Pacesetter of Fluid Equipment in the World

Depamu

德帕姆

Supercritical Fluid Equipment

Aerogel Special Equipment

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PACESETTER OF FLUID EQUIPMENT IN THE WORLD

全球流体装备的领跑者

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Enterprise Profile

Depamu (Hangzhou) Pumps Technology Co., Ltd., founded in 2003, located in Qiantang New Area, China, is a high-tech enterprise specialized in R & D, production and sales of main products including super-critical fluid equipment, CO_2 special pumps (plunger/diaphragm), metering pumps, cryogenic pumps, pneumatic diaphragm pumps, cryogenic pumps, screw pumps, petroleum and chemical pumps, chemical dosing packages, water-steam sampling devices and water-treatment equipment.

Through introduction of advanced technologies from Germany, the company has been devoted to research and development of fluid transfer equipment since its establishment, and multiple patents take a leading place globally. The company has passed API, CE and DNV certification; at the same time, it serves as a drafter of industry standards.

Presently, company products have been widely applied to industries of aerospace, new material, pharmaceutical, biotech, food, healthcare product, fine chemical, environment protection, water treatment, printing and dyeing, military, nuclear power, etc. As a first-grade supplier of CNPC, SINOPEC, CNOOC and COFCO, the company has established long-term strategic partnerships with Fortune Global 500 large-scale enterprises.

The company aims to be the most competitive fluid equipment manufacturer and service supplier in the world, and build Depamu into a century-old global brand.

Enterprise Qualification Certificates

Certificate of National
High-tech Enterprise (P. R. C.)

Enterprise High-tech R&D
Center in Hangzhou City, China

" Zhejiang Made"
Certificate

ISO 9001 Certificate

ISO 14001 Certificate

OHSAS 18001 Certificate

API Certificate

Certificate of China
Torch Program for New-type
Extra-large Flow High
Pressure Metering Pump

Invention Patent

Invention Patent

Invention Patent

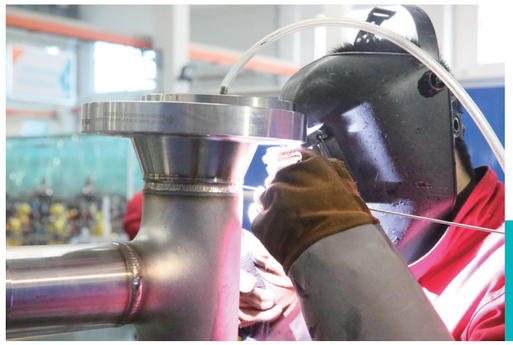
Invention Patent

Invention Patent

Delicacy Management

Adhering to the enterprise spirit of "innovation and progression", "DEPAMU" supercritical fluid equipment manufactured by the company have been at the forefront relying on the excellent team, superior equipment, advanced process, top-ranking standard, strict management and perfect service, which has then made us the key new high-tech enterprise with the most significant influence in the industry.

Finished Product Inspection



Welding Technology

CO_2 High-pressure Reciprocating Pump Test Center

Inspection Workshop

Excellent Team

Precision Machining Workshop

Supercritical Equipment Test

Supercritical Fluid Equipment

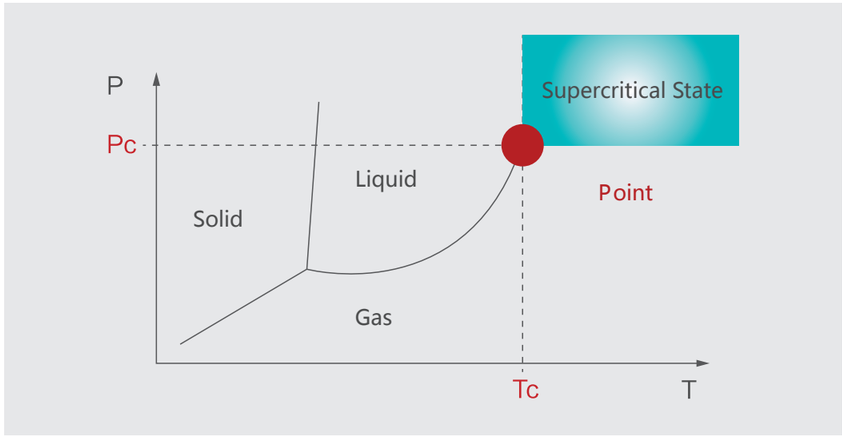
Introduction of Supercritical Fluid

Generally, a supercritical fluid refers to a solvent of supercritical state used to dissolve substances. Under a certain temperature and pressure, this solvent stays at the balance point of gas state and fluid state, the fluid density is the same with the saturated gas density, and the point where the interface disappears is called the critical point. The state where the temperature and pressure are higher than the critical point is called the super-critical fluid state. Generally, a fluid whose temperature exceeds the critical temperature, regardless whether the pressure or density exceeds the critical value or not, is called a supercritical fluid.

Supercritical Fluid Equipment

Most Common Substances at Supercritical State

- CO_2, critical temperature is 31.19℃ and critical pressure 7.38MPa
- CH3CH2OH, critical temperature 243.1℃ and critical pressure 6.17 MPa
- H2O, critical temperature 374.2℃ and critical pressure 22.13MPa



Product Application

Supercritical Fluid Extraction

Supercritical Fluid Printing and Dyeing

Supercritical Fluid Drying

Supercritical Fluid Washing

Ultrafine Particle Preparation with Supercritical Fluid

Supercritical Water Oxidation Technology

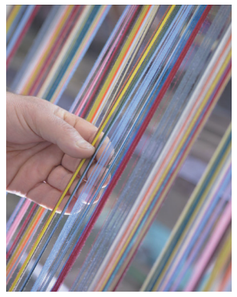
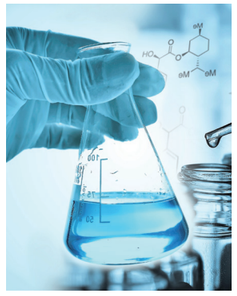
Supercritical Fluid Chromatography

