



Project Proposal

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Offer No: YC-20210407-002

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Hello Carlo,

Thanks for your inquiry, please check the below solution for you according to your requirements.

Model and Name	Brief Descriptions
YC-JF2000 (full-auto control with PLC) Vacuum only Impregnation System	This equipment works only under vacuum condition, and controlled full-automatically. Whole unit is CE certified.



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**YC-JF2000 (Full-auto Control) Vacuum only
Impregnation System with CE**

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Add: Qingshui Industrial Zone, Fenghuang Town, Zhangjiagang-215612, Jiangsu, China
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1. Brief description and characteristics



Description

This kind of equipment is mainly used for insulation treatment to electrical products, such as low/medium voltage motor, wind turbines, H-grade dry transformer, power capacitor and cable insulation materials, etc.

It also applies in material industry for modifying material and improving structure to achieve raising material performance. For example, through vacuum impregnation, increase compactness of graphite so to raise strength and resistance characteristic of graphite products.

Technology Advantages

- Easily evaporate moisture and air
- Residual water rate less than 10ppm, good insulation performance
- Good humidity resistance
- High dielectric property
- Impregnation can be reused to reduce environmental pollution
- Short impregnation time, good result

Working Principle

Firstly, load workpieces into a basket, lift the basket into the vacuum pressure tank by crane, evacuate the moisture and air from workpieces under vacuum condition. Then fill impregnation liquid into vacuum tank by pressure difference or pump.

Then take out workpieces, put into a special bake oven which is electric heated, automatic intelligent control.

Finally take out workpieces from drying oven, and the complete process is finished.

2. 【Equipment Components】

2.1	Vacuum impregnation tank (square)	1 set
2.2	Resin storage tank (cylindrical) with thermal insulation and mixer	1 set
2.3	Resin temperature regulation system (heating and cooling 2 in 1 unit) for storage tank	1 set
2.4	Vacuum pump system	1 set
2.5	Hydraulic power unit	1 set
2.6	Resin transferring and recycling system	1 set
2.7	Control system	1 set

3. 【Technical Specifications】

3.1. Vacuum impregnation tank (square)



3.1.1. Basic configuration

- inner dimensions of the vacuum impregnation tank: 1200 (width) x 2000 (length) x 1200 (depth) mm
- Useful volume of the impregnation tank: 2100L

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- tank is overall made of Q345-R material, and the tank brim flange is made of integral forming solid steel plate;

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3.1.2. Structure: (vertical)

- The tank cover is opened/closed by hydraulic power unit with button control;
- Resin transferring and recycling: from the bottom;
- Flange seal: corrosion resistance labiates seal ring (rubber), and spare parts are provided;
- Installed with fluid level sensor, which can be controlled on touch panel by PLC.
- Sight glass with illumination is installed, and user can closely watch the whole process of impregnation.

3.1.3. Technical specs:

- Working vacuum degree: **ultimate 0.5mbar (50Pa)**
- 1 sets of iron baskets for loading workpieces

3.2. Resin storage tank (cylindrical) with thermal insulation and mixer



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3.2.1. Basic configuration

- Inner dimensions: $\phi 1400 \times 1500$ mm (inner diameter*height).
- Useful volume of the storage tank: 2000L
- made of Q235A steel plate of national standard;

3.2.2. Structure

- Vertical with 3 support legs.
- Manholes are designed on the tank cover for easy cleaning;
- Liquid level indicator is installed on the tank to indicate the resin level in the tank;
- A mixer is installed on top of the tank, composed of motor, reducer, agitating shaft and impeller (welded on shaft). This system keeps resin flowing to guarantee uniform temperature of it.
- Seamless coiling pipes (open loop) are installed inside the storage tank for circulation of heated or cooled water to regulate the resin temperature (reduce viscosity and increase fluidity of resin).
- The storage tank is wrapped by thermal insulation material (thickness 5cm) for heat preservation of resin inside, and then steel plates are jacketed outside.
- Resin sampling opening is designed in it for easy getting resin sample
- PT100 resin temperature sensor installed and temperature controller on the control panel.

3.2.3. Technical spec

- Working vacuum degree: -0.098Mpa

3.3. Resin temperature regulation system (heating and cooling 2 in 1 unit) for storage tank

3.3.1. Basic configuration

- This is a heating and cooling 2 in 1 unit
- Cooling system is composed of heating and cooling 2 in 1 unit, water pipes and control valves.

