

# supercritical co2 extraction machine



supercritical  
CO2 extraction

## ANTITECK LIFE SCIENCES LIMITED

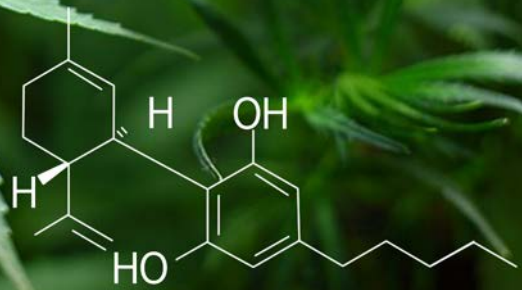
Add: A1-519, XingGang GuoJi, Yingbin Road, Huadu, Guangzhou, China

Tel: +86 133 1286 3972

Web: <https://antiteck.com>

E-mail: [info@antiteck.com](mailto:info@antiteck.com)

## ABOUT SUPERCRITICAL CO2 EXTRACTION EQUIPMENT AND MODELS



Supercritical extraction technology is the latest technology in modern chemical separation. It is an advanced separation technology worldwide.

The so-called supercritical fluid refers to the thermodynamic state in the fluid critical point (Pc, Tc) above the critical point is a gas, liquid interface just disappears state point. Supercritical fluid has very unique physical and chemical properties. Its density is close liquid and viscosity close to gases. The characters such as big diffusion coefficient, a small viscosity and big dielectric constant etc MAKES EXCELLENT SEPARATION RESULT, THUS ALSO TOP-CLASS EXTRACTS. The supercritical extraction is to achieve the purpose of separation under high pressure at a suitable temperature in the extraction solvent in contact with the cylinder extract, solute diffusion in the solvent and then change the operating conditions in the separator, making the precipitated substance dissolved. SO IT IS THE BEST CHOICE FOR HEMP/CANNABIS EXTRACTION TO MAKE HIGH QUALITY CBD/THC



## MODELS

	Capacity	Model	Extractors and Separators.
1	0.5L	GKSFE 0.5L×1/50Mpa	1 Extractors 2 Separators
2	1L	GKSFE 1L×1/50Mpa	1 Extractors 2 Separators
3	2L	GKSFE 2L×1/50Mpa	1 Extractors 2 Separators
4	5L	GKSFE 5L×1/50Mpa	1 Extractors 2 Separators
5	5L+1L	GKSFE 5L+1/50Mpa	2 Extractors 2 Separators
6	10L	GKSFE 5L×2/50Mpa	2 Extractors 2 Separators
7	20L	GKSFE 10L×2/40Mpa	2Extractors 2 Separators
8	50L	GKSFE 25L×2/40Mpa	2 Extractors 2 Separators
9	100L-1	GKSFE 25L×4/40Mpa	4Extractors 2 Separators
10	180L	GKSFE 30L×6/40Mpa	6 Extractors 2 Separators
11	100L-2	GKSFE 50L×2/40Mpa	2 Extractors 3 Separators
12	200L	GKSFE 50L×4/40Mpa	4 Extractors 3 Separators
13	300L-1	GKSFE 150L×2/40Mpa	2 Extractors 3 Separators
14	300L-2	GKSFE 50L×6/40Mpa	6 Extractors 3 Separators
15	150L×4	GKSFE 150L×4/40Mpa	4 Extractors 3 Separators
16	300L×4	GKSFE 300L×4/35Mpa	4 Extractors 3 Separators
17	1000L×2	GKSFE 1000L×2/35Mpa	2 Extractors 3 Separators
18	1500L×2	GKSFE 1500L×2/35Mpa	2 Extractors 3 Separators
19	2000L×2	GKSFE 2000L×2/35Mpa	2 Extractors 3 Separators
20	3000L×2	GKSFE 3000L×2/35Mpa	2 Extractors 3 Separators
21	150L×3	GKSFE 150L×3/35Mpa	3 Extractors 3 Separators
22	300L×3	GKSFE 300L×3/35Mpa	3 Extractors 3 Separators
23	500L×3	GKSFE 500L×3/35Mpa	3 Extractors 3 Separators
24	600L×3	GKSFE 600L×3/35Mpa	3 Extractors 3 Separators
25	1000L×3	GKSFE 1000L×3/35Mpa	3 Extractors 3 Separators
26	1500L×3	GKSFE 1500L×3/35Mpa	3 Extractors 3 Separators
27	2000L×3	GKSFE 2000L×2/35Mpa	3 Extractors 3 Separators
28	3000L×3	GKSFE 3000L×3/35Mpa	3 Extractors 3 Separators
CUSTOMIZED MODELS ARE AVAILAVIE FOR DIFFERENT PRESSURES AND VOLIMES			

