



## 10L Infinity Supercritical CO2 Extraction System

**Infinity Turbine  
LLC**

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<https://www.infinityturbine.com/supercritical-co2-plant-hops-beer-oil-extraction-system.html>

Supercritical CO2 Extractor 10L system for botanical oil extraction. Can be run at an subcritical pressure and up to 2,000 psi. Runs completely silent since the process does not require a air compressor. Supercritical CO2 may also be used for vapor deposition for sulfur on carbon nanofiber for battery research.



This webpage QR code

**PDF Version of the webpage (maximum 10 pages)**

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## Supercritical CO2 10L Extractor System

Supercritical CO2 Extractor 10L system for botanical oil extraction.

This system is built like a tank. Powder coated caster beams with 5 inch heavy duty casters for easy movement.

This system is compact and will fit through any standard door, hallway, or elevator.

System operation is manually set parameters, with automatic feedback PID to maintain temperature and pressure. Set it and watch the extraction.

System is designed for maximum 2,000 psi operation. Most processors use 1,400 psi or less.

Terpene extraction can be done running cold prior to turning on the heat for FSO extraction. This system is great for beer hop extraction, lavender, vanilla, pinene, and other valuable terp extractions.





## Supercritical CO2 System Support Files Package

Support package includes:

A. Cat 310 Conversion Kit to CO2 Duty (for a fraction of the cost of purchasing a dedicated CO2 pump from Cat). Parts list only. Support is not included. Pressure seal manufacturer for high and low pressure seals as low as \$4.00 a seal versus \$30-50 a seal from Cat Pumps. Pump assembly checklist.

B. 10L Botanical Basket Cad/Cam files including supplier in China for full build purchase.

C. Infinity Supercritical 10L Consumable Parts List and Suppliers with links. Includes PID controller, Cat pump parts, hoses, motor pump coupler, down tube material, CC1 CC2 CC3 O-Rings part number and supplier, brass sleeve o-rings, extraction vessel o-rings, pump valve o-rings, exhaust hose, low and high pressure pump seals, 3 micron stainless steel filter for CC3 (to prevent any material from going into pump), Cat 310 pump valve replacement kit, pump brass sleeve replacement kit, and pump stainless steel retainer.

D. Supercritical CO2 Automation Information including flowcharts, components, PID justification, and more.

E. Customer Training Checklist.

F. 10L Installation Checklist.

G. 10L Flow Diagram.

H. Crate build cad/cam and parts list.

The above information includes parts lists, part numbers, and suppliers when available. Support is optional and additional.

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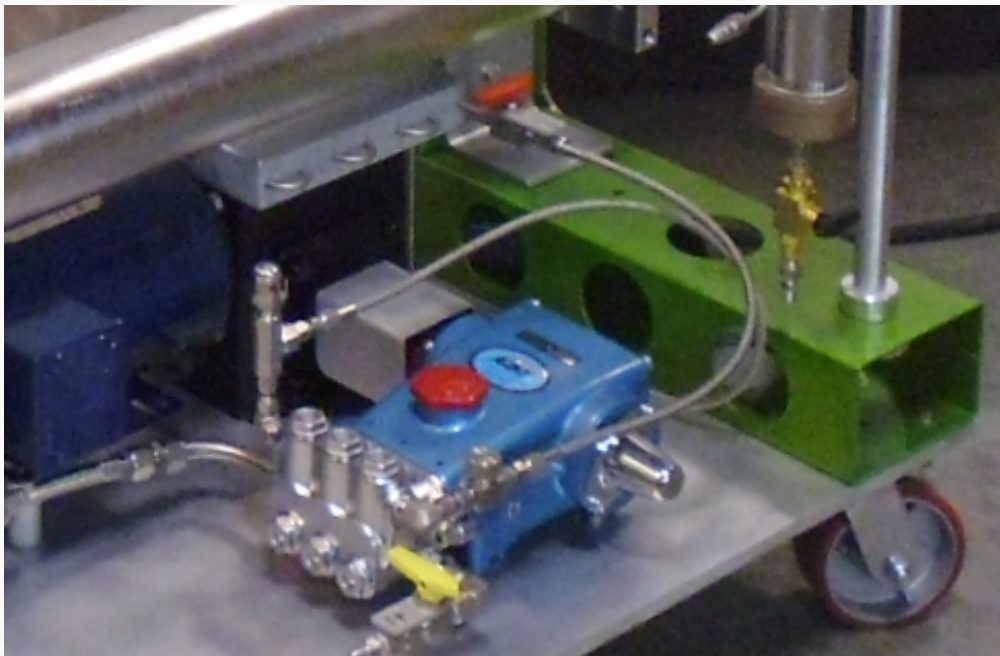
E. Customer Training Checklist.