Chemical Reaction in Supercritical Fluid

Supercritical Fluid Equipment

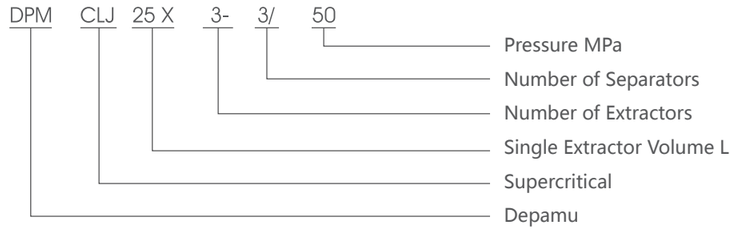
Product Characteristics

- Intelligent Control: PLC intelligent control, color touch screen display, digital proportional control technology, device flow, pressure, temperature, flow and other important parameters can be set, memorized and stored directly on the touch screen, which can achieve remote automatic control. Possible combination of automatic control and manual control greatly improves pressure control precision and makes the extracted components purer.
- Overall Layout: A rational structure and modular design make installation and maintenance very convenient;
- Extractor Quick-opening Structure: Adoption of a clamp quick-opening structure (for extraction equipment above 30L) and a pneumatic or hydraulic kettle cover save refilling time; seal material will not swell, can be reused, which improve the utilization rate of the equipment;
- Dryer and Purifier: Able to complete drying and purification of CO_2 gas, automatically activate the scavenger; an entrance for trapping agent is provided, and a few substances not separated can be separated from CO_2 by adding of trapping agent;
- CO_2 Pump: The packing is with high pressure resistance, good sealing performance and a long service life. Adoption of a cooling pump head and a cooling plunger chamber make CO_2 fluid transfer safer and more reliable without phase change; a simple structure and convenient maintenance render a high cost performance;
- CO_2 Oxidation and Recycling Function: Improving the utilization efficiency of CO_2 and achieving zero emission;
- Refrigerating System: Separate indoor and outdoor system eliminates noise and heat generated by the compressor. An energy-efficient heat exchanger has been used, which greatly reduces the foot space of the refrigerating system.
- Heating System: Steam and electric heating can be chosen for heating, which have high heating efficiency and long service life;
- Automatic Isobaric Switching Function: Pressure balance is not required for kettle replacement, a kettle shall be replaced once extraction is completed, which not only saves pressure balance time, but also increases production capacity of the equipment;
- Hot flushing function: When kettle pressure is balanced, the temperature of the material basket is very low due to depressurization of CO_2, which severely affects gasification of CO_2 and thereby prolongs the time for pressure balance (CO_2 recovery) and material reclaiming is very difficult due to agglomeration, this function can completely solve such problems.

Supercritical Fluid Equipment

Product Model



Supercritical CO_2 Extraction Equipment for Experiment

Model	Extractor Volume	Number of Extractors	Number of Separators	Pressure	Combination Function	Remarks
DPMCLJ 0.1 x 1–2/50	100ml	1	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 0.3 x 1–2/50	300ml	1	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 0.5 x 1–2/50	500ml	1	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 1.0 x 1–2/50	1L	1	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 1.0 x 2–2/50	1L	2	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 5.0 x 1–2/50	5L	1	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 5.0 x 2–2/50	5L	2	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 10.0 x2–2/50	10L	2	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 25.0 x2–2/50	25L	2	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement

Supercritical CO_2 Intelligence Test Platform

Model	Extractor Volume	Number of Extractors	Number of Separators	Pressure	Combination Function	Remarks
DPMCLJ 0.5 x 1–2/50	500ml	1	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 1.0x1–2/50	1L	1	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 1.0x2–2/50	1L	2	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 5+1–2/50	5L, 1L各1	2	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 5.0 x2–2/50	5L	2	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ10.0+2–2/50	10L 2L各1	2	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 10.0 X2–2/50	10L	2	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement

Supercritical Fluid Extraction Equipment

Supercritical CO_2 Drying Equipment (Aerogel Preparation Package)

Model	Dryer Volume	Number of Dryers	Number of Separators	Pressure	Theoretical Annual Output of Standard Aerogel Blanket
DPMCLJ 500 x 2–2/20	500L	3	2	20MPa	1000 m^3
DPMCLJ 1000x3–3/20	1000L	3	2	20MPa	2000 m^3
DPMCLJ 1500 x 3–2/20	1500L	3	2	20MPa	3000 m^3
DPMCLJ2000x3–3/20	2000L	3	2	20MPa	4000 m^3
DPMCLJ 2000 x6–2/202	2000L	6	2	20MPa	8000 m^3
DPMCLJ2600x3–2/20	2600L	3	2	20MPa	5000 m^3
DPMCLJ2600x6–2/20	2600L	6	2	20MPa	10000 m^3

Supercritical Ethanol Drying Equipment (Aerogel Preparation Package)

Model	Dryer Volume	Number of Dryers	Number of Separators	Pressure	Theoretical Annual Output of Standard Aerogel Blanket
DPMCLJ 370 x15/20	370L	15	3	20MPa	1000m^3
DPMCLJ 370x30/20	370L	30	6	20MPa	2000m^3
DPMCLJ600 x15/20	600L	15	3	20MPa	1500m^3
DPMCLJ600x30/20	600L	30	6	20MPa	3000m^3
DPMCLJ 1000 x15/20	1000L	15	3	20MPa	2000m^3
DPMCLJ1000 x30/20	1000L	30	6	20MPa	4000m^3
DPMCLJ1500x15/20	1500L	15	3	20MPa	3000m^3
DPMCLJ1500x30/20	1500L	30	6	20MPa	6000m^3
DPMCLJ2000x15/20	2000L	15	3	20MPa	5000m^3
DPMCLJ2000x15/20	2000L	30	3	20MPa	10000m^3

