

## Lab Scale Glass Reactor Solution



### Recommended Solution

| Temperature Control System    | Glass Reactor | Vacuum Pump             |
|-------------------------------|---------------|-------------------------|
| CDL-400CE                     | BR-1CE        | P-SHB3<br>or<br>PM-201Z |
| CZT-5-200-30H                 | BR-2CE        |                         |
|                               | BR-3CE        |                         |
| CDL-30-300CE<br>CZT-5-200-30H | BR-5CE        |                         |

## Pilot Scale Glass Reactor Solution



### Recommended Solution

| Temperature Control System | Glass Reactor | Vacuum Pump              |
|----------------------------|---------------|--------------------------|
| CSY-20-250                 | BR-20CE       | P-SHB-95<br>or<br>PM-401 |
| CLT-20-80                  |               |                          |
| CZT-20-200-30/40/80H       |               |                          |
| CSY-50-250                 | BR-50CE       |                          |
| CLT-50-80                  |               |                          |
| CZT-50-200-30/40/80H       |               |                          |
| CSY-100-250                | BR-100CE      |                          |
| CLT-100-80                 |               |                          |
| CZT-100-200-30/40/80H      |               |                          |



## Lab Scale Rotary Evaporator Solution



### Recommended Solution

| Chiller  | Rotary Evaporator | Vacuum Pump              |
|----------|-------------------|--------------------------|
| CH-400CE | REV-1001VN        | P-SHB3G<br>or<br>PM-201Z |
|          | REV-3001          |                          |

## Pilot Scale Rotary Evaporator Solution



### Recommended Solution

| Chiller      | Rotary Evaporator | Vacuum Pump             |
|--------------|-------------------|-------------------------|
| CH-30-300CE  | REV-1005CE        | P-SHB95                 |
| CH-30-700CE  | REV-1010CE        | P-SHB95<br>or<br>PM-401 |
| CH-30-1000CE | REV-1020CE        |                         |
| CH-30-2500CE | REV-1050CE        |                         |

## R-series Rotary Evaporator (Lab-scale)

### Advantages

- Patented technology of double sealing of Teflon(PTFE) and FV rubber can ensure the negative pressure level.
- Wide power supply range 100V to 240V~ , 50/60Hz.
- Patented structure, the tilt angle of the evaporating flask is adjustable.
- Quick lock button on rotation axis makes it easier to be installed or removed.
- Motorized lift. Belt drive mechanism makes it running more smoothly, with lower noise during rotation process.
- Individual main machine and water bath design for easy future upgrades.

### Technical Specifications

| Model                               | REV-3001  |            |
|-------------------------------------|---|------------|
| Rotation Speed                      | 10~280 rpm  |            |
| Pressure rise rate of vacuum system | ≤0.33kPa/min  |            |
| Temperature Range                   | Room temp +5°C ~ 95°C   |            |
| Temperature Stability               | ±1°C  |            |
| Temperature Control                 | Keypad input, Digital display   |            |
| Speed Control                       | Knob setting, Digital display   |            |
| Protection                          | Over-current protection, ground fault protection, over-temperature protection |            |
| Lifting                             | Electric Lifting  |            |
| Rotary Motor Power                  | 40W   |            |
| Heating Power                       | 1300W   |            |
| Condenser Type                      | Vertical  |            |
| Condensing Area                     | 0.126 m <sup>2</sup>  |            |
| Evaporating Flask                   | 500ml /1000ml   |            |
| Receiving Flask                     | 1000ml  |            |
| Vacuum Sealing                      | Double sealing rings made of Teflon+ Viton materials                          |            |
| Water Bath Size · Capacity          | 254×130mm · 6.5L  |            |
| Evaporating Speed                   | Water   | 23.5ml/min |
| Lifting Distance                    | 150mm   |            |
| Lifting Speed                       | 10mm/s  |            |
| Ambient Temperature                 | 5~35°C  |            |
| Overall Dimensions                  | 595W×390D×680H  |            |
| Net Weight                          | 13.9kg  |            |
| Power Supply                        | 110V~, 60Hz or 220-240V~ , 50/60Hz  |            |



REV-3001

## R-series Rotary Evaporator (Lab-scale)

### Applications

It is suitable for experiment of evaporation, distillation or separation of chemicals. It usually works with water circulating vacuum pump and recirculating chiller as a whole system to meet the production and experimental requirements.

### Advantages

- Patented technology of double sealing of Teflon (PTFE) and FV rubber can ensure the negative pressure level.
- The tilt angle of the evaporating flask is adjustable.
- Evaporating flask can be lifted manually by the handle.
- Specialized motor and reasonable structure design ensures the evaporating flask running smoothly and steadily.
- PID controller ensures precise temperature control.
- Digital display of rotation speed and bath temperature.
- Individual main machine and water bath design for easy future upgrades.

### Technical Specifications

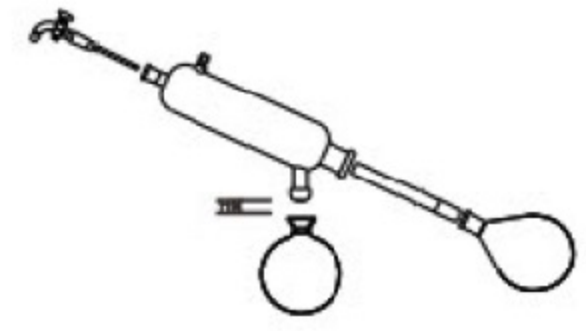
| Model                               | REV-1001VN  |          |
|-------------------------------------|---|----------|
| Rotation Speed                      | 20~180rpm   |          |
| Evaporating Speed                   | 20ml/min  |          |
| Pressure rise rate of vacuum system | ≤0.33kPa/min  |          |
| Temperature Range                   | Room temp +5°C ~ 95°C   |          |
| Temperature Stability               | ±1°C  |          |
| Temperature Control                 | Keypad input, Digital display   |          |
| Speed Control                       | Knob setting, Digital display   |          |
| Safety Functions                    | Over-current protection, ground fault protection, over-temperature protection |          |
| Lifting                             | Weight balancing<br>Gliding elevating+ manual lifting                         |          |
| Rotary Motor Power                  | 25W   |          |
| Heating Power                       | 1050W   |          |
| Condensing Area                     | 0.126 m <sup>2</sup>  |          |
| Evaporating Flask                   | 500ml /1000ml   |          |
| Receiving Flask                     | 1000ml  |          |
| Vacuum Sealing                      | Double sealing rings made of Teflon+ Viton materials                          |          |
| Water Bath Size · Capacity          | 254×130mm · 6.5L  |          |
| Evaporating Speed                   | Water   | 15ml/min |
|                                     | Ethanol   | 20ml/min |
| Lifting Distance                    | 100+150mm   |          |
| Ambient Temperature                 | 5~35°C  |          |
| Overall Dimensions ( mm )           | 560W×320D×660H  |          |
| Net Weight                          | 9.5kg   |          |
| Power Supply                        | 110V~, 60Hz or 220-240V~ , 50/60Hz  |          |



REV-1001VN

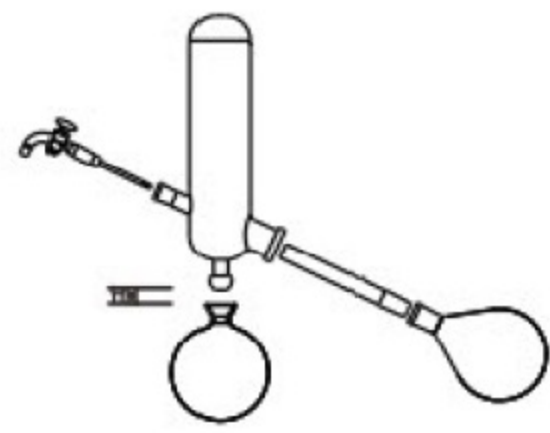
**Glass Components**

Three types of condenser available.



