



SHUKA LLC / SHENZHEN JOSHUA DE
IMPORT EXPORT LTD

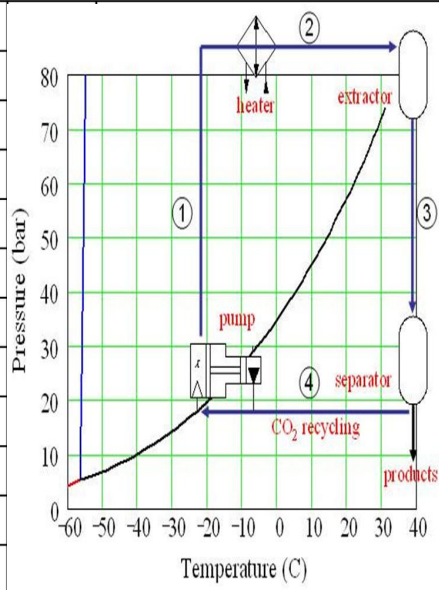
CO₂ SUPERCRITICAL



SHUKA CO₂ Supercritical Extraction Models

Custom specifications available by request

Model No.	Main parameters
SK120-50-01	Extraction kettle:1L/. Max Pressure: 50MPa
SK120-50-02	Extraction kettle:2L/. Max Pressure: 50MPa
SK120-50-05	Extraction kettle:5L/. Max Pressure: 50MPa
SK220-50-06	Extraction kettle:1L+5L /. Max Pressure: 50MPa
SK120-40-10	Extraction kettle:5L+5L/.Max Pressure: 40MPa
SK220-40-11	Extraction kettle:1L+10L/. Max Pressure: 40MPa
SK220-40-20	Extraction kettle:10L+10L/. Pressure: 40MPa
SK120-40-24	Extraction kettle:24L/.Max Pressure: 40MPa
SK220-40-48	24L+24L/40Mpa
SK420-40-96	(24+24)Lx2/40Mpa
SK220-40-100	50L+50L. Max.Pressure: 40MPa



REMARK: FULL CUSTOMIZATION UP TO 1500L , PLEASE INQUIRE Today!

PAYMENT: 40% as deposit and 60% before shipment.

DELIVERY: 55 days after the order confirmation, the receipt of the down-payment.

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SHUKA QUALITY MACHINERY FEATURES:

1. This system is a multi-function SCFE extraction machine allowing an ntermittent or continuou modes to extract chemical formulas such as THC molecules, terpenes and more from solid or liqu id material with the addition of the use of Co2 supercritical fluids (Not included)
2. The standard system has one extractor and two separators cansisters;
3. The highest working pressure of solid extractor is 50Mpa, the highest working temperature is 185 ;
4. The basic design of all of our pressure vessels exceed all worldwide certified laboratory and institution standards and customization is available to requested specifications with full safety pressure protection system with standard safety valves;
5. All material s including cansisters, body, instument panels, piping fittings, valves, pipe lines,are all highest quality durable stainless steel(0Cr18Ni9Ti).