Supercritical Fluid Extraction Equipment

Supercritical CO_2 Pilot Equipment

Model	Extractor Volume	Number of Extractors	Number of Separators	Pressure	Combination Function	Remarks
DPMCLJ 25.0x2–2/50	25L	2	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 25.0x3–2/50	25L	3	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ300x2–2/40	30L	2	2	40MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 300x2–2/50	30L	2	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement
DPMCLJ 300x3–2/50	30L	3	2	50MPa	Possible Equipment with Distillation Column	Combination as per Customer Requirement

Industrial Supercritical CO_2 Extraction Equipment

Model	Extractor Volume	Number of Extractors	Number of Separators	Pressure	Remarks
DPMCU 50x2–2/40	25L	2	2	40MPa	Combination as per Customer Requirement
DPMCLJ 50x3–3/40	25L	3	3	40MPa	Combination as per Customer Requirement
DPMCLJ 100 x 2–2/40	50L	2	2	40MPa	Combination as per Customer Requirement
DPMCLJ 100 x 3–3/40	50L	3	3	40MPa	Combination as per Customer Requirement
DPMCLJ 300x2–2/32	100L	2	2	32MPa	Combination as per Customer Requirement
DPMCLJ 300x3–3/32	100L	3	3	32MPa	Combination as per Customer Requirement
DPMCLJ 600 x 2–2/32	300L	2	2	32MPa	Combination as per Customer Requirement
DPMCLJ 600x3–3/32	300L	3	3	32MPa	Combination as per Customer Requirement
DPMCLJ 1000x2–2/32	600L	2	2	32MPa	Combination as per Customer Requirement
DPMCLJ 1000x3–3/32	600L	3	3	32MPa	Combination as per Customer Requirement
DPMCLJ 1500x2–2/32	1000L	2	2	32MPa	Combination as per Customer Requirement
DPMCLJ 1500x3–3/32	1000L	3	3	32MPa	Combination as per Customer Requirement
DPMCLJ 2000x2–2/32	1500L	2	2	32MPa	Combination as per Customer Requirement
DPMCLJ2000x3–3/32	1500L	3	3	32MPa	Combination as per Customer Requirement

Supercritical Fluid Extraction Equipment

Introduction to Supercritical Fluid Extraction

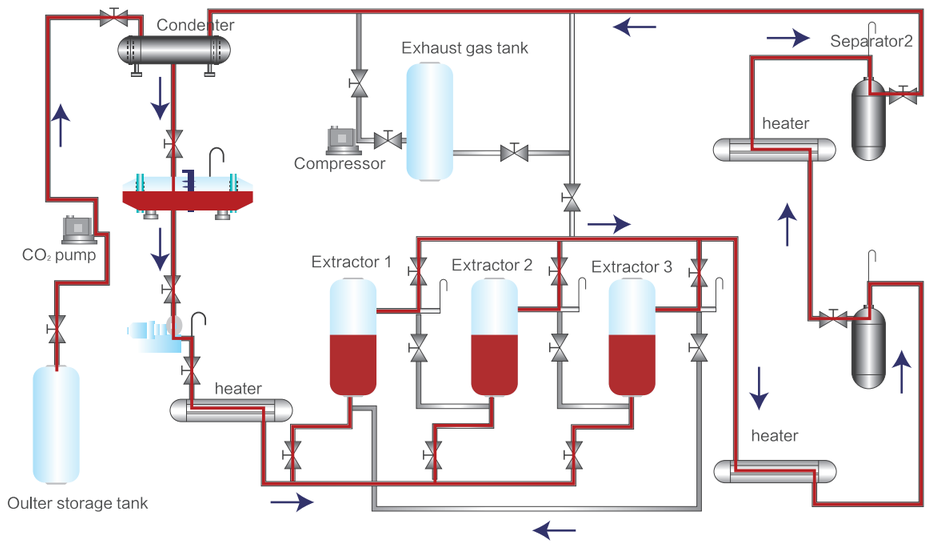
Supercritical fluid extraction is the most advanced physical extraction technology in the world, abbreviated as SFE (supercritical fluid extraction), which is a high and new technology emerging in modern chemical engineering separation. SFE combines traditional distillation and organic solvent extraction, and utilizes the excellent solvent power of supercritical CO_2 to effectively separate, extract, and purify the matrix and extractant. CO_2 is a fluid safe, non-toxic and inexpensive. Supercritical CO_2 has a diffusion coefficient similar to gas, a dissolving capacity like liquid, zero surface tension, and can quickly penetrate into solid materials to extract the essence, which features high efficiency, difficult oxidization, pure naturalness, stableness, non-toxicity and no chemical pollution. During extraction by supercritical CO_2, the extractant can be separated out by reducing the pressure or raising the temperature with no need in repeated extraction operations; therefore, the supercritical CO_2 extraction process is simple. So, supercritical CO_2 extraction is particularly suitable for extraction and purification in industries like biology, food, cosmetics and drugs.

Supercritical Fluid Extraction Equipment

Application of Supercritical CO_2 Fluid Extraction Technology

Field	Category
Food	1、Extraction of grease 2、Extraction of flavor and fragrance 3、Extraction of animal and vegetable fat and liposoluble constituent 4、Extraction of plant alkaloid 5、Extraction of food colorant 6、Deodorization, decoloration, deacidification and organic solvent stripping
Pharmaceuticals	1、Extraction of volatile oil and essential oil in Chinese herbal medicine 2、Extraction of alkaloid in Chinese herbal medicine 3、Extraction of flavonoid 4、Extraction of saponins
Cosmetics	1、Essential oil in natural plants 2、Extraction of natural pigment

Supercritical Fluid Extraction Process



Supercritical CO_2 Fluid Printing and Dyeing Equipment

Supercritical CO_2 Fluid Printing and Dyeing Principles

As a kind of new anhydrous dyeing technology, supercritical carbon dioxide dyeing features high dyeing speed, good level dyeing and permeability, good reproducibility of dyeing, short process flow, zero emission, no pollution, reusable fuel and no assistant, which has demonstrated quite obvious prospect of industrialization. Carbon dioxide fluid is pressurized to the critical pressure by a high-pressure plunger pump, and then warmed up to the critical temperature by a preheater, making carbon dioxide liquid reach the supercritical state, and then it enters a dyes kettle preloaded with dye so as to get contact with dye and dissolve fully. When the supercritical CO_2 with dye components passes through the dyeing kettle filled with textiles, dye enters into the interior of the textiles so as to realize dyeing process. After completion, the working conditions of the supercritical CO_2 are changed to reduce its solubility and separate incompletely dyed dye from CO_2 fluid, so dye is left in the separator and CO_2 is completely vaporized and condensed into liquid via the condenser for use in the next cycle.

