

BUYER'S GUIDE

AUTOMATED EVAPORATION

HEI-VOLUME DISTIMATIC PRO



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AUTOMATIC EVAPORATION

Processing large quantities of a medium using a rotary evaporator is laborious and time consuming. In applications such as the concentration of solutions or recycling of solvents, the medium to be evaporated must be refilled regularly, the distillate is emptied often and residue after every process cycle. Instead of increasing the dimensions of the rotary evaporator, automation offers a much more elegant way of increasing the throughput without increasing the working time or space requirements.

What is the Hei-VOLUME Distimatic Pro?

The Hei-VOLUME Distimatic Pro is the only automated evaporation module in the market and can be combined with either a rotary evaporator of the Hei-VAP Benchtop or Hei-VAP Industrial series. Hei-VOLUME Distimatic Pro enables a time-saving and cost-efficient evaporation process by fully automating all process steps. Both the refilling of the medium as well as the removal of residue - are sensor-controlled and run continuously without interrupting the actual distillation process, which ensures the maximum distillation performance.

The solution for evaporating large volumes does not always result in an increase in evaporator size. The Hei-VOLUME Distimatic Pro allows you to achieve this more fully automatically with your current benchtop or industrial evaporator. The throughput is improved by reducing the downtime due to flask replacement, draining, and filling. It also enables a 24/7 workflow. Process automation with the Hei-VOLUME Distimatic Pro also increases user safety, as contact with the medium is minimized.



How Does the Hei-VOLUME Distimatic Pro Automate Continuously the Evaporation Process?

The Hei-VOLUME Distimatic Pro enables all steps of the evaporation process to be carried out automatically. Both the filling of the evaporation flask and the refilling of the medium and, if necessary, the extraction of the residue in the evaporation flask can be carried out either time-controlled or sensor-controlled with the aid of a capacitive sensor (optional). A sensor in the distillate vessel ensures that the distillate is emptied regularly, whereas a sensor in the receiver tank* is used to detect the end of the process.

The distillate from the distillate vessel and residue from the evaporation flask were emptied using a compressor integrated into the Hei-VOLUME Distimatic Pro. The use of compressed air for these emptying processes makes it possible to transport the distillate and residue over a certain distance or height difference. Isolating the distillate vessel from the overall system during draining ensures a linear pressure without fluctuations in the evaporator flask during the entire process cycle.

The Hei-VOLUME Distimatic Pro offers a complete display of all process steps running simultaneously in the evaporator and in the automatic module. Hoses, lines, glass parts, sensors, and valves are displayed in appropriate colors, depending on their current status.



To see the full process in action visit [our Youtube page.](#)

*Sensor is optional and sold separately. It is not included with the standard product.

