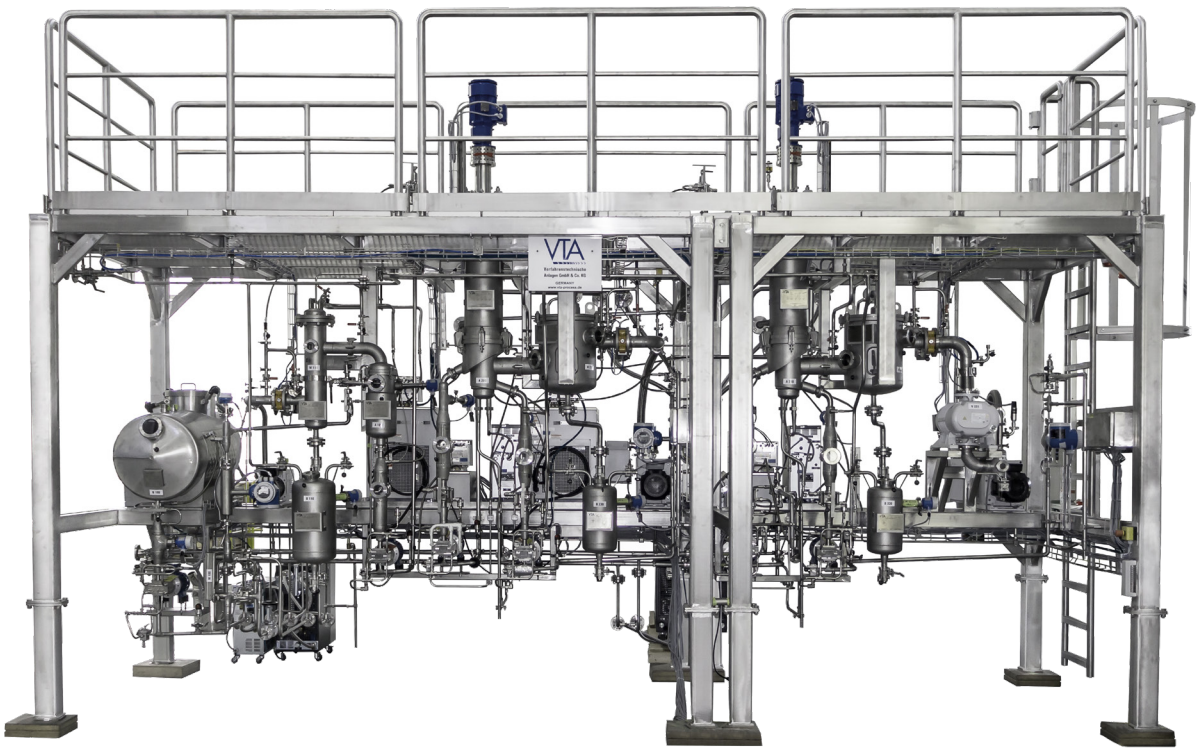

VK 200-40 RS

WIPED-FILM SHORT PATH DISTILLATION SYSTEM

ROOT SCIENCES

VK 200-40 RS

Key Features

- **Throughput Capability:** 40 L/h typical, maximum of 50 L/h
- **Preliminary Degassing Stage:** Compensates for variations in feedstock preparation and ensures optimal processing regardless of flow rate and feedstock quality
- **Dual Stage Distillation:** Two main distillation stages separate both light- and heavy-end molecules from the target compound, simplifying the process flow
- **Advanced Automation Package:** Includes a mass flow meter for the feed pump, level sensors for the transfer and discharge pumps, and PLC-controlled vacuum valves, which maximizes efficiency and safety while reducing labor costs
- **PLC Control System:** The system is equipped with a computer interface that monitors and controls the entire process
- **Fully Jacketed System:** Heated from start to finish, negating the use of heating tape or heat guns to keep product moving through the system
- **GMP Ready:** Equipment can be customized according to your URS to meet any local or international GMP requirements
- **Expert On-Site Training:** Instructions for operation of equipment and proprietary parameters for producing distillate are included with purchase
- **Service and Maintenance:** Root Sciences maintains a US-based warehouse of spare parts and inventory to help keep your equipment in top operational condition

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What is Short-Path Molecular Distillation?

Short-path molecular distillation is a technique used to purify compounds, such as cannabinoids, through a thermal separation process, utilizing a deep vacuum to reduce the boiling point of the desirable components, fractioning substances based on their boiling points.