Characteristics of Supercritical CO_2 Fluid Printing and Dyeing Technology

- No water is required for the whole process of supercritical CO_2 printing and dyeing, which has completely solved the problem of sewage treatment in printing and dyeing enterprises. Dyes can be recycled, and the utilization rate can reach 100%. No assistant is added, which saves resources greatly. So, it is one kind of high-tech technology that is energy-efficient and environmentally-friendly.

- Fabric after printing and dyeing with supercritical CO_2 is bright with no color losing. Color fastness and soaping fastness friction of materials can reach 4 or even 5 degrees.

- The process reproducibility of the supercritical CO_2 printing and dyeing technology is good, and there is no color difference for several batches of fabrics dyed.

- Compared with traditional dyeing technology, supercritical CO_2 printing and dyeing technology eliminates multiple time-consuming operation of rinsing and drying in traditional process, therefore, the required process time is shorter and procedures are fewer. Due to characteristics of the process, the whole printing and dyeing process is 3-5 times shorter than the traditional process.

Supercritical CO_2 Fluid Printing and Dyeing Equipment

Application of Supercritical CO_2 Fluid Printing and Dyeing Technology

Current researches indicate that supercritical CO_2 fluid dyeing can achieve good performance for various synthetic fibers (such as polyester fibers, polyamide fibers, elastic fibers, polyethylene fibers and polypropylene fibers). However, since water-soluble dyes are commonly used for natural fibers (cotton, linen, wool, etc.) and such dyes cannot be dissolved in supercritical CO_2 fluid, therefore, supercritical CO_2 fluid cannot be used as dyeing media. So, it is necessary to pretreat natural fiber dyeing. At present, modification of natural fibers, modification of dyes, and addition of a co-solvent (methanol) are quite common ways.

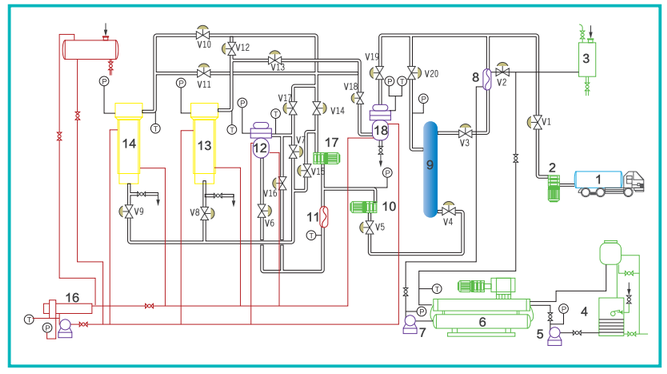


Figure 2 Chart of Supercritical CO_2 Waterless Industrial Dyeing

1、CO_2 Tank	4、Cool Water Tower	7、Refrigerant Pump	10、High Pressure Pump	13、I Dyeing Kettle I	16、Heat Transfer Oil Unit
2、Liquid Transfer Pump	5、Water Pump	8、Condenser	11、Preheater	14、Dyeing Kettle Ⅱ	17、Circulating Pump
3、Refrigerant Overhead Tank	6、Air Compressor	9、Gas Storage Tank	12、Dye Kettle	15、Heat Transfer Oil Overhead Tank	18、Separator

Supercritical Ethanol Fluid Drying Equipment

Supercritical Ethanol Fluid Drying Principles

Supercritical ethanol fluid drying technology is a kind of new drying method developed under use of the special properties of supercritical ethanol fluid. One of its obvious features is that during the process of drying, the process of water or other solvents stripping, no micro-structure change (such as collapse of pore and others) will be caused due to the surface tension on the capillary for materials to be dried since phase equilibrium relationship between carbon dioxide and the material to be removed is rebuilt, therefore, particles of a smaller size in uniform distribution can be obtained.

High Temperature Ethanol Drying Method

▲ CO_2 Drying Method

▲ CO_2 Drying Method

▲ High Temperature Ethanol Drying Method

Supercritical CO_2 Fluid Drying Equipment

Characteristics of Supercritical CO_2 Fluid Drying Technology

- Able to be conducted under a mild temperature, especially suitable for drying of heat sensitive materials.
- Able to effectively dissolve and extract materials with large molecular weight, a high boiling point and hard to volatilize.
- It is easy to remove organic solvent from solid materials by changing the working conditions.

Application of Supercritical CO_2 Fluid Drying Technology

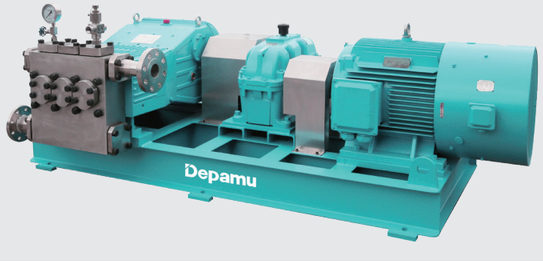
- Field of Materials Development and Application: Preparation of aerogel;
- Pharmaceutical Industry: Drying of antibiotics;
- Food Industry: Treatment of thallus in raw materials.