3.3.2. Specifications

- Resin/varnish temperature control range: 20°C - 55°C (adjustable)
- Total installed power: 29.5KW

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Model	XC-LF12AH
Refrigerating Capacity	34.3 KW
	25585 kcal/hr
Refrigerant	R22
	Control method: (Capillary) Expansion Valve
Compressor	Input power: 4.5KW * 2
	Rated power: 5KW * 3
Condenser	Type: Finned copper tube + low noise outer rotor fan
	Fan power: 0.42kw x 2
Evaporator	Type: water tank with tube
	Pipe diameter: 2"
Chilled water flow	5.03 m ³ /h
Water pump	Power: 1.5 KW
	Lift: 15m
Heating device	Type: heating pipe
	Heating power: 18KW
Dimensions	1550x830x1543mm (L*W*H)

3.4. Vacuum pump system (2-stage)



3.4.1. Basic configuration

- Composed of VSV-160 Rotary Vane Pump and ZJP-150 Roots vacuum pump,, vacuum pipelines, control valve and etc;
- There's a vacuum buffer in front of the vacuum pump in size of $\phi 280 \times 500$ mm. Air is vacuum buffered in pipelines and auxiliary valves, so that solvent will not go into the vacuum pump. And the service life of the pump can be guaranteed;

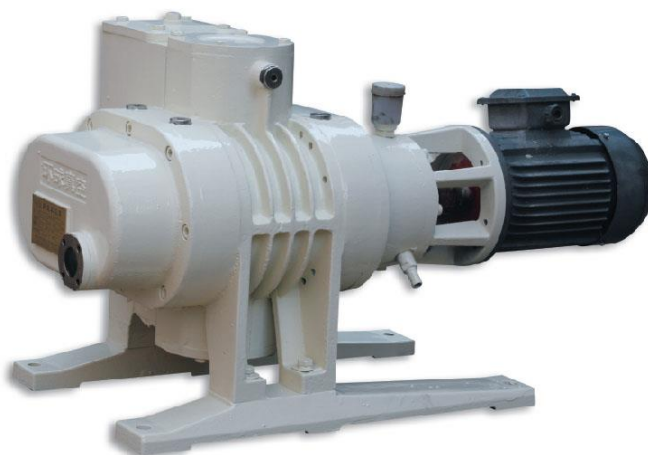
3.4.2. Technical spec

- First stage: VSV-160 Rotary Vane vacuum pump

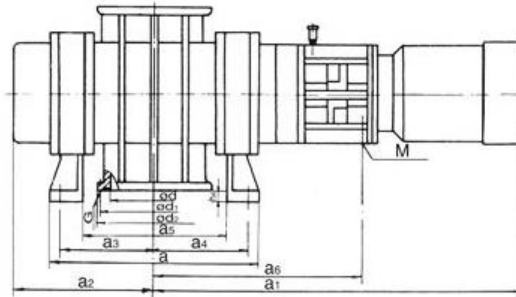
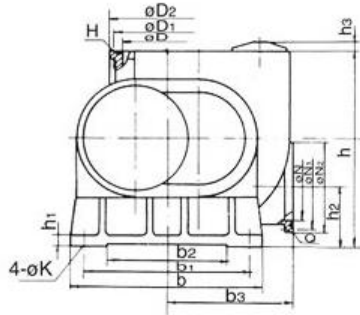


MODEL			VSV-160
Displacement speed		m³/h	160
Ultimate pressure	Without gas ballast	Witmbar	$\leq 8 \times 10^{-2}$
	With gas ballast I	Wimbar	≤ 0.5
	With gas ballast II	mbar	≤ 1.5
Ultimate total pressure	With gas ballast I	mbar	30
	With gas ballast II	mbar	50
Noise level (Lw)		dB	≤ 70
Power supply			3-Phase
Power rating		KW	4
Motor speed (50/60Hz)		rpm	1440/1720
Ambient temperature		°C	10-40
Oil capacity		L	5~7
level of protection			IP54
Intake and exhaust			G2"
Net weight		Kg	143
Dimension (L*W*H)		mm	930×533×436

• Second stage: ZJP-150 Roots vacuum pump



Model	Ultimate Pressure		Pumping Speed (L/S)	Inlet Dia. (mm)	Outlet Dia. (mm)	Max. permissible Diff. pressure		Diff. pressure at overflow valve		Motor Power (kw)
	Pa	Torr				Pa	Torr	Pa	Torr	
ZJP-150	5×10^{-2}	3.7×10^{-4}	150	100	100	-	-	4000	30	2.2



型号	a	a1	a2	a3	a4	a5	a6	b	b1	b2	b3	h	h1	h2	h3	h4	K	D	D1	D2	H	d	d1	d2	G	N	N1	N2	Q	M
ZJP-150B	154	623	252	45	45	50	281	360	310	220	245	410	20	125	35	20	18	100	145	170	4-M10	100	145	170	4-M10	100	145	170	4-M10	M16

