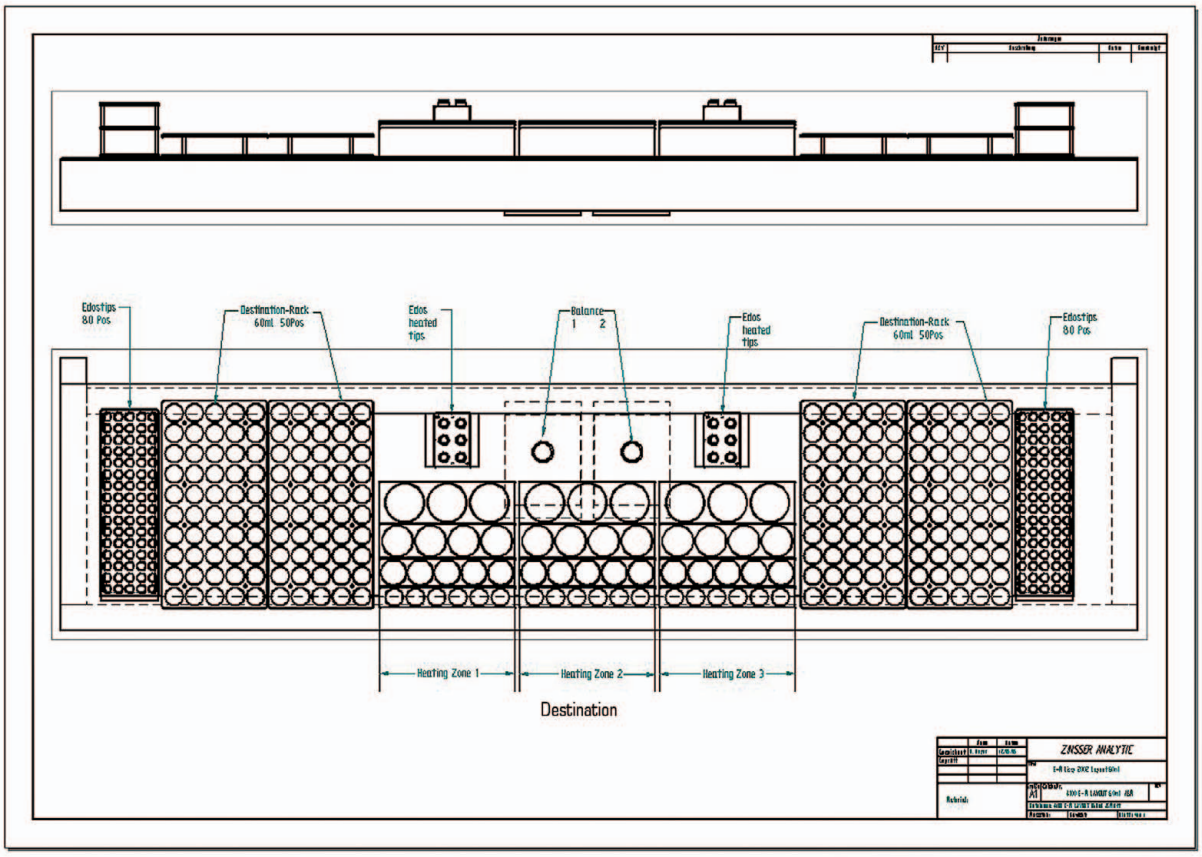
Customised Solutions from Zinsser Analytic

All of our systems are customised for the throughput and work practices of individual companies. The system described can be modified in any way to suit your particular requirements. Our solution to you includes a development phase where the scope of the instrument and methods are defined. The pre-defined methods, allow you to make use of our years of experience. They can be used as sub routines that you can be combined easily and quickly to create new methods. After the instrument is built you can visit the factory for Factory Acceptance Testing. Installation, training and site acceptance then take place and your instrument is ready to use to its full capacity.

Blending Station

The Blending Station is designed for the preparation of complex blends of viscous media. Specially designed pumps, liquid delivery tools and powerful software allow high through-put blending without compromise in precision or accuracy.

Layout of the workbench



The System is based on a 2.5m long Lissy 2002 liquid handling workbench with two independently operating arms. Each arm is equipped with the viscous media dispenser and a gripper. Gripping tools are designed for transportation of the blending vessels and the tips of the viscous media tools.