Supercritical CO_2 Special Pump

Introduction to CO_2 Special Pump

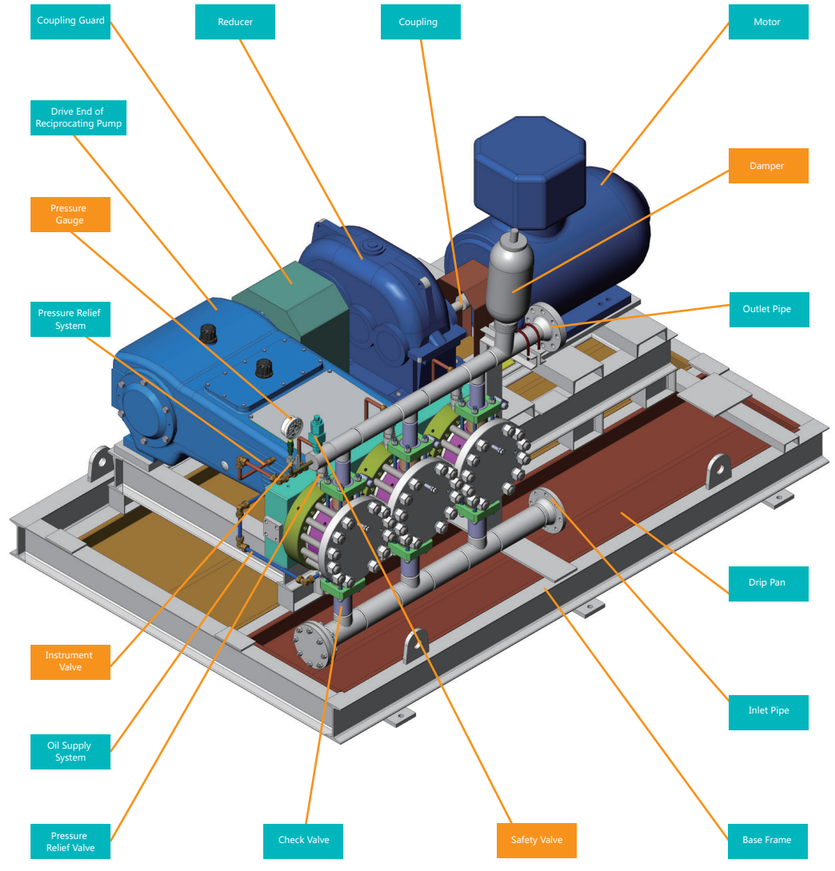
Depamu reciprocating pumps is global leading under design as per API 674; with many patents, products can meet demands in severe working conditions, transfer fluids accurately and reliably, and meet the most severe demands for such pump. Reciprocating pumps in a compact structure are especially favored in the field of equipment manufacturing; thanks to solid technical foundation, the design of a process diaphragm reciprocating pump guarantees no leakage during transport of harsh, toxic, flammable or corrosive fluids without limit of all fields.

- A compact modular structure, a small size and a light weight;
- Good lubricity, small friction coefficient and high efficiency;
- Stable and reliable transmission at drive end with low noise;
- Assembly Forms: Horizontal, vertical, stationary and mobile;
- Power Sources: Motor, diesel engine or solar energy;
- Deceleration Mechanism Types: Double helical gear, worm and gear, reducer and belt pulley;
- Materials of wetted parts can be alloy steel, stainless steel, dual-phase steel, titanium, zirconium, Hastelloy, etc.;
- Personalized customization is available according to customer requirements.



Carbon Dioxide Delivery Pump

Supercritical CO_2 Special Pump

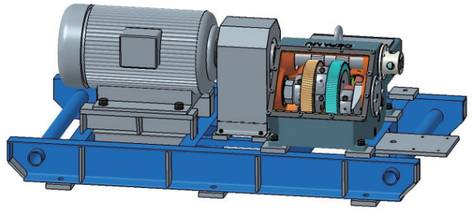


Note: The above is a typical installation chart for a reciprocating pump, in which, the blue blocks are standard a ccessories while the yellow ones are optional customers can select based on specific working condition.

Supercritical CO_2 Special Pump

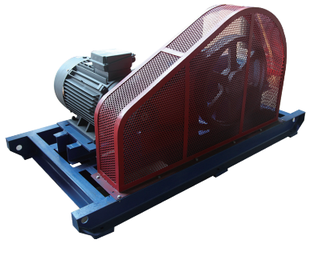
Features of Double Helical Gear Reducer

- A small axial force, self-adjustment capability and a long service life of bearing;
- A special design of plunger alignment and short crosshead, a compact structure, and a high transmission precision;
- Double helical gears render a highly simplified design and guarantee a maximum efficiency. Such design minimizes the footprint and the power;
- The crankshaft and the pinion shaft are free from axial loading as a result of the design of double helical gears, and a smooth transmission device renders a long service life and low noise of a pump;
- Forging and shot peening hardening treatment reduce stress of a crankshaft, achieving a firm structure and high fatigue resistance of a pump;
- Reciprocating pressure pushes lubricating oil to act on crosshead pin, connecting rod and sliding bearing; therefore, no additional lubrication system is needed;
- A gear is under detection of pressure and temperature switches, which prevents happening of a low oil level and overload;
- Repairing of all oil sealing can be done externally, which makes repairing easy and convenient; and oil release is not required for repairing.



Features of Belt Pulley Drive

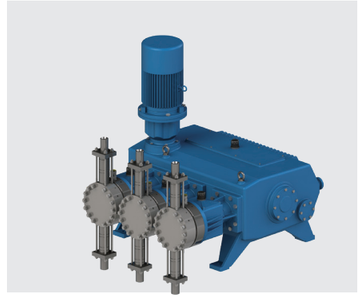
- Able to ease load impact and operate stably with low noise and vibration;
- A simple structure renders convenient adjustment;
- With the function of overload protection;
- Disadvantages: Existence of an elastic slip phenomenon, low transmission efficiency and inability to accurately retain a certain transmission ratio.



