

DISTILLATION & SEPARATIONS

PLANT WORKS GROUP
DESIGN, MANUFACTURE
AND INSTALL
AUTOMATED SYSTEMS
FOR BOTANICAL
EXTRACTION



The PWG distillation column is designed to operate at 50mtorr and up to 200°C for crude oil distillation, with batches up to 100-gallons.

Our short path distillation unit separates the feed material by one equilibrium stage. The short path reboiler can be expanded with a bolt on packed bed for multiple equilibrium stage separation.

Designs are based upon verified cannabinoid physical properties at our lab including: boiling point charts, heat of vaporizations, viscosities, and vapor-liquid equilibrium curves for multiple species separation.



Our column delivers a cutting edge, high volume distillation solution. Multiple functionality in this unit to either run a short path process or fractional distillation to allow for customer specific purity of final product.

- PWG engineers have proven experience in designing, manufacturing, and installing distillation equipment for specialty and essence oils. Inhouse patents date back to 2016 with underlying short path fractional column design dating back to the 1980's.
- Closed-loop design to pair with the PWG Decarboxylation vessel.
- Significant industry technical advancements to facilitate:
 - Crude remediation: removal of waxes, lipids and other undesirables.
 - Mother liquor distillation.
 - Concentration, isolation and partitioning of cannabinoids by molecular distillation.

Automatic valves for full system control. Product circulation, feeding, discharge, storage & waste collection. Air manifold with solenoid valves for automation control.

Ultra-deep vacuum capability of 650-m3/hr with cold trap protection. Fully automated including start up routines, fail safe programmed logic controls and shut down routines.

Thermo-oil pump operating between 360F – 375F provides heat transfer for all thermal jacketed components. PLC automation controls temperature, flow and emergency shut-off routines.

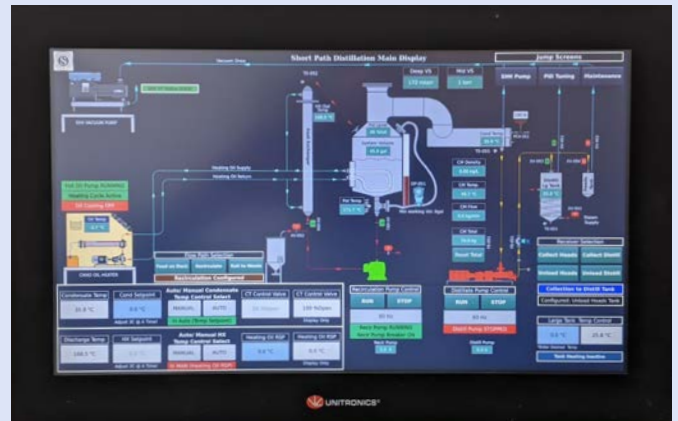
Process piping thermal jacketed with unique design features maximizing heat transfer to maintain critical flow properties throughout entire system.

Overhead condenser with multiple product tanks for fraction collection, to allow for isolation of quality fractions or for future re-homogenizing. Head and Tail fractions are also stored for waste removal.

cGMP, API compliant with comprehensive CIP (Clean In Place) operating procedures programmed into automation.

PLC and touchscreen HMI for access to all required process controls and system monitoring (VFDs, RTDs, Coriolis flow meters, heating/cooling elements and specialty product pumps).

Entire system contained within a square tubing frame for easy installation. Constructed, leak tested and pressure tested at manufacturing facility in Tampa, Florida.



A Chemical Engineering Company
Made in the USA with full factory support

Industrial Scale Hemp / Cannabis Processing Equipment
Continuous Feed Extraction, Mechanical Separation & Filtration, Falling Film Evaporators, Decarboxylation & Fractional Distillation, Automation and Industrial Design services.

t: +1 (813) 434-1044
e: rob@plantworksgroup.com
w: plantworksgroup.com