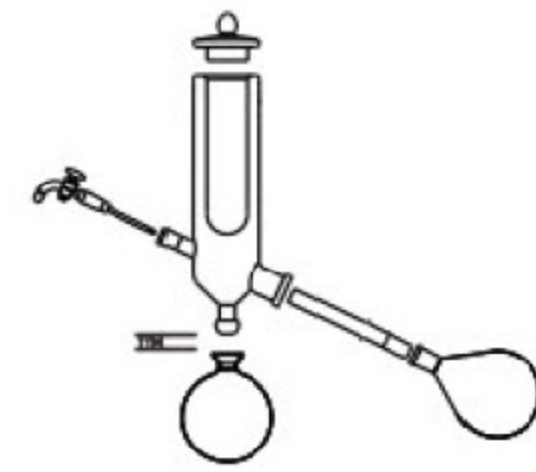
LN type

Lean condenser with higher cooling efficiency.



VN type

Vertical condenser with smaller foot print.



JN type

Jacketed condenser with lower temperature by dry ice cooling.

**Accessories**



Evaporating flask  
500ml



Evaporating flask  
1000ml



Receiving flask  
1000ml



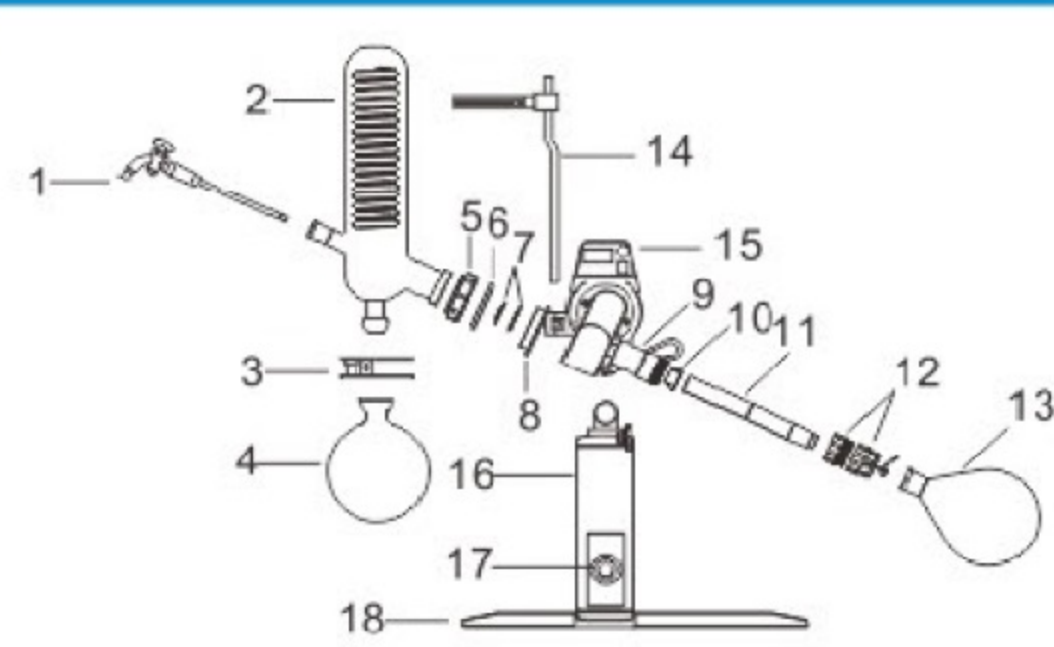
Sealing ring



Receiving flask clamp

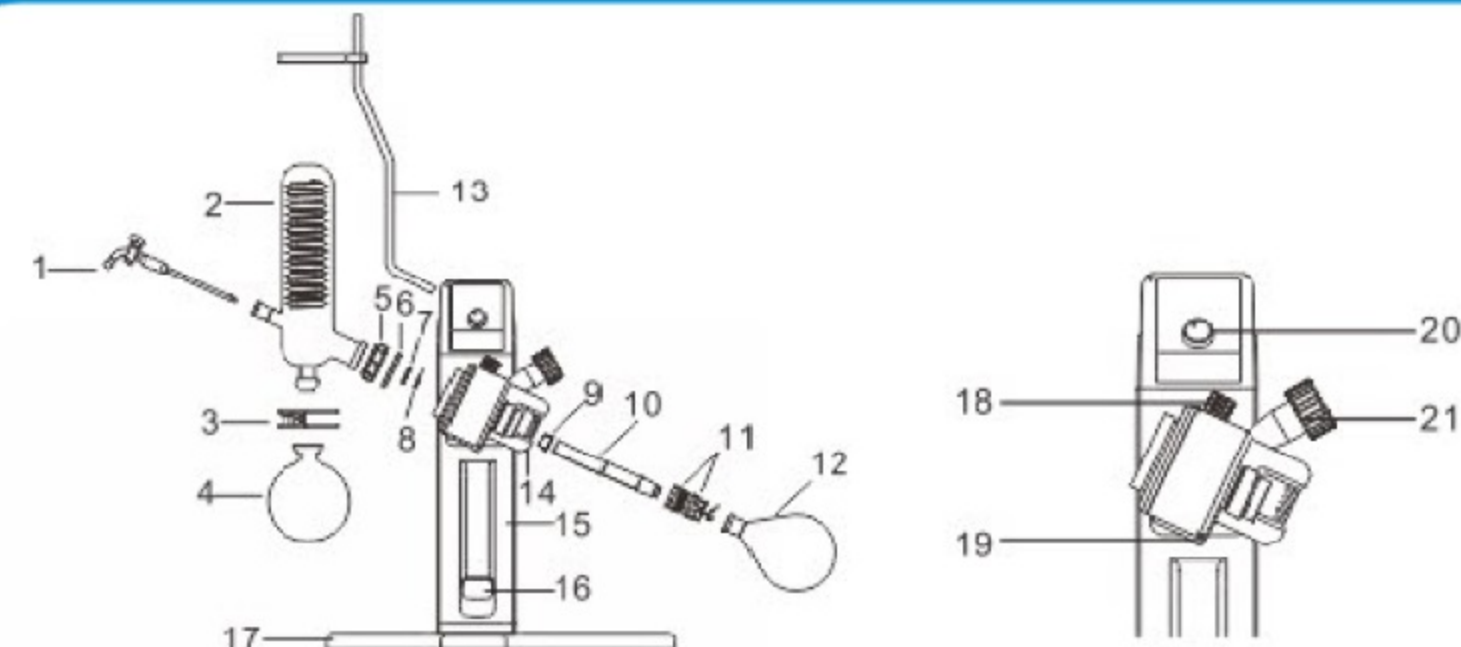
**Configuration**

REV-1001VN



1. Glass feeding valve
2. Glass condenser
3. Receiving flask clamp
4. Receiving flask
5. Condenser locknut
6. Spring ring
7. Vacuum sealing ring
8. Bearing end cap
9. Stainless steel rotation axis
10. Tapered sleeve
11. Glass rotation axis
12. Evaporating flask quick-release nut
13. Evaporating flask
14. Condenser support +Rubber bracket
15. Motor shield
16. Lifting column
17. Lifting handle
18. Base

REV-3001



1. Glass feeding valve
2. Glass condenser
3. Receiving flask clamp
4. Receiving flask
5. Condenser locknut
6. Spring ring
7. Deputy vacuum seal
8. Main vacuum seal
9. Tapered sleeve
10. Glass rotation axis
11. Evaporating flask quick-release nut
12. Evaporating flask
13. Condenser support
14. Motor shield
15. Lifting column
16. Lifting handle
17. Base
18. Locking knob
19. Quick locking knob
20. Rotation speed adjusting knob
21. Angle adjusting knob

**R-series Rotary Evaporator ( Pilot-scale )**

**Applications**

Large capacity and large opening of evaporating flask give larger evaporation surface. The evaporating flask keeps rotating when it is constantly heated by water bath, and solvent evaporates more efficiently under vacuum condition. It can be used for pilot-scale production in biology engineering, pharmaceutical industry, chemical industry and food processing. It usually works with water circulating vacuum pump, diaphragm vacuum pump, recirculating chiller, constant temperature circulator, low temperature circulating pump, etc.