Supercritical CO_2 Special Pump

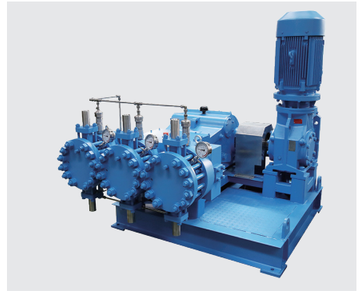
Features of Worm Gear Drive

- With a high single-stage transmission ratio and a compact structure;
- Able to operate stably with low noise and vibration;
- Shafts can be arranged vertically without crossing;
- Able to avoid reversing;
- Disadvantages: Big friction, existence of axial force, and a rather low transmission efficiency.



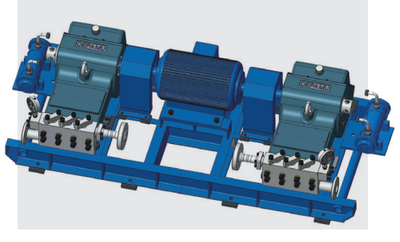
Features of Reducer Drive

- A high transmission efficiency and a stable transmission ratio;
- Able to drive stably, reduce pulsation and absorb vibration;
- Good heat dissipation, reliable performance and a long service life;
- Disadvantages: A rather large footprint.



Features of Multiplex Reciprocating Pump

- Under the multi-head design effectively reducing pulsation, the pump is more suitable for application to occasions with a large flow and a high pressure, and can operate stably for a long time;
- The modular design allows for direct packing replacement without dismantling of pump head or pipeline, which greatly cuts down user maintenance cost;
- The design of double helical gears achieves simplicity and a maximum efficiency, which minimizes the footprint and the power;
- It can be converted to a multi-head high pressure process diaphragm pump according to specific working condition.

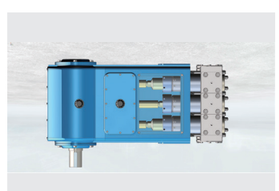


Supercritical CO_2 Special Pump

Features of Hydraulic End in Plunger Pump

Aviation emery spraying process, adopted for plunger, realizes small friction and high hardness; sealing is made via imported packing with a special internal separation sleeve structure; sealing in that way, together with a specially designed backflow mechanism, lowers the possibility of leakage at hydraulic end;

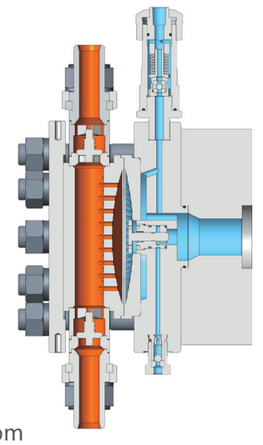
- A large flow, a high working pressure and low pulsation;
- A strong and high-efficiency power end, an advanced forced lubrication system and adjustable eccentric couplings ensure stable and reliable pump running with small damage. A state patent has been granted for the pump structure with the Patent No. ZL20172114323351 and the Patent Name Three-plunger Reciprocating Pump.
- Good sealing performance of cylinder liner in a sealing structure adopts advanced German technology; packing, featuring self-sealing, shows excellent sealing performance with a sealing force automatically adjustable based on operation pressure;
- Quality integral ceramic plungers and mold combined modified PTFE packing render a low friction coefficient and a long service life, and can meet harsh conditions due to outstanding sealing performance and safeness;
- The advanced modular design allows for direct replacement of plunger and packing without dismantling of pump head;
- Check valve technology, double-guide ball valve spool and combined check valve with forced-return spring ensure reliable and stable check valve performance, low media flow resistance, timely shutoff and very little backflow.
- Pump head bolt technology with self-positioning anti-loose function ensures safe running of a high-pressure pump.

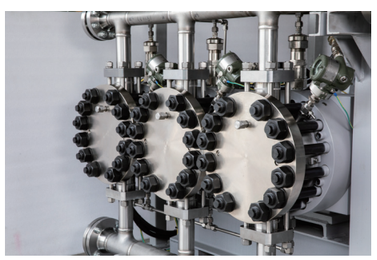
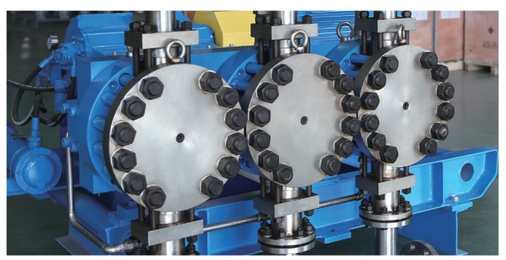

Supercritical CO_2 Special Pump

Features of Hydraulic End in Process Diaphragm Pump

Process diaphragm pumps with an invention patent, developed by Depamu based on the structure of its original advanced metering pumps, retain the advantages of hydraulic diaphragm pumps and plunger pumps, like a compact structure, a high efficiency and a high bearing pressure; besides, process diaphragm pumps have overcome the shortcomings of plunger pumps, easy corrosion and easy leakage.



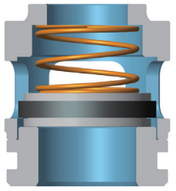
- A diaphragm is used to fully separate media from hydraulic oil and ensure no media leakage. A process diaphragm pump is applicable to occasions of corrosive and toxic media transportation requiring high precision.
- A vent valve can automatically discharge air from hydraulic chamber.
- A compensation valve can timely replenish hydraulic oil into hydraulic chamber, thus stabilizing the oil volume in hydraulic chamber and ensuring measurement accuracy of the pump.
- Hydraulic oil circuit, under a fully enclosed design, prevents from entrance of dust and debris, and avoids blocking and insecurity of the circuit arising during manual operation.
- A double diaphragm pump, carrying all advantages of a diaphragm pump, contains a diaphragm rupture detector as well. When one diaphragm ruptures, the other diaphragm can continue working; meanwhile, the diaphragm rupture detector can send out alarm signals. The pump is applicable to transportation of dangerous media toxic, flammable, explosive and highly corrosive.
- A hydraulic metal diaphragm pump head is applicable to occasions under a high temperature or a high pressure. The max working temperature can reach 451℃ and the max pressure is up to 70 Mpa.
- Variable frequency regulation means regulation of motor power frequency via a VFD to control motor speed, thus changing pump speed to regulate pump flow.