## TOP ONEMODEL 300L(50LX6)



## TOP ONE MODEL 300L(50LX6)

- The best sale and top one model in USA specially designed for hemp extraction and till now, over 100 sets have been sold to USA and Europe since the first set was made in 2016.
- The regular buyers include Gencanna, Zelios, Elemental processing, etc. It has two models, with and without Siemens PLC controlling system.
- Now we have new design with three separators and three filters based on the requirements of Gencanna for better extract results
- About 10 sets of this model can be put together for biomass production

Customized version is available

NO	MAIN CONFIGURATION	PARAMETERS
1	Extraction Tank	Volume : 50L(6tanks) , Max working Pressure :35MPa
2	Separation Tank	Volume : 3×20L ,Pressure : 30MPa
3	Pump	CO <sub>2</sub> high-pressure pump & Co-solvent pump
4	Cooling System	Temperature range:5°C-10°C
5	Heating Exchasse System	Max working Pressure: 30MPa
6	Purification System	Max working Pressure: 16MPa
7	CO <sub>2</sub> Storage Tank	Max working Pressure: 16MPa
8	Safety Devices	Pressure gauge at high pressure pump outlet overpressure protection;the extractor , separator, evaporator, dry purifier and mixer have safety valve to keep safe of system
9	Power consumption	101.5kw
10	Temperature Control System	Temperature Range:Room temperature-75°C
11	User-supplied	Installation dimension : 8000mm×4500mm×4500mm Co <sub>2</sub> :Food grade99.9%, singer bottle net weigh 22KG power : 3phase



## TOP TWO-150LX2 MODEL



## TOP TWO-150LX2 MODEL

- Improved modj based on 50L×6 with characteristics of easier operation, shortened extraction time, etc.
- With tyo extraction tanks work in turn, the best design for supercritical co2 extraction machine , this model is attract- ing more and more buyers.

Customized version is available

NO	MAIN CONFIGURATION	PARAMETERS
1	Extraction Tank	Volume : 150L(2tanks) , Max working Pressure :35MPa
2	Separation Tank	Volume : 20L×3 Pressure :35MPa
3	Pump	CO2high-pressure pump &Co-solvent pump
4	Cooling System	Temperature range:5°C-10°C
5	Heating Exchasje System	Max working Pressure: 30MPa
6	Purification System	Max working Pressure: 16MPa
7	CO2 Storage Tank	Max working Pressure: 8MPa
8	Safety Devices	Pressurle gauge at high pressure pump outlet over presure protection; the extractor , separator, evaporator, dry purifier and mixer have safety valve to keep safe of system
9	Power consumption	110kw
10	Temperature Control System	Temperature Range:Room temperature-75°C
11	User-supplied	Installation dimension : 6000mm×4800mm×6000mm Co2:Food grade99.9%, singer bottle net weigh 22KG power : 3phase

## TOP THREE -150LX4MODEL





## TOP THREE -150LX4MODEL

- New version based on 150L×2 upon the buyer 's requeste of bionmass design with characterisitcs of easier operation.fast extractiopspeed,large extraction capacity.
- Shortiead time, good choice for biomass production(Approx 1000kgs each day based on 24 hours working time)