**Advantages**

- Patented technology of double sealing of Teflon ( PTFE ) and FV rubber ensures the negative pressure level.
- Automatic switch valve makes continuous collection possible without affecting vacuum degree and without stopping distillation.
- Teflon discharge valve is corrosion resistant and contamination free.
- Water bath jacket protecting operator from scalding by hot liquid.

**Large LCD display screen, one-touch setting mode**

**National Patent**  
Rubber insulation jacket can protect operator from scalding by hot liquid.

**Easy operation**  
Fast-assembly flange: For quick and easy installation

**Safety protection**

**Patented sealing**  
Auxiliary sealing part  
Main sealing part  
Patented structure in sealing ensuring leakage  $\leq 2000\text{Pa/h}$

Evaporating flask cap spanner, easy to remove evaporating flask

Sealing gasket

Note: This picture is a regular type

**Technical Specifications**

| Model                                       | REV-1005CE                           | REV-1005Ex          | REV-1010CE  | REV-1010Ex          | REV-1020CE  | REV-1020Ex           | REV-1050CE                           | REV-1050Ex           |     |
|---|--------------------------------------|---------------------|---|---------------------|---|----------------------|--------------------------------------|----------------------|-----|
| Evaporating flask                           | 5L, φ 50mm                           |                     | 10L, φ 125mm  |                     | 20L, φ 125mm  |                      | 50L, φ 125mm                         |                      |     |
| Receiving flask (L)                         | 3                                    |                     | 5   |                     | 10  |                      | 20                                   |                      |     |
| Speed-regulation                            | Continuously variable                |                     |   |                     |   |                      |                                      |                      |     |
| Power supply                                | 220-240V~, 50/60Hz                   |                     | 220-240V~, 50/60Hz  |                     | 3~380V, 50Hz or 220V, 60Hz                                |                      | 3~380V, 50Hz or 220V, 60Hz           |                      |     |
| Heating power (kW)                          | 2                                    | 3                   | 3.5   | 4.5                 | 6   |                      | 6                                    |                      |     |
| Overall power (kW)                          | 2.3                                  | 3.1                 | 3.8   | 4.8                 | 6.3   |                      | 6.3                                  |                      |     |
| Rotation speed (rpm)                        | 20 ~ 140                             | 20 ~ 140            | 20 ~ 130  | 20 ~ 130            | 20 ~ 130  | 20 ~ 130             | 20 ~ 110                             | 20 ~ 110             |     |
| Power of motor (W)                          | 250                                  | 60                  | 250   | 180                 | 250   | 180                  | 250                                  | 370                  |     |
| Condenser                                   | Vertical type dual-cooling coils     |                     | Vertical type, Main + auxiliary triple-cooling cold traps |                     | Vertical type, Main + auxiliary triple-cooling cold traps |                      |                                      |                      |     |
| Condensation area (m <sup>2</sup> )         | Main                                 | 0.278               | 0.39  |                     | 0.948   |                      | 1.15                                 |                      |     |
|   | Auxiliary                            | -                   | 0.253   |                     | 0.358   |                      | 0.4                                  |                      |     |
| Bath material                               | Stainless steel 304<br>φ 300mm*170mm |                     | Stainless steel 304<br>φ 370mm*220mm                      |                     | Stainless steel 304<br>φ 450mm*260mm                      |                      | Stainless steel 304<br>φ 550mm*320mm |                      |     |
| Temperature range                           | RT~95°C                              |                     |   |                     |   |                      |                                      |                      |     |
| Temperature display                         | LCD                                  | Digital display     | LCD   | Digital display     | LCD   | Digital display      | LCD                                  | Digital display      |     |
| Pressure rise rate of vacuum system         | ≤2kPa/h                              |                     |   |                     |   |                      |                                      |                      |     |
| Evaporating speed (L/h)                     | Water                                | 2.0                 | 3.2   |                     | 5.0   |                      | 9.0                                  |                      |     |
|   | Ethanol                              | 5.4                 | 8.6   |                     | 14.3  |                      | 24.5                                 |                      |     |
| Lifting function                            | Motorized lift                       | Manual lift         | Motorized lift  | Manual lift         | Motorized lift  | Manual lift          | Motorized lift + Manual lift         | Manual lift          |     |
| Elevating stroke (mm)                       | 0 ~ 150                              |                     | 0 ~ 160   |                     | 0 ~ 190   |                      | 0 ~ 180                              |                      |     |
| Dimensions (mm)                             | 840W × 460D × 1090H                  | 840W × 460D × 1090H | 990W × 550D × 1740H                                       | 990W × 550D × 1740H | 1120W × 680D × 1900H                                      | 1195W × 740D × 2040H | 1345W × 770D × 2230H                 | 1345W × 770D × 2230H |     |
| Explosion-proof control box dimensions (mm) | -                                    | 500W × 455D × 985H  | -   | 500W × 455D × 985H  | -   | 500W × 455D × 985H   | -                                    | 500W × 455D × 985H   |     |
| Net weight (Kg)                             | Main machine                         | 35                  | 60  | 61                  | 85  | 90                   | 115                                  | 140                  | 200 |
|   | Explosion-proof control box          | -                   | 58  | -                   | 58  | -                    | 58                                   | -                    | 58  |