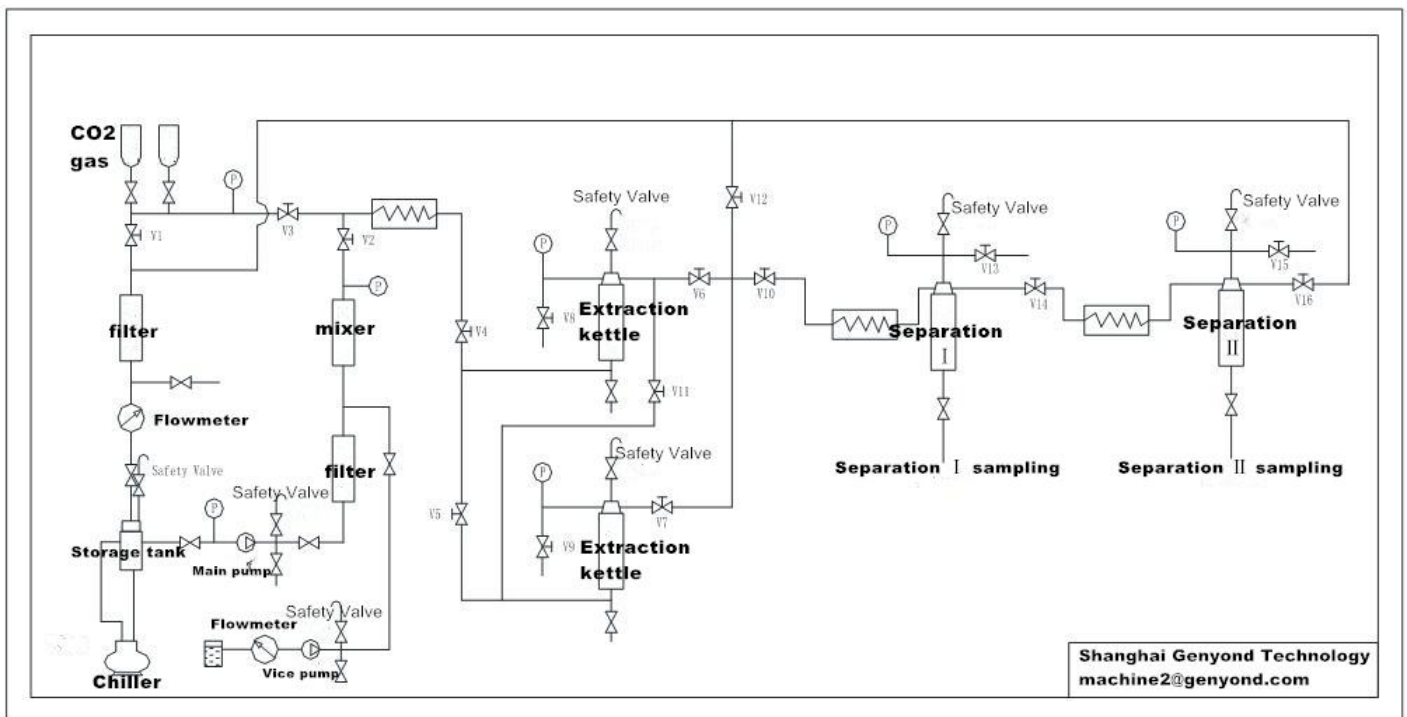
5L Model Technical Parameter:

1. Maximum working pressure: 50Mpa;
2. The operation temperature ranges +90 to -121 ;
3. CO₂ fluid flow rate: 0~50L/h;
4. Extractor Volume: 5L;
5. Vacuum separator: 3L/16Mpa;
6. Secondary separator vac: 2L/16Mpa;
7. Total power: 18KVA;
8. Cooling capacity: 5,100 Kcal;
9. Dry purifier : 0.5L/50Mpa;
10. The additive flow: 0~4L/h;
11. Power Voltage: 380V(Ac).



Main configurations and instrument contents :

The standard equipment consists of a extraction kettle, 2 sets of separation kettle, 1 set of carbon dioxide injection pumps, 1 set of carrier pumps, pressure control system, flowmeter, safety protection devices, refrigeration system, CO₂ tank, mixer, filters, Electric Control Chassis, Frame panels and various high quality components. Our machines are fabricated with the highest quality stainless steel ancillary equipment systems that exceed all the safety and quality requirements of a high production capacity supercritical reaction extraction. Below is our flow chart diagrams.



1. Extraction kettle:

- a) Volume: 5L model contains one kettle / 10L model +2 extraction kettles
- b) The max working pressure: 50MPa
- c) The max operating temperature: 176
- d) Material: 0Cr18Ni9 Stainless Steel
- e) Material tank qty. (for both liquid and solid material): 2
- f) Heat preservation structure, and with stainless shell outside(also called jacket water structure)