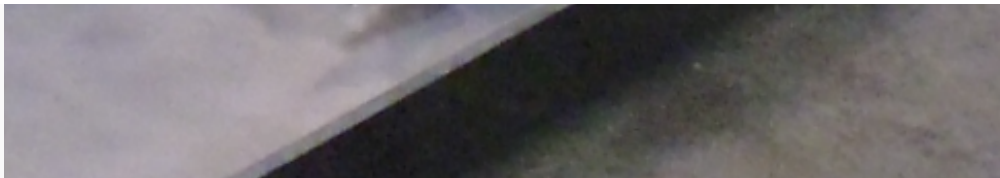
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## Plant Terpenes Extractor

Other ways to make profit are to run as a terpene extractor. This can be done by running the system cold (no heat). If you want to make alpha Pinene (a terpene which is common in Pine Needles, Pine Oleo Resin, Basil, Orange Peels, Rosemary, Cumin, and others.

Here is a short abstract of a-Pinene: These two phytochemicals exhibit diverse biological activities, leading them to various applications and uses, such as fungicidal agents, flavors, fragrances, and antiviral and antimicrobial agents. In addition, alpha and beta pinene are components of renal and hepatic drugs. Also, alpha and b-pinene are used as antibacterials due to their toxic effects on membranes.

Moreover, alpha and beta pinene have been found to have inhibitory effects on breast cancer and leukemia. The application of pinenes goes beyond natural medicine; for instance, they have been proven to be very flexible in the synthesis of polymers; polymers synthesized from pinenes are of better quality than other polymers.

The safety profile of pinenes is considered outstanding, allowing their use in various chemicals, and they are generally recognized as safe (GRAS). Thus, due to their physicochemical characteristics, it is challenging in the process of biotransformation, but are still used in the production of aroma compounds.





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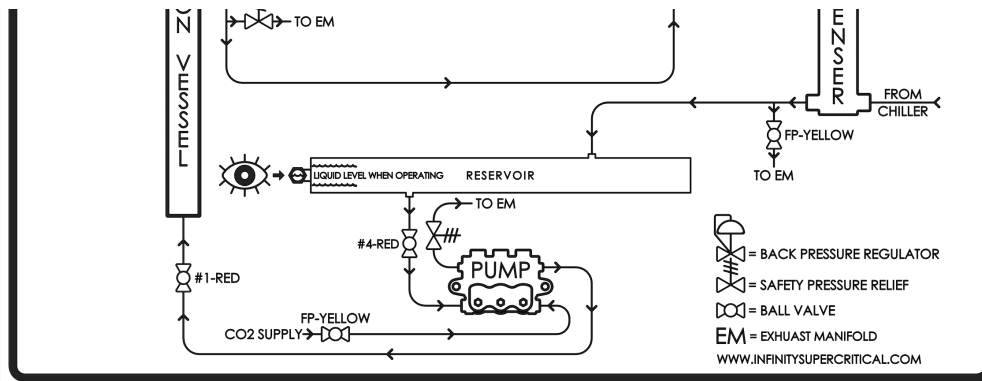
Info:

Cascade Hops Oil Extract









## The finest craft supercritical CO2 full spectrum oil extraction. Botanical oil extraction.

Supercritical CO2 Extraction, Completely Silent, No Air Compressor Required, Start Your Botanical Oil Extraction  
Fast 1-4 Hour Extraction. Great for extraction and full spectrum oil right out of the machine. Produces the best quality extract in the industry. Leave waxes behind if you run near subcritical (reduces or eliminates winterization). Output oil straight out of the machine near isolate quality (85 percent).







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## Processing Advantages

**Low Carry-Over (More Extracted Oil You Can Sell):** Reducing carry-over saves time and parts costs in system maintenance, and puts more profit into your pocket. It also means less time spent on upkeep with the machine, and more time spent on extracting oil.

**Target Oil and Reduce Post Processing Time (Save more than 50 percent of your time by targeting oil you want, not wax):** Systems are designed to target oil production at pressures lower than 2,000 psi, which specifically can retain valuable terpenes, and emphasize oil harvesting, instead of waxes and other byproducts, which need to be removed in post processing. The crude oil output from the 10L is considered a full spectrum oil, and can be sold directly as-is, or mixed with a carrier oil (such as coconut oil) and bottled for sale.