**Optional Accessories**



**REV-1005CE Solution**



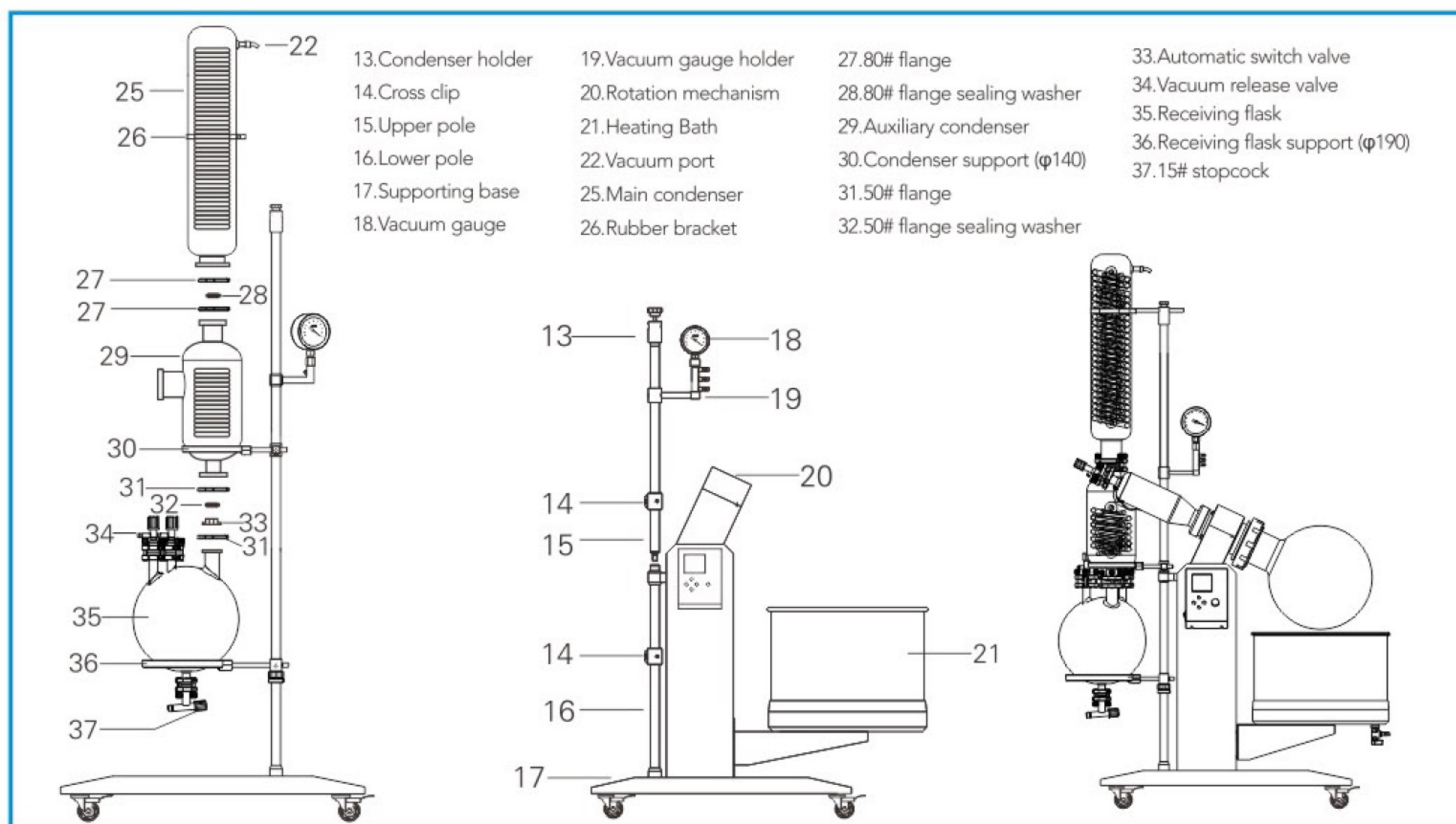
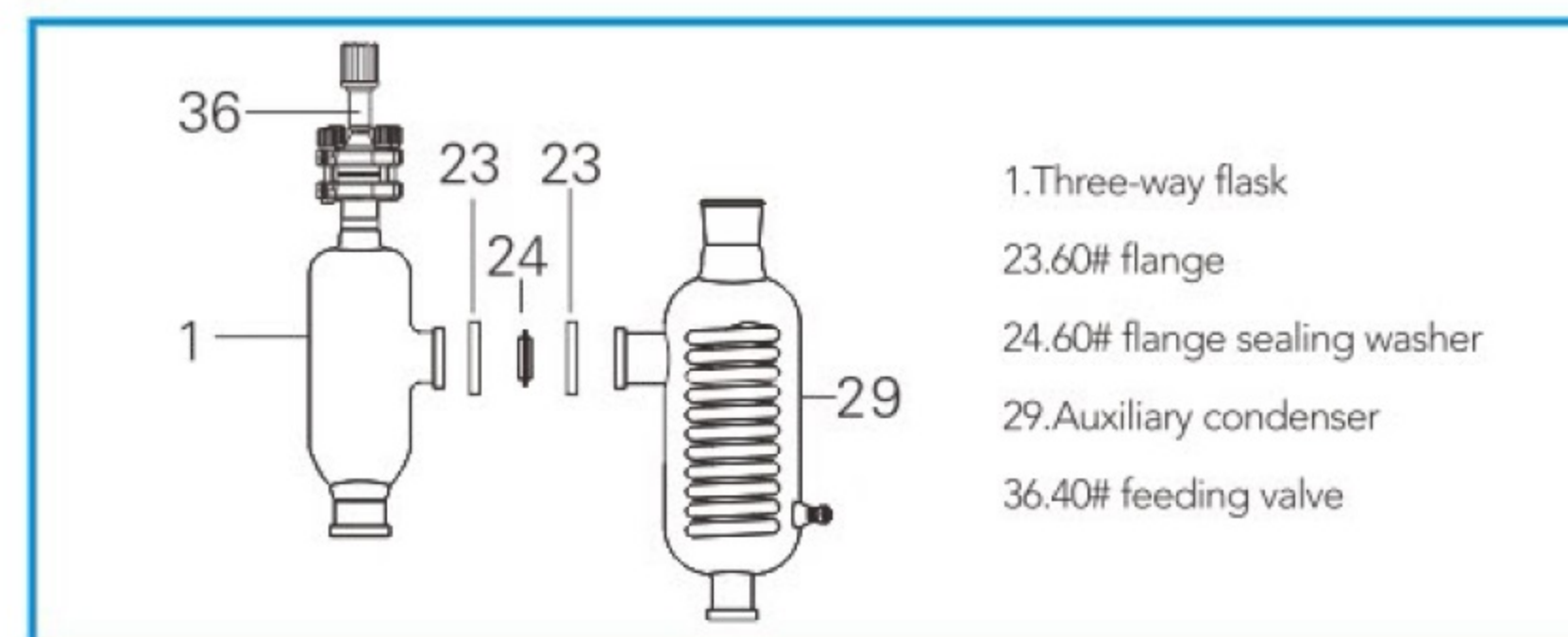
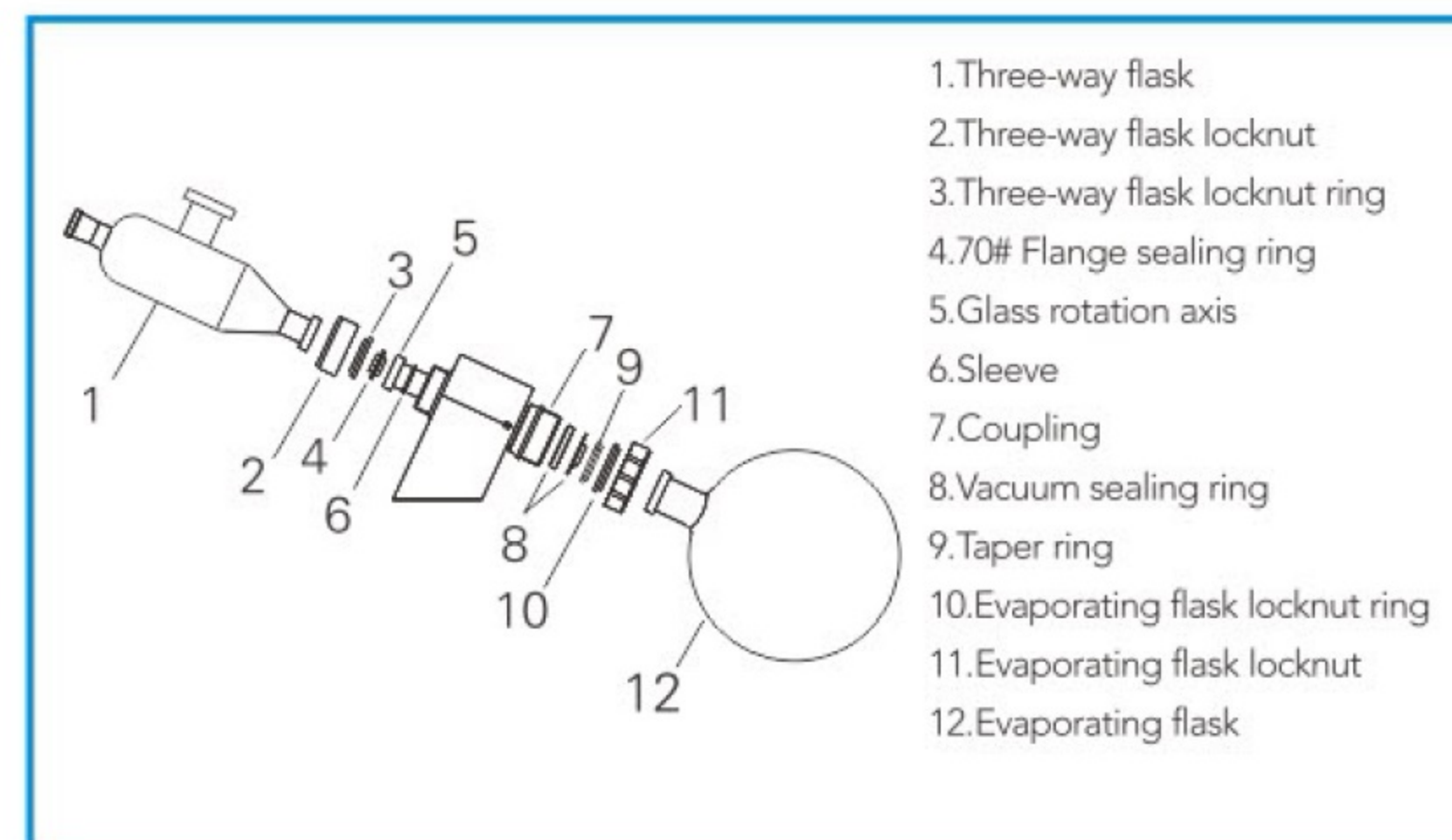
**REV-1005CE Solution**