2. Separator

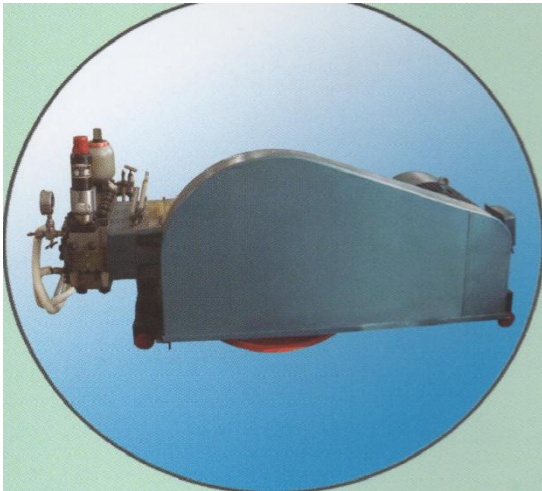
A critical part that creates a supercritical fluid mixture of gas and liquid, the material used 1 Cr18. A separator pressure of 30MPa flows to an inlet connected to an intubation close to the bottom of the the kettle body water heating sleeve and insulation layer with a maximum separation temperature of up to 167 . The inner wall is machined with special grinding process to form a smooth inner plane, which can effectively improve the retention of inner wall material.



Item	The stair separator	The secondary separator
Volume	3L	2L
Working pressure	16MPa	16MPa
Amount	1	1
Operation temperature	Room temperature - 185	
Material	0Cr18Ni9Ti	
Heat preservation structure, also called a jacket water structure has a stainless steel shell.		

3. Pre-heater: 3 sets (two different pressure, 50MPa, 16MPa) heated directly

4. Pump



- (1) Pressure pump
 - a) Type : 3DT-50/50
 - b) Flow : 0~100L/h (real flow of CO₂)
 - c) The rate working pressure: 50MPa
 - d) Flow adjustment: 20%—100%
 - e) Head of pump with cooling structure
 - f) Entrance Pressure from bottom: 3MPa
- (2) Additive pump
 - a) Type: 2J-X5/50
 - b) Flow: 0~5L/h
 - c) The rate working pressure: 50MPa
 - d) Flow adjustment : 20%—100%

5. Dry purifier

- a) Volume: 0.5L
- b) The max working pressure: 50MPa

6. Mixer

- a) Volume: 0.5L
- b) Working pressure: 50MPa
- c) Material: 0Cr18Ni9Ti

7. Refrigerating system



This uses carbon dioxide gas to facilitate a high pressure injection of the gas liquid to keep stable and reliable. Refrigeration unit imported compressor, stable operation, other refrigeration accessories are selected from premium internationally renowned brand products. According to the test conditions, the control system automatically adjust the operating conditions of the refrigerator, the amount of cold to ensure that the compressor works in a suitable state to extend the service life of the compressors. Only environmentally safe refrigerant R404a is used. The refrigerator has a dedicated vibration damping spring and the unit board has special sound-absorbing acoustic reduction measures

Specific technical indicators are as follows:

Cooling capacity: 5100kcal / h

Cooling method: air-cooled, sealed cycle

Temperature range -23 ~ +41



8. The controlling of pressure and temperature, flow showing

(1) Pressure control

- a) Adjustable micrometer valve to control pressure for stable extraction and separation
- b) Using Y-160 piezometer to show pressure levels with precision up to 1.5 class

(2) Temperature control

Using digital meter to show and control precision 1 class levels

(3) Certified flow gauge

- a) CO₂ uses metal rotor flow meter with a range of 0~150kg/H
- b) Additive meter uses a glass rotor flow meter with a range of 0~20Kg/H

9. Safety system

- (1) The pressure pump has a limited pressure structure for emergency shut off measures.
- (2) The extractor, separator, CO₂ storage tanks and kettles all contain fail safe safety valves.