3.5. Hydraulic power unit

3.4.1 Basic configuration

- It's composed of hydraulic station, oil tank, reversing valve, no-touch approach switch and meters;
- It controls the opening, closing operation of the vacuum tank cover

3.4.2 Technical spec

- Power of hydraulic station: 0.75KW;
- Max. pressure 16Mpa, working pressure 10Mpa

3.6. Resin transferring and recycling system

- Resin loading and returning between impregnation tank and storage tank is realized through vacuum;
- There is a filter of size $\phi 380 \times 500$ mm on resin pipelines between impregnation tank and resin storage tank. Impurities can be filtered in the process to guarantee the quality. Screen mesh is installed inside filter and mesh size is 2mm. Easy for maintenance.

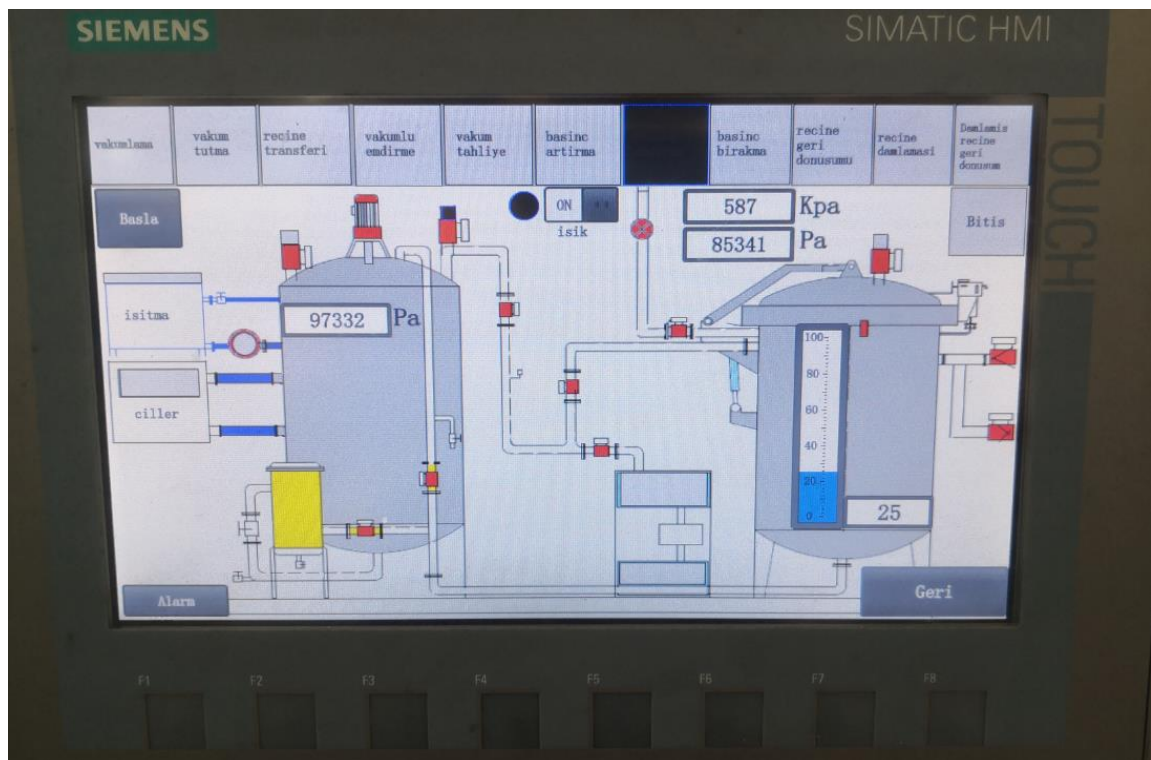


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3.7. Control system

- Electrical cabinet and control & operation station is designed to control the whole system;
- The whole system is controlled by PLC (SIEMENS), on a touch panel. All process and production data can be displayed and changed setting;
- Tank cover opening/closing is manually controlled on the panel with buttons.
- Vacuum degree is measured by vacuum sensor;
- Liquid level is controlled by column Magnetic Reversible Level Meter, and the liquid level is displayed on monitor
- Resin temperature is measured by PT100 temperature sensor and controlled by temperature controller.
- Major control valves are pneumatic (automatic) type;
- Manual and automatic control modes are switchable.
- The voltage regulator is installed.
- Remote monitoring and diagnosing (not remote control) through Ethernet can be realized (from China to Italy)