REV-1020CE



REV-1020CE



Explosion-Proof Rotary Evaporator

Features

- High borosilicate 3.3 glass has good physical and chemical properties.
- Main and auxiliary condensers, high efficiency triple-circulating condensing tube has bigger condensing area.
- High borosilicate glass three-way flask can prevent flushing and bumping to ensure safe operation.
- Patented technology of double sealing of Teflon (PTFE) and FV rubber ensures negative pressure level.
- Auto switch valve makes continuous collecting possible without affecting vacuum degree and without stopping distillation.
- The motor, heater, electric control box and low liquid level protector are all explosion proof type. Explosion-proof grade: Exd II BT4, all explosion-proof parts have related certificates .
- Motorized stainless steel water bath, has liquid level protection and dry- run protection .
- Quick-clamp for easy installation and removal of glass components.
- PTFE discharge valve is corrosion resistant and contamination free.
- Lockable casters, easy to move and lock.
- LCD control panel.

| Model                                    | REV-2020Ex  | REV-2050Ex   |
|--|---|--|
| Temperature range                        | RT+5~95°C   | RT+5~95°C  |
| Display                                  | LCD display   | LCD display  |
| Heating power                            | 4000W   | 6000W  |
| Rated power                              | 4500W   | 6500W  |
| Pressure rise rate of vacuum system      | 2kPa/h  | 2kPa/h   |
| Rotary motor power                       | 370W  | 370W   |
| Speed-regulation                         | Frequency control   | Frequency control  |
| Rotation speed                           | 20~130rpm   | 20~110rpm  |
| Condenser type                           | Vertical, main+ auxiliary condensers high efficient triple coil condenser     | Vertical, main+ auxiliary condensers high efficient triple coil condenser    |
| Condensing area                          | Main condenser:0.948m <sup>2</sup><br>Auxiliary condenser:0.358m <sup>2</sup> | Main condenser:1.15 m <sup>2</sup><br>Auxiliary condenser:0.4 m <sup>2</sup> |
| Evaporating flask                        | 20L, φ 125mm  | 50L, φ 125mm   |
| Receiving flask                          | 10L   | 20L  |
| Water bath                               | SUS304, 450mm×260mm   | SUS304, 560mm×340mm  |
| Water bath temperature control stability | ±1.5°C  | ±1.5°C   |
| Lifting method                           | Motorized lift  | Motorized lift   |
| Lifting distance                         | 0~160mm   | 0~170mm  |
| Vacuum sealing (patent technology)       | PTFE + PTFE-Viton rubber  | PTFE + PTFE-Viton rubber   |
| Discharge valve (valve plug)             | PTFE  | PTFE   |
| Evaporating speed (L/h)                  | Water<br>About 5.0L<br>Ethanol<br>About 14.3L                                 | Water<br>About 9.0L<br>Ethanol<br>About 24.5L                                |
| Protection functions                     | Over-current, ground-fault, over temperature, run-dry protection              | Over-current, ground-fault, over temperature, run-dry protection             |
| Communication protocol                   | RS485 interface standard<br>Modbus communication protocol                     | RS485 interface standard<br>Modbus communication protocol                    |
| Ex-grade of electric control box         | ExdII BT4   | ExdII BT4  |
| Protection rating                        | IP65  | IP65   |
| Ambient temperature                      | 5~35°C  | 5~35°C   |
| Relative humidity                        | ≤ 70%   | ≤ 70%  |
| Mobility                                 | Lockable casters  | Lockable casters   |
| Power supply                             | 3~, 380V, 50Hz  | 3~, 380V, 50Hz   |
| Dimensions                               | 1210W×740D×2080H mm   | 1360W×770D×2250H mm  |



REV-2020E

# Glass Reactor



**Stirring shaft sealing**

Excellent sealing,  
Durable and corrosion resistant, abrasion resistant, corrosion resistant, long service life



**Stainless steel thermal insulation hose**

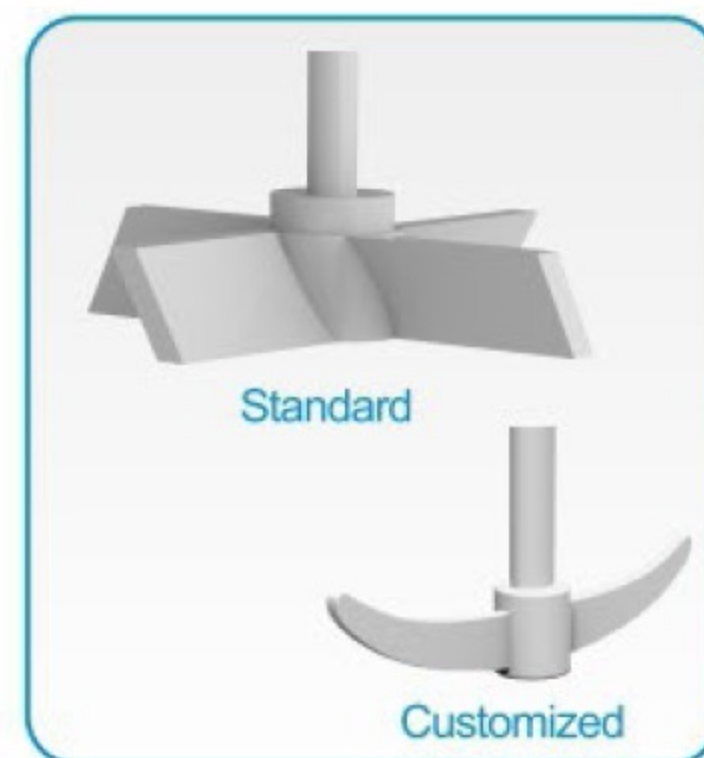
Temperature range: -100 - 250°C, can be used for both high and low temperature circulating fluid pipeline



**Thermal Insulation Jacket ( Optional )**

For thermal insulation;  
Designed with window for observation.