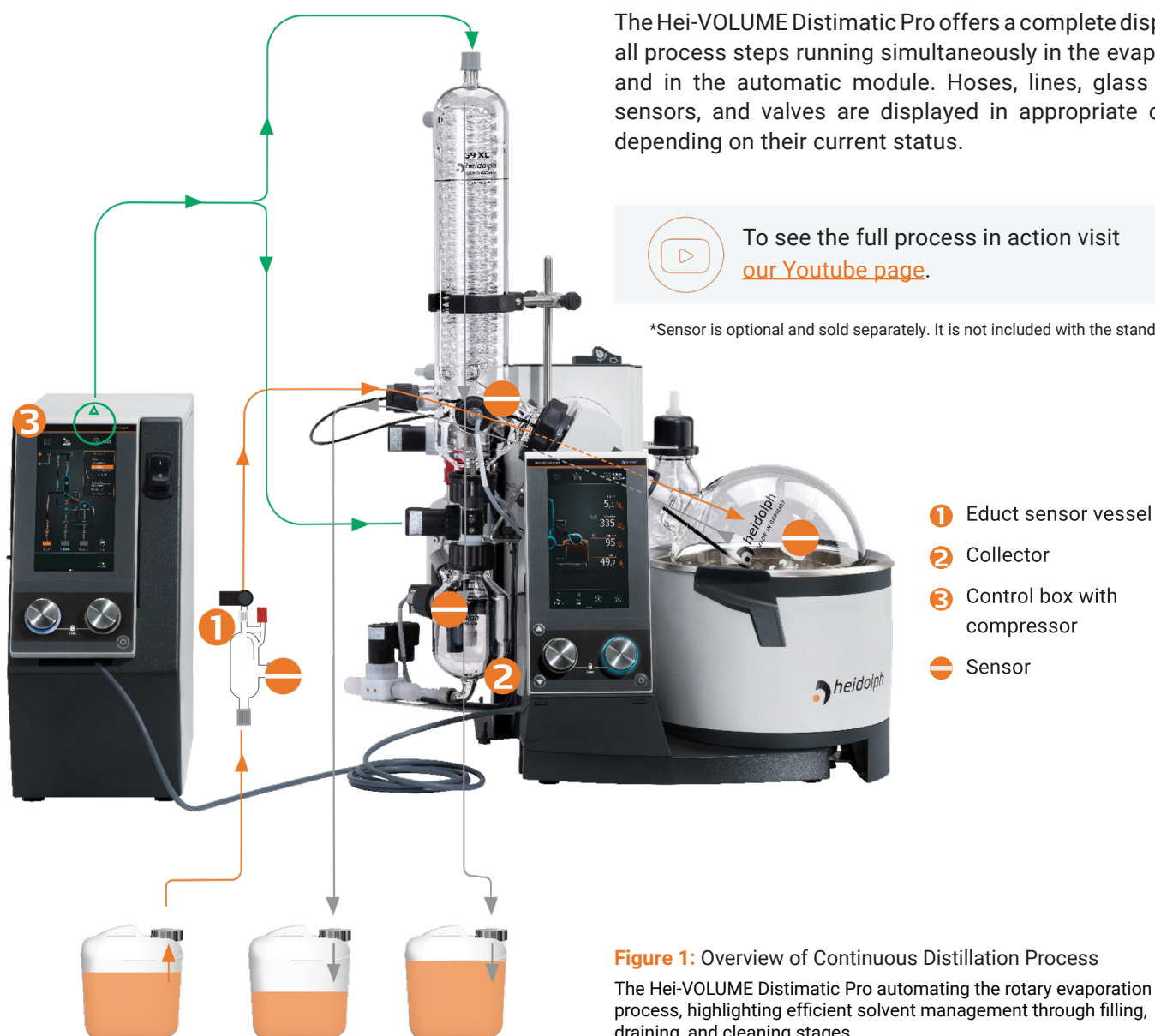


Figure 1: Overview of Continuous Distillation Process

The Hei-VOLUME Distimatic Pro automating the rotary evaporation process, highlighting efficient solvent management through filling, draining, and cleaning stages.

How Do You Operate the Hei-VOLUME Distimatic Pro?

The Hei-VOLUME Distimatic Pro facilitates the production of solutions with precisely defined concentrations. The volume of the distillate, and therefore the concentration of the residue, can be set exactly as required by counting the distillate. This option makes the creation of recipes user friendly and easily leads to the desired result.

Using the Hei-VOLUME Distimatic Pro makes it easy to program processes to achieve the desired result in a simple manner. The automatic module offers different modes for flexibly and easily processing a wide range of applications.

Sensor Mode

In many applications, the sensor mode offers a practical option for processing a sample. In this mode, all steps are sensor-controlled. Both the filling of the evaporation flask and the emptying of the residue can be controlled by a capacitive-level sensor.

Time Mode

In the time mode, the filling of the evaporator flask and emptying of the residue time-controlled. This mode offers the option of processing complicated, highly foaming, or

sticky media, and is used when the level sensor cannot be used because of the nature of the media. For example, the fill level in the evaporation flask can be maintained permanently at a low level, and the refill times can be kept very short to process highly foaming media without any problems.

Rinse Mode

The rinsing mode enables the cleaning of all glass parts, as well as the supply line and residue extraction system. Contamination and residues can easily be removed using suitable solvents.

Manual Mode

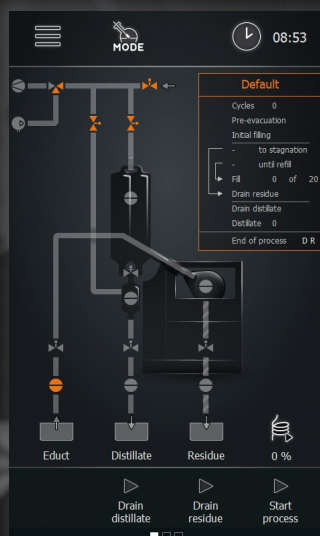
In manual mode, Hei-Volume Distimatic Pro offers the option to use the connected evaporator like a manual unit, all functions of the evaporator (ramp function, AutoAccurate or DynamicAutoAccurate) can be used here.



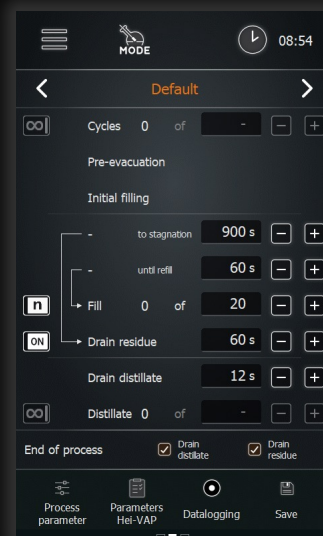
Watch our [On-Demand Demo](#) to see the Hei-VOLUME Distimatic Pro in action!



Panel A: The Overview Panel



Panel B: The Parameter Panel



Bench-top or Industrial?

The first step to automation is determining the volume of the material to be processed. If the material you are looking to process requires more than one bench-top evaporator to complete in a given day, the Hei-VOLUME Distimatic Pro may be a simpler method of scale-up than purchasing a larger unit. If you are currently working with a 20 L unit, it may also be more efficient to automate the unit to highly increase its throughput for volumes up to 1,000 L or more.