Bulk reagents in 5 litre cans are stored under the workbench or outside the cabinet. A pump tower - under the platform - with 9 high precision rotating piston pumps delivers the reagents from the reservoirs and dispenses them via a special dispensing head into the blending vessels waiting on the two balances. The two precision 4-place weighing cells are integrated in the middle of the deck of the workbench. The blending vessels are transported by the robotic arms from the storage racks to the balances and tare weighed, filled with the viscous liquid and then brought back to the storage rack.

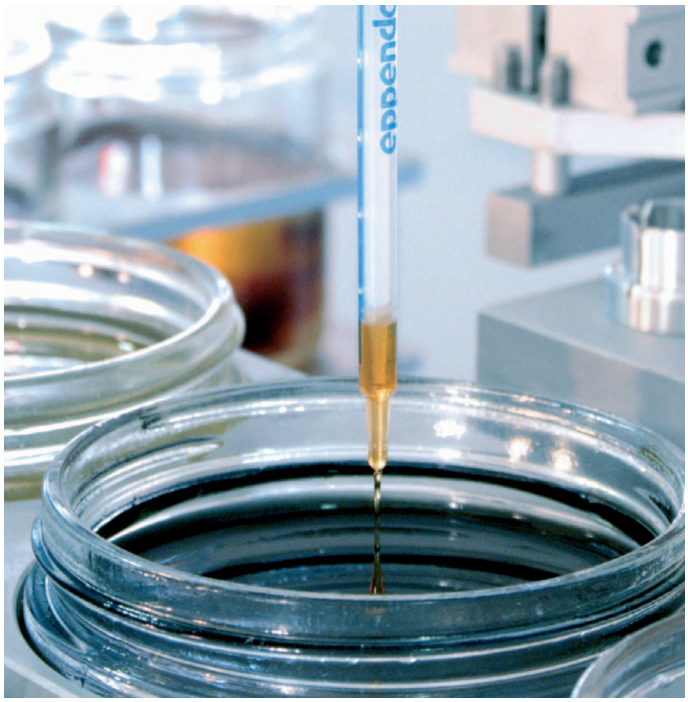
The dispensing head can move on a linear drive between the two balance positions and the purge station and service both weighing stations.

Standard low cost glass jars are used as blending vessels (60ml, 150ml, 200ml and 300ml). The vessels are positioned in racks, made to the dimensions of the vessels, on the workbench and can be accessed by both arms of the Lissy. A newly designed pneumatic gripper safely handles the heavy blending vessels.

Three individually controlled heated zones on the deck (80°C, 50°C and room temperature) carry racks with the blending vessels, source containers for low volume materials and the dispensing cartridges of the viscous dispensing tool. Software controlled external recycling heating thermostats provide heat to these positions.

Heated strip racks take 3 x 1000ml, 4 x 500ml, 5 x 200ml, and 6 x 50ml source containers. Individual numbers of each type of strip rack can be placed on the heated positions (80°C or 50°C).

Tips, i.e. syringe cartridges with a piston for the viscous dispensing tool (100µl, 250µl, 1ml, 5ml and 10ml) are stored on a rack on each side of the platform. The software chooses the appropriate tip for the volume to be dispensed and the gripper brings them to a heated park position. Finally the viscous pipetting tool picks up the heated tip, fills the cartridge, moves to the balance position, where a blending vessel is already waiting and dispenses the reagent under weight control into the vessel.
Both arms are equipped with the same tools and the software allows them to work independently. This makes the system fast and suitable for high throughput.



The combination of volumetric and gravimetric dispensing with the special pipetting algorithm of the software enables outstanding performance. The precision and accuracy are ≤ 1%.

Software

The system is controlled by the well-established WinLissy Software package, which has been recently updated for ease of use. The Layouter enables the user to define his own reagent vessels, carriers etc.

The WinLissy Designer is a new user-friendly tool for the design and development of methods and the data handling including import and export from peripheral sources and instruments using a simple “drag and drop” technique. The WinLissy Scheduler organizes and optimises the run of the methods.
A complete audit trail is provided, which is used to control the system and for documentation of each run.

Throughput

The throughput very much depends on the number of reagents to be blended together per blending vessel. 160 blends of about 40-50ml with an average of 9 viscous blends can be processed in 24 hours.

Cabinet

The workbench system is sitting on a solid aluminium table (2800 x 1200 x 900 mm, 10mm thick). All supplies (electricity, air pressure etc.) are plumbed in from the back. The waste line from the wash station and dip trays leads directly into large waste bottles on the bottom of the table. Ventilation can be connected to the top of the hood by a flexible hose.

Materials of Construction

Materials in contact with the reagents are aluminium, stainless steel, PTFE, Polypropylene, and glass.

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