CE



**Propeller stirrer**

Stirring shaft is PTFE reinforced stainless steel, strong and durable



**Explosion-proof motor**

Ex grade is dII BT4



For IIB explosive atmospheres, we use dII BT4 explosion-proof electrical parts for safety concern.

**Explosion-proof control box**

# Glass Reactor

- 1L, 2L, 3L, 5L volume available.
- Designed with vacuum gauge and temperature display unit.
- Imported motor for stable stirring performance.
- Imported stirrer sealing guide with high level of chemical resistance, anti-whip and reduced vibration, no shedding.

CE



BR-2CE (Desktop)

CE



BR-5CE (Floor Type)



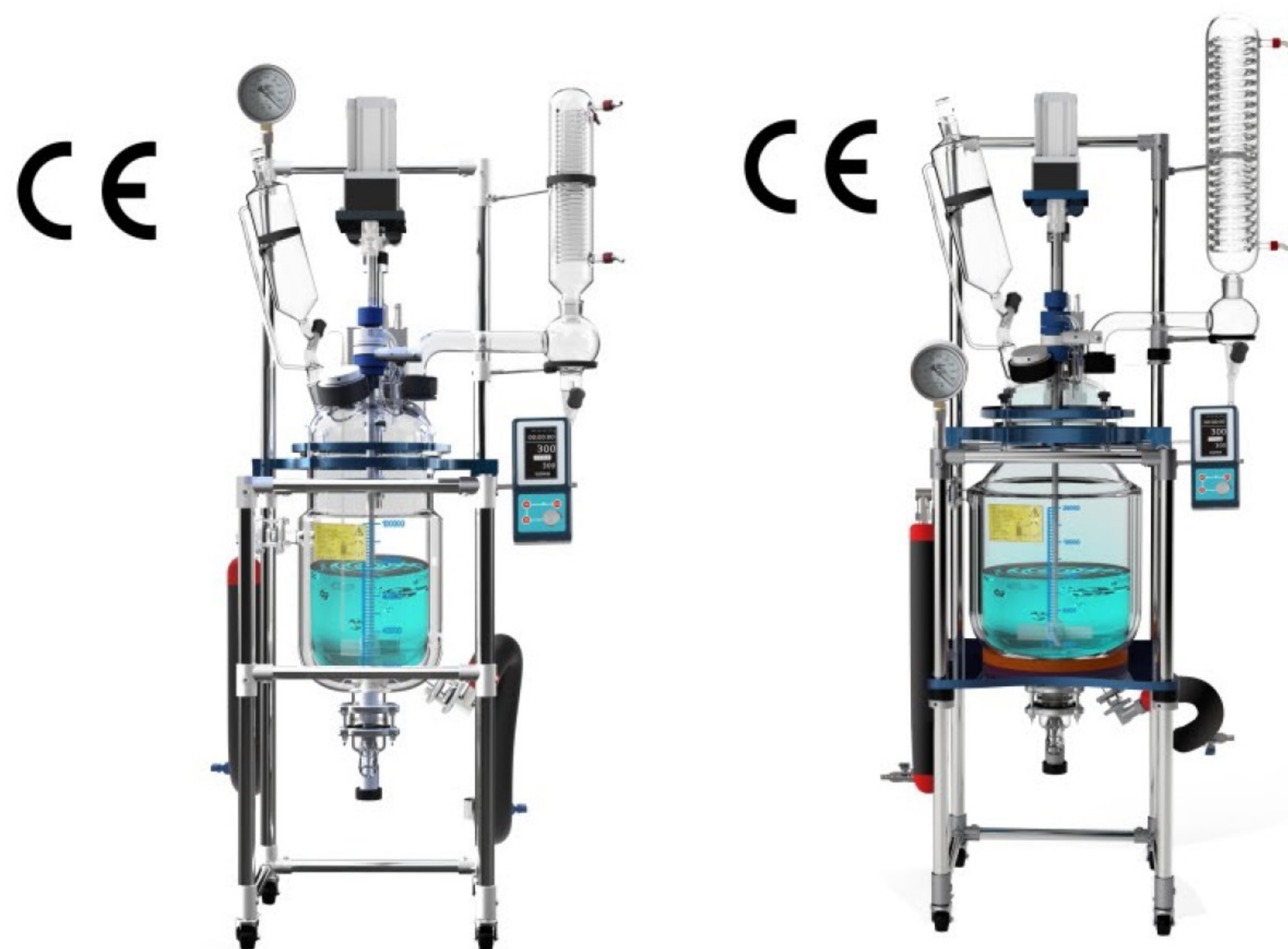
BR-5Ex (Floor Type)

## Technical Specifications

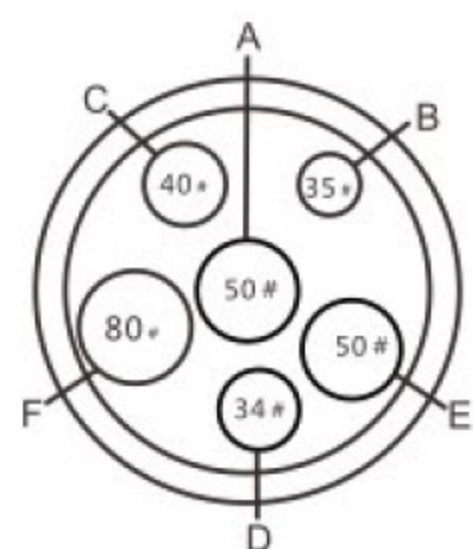
| Model  | Jacket capacity (L) | Vessel capacity (L) | Funnel size (L) | Stirring speed (rpm) | Power supply                    | Operating pressure (Mpa)               | Condensing surface (m <sup>2</sup> ) | Dimensions (mm)    | Net weight (Kg) |
|--------|---------------------|---------------------|-----------------|----------------------|---------------------------------|--|--------------------------------------|--------------------|-----------------|
| BR-1CE | 0.3                 | 1                   | 0.2             | 40 - 500             | 110V~60Hz or 220-240V~, 50/60Hz | Ordinary pressure or negative pressure | 0.025                                | 480Wx420Dx1110H    | -               |
| BR-2CE | 0.6                 | 2                   | 0.2             |                      |                                 |  |                                      | 480Wx420Dx1200H    | -               |
| BR-3CE | 0.9                 | 3                   | 0.2             |                      |                                 |  |                                      | 600Wx520Dx1600H    | 34              |
| BR-5CE | 1.5                 | 5                   | 0.5             | 20 - 500             | 110V-240V~, 50/60Hz             | Ordinary pressure or negative pressure | 0.045                                | 600Wx520Dx1600H    | 34              |
| BR-5Ex |                     |                     |                 | 50 - 500             |                                 |  |                                      | 220-240V~, 50/60Hz | 620Wx520Dx1600H |