Supercritical CO_2 Special Pump

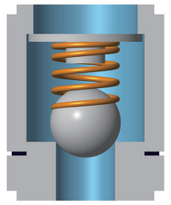
Valve Body System

Reliable Check Valve Technology



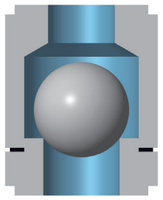
Planar Pressure Reset Type Check Valve

The working pressure can reach more than 200 bar; with the features of a simple structure, wide opening flow way, small reverse current, light weight, rapid reset, etc., the valve is applicable to transportation of media with a large flow, high pressure and low viscosity via injection pumps, alcohol injection pumps and cleaning pumps.



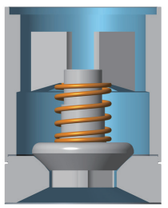
Spherical Pressure Reset Type Check Valve

With the features of a simple structure, good self-cleaning ability, good sealing, stable operation and good fluidity, it can be used for transportation of media with strict performance and solid particles, is especially applicable to occasions requiring a high accuracy and a low flow, and widely used in equipment with high demand in accurate flow measurement and pressure retaining.



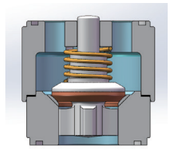
Spherical Automatic Reset Type Check Valve

With the features of a simple structure, rapid reset, good sealing and stable running, it can be used to transport media with a high viscosity and solid particles, and is applicable to special occasions with requirement of good sealing, a high viscosity and a high pressure.



Double Orientation Cone Reset Type Check Valve

With the features of quick reset, high precision, good sealing, low noise, low wearing, etc., it is applicable to transportation of media with a large flow and a high viscosity, and is especially suitable in occasions with strict requirement of environment noise.



Double Orientation Spherical Reset Type Check Valve

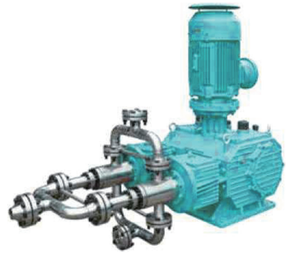
With the features of quick reset, high precision, good sealing, high wear resistance, high corrosion resistance, low noise, etc., it is applicable to transportation of media with a large flow, corrosivity, a high viscosity and particles, and is especially suitable for transportation of media containing many particles.

Supercritical CO_2 Special Sealing System/CO_2 Cryogenic Pump

CO_2 Special Sealing System

- The combined seal ring structure with automatic compensation function under a patented technology has good sealing effect and a long service life.
- Highly wear-resisting and modified materials in a special formula can satisfy long-term use under a wide temperature range of -185°C to 310°C with a longer service life.
- Strong resistance to chemical corrosion, good dimensional stability, no swelling and reusability save time for refilling.

Seal Ring



Carbon Dioxide Cryogenic Pump

Carbon Dioxide Cryogenic Pump

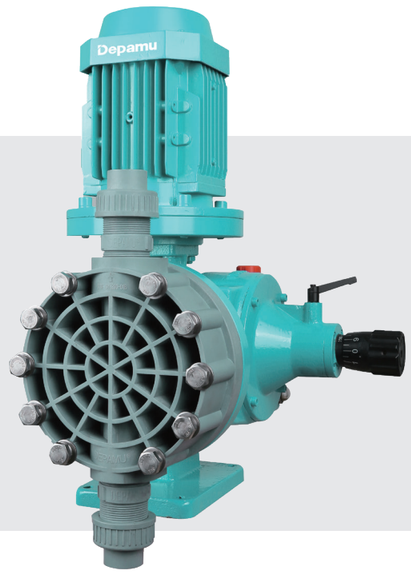
- An integrated circulating cooling system in pump head and plunger chamber is adopted, which can effectively transfer heat generated due to movement of the plunger. With a strong cavitation resistance, it is suitable to convey heat sensitivity materials and materials easy to be damaged due to centrifugal force.
- An advanced plunger packing sealing structure ensures wear resistance, and high strength, a long service life and no leakage.
- The oblique diameter sealed check valve structure under a patented technology is adopted, which has zero emission and a more stable flow.
- Advanced flow channel design and multi pump head combination design make flow delivered uniform and pressure stable.
- Use of stainless steel with high strength, high-performance corrosion resistance and low-temperature resistance renders a higher pressure and cleanness and more environmentally friendliness.