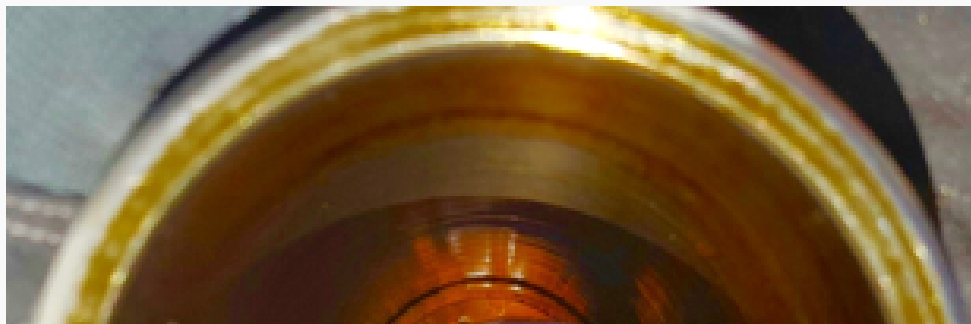
**Run 2 Months Without Pump Cleaning (expert status operator with training and experience):** Quiet, reliable, and lowest maintenance CO2 pump in the industry. We have one customer who has run his machine almost everyday for 2 months without cleaning his CO2 pump. We also are the first company to provide a bolt-on pump cleaner to clean your pump head in-place. We specialize in collecting the oil before it gets to the CO2 pump using our proprietary electrostatic collector. Others make you buy additional pumps, or require cleaning every few days.

**Cleaning:** Respect your equipment, and it will operate great. We recently had one customer comment that the 10L was a gold mine and was looking forward to his second machine, to make even more profit. Keeping a system clean so that it operates correctly is true with most equipment.

We recommend always keeping your machine clean, and at least every 15 cycles do a thorough ethanol clean out of the system. If you do not clean your machine, expect that it will not work at all.

We've had customers that don't clean their machine at all, and they go through seals on a weekly basis, then wonder why it isn't operating up to expectations. We've had a few groups return machines for repair, and all that was needed was a good machine cleaning. Have some respect for your profit center, and you'll get great results.

**System Components:** 3 collection vessels with bottom exit valves, heat recovery system, CO2 preheat, electrostatic collection, FlowBar, spares package, shipping, crate, chiller, extra baskets, bolt on pump cleaner, training, support, pump head cleaning holder, vent tube and manifold, CO2 monitor, CO2 liquid sight-glass.





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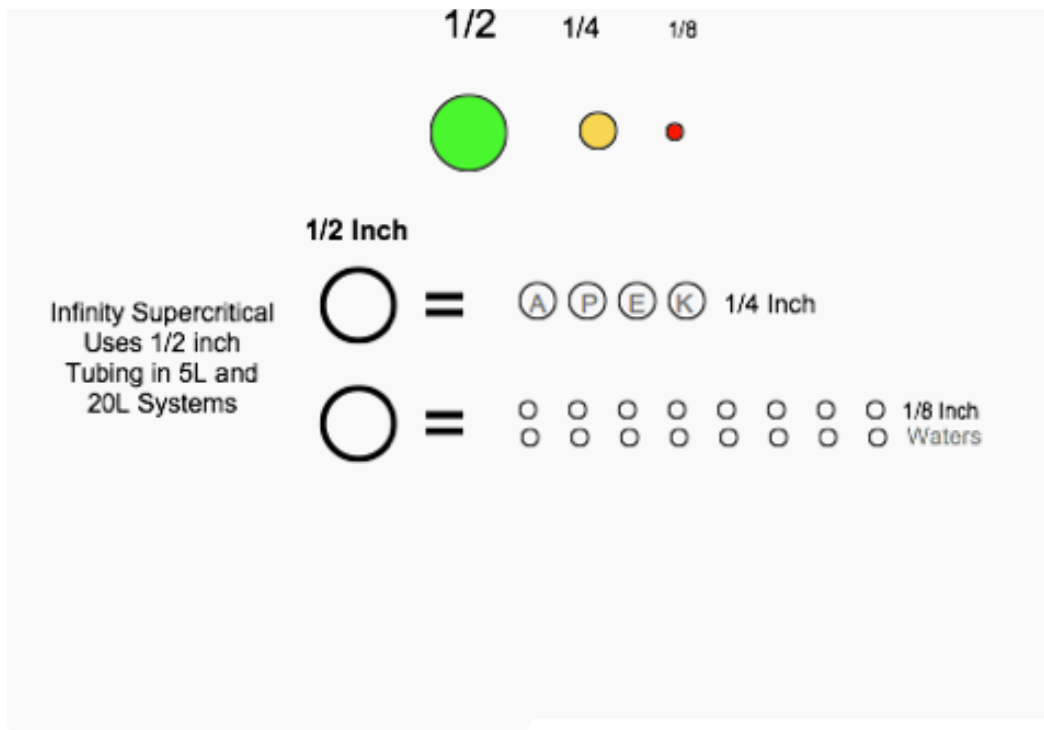
## **CO2 Extraction System Full Configuration Engineer Reviewed and Certified**

Capacity: 10 Liter (1-3 pounds of dried flower)

Operation: Semi-Automatic Pressure: 2,000 psi

Power: **220V 60hz Single Phase**  
(for European installations you must have 60hz)

Engineer Peer Reviewed:  
California, Colorado, Nevada, Washington, Arizona, Oregon



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## How it Works

High pressure liquid CO<sub>2</sub> is pumped into a extraction vessel, which brings the CO<sub>2</sub> supercritical as it goes into the separation/collection vessels.