Customized version is available

NO	MAIN CONFIGURATION	PARAMETERS
1	Extraction Tank	Volume : 150L(4tanks) , Max working Pressure :35MPa
2	Separation Tank	Volume : 3×20L, Pressure : 20MPa
3	Pump	CO2high-pressure pump &Co-solvent pump
4	Cooling System	Temperature range:5°C-10°C
5	Heating Exchasje System	Max working Pressure: 30MPa
6	Purification System	Max working Pressure: 16MPa
7	CO2 Storage Tank	Max working Pressure: 8MPa
8	Safety Devices	Rressure gauge at high pressure pump outlet over pressure protection;the extractor, separator, evaporator, dry purifier and mixer have safety valve to keep safe of system
9	Power consumption	220kw
10	Temperature Control System	Temperature Range:Room temperature-75°C
11	User-supplied	Installation dimension : 9000mm×6000mm×5300mm Co2:Food grade99.9%, singer bottle net weigh 22KG



## LAB SCALE MODEL 6L(5L+1L)

- This capacity is very popular among the new starters for test run.
- It has two extraction tanks with the capacity of one is 5L and the other is 1L for test purpose.

NO	MAIN CONFIGURATION	PARAMETERS
1	Extraction Tank	Volume : 15L(1tank) , Max working Pressure :40MPa
2	Separation Tank	Volume : 3L×1+2L×1, Pressure : 30MPa
3	Pump	CO2high-pressure pump &Co-solvent pump
4	Cooling System	Temperature range:5°C-10°C
5	Heating Exchange System	Max working Pressure: 50MPa
6	Purification System	Max working Pressure: 50MPa
7	CO2 Storage Tank	Max working Pressure: 16MPa
8	Flowrate Meter	Model :Metal tube float (6.3-63L/H)
9	Safety Devices	Pressure gauge at high pressure pump outlet over pressure protection;the extractor, separator, evaporator, dry purifier and mixer have safety valve to keep safe of system
10	Power consumption	11.37kw
11	Temperature Control System	Temperature Range:Room temperature-75°C
12	User-supplied	Installation dimension : 2800mm×2500mm×2300mm Co2:Food grade99.9%, singer bottle net weigh 22KG power : 3phase



## LABSCALE MODEL10L(5LX2)

- This capacity is very popular among the new starters with small production capacity.
  - It has two extraction tanks with the capacity of 5L each one
  - The two tanks work in turn and the extra CO<sub>2</sub> in the extraction tank after each extraction could be transferred to another tank, thus saving CO<sub>2</sub> a lot.
- For this model, we generally have two types. One is general version and the other with screen touching system

NO	MAIN CONFIGURATION	PARAMETERS
1	Extraction Tank	Volume : 5L(2tanks) , Max working Pressure :45MPa
2	Separation Tank	Volume : 4L×1+2L×1, Pressure : 30MPa
3	Pump	CO <sub>2</sub> high-pressure pump &Co-solvent pump
4	Cooling System	Temperature range:5°C-10°C
5	Heating Exchasse System	Max working Pressure: 50MPa
6	Purification System	Max working Pressure: 50MPa
7	CO <sub>2</sub> Storage Tank	Max working Pressure: 16MPa
8	Flowrate Meter	Model :Metal tube float (6.3-63L/H)
9	Safety Devices	Pressure gauge at high pressure pump outlet over pressure protection;the extractor , separator, evaporator, dry purifier and mixer have safety valve to keep safe of system
10	Power consumption	13.87kw
11	Temperature Control System	Temperature Range:Room temperature~75°C
12	User-supplied	Installation dimension : 3000mm×2000mm×1800mm Co <sub>2</sub> :Food grade99.9%, singer bottle net weigh 22KG power : 3phase



## SMALL SIZE MODEL 20L (10LX2)

- This capacity is very popular among the new starters with small production capacity.
- It has two extraction tanks with the capacity of each one is 10L.
- The two tanks work in turn and the extra CO<sub>2</sub> in the extraction tank after each extraction could be transferred to another tank, thus saving CO<sub>2</sub> a lot. For this model, we generally have two types. One is general version and the other with screen touching.