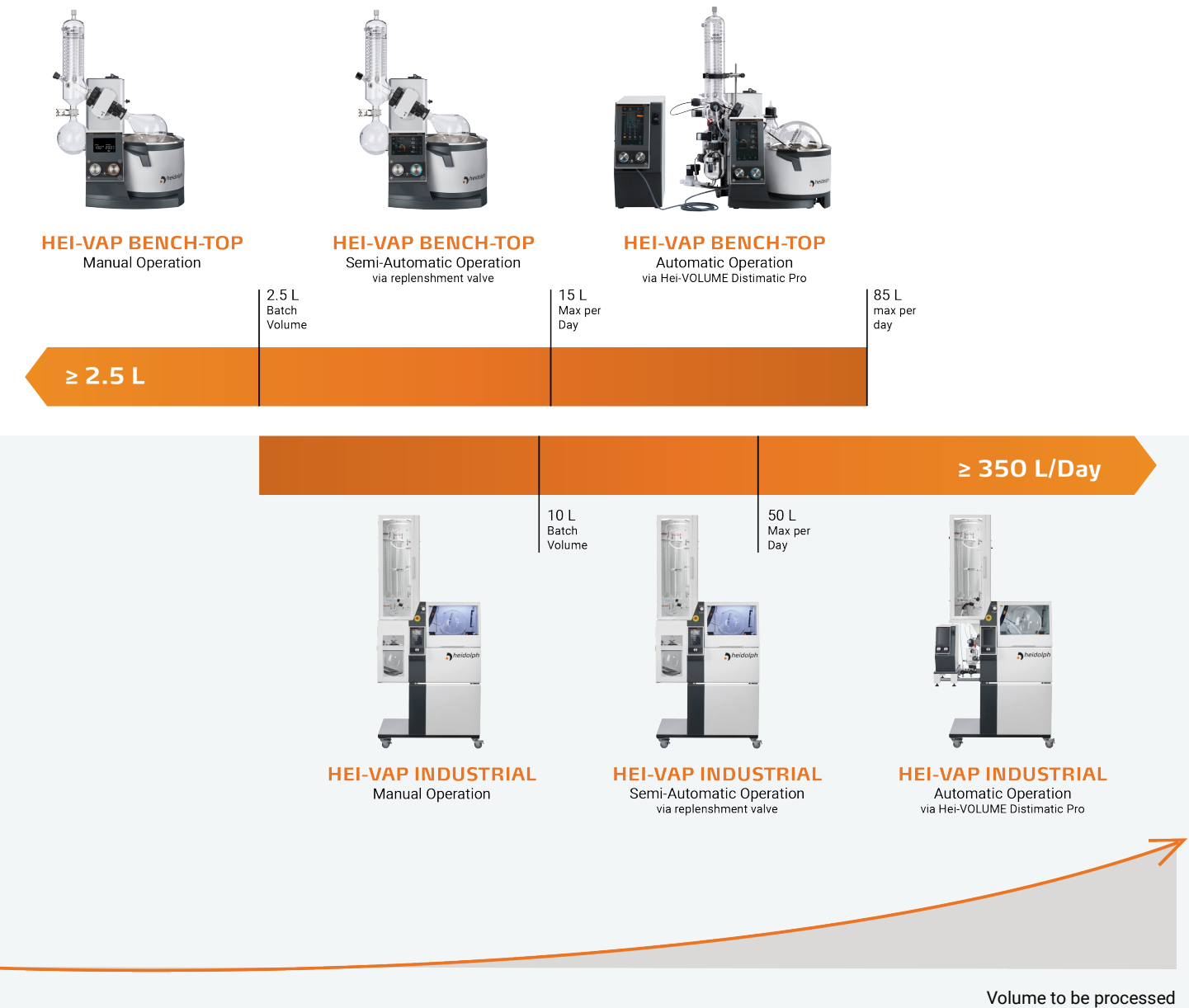


Figure 2: Upscaling scheme with Heidolph rotary evaporation systems based on distillation rates with ethanol (pure solvent only).



Residue Removal or No Residue Removable?

The last question to answer when choosing your Hei-VOLUME Distimatic Pro is what does your end process material look like? Is it an aqueous, wax, oil, or powder? The final material will determine how to utilize the residue-removal feature of the automated evaporation module. If the end material is solid, it may be advantageous to replace the flask manually at the end stage. Alternatively, it may also be useful to leave a small amount of solvent to enable automatic pumping.

Medium	Viscosity/mPas (at 25°C)	Quantity ml/min (at 25°C)	Max. Drain Speed	Max Viscosity
Water	1	2,600	6.5l/min	1,500 mpas (on ambient temperature, heated residue line for reducing viscosity optional)

Figure 3: Viscosity Benchmarks

Flow rates of the residue pump with maximum viscosity of approx. 1,500 mPas. Please consider that temperature has an influence on viscosity.

Research Made Easy

At Heidolph, we are dedicated to helping you maintain focus by providing robust, user-friendly devices without compromising on quality, endurance, or reliability. Our Rotary Evaporators, along with all our products, are crafted with exceptional workmanship and premium materials that are uniquely designed to make research easier and more efficient.

View our full line-up of solutions us at heidolph.com

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