### Glass Reactor



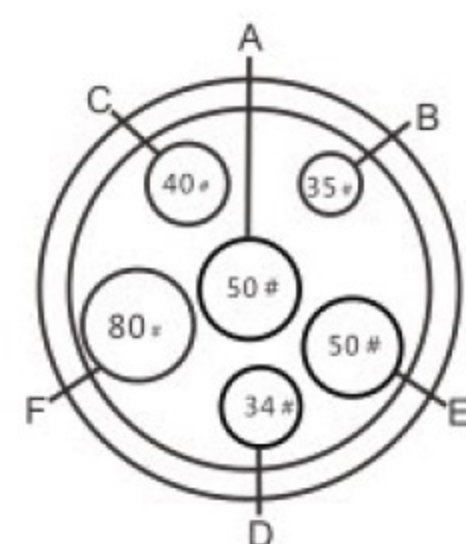
BR-10CE



- A) 50# flange, stirring shaft
- B) 35# flange, connected to temperature sensor
- C) 40/38 tapered frosted mouth, connected to constant-pressure funnel
- D) 34/35 tapered frosted mouth, liquid charging port
- E) 50# ball milling port, connected to condenser
- F) 80# flange, solid feeding port

10L reactor lid layout

BR-20CE



- A) 50# flange, stirring shaft
- B) 35# flange, connected to temperature sensor
- C) 40/38 tapered frosted mouth, connected to constant-pressure funnel
- D) 34/35 tapered frosted mouth, liquid charging port
- E) 50# ball milling port, connected to condenser
- F) 80# flange, solid feeding port

20L~50L reactor lid layout

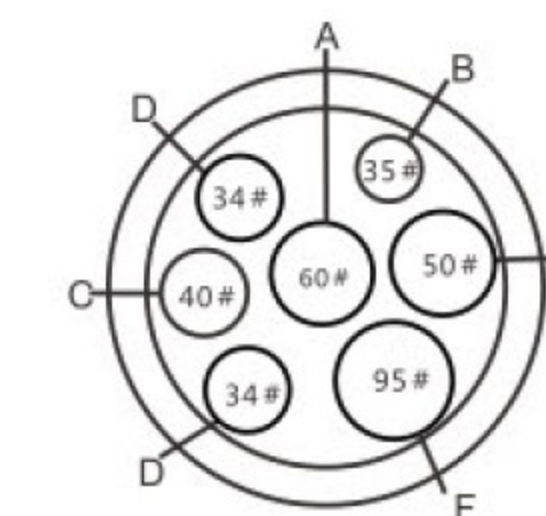
#### Technical Specifications

| Model   | Jacket capacity (L) | Vessel capacity (L) | Funnel size (L) | Stirring speed (rpm)     | Power supply        | Operating pressure                     | Condensing surface (m <sup>2</sup> ) | Power (reduction ratio:3) (w) | Drain port ground clearance (mm) | Dimensions (mm) | Net weight (Kg) |
|---------|---------------------|---------------------|-----------------|--------------------------|---------------------|--|--------------------------------------|-------------------------------|----------------------------------|-----------------|-----------------|
| BR-10CE | 3                   | 10                  | 1               | CE: 20~500<br>Ex: 50~500 | 110V-240V~, 50/60Hz | Ordinary pressure or negative pressure | 0.234                                | 370                           | 355                              | 845Wx640Dx1780H | 48              |
| BR-10Ex |                     |                     |                 |                          | 220-240V~, 50/60Hz  |  |                                      | 180                           |                                  |                 | 61              |
| BR-20CE | 6                   | 20                  | 2               | CE: 20~500<br>Ex: 50~500 | 110V-240V~, 50/60Hz | Ordinary pressure or negative pressure | 0.341                                | 370                           | 335                              | 845Wx640Dx1910H | 67              |
| BR-20Ex |                     |                     |                 |                          |                     |  |                                      | 180                           |                                  |                 | 80              |
| BR-30CE | 10                  | 30                  | 2               | CE: 20~500<br>Ex: 50~500 | 110V-240V~, 50/60Hz | Ordinary pressure or negative pressure | 0.341                                | 370                           | 310                              | 845Wx640Dx2030H | 72              |
| BR-30Ex |                     |                     |                 |                          |                     |  |                                      | 180                           |                                  |                 | 83              |
| BR-50CE | 16                  | 50                  | 2               | CE: 20~500<br>Ex: 50~500 | 220-240V~, 50/60Hz  | Ordinary pressure or negative pressure | 0.429                                | 370                           | 320                              | 900Wx690Dx2100H | 82              |
| BR-50Ex |                     |                     |                 |                          |                     |  |                                      | 180                           |                                  |                 | 95              |

### Glass Reactor ( 80L~100L )



BR-100CE



- A) 60# flange, stirring shaft
- B) 35# flange, connected to temperature sensor
- C) 40/38 tapered frosted mouth, connected to feeding bottle
- D) 34/35 tapered frosted mouth, liquid charging port
- E) 50# ball milling port, connected to condenser
- F) 95# flange mouth, solid feeding port

80L~100L reactor lid ( Φ290 ) layout

#### Recommended Solution:

| Glass reactor        | Temperature control device | Vacuum pump         |
|----------------------|----------------------------|---------------------|
|                      | Temperature range (°C)     |                     |
| BR-80CE<br>BR-80Ex   | RT +5~250<br>-30°C ~ 200   | PM-401<br>P-SHB-B95 |
| BR-100CE<br>BR-100Ex | RT +5~250<br>-30°C ~ 200   |                     |

#### Technical Specifications

| Model    | Jacket capacity (L) | Vessel capacity (L) | Funnel size (L) | Collection flask (L) | Stirring speed (rpm)     | Power supply        | Operating pressure (Mpa)               | Condensing surface (m <sup>2</sup> ) | Power (reduction ratio:3) (w) | Drain port ground clearance (mm) | Dimensions (mm)  | Net weight (Kg) |
|----------|---------------------|---------------------|-----------------|----------------------|--------------------------|---------------------|--|--------------------------------------|-------------------------------|----------------------------------|------------------|-----------------|
| BR-80CE  | 24                  | 80                  | 10              | 20                   | CE: 20~500<br>Ex: 50~500 | 110V-240V~, 50/60Hz | Ordinary pressure or negative pressure | 0.954                                | 370                           | 340                              | 1270Wx810Dx2360H | 110             |
| BR-80Ex  |                     |                     |                 |                      |                          |                     |  |                                      |                               |                                  |                  | 124             |
| BR-100CE | 30                  | 100                 | 10              | 20                   | CE: 20~500<br>Ex: 50~500 | 220-240V~, 50/60Hz  | Ordinary pressure or negative pressure | 0.954                                | 370                           | 340                              | 1270Wx810Dx2360H | 119             |
| BR-100Ex |                     |                     |                 |                      |                          |                     |  |                                      |                               |                                  |                  | 132             |



## Lifting Glass Reactor BRL

- The reaction vessel and the lid can be separated, the glass vessel can be lifted up, and can be angled 120 degree both sides, which makes it more convenient to operate and clean.
- Openings are sealed with flanges, ensuring higher vacuum degree, easy to disassemble.