NO	MAIN CONFIGURATION	PARAMETERS
1	Extraction Tank	Volume : 10L(2tanks) , Max working Pressure :40MPa
2	Separation Tank	Volume : 4L×1+2L×1, Pressure : 40MPa
3	Pump	CO <sub>2</sub> high-pressure pump &Co-solvent pump
4	Cooling System	Temperature range:5°C-10°C
5	Heating Exchache System	Max working Pressure: 40MPa
6	Purification System	Max working Pressure: 40MPa
7	CO <sub>2</sub> Storage Tank	Max working Pressure: 16MPa
8	Safety Devices	Pressure gauge at high pressure pump outlet over pressure protection;the extractor, separator, evaporator, dry purifier and mixer have safety valve to keep safe of system
9	Power consumption	16.37kw
10	Temperature Control System	Temperature Range:Room temperature~75°C
11	User-supplied	Installation dimension : 3500mm×2000mm×1800mm Co <sub>2</sub> :Food grade99.9%, singer bottle net weigh 22KG power : 3phase



## MEDUM SIZE MODEL 50L(25LX2)

■ This capacity is medium size machine with two extraction tanks with the capacity of each one is 25L.

■ The two tanks work in turn and it is better to have a co2 recovery system to help recover co2 after each extraction batch.

For this model, we generally have three types.

One is general version and the other with screen touching system. The third one is with PLC controlling system

NO	MAIN CONFIGURATION	PARAMETERS
1	Extraction Tank	Volume : 25L(2tanks) , Max working Pressure :40MPa
2	Separation Tank	Volume : 10L×2, Pressure : 30MPa
3	Pump	CO2high-pressure pump &Co-solvent pump
4	Cooling System	Temperature range:5°C-10°C
5	Heating Exchasse System	Max working Pressure: 40MPa
6	Purification System	Max working Pressure: 16MPa
7	CO2 Storage Tank	Max working Pressure: 16MPa
8	Safety Devices	Pressure gauge at high pressure pump outlet over pressure protection;the extractor, separator, evaporator, dry purifier and mixer have safety valve to keep safe of system
9	Power consumption	16.37kw
10	Temperature Control System	Temperature Range:Room temperature-75°C
11	User-supplied	Installation dimension : 6000mm×4000mm×4500mm Co2:Food grade99.9%, singer bottle net weigh 22KG power : 3phase





## MEDUM SIZE MODEL 100L(50LX2)

■ This capacity is medium size machine with two ex-traction tanks with the ca-pacity of each one is 50L.

■ The two tanks work in turn and it is better to have a co2 recovery system to help recover co2 after each extraction batch.

For this model, we general-ly have two types.

One is general version and the other with Siemens PLC controlling system.

NO	MAIN CONFIGURATION	PARAMETERS
1	Extraction Tank	Volume : 50L(2tanks) , Max working Pressure : 35MPa
2	Separation Tank	Volume : 20L×1+20L×1, Pressure : 30MPa
3	Pump	CO2high-pressure pump &Co-solvent pump
4	Cooling System	Temperature range:5°C-10°C
5	Heating Exchasge System	Max working Pressure: 30MPa
6	Purification System	Max working Pressure: 16MPa
7	CO2 Storage Tank	Max working Pressure: 16MPa
8	Safety Devices	Pressure gauge at high pressure pump outlet over pressure protection;the extractor, separator, evaporator, dry purifier and mixer have safety valve to keep safe of system
9	Power consumption	67.25kw
10	Temperature Control System	Temperature Range:Room temperature-75°C
11	User-supplied	Installation dimension : 6000mm×4500mm×4500mm Co2:Food grade99.9%, singer bottle net weigh 22KG power : 3phase



## LARGE SCALESIZEMODEL200L(50LX4)

- This capacity is the size between 100L(50L×2) and 300L(50L×6). It has four Extraction Tanks with the capacity of each one 50L.
- For this model , we generally have two types. One is general version and the other with Siemens PLC controlling system.