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Major part list

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No.	Name	Qty	Origin
1	Vacuum impregnation tank	1 set	Yicheng
2	Resin storage tank	1 set	Yicheng
4	Vacuum pump system	2 sets	Value band for rotary vane pump, China Huanqiu brand for roots pump, China
5	Valve system	15 sets	Yongyi, China
6	Pneumatic elements	8 sets	SMC, Japan
7	Resin level gauge	2 sets	Youding, Shanghai, China
8	Hydraulic power unit	1 set	Jiangyin, China
9	Heating and cooling 2 in 1 unit	1 set	Xiecheng
10	PLC and touch panel	1 set	SIEMENS
11	Control cabinet	1 set	Yicheng
12	Vacuum sensor	2 pcs	Leybold, Germany
14	Electrical components	1 set	Schneider
15	Temperature sensor	2 pcs	Honeywell or Omron
16	Temperature controller	2 pcs	Honeywell or Omron
17	Analog Output Module	1 pc	SIEMENS
18	Ethernet module	1 pc	SIEMENS

Summary of specifications

Items	Specifications
Vacuum dipping tank size	1200 (width) x 2000 (length) x 1200 (depth) mm
Resin storage tank	Diameter * depth ϕ 1400*h1500mm
Ultimate vacuum degree	0.5mbar (50Pa)
Temperature regulation function for vacuum impregnation tank	Not available
Temperature regulation function for storage tank	Available (both heating and cooling)
Resin temperature regulation range in storage tanks	20-55°C (adjustable)
Vacuum system power (fore-pump + Roots pump)	6.2 KW
Agitator/mixer motor power (on storage tank)	3 KW
Heating and cooling 2 in 1 unit	29.5 KW
Hydraulic oil pump power	0.75 KW
Power supply	3-Phase, 380-400V, 50Hz
Total installed power	40 KW

Commercial terms

Name	Model	Qty.	Price (USD)
(full-auto control with PLC) Vacuum only Impregnation System with CE	YC-JF2000	1 set	\$ 64,400
Packing cost			included
Inland shipping cost from factory to Shanghai port			included
Shipping freight from Shanghai to Italy			Not included
Total amount (FOB Shanghai)			USD \$64,400

Production lead time	40 working days since the date of receiving deposit
Payment terms	30% deposit by T/T, 70% by T/T before delivery and after pre-acceptance
Warranty period	13 months since date of bill of lading, life-long service
Packing	With standard sea worthy exportable packing
Commissioning & installation	VI system normally doesn't require on-site service from seller. Buyer can finish installation and commissioning work by themselves with seller's instructions.



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Our Major customers

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 <p>USA</p>	 <p>USA</p>	 <p>Germany</p>
 <p>Germany</p>	 <p>Austria</p>	 <p>UK</p>
 <p>Norway</p>	 <p>Slovenia</p>	 <p>Portugal</p>
 <p>Singapore</p>	 <p>Turkey</p>	 <p>Turkey</p>
 <p>Turkey</p>	 <p>Turkey</p>	 <p>Turkey</p>
 <p>Russia</p>	 <p>Russia</p>	 <p>Ukraine</p>
 <p>Guatemala</p>	 <p>Trinidad and Tobago</p>	 <p>Algeria</p>
 <p>Thailand</p>	 <p>Saudi Arabia</p>	 <p>UAE</p>

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 <p>China</p> <p>(Joint venture of USA Pratt & Whitney Group with China Eastern Airlines in Shanghai)</p>	 <p>China Eastern Airlines</p>	 <p>China</p> <p>(CSR Group, China South Locomotive & Rolling Stock Corporation Limited)</p>
 <p>China</p> <p>(CNR Group, China North Locomotive and Rolling Stock Industry (Group) Corporation)</p>	 <p>China</p> <p>NIO (Weilai) Electric car company. No 1 electric car maker in China</p>	 <p>China</p> <p>(AVIC Beijing Institute of Aeronautical Materials, established in 1956)</p>
 <p>China</p> <p>(Beijing railway engineering electromechanical technology research institute)</p>	 <p>China</p> <p>(GUANGTAI Group is one of the leading Ground-based Support Equipment manufacturers in the world)</p>	 <p>China</p> <p>(China Youngman Automobile Group Co., Ltd.)</p>
 <p>China</p> <p>(ECRIEE-TAMURA Group, a Sino-Japanese joint venture)</p>	 <p>China</p> <p>(Beijing Institute of Technology. A world-class university)</p>	 <p>China</p> <p>(No 1 Maritime university in China)</p>

Thank you for your inquiry and we would be pleased to receive your order soon.

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