Spare parts:

No.	Name	Amount
1	Extractor seals	6
2	Material tank seals	6
3	Separator seals	5
4	Purifier seals	5
5	Mixer seals	5
6	High pressure stop valves	1
7	Intercept valves	2
8	Main pump seals	1 set
9	Spare pump seals	1 set
10	Professional pump tools	1 set



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Training content:

- 1)Operational safety training of the equipment, including: power, pressure, inflammable mechanical drive, health, so minimal risk of failure and accidents.
- 2)Normal operation method sand steps;
- 3)CO2 and additive suggestions and suppliers;
- 4)Biomass and plant material tank loading and unloading of extractor;
- 5)Open ing and closing of extractors nd separators.
- 6)How to use dry purifiers;
- 7)Complete parameter physics and all controlling component settings and programming.
- 8)The operation of high pressure valve controls, flow adjustments, temperature settings, pressure balances and settings.
- 9)Complete maintenance program for longevity and safety of the use of this device.

Configuration list:

No.	Name	Type	Qty	Remark
1	Extractor(Liquid and solid)	5L/50Mpa	1	Made by GY
2	Material tank(for both liquid and solid material)	Stainless steel	2	
3	The stair separator	3L/16MPa	1	
4	The secondary separator	3L/16MPa	1	
5	Mixer	0.5L/50MPa	1	
6	Filter	0.5L/20MPa	1	
7	Purifier	0.5L/50MPa	1	
8	Pre-heater	17	3	
9	CO2 storage tank	16 L/9.8MPa	1	
10	Refrigerator	5100 Kcal	1	Made in china
11	CO2 Pressure pump	60L/h 50MPa	1	
12	Co-solvent pump	4 L /h · 50 Mpa	1	
13	Flow meter	60/h	1	
14	Co-solvent pump flow meter	4L/h	1	



No.	Name	Type	Qty	Remark
15	Temperature controller	Digital show	1	
16	Safety valve		9	
17	Pressure Valve	Y-150	5	Made in china
18	Pressure transducer		1	
19	Valve	304 Stainless steel	1	
20	High pressure pipe and parts	304 Stainless steel	1	Made by GY
21	Transducer	For CO2 pressure pump and Co-solvent pump	2	Tai wan Tai da
22	Operation platform	304 Stainless steel	1	Made by GY
23	CO2 cylinder frame/CO2	Carbon steel with A3 paintingA3	1	

Quotation Part's supplement:

INSTALLATION:

1. All machinery is pre-assembled, tested with certified quality audit before packaging prep
2. Complete English instruction manual (Please inquire for translated editions) .
2. Engineers are available by request for assembling and training of machinery use if the buyer provides full paid airfare and accomodations and transportation with a \$100USD per diem for food allowances and basic expences related to service trip.

1 YEAR / 12 MONTH FULLWARRANTY (If all proper instructions and safety compliance)



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Pictures of our CO₂ supercritical extraction machine with different size





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PI Extraction Material Uses:

Supercritical fluid extraction (SFE) technology using CO₂ is an innovative solid-liquid extraction techniques used for recovering phytochemical compounds from Cannabis matrices. Supercritical CO₂ extraction exceeds modern consumer market quality demands for health-promoting bioactive compound-rich extracts, and has an excellent rated for green chemistry concepts and sustainability principles.

Supercritical CO₂ extraction is one of the best and safest environmentally friendly technology using thermodynamic operations and the CO₂ is commonly recycled and reused in the future extractions.

This revolutionary process machinery extract extensive Cannabinoids, Terpenes, Polyphenols, Tocopherol molecules that include but are not limited to CBDV, THCV, CBD, CBG, CBDA, CBGA, CBN, THC Delta 8, THC Delta 9, THCA, THCB, CBC and THCA. (CBN: Cannabinol; CBD: Cannabidiol; CBDA: Cannabidiolic acid; THCA: 9-tetrahydrocannabinolic acid; THC: 9-tetrahydrocannabinol; CBC: Cannabichomere and CBG: Cannabigerol.)

Also the valuable chemicals such as hydrocarbon sesquiterpenes (caryophyllene, -farnesene, -humulene) and oxygenated sesquiterpenes (caryophyllene oxide, -eudesmol, -bisabolol and -bisabolol)

and nutrients, antioxidant compounds and bioactive molecules (polyunsaturated fatty acids) and many food grade ingredients like acetate, propionate, and butyrate short-chain fatty acids during the fermentation process using probiotic strains.



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CANNABIS LOADING INTO CANISTER FOR FIRST STAGE.



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