NO	MAIN CONFIGURATION	PARAMETERS
1	Extraction Tank	Volume : 50L(4tanks) , Max working Pressure :40MPa
2	Separation Tank	Volume : 30L×1+20L×1, Pressure : 30MPa
3	Pump	CO2high-pressure pump &Co-solvent pump
4	Cooling System	Temperature range:5°C-10°C
5	Heating Exchasse System	Max working Pressure: 30MPa
6	Purification System	Max working Pressure: 16MPa
7	CO2 Storage Tank	Max working Pressure: 16MPa
8	Safety Devices	Pressure gauge at high pressure pump outlet over pressure protection,the extractor, separator, evaporator, dry purifier and mixer have safety valve to keep safe of system
9	Power consumption	67.25kw
10	Temperature Control System	Temperature Range:Room temperature~75°C
11	User-supplied	Installation dimension : 7860mm×4000mm×5500mm Co2:Food grade99.9%, singer bottle net weigh 22KG power : 3phase

TOP ONEMODEL 300L(50LX6)



## LARGE-SCALE SIZE MODE 1200L(300LX4)

- This model is popular among the buyers with requirements for biomass production.
- It is with Siemens PIC controlling system.
- Within 24 hours it could extract about 2800kgs if working 24 hours per day.

NO	MAIN CONFIGURATION	PARAMETERS
1	Extraction Tank	Volume : 300L(4tanks) , Max working Pressure :35MPa
2	Separation Tank	Volume : 100L×3 , Pressure : 30MPa
3	Pump	CO2high-pressure pump &Co-solvent pump
4	Cooling System	Temperature range:5°C-10°C
5	Heating Exchage System	Max working Pressure: 30MPa
6	Purification System	Max working Pressure: 16MPa
7	CO2 Storage Tank	Max working Pressure: 8MPa
8	Safety Devices	Rressure gauge at high pressure pump outlet overpres- sure protection;the extractor , separator, evaporator, dry purifier and mixer have safety valve to keep safe of system
9	Power consumption	253kw
10	Temperature Control System	Temperature Range:Room temperature-75°C
11	User-supplied	Installation dimension : 15000mm×9000mm×8500mm Co2:Food grade99.9%, singer bottle net weigh 22KG power : 3phase

# HOW TO MAKE PURIFIED CBD OIL CRYSTAL/ISOLATE FROM HEMP

## Step 1. Herbal grinder, which will grind the raw material into powder



Dry hemp material



Herbal Grinder



Hemp Powder

## Step 2. Supercritical co2 Extraction Machine



Hemp Powder



Supercritical CO2 Extraction machine



CBD Oil paste(Crude oil)

## Step 3. Winterization/Filtration/Rotary Evaporating



CBD Oil paste(Crude oil)



Rotary Evaporator



CBD Oil paste(Crude oil)



**Step 4. Wiped film and short path distillation**

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CBD Oil pasle(Crude oil)



Short Path distillation system



Full Spectrum CBD oil

**Step 5. HPLC System**

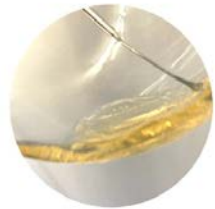
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Full Spectrum CBD oil



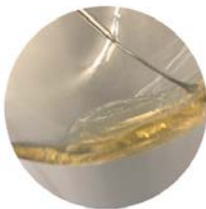
HPLC



THC FREE CBD Oil

**Step 6. Nutche filter dryer**

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THC FREE CBD Oil



Nutche filter dryer system



CBD Isolate 99.9%