Wiped-film distillation utilizes wipers to spread the feed-stock into a thin film on the evaporator, which greatly increases the surface area and decreases the residence time (or how long the crude oil is exposed to high temperatures). By using an internal condenser, the distilled vapor travels a short path before condensing, enabling efficient operation with little waste and minimal thermal degradation. This process operates in a continuous manner to enable rapid, repeatable, and scalable production. With a low operating cost, high throughput, and unbeatable reliability, wiped-film distillation has become the most popular method of purifying crude extracts to produce high potency concentrates.

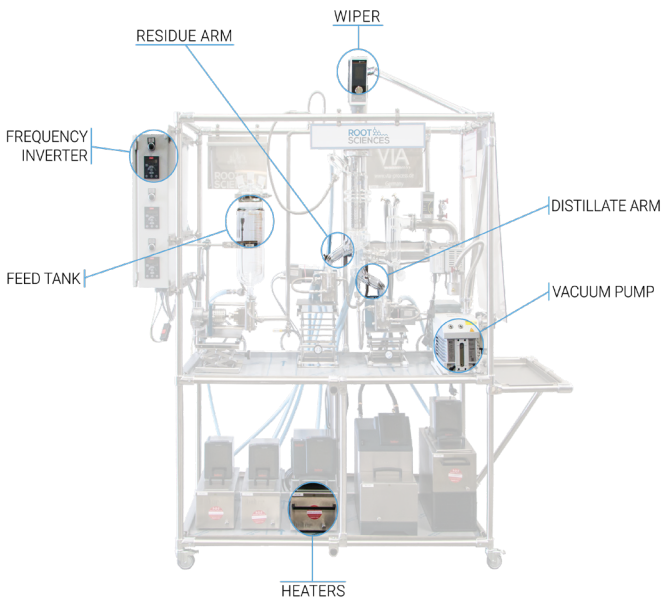
A necessary precursor for cannabinoid isolation, short-path molecular distillation is the preferred technology utilized during the production of CBD and CBG isolates.

Short-Path Wiped-Film Distillation Equipment

Root Sciences' wiped-film molecular distillation plants are specifically intended for the processing of cannabis and hemp crude oil, with honest and accurate throughput/yield rates reflecting that. Designed and manufactured by VTA of Germany, these machines are expertly engineered to produce distillate that can be used in a wide variety of products commonly found on the market today.

Equipment is available to suit a range of operations, from small-scale labs focusing on the recreational THC market, all the way up to large-scale hemp processing facilities focusing on industrial CBD production, and everything in between.

The VTA VK 200-40 is the flagship offering in the VTA line up and is the industry standard for industrial-scale hemp processing facilities. It is a dual-stage short-path distillation plant with a degassing stage for processing winterized and decarboxylated cannabis or hemp oil derived from extraction methods using CO2, light hydrocarbon, or cold ethanol. The VK 200-40 is designed to be operated in automatic mode for continuous production in state-of-the-art facilities.



DISTILLATION

ROI / Payback Period

Material	Cannabis	Hemp	Cannabis	Hemp
Daily Processing Time	8-hour (one shift)		24-hour continuous (three shifts)	
Daily Distillate Yield	280 L		1,050 L	
Daily Distillate Value	$2.28M	$1.23M	$6.85M	$3.69M
Payback Period	1.6 days	3.4 days	0.5 days	1.1 days

Specifications

Throughput	40,000 mL/h
Distillate yield (per 8 hr. shift)	280 L
Evaporator surface area	0.4 m^2 each
Power requirements	3Φ 400 V, 60 Hz, 100 A
Stages	Dual
Dimensions (L x W x H)	25.6′ x 6.9′ x 12.9′
Weight (gross)	6,000 kg
Certification	UL ready (all necessary individual components are UL listed)
Warranty	1 year (excluding glass and vacuum system)
Materials Used	316 stainless steel, graphite wipers

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About Root Sciences

Root Sciences is the global leader in the distribution of equipment and support services for processing facilities in the cannabis and hemp industries, representing premium extraction, distillation, and other post-processing technologies. However, we are in the unique position of being much more than an equipment distributor. Backed by years of hands-on experience in both growing and processing, our collective knowledge as a team of seasoned practitioners and process engineers is unmatched in the industry.

For Root Sciences, the sale is just the beginning, as we aim to nurture a long-term partnership with all of our clients. After delivering and installing equipment, our training and after-sales support is where we really add value. This is where Root Sciences' in-house knowledge and experience becomes so crucial, as we will have everything set up and running efficiently on day one. Furthermore, we are always just a phone call or an email away whenever support is needed. We also offer extended service and maintenance packages to keep your equipment in top condition and minimize the risk of downtime for your operations. As your partner, we have your back.

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