Aerogel Drying Auxiliary Equipment

Aerogel Preparation Line

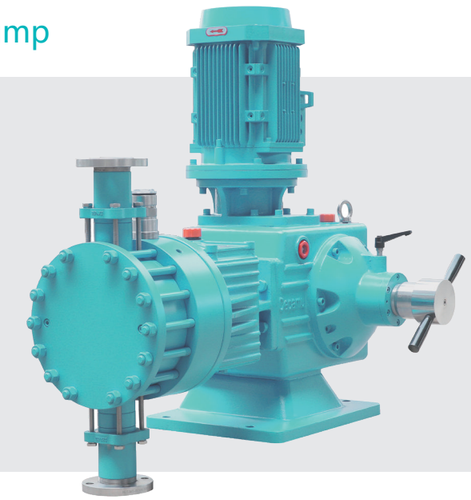
Aerogel Drying Auxiliary Equipment

Special Pump for Aerogel Preparation Line



Aerogel Drying Auxiliary Equipment

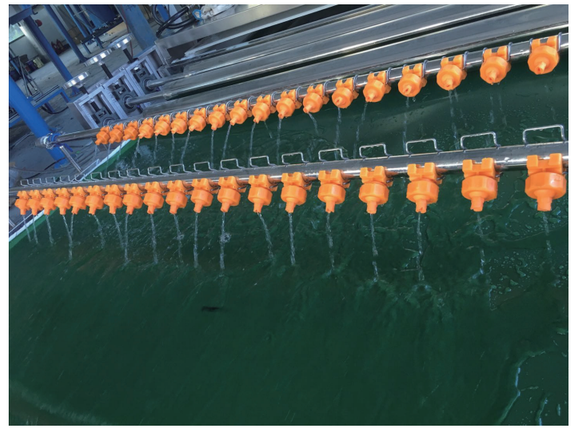
Supercritical CO_2 Special Pump



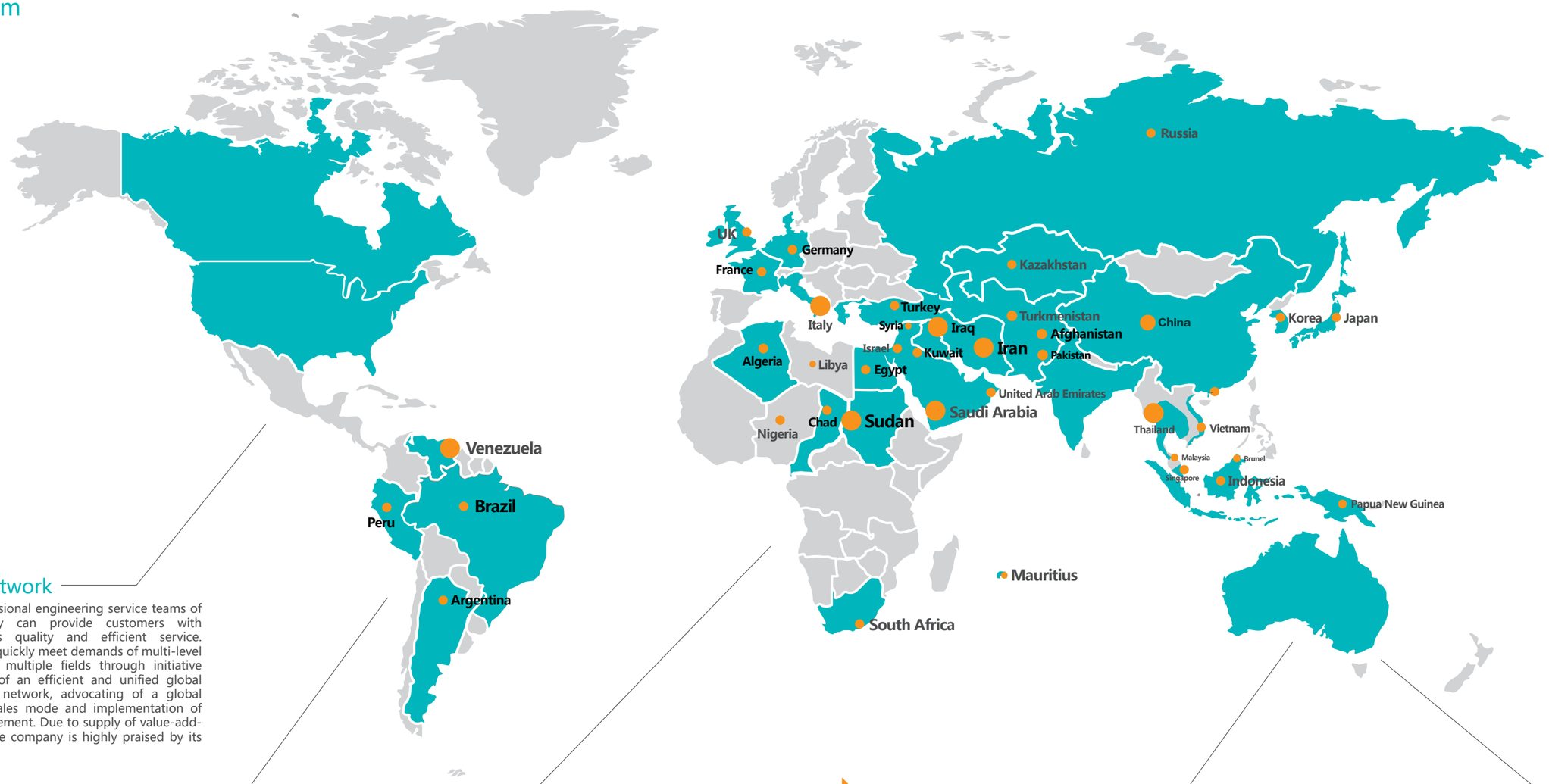
Special Pump for Aerogel Preparation Line

Aerogel Drying Auxiliary Equipment

Aerogel Showering Coating Line



Global Service System



Sales Network

The professional engineering service teams of the company can provide customers with whole-process quality and efficient service. Depamu can quickly meet demands of multi-level customers in multiple fields through initiative construction of an efficient and unified global sales service network, advocating of a global localization sales mode and implementation of brand management. Due to supply of value-added service, the company is highly praised by its customers.

Customer Orientation

The company has built a global service network sincerely offering pre-sales and after-sales service.

Integrated Service

- Vibration Analysis
- Medium Assessment
- Site Commissioning
- System Testing
- Service and Repairing Contract
- Global Service
- Diagnosis of Change in Operation Conditions
- Extension and Modification of Running Pump and System

Extensible System Solution

- Pump Instrumentation
- VFD Flow Adjustment
- System-oriented Operation Interface
- Electronic Control of Online and Offline Monitoring System

Consulting and Engineering with Special Requirements

Depamu products are widely applied all over the world, which brings lots of experience where the company can learn and benefit. As a supplier of solutions and systems for liquid transportation, metering and mixed application, we can provide personalized solutions from the smallest independent unit to the biggest multi-link pump installation; at the same time, we can provide technical engineering consulting for complex processes as well as solutions meeting the needs of special processes.

- Fluid Evaluation
- Independent Design Concept
- Cost Calculation for Installation Project
- Commissioning and Service
- Seminars and Site Training