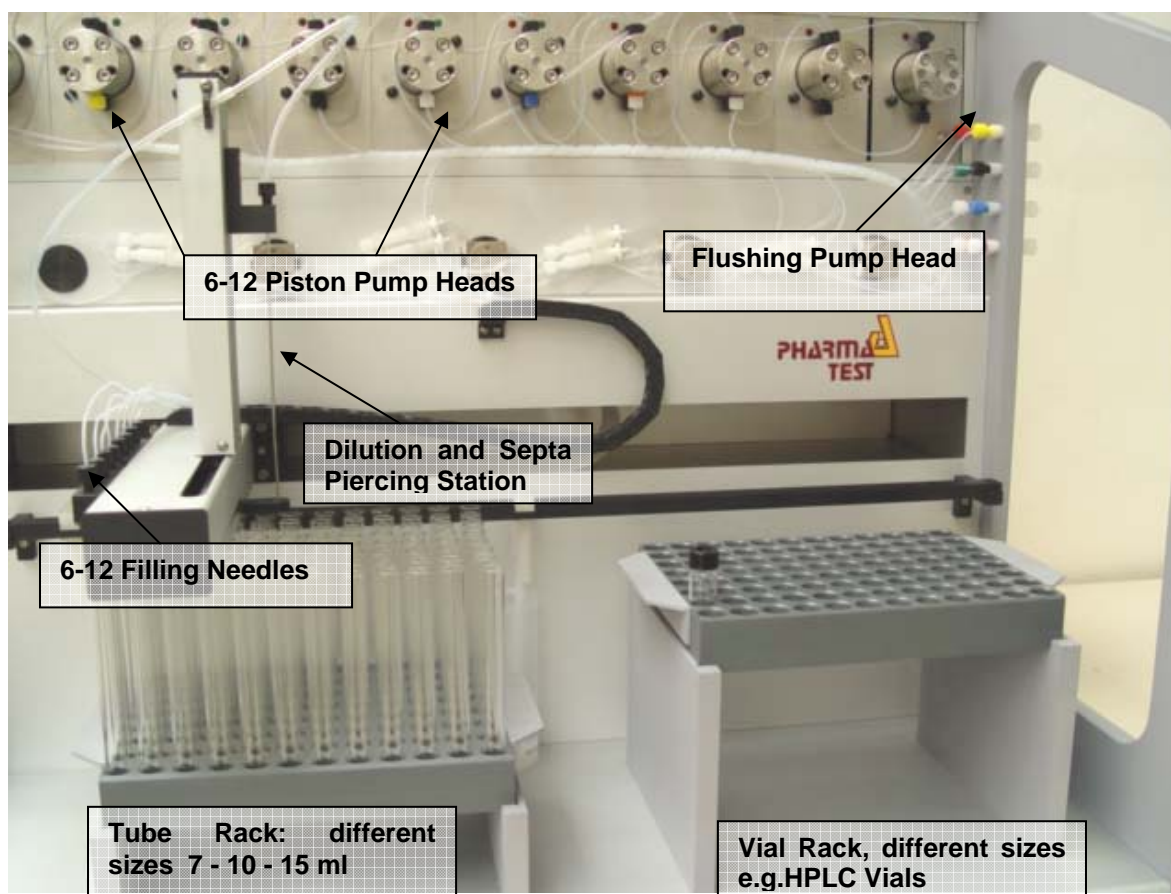
PTWS310/610/1210/D610 System usually the sampling probes are connected to the EPE Auto Sampling Manifold. The motorized EPE lowers the sample probes into the corresponding sampling position which can be set for either 500 or 900 ml total media volume. Sampling cycle information is programmed at the Dissolution Bath also using the Method filing system. When a test is started either a trigger signal or the program file at the manual keypad of the DSR starts the sampling pumps inside the DSR so that the preset volume is withdrawn and dispensed into the vials or tubes which are in the sample rack holder. *Only one sample tubing line is required from the dissolution tester via the sampling manifold as all liquid sampling and refilling is made through the same tubing line. So no need for extra return tubing for refilling.*

If the DSR is equipped with the Auto-Media Refilling Option (DSR-R), the refill cycle starts immediately after the sampling cycle is complete.

After sampling and refilling is complete, the EPE sampling manifold is moved out of the dissolution medium and remains there until the start of the next cycle.

User friendly Design...

Up to 15 sampling cycles can be run. These are collected in the primary rack position. There is a second rack available which is used for sample processing, such as dilution. This requires the installation of a Z-Arm Sample Processing Option.



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The DSR Features:

- Pump Head Security: Pump Head Back Flush option included
- User Information: Active Piston Pump LED display information
- Precise Piston Pump operation - no calibration required
- 20 sampling and processing cycles possible
- Modular design to allow auto-media refill, dilution and sealed vial transfer
- Sample processing needle rinse position
- Dispensing needles rinse position
- Different racks available for either standard glass tubes (5-10-15ml) or sealed HPLC vials. Can also take any HPLC Auto-Injector Rack for easy sample transfer
- Heating for vial racks available
- Dead volume calibration for all 8 positions (pump head and tubing) - no volume loss
- Optional medium refilling through sampling tube line - refilling media inside DSR
- Only one sample line per vessel for sampling and medium refilling
- Auto flushing of sampling line at the end of each sampling process (avoids carry over)
- Colour coded identification for Pump / Vessel.
- Can handle various vial racks
- Sampling method file via data entry handheld key pad
- Space saving, compact design

Technical Data:

Number of Samples: up to 20 samples from a maximum of 8 vessels
Sampling Volume: 1.0 ml - 15.0 ml
Accuracy: < 1% transfer error
Flow-Rate: minimum 0,15 ml/min
maximum 20,0 ml/min
Accuracy: < 1% error over the full range
Refilling Option: additionally piston pumps will be used
Sample Processing: Z-Arm with septum piercing (option)
Dilution: maximum 1:100
Materials used: all wet parts: 99.7% Al₂O₃, Teflon or PEEK
Tubing: 1.0 mm ID - 1.6 mm OD FEP or PTFE (not included in supply scope)
Dispensing Probe Positioning: +/- 0.8mm
Sample Processing Probe: +/- 0.5mm
Repeatability: +/- 0,3mm

Connection Ports:

Interface: 1 RS-232 port
1 Analogue signal I/O port
1 Handheld key pad for data entry

Typical System Configuration

- 1 PTWS310 - EPE Auto Sampling System
- 1 manual Tablet Drop Magazine

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- 1 set of Monoshaft Paddle Stirrers
- 1 DSR 8S Auto-Sampler (without media refilling)
- 1 Teflon Tubing installation

Options

- ITM Individual Temperature Monitoring System for the PTWS 310
- Other stirring tools for the Dissolution bath
- Heated vial rack option for DSR
- Auto-medium refilling cycle DSR 8R

Available Versions

- DSR 6 - 8 or 12 typical Auto Sampler to take samples only from 6 to 12 Dissolution Vessels. *No refilling, No Dilution*
- DSR 6R - 8R Auto Sampler to take samples and refill from/into 6 to 8 Dissolution Vessels, *No Dilution*
- DSR 6S - 8S Auto Sampler to take samples from 6 to 8 Dissolution Vessels *includes Refilling and Dilution Option.*

We reserve the right to make technical changes without any prior notice