As the botanicals come in contact with the CO<sub>2</sub>, the oil is released into the CO<sub>2</sub>, since the CO<sub>2</sub> acts as a solvent. The gas and oil (co-mingled) are released into the separation/collection vessel where the pressure drops and the botanical oil drops out as a liquid.

The CO<sub>2</sub> gas is then condensed back to a liquid via a small heat exchanger, and then recirculated through a CO<sub>2</sub> pump to start the cycle over.

The system is closed-loop.

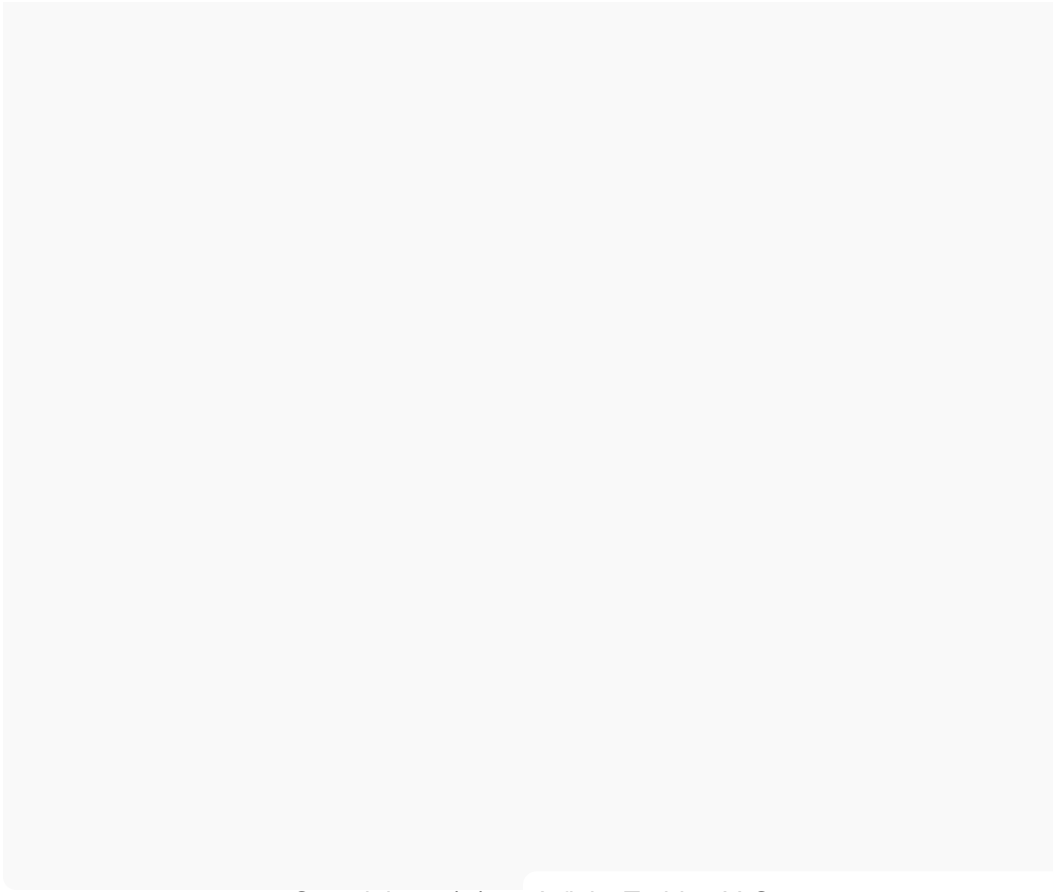
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### System Operation

**Electrostatic Precipitator:** Infinity Supercritical is the first in the industry to utilize static electricity to assist in collection of oil. Commonly known as ESP, electrostatic precipitation is a method used in many industries to remove particulates in a gas flow. In this case, we're applying some same technology (but with our own invention) to collect oil. A small charge accumulates in the entrained oil, which makes it adhere to the first collection vessel.

**Semi-Automated:** Turn the CO2 pump on, and leave it on. You can adjust the pump speed, which sets the pressure. The system runs in a steady-state once started. This is a 2,000 psi or less working pressure system. Typical runs will be at 1,300 to 1,800 psi. The system working pressure is rated for 2,000 psi. A safety relief valve is provided to release any pressure which goes above 2,000 psi. Targets oil at or below 2,000 psi to minimize post processing. High Pressure Systems (above 2000 psi) = lots of post processing.

**Filtration:** We use quality Quanta filtration. System is made in the USA



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