National Patent



BRL-20CE



Lifting



Rotating

### Technical Specifications

| Model  | BRL-10CE  | BRL-10Ex         | BRL-20CE         | BRL-20Ex         | BRL-30CE              | BRL-30Ex         | BRL-50CE         | BRL-50Ex         |
|--|---|------------------|------------------|------------------|-----------------------|------------------|------------------|------------------|
| Glass material                                 | High borosilicate glass                                   |                  |                  |                  |                       |                  |                  |                  |
| Sensor material                                | Stainless steel coated by fluorine, double anti-corrosion |                  |                  |                  |                       |                  |                  |                  |
| Temperature range ( °C)                        | -80~200°C   |                  |                  |                  |                       |                  |                  |                  |
| Speed control                                  | Frequency speed control                                   |                  |                  |                  |                       |                  |                  |                  |
| Bearable temperature difference ( °C)          | 60°C (Triple wall), 80°C (Double wall)                    |                  |                  |                  |                       |                  |                  |                  |
| Condensing surface ( m²)                       | 0.245   |                  |                  |                  | 0.42                  |                  |                  |                  |
| Diameter of circulating fluid inlet and outlet | Rc3/4"  |                  |                  |                  |                       |                  |                  |                  |
| Power supply                                   | CE:110-240V~, 50/60Hz                                     |                  |                  |                  | Ex:220-240V~, 50/60Hz |                  |                  |                  |
| Max. drain port ground clearance (mm)          | 580   |                  | 530              |                  | 620                   |                  | 570              |                  |
| Lifting distance (mm)                          | 400   |                  |                  |                  |                       |                  |                  |                  |
| Dimensions (mm)                                | 840Wx1100Dx2030H  | 900Wx1100Dx2030H | 840Wx1100Dx2030H | 900Wx1100Dx2030H | 840Wx1100Dx2030H      | 900Wx1100Dx2030H | 840Wx1100Dx2030H | 900Wx1100Dx2030H |

## Lifting Filter Glass Reactor

- High borosilicate glass 3.3 has good physical and chemical properties. Wide working temperature range: -80 ~ 200°C.
- The glass vessel can be lifted up, and can be angled 120° both sides, which makes it more convenient to operate and clean.
- The inlet/outlet of the jacket connected with stainless steel hose to decrease the stress of the liquid inlet/outlet.
- Lockable casters with adjustable foot structure for easy moving and locating.
- Equipped with a lift truck, making it easier to disassemble the filter part for cleaning or replacing of filter paper or filter cloth.
- BLDC ( brushless DC) stirring motor, stepless speed regulation, LED digital display of torque, set stirring speed, measured speed, temperature and running time.
- The data can be copied through RS485 communication interface on the operation box.
- Patent technology of stirrer sealing guide comes along with good sealing performance and long service life.
- PT100 temperature sensor has high temperature accuracy, SUS304 material coated with PTFE tube, double anti-corrosion.
- Propeller-type shaft stirrer, PTFE stirring rotor, PTFE jacketed stainless steel (SUS304) stirring shaft, highly corrosion resistant.

|  |   |   |
|--|---|---|
| Model  | BRL-50FCE   |   |
| Vessel volume  | 50L   |   |
| Jacket volume  | About 16L   |   |
| Interface size of liquid outlet/inlet                | Rc 3/4"   |   |
| Power supply   | 110V~, 60Hz or 220-240V~, 50/60Hz   |   |
| Condenser heat exchanging area                       | About 0.42m²  |   |
| Constant pressure funnel volume                      | 2000 ml   |   |
| Material of glass parts                              | High borosilicate glass 3.3   |   |
| Reactor lid openings                                 | Stirring port   | 50 # flange port  |
|  | Temperature sensor port   | 35 # flange port  |
|  | Condenser connection port   | 50 # flange port  |
|  | Vacuum gauge installation port  | 35 # flange port  |
|  | Constant pressure funnel elbow port   | 35 # flange port<br>80 # flange port  |
| Filter parts   | Material  | PTFE sand core<br>(filter paper/cloth to be prepared by users)<br>1~250µm available |
|  | Filtration accuracy   | Performed filter plate hole size available<br>30~50µm<br>16~30µm<br>7~16µm<br>4~7µm |
| Filtration area                                      | About 0.16 m²   |   |
| Material of filtration base plate                    | PTFE  |   |
| Mobility   | Lockable casters + adjustable foot  |   |
| Working temperature range                            | -80~200°C<br>Please pay attention to the Max. tolerable temperature of filter cloth |   |
| Max temperature difference inside/outside the vessel | ΔT < 80°C   |   |
| Operating pressure                                   | Ordinary pressure   |   |
| Max. jacket pressure                                 | ≤ +0.03 MPa   |   |
| Max. filtration pressure difference                  | 0.1 MPa   |   |
| Stirring motor power                                 | 370 W   |   |
| Max. torque  | 5.4N·m  |   |
| Stirring speed range                                 | 20~500 rpm  |   |



Lifting filter glass reactor





## Customized Filter Glass Reactor\*

### Applications

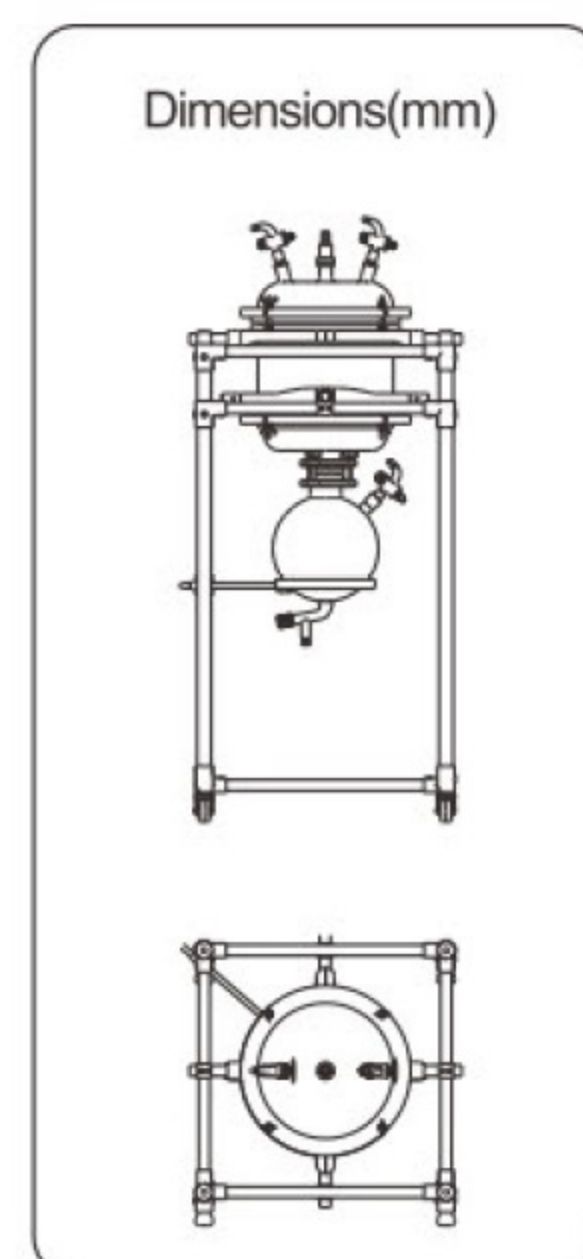
Pilot-scale solid-liquid separation process.

### Advantages

- Stainless steel supporting framework with beautiful appearance and strong corrosion resistance;
- High borosilicate glass vessel with strong corrosion resistance and wide range of application, the filtering process is visible.
- Various options of filter plate.
- The filter plate is convenient to remove and easy to clean and maintain.

### Technical Specifications

| Name                                    |                      | Filter Glass Reactor                   |                     |                     |
|---|----------------------|--|---------------------|---------------------|
| Model                                   |                      | BR-CL20                                | BR-CL30             | BR-CL50             |
| Filter Vessel                           | Capacity (L)         | 20                                     | 30                  | 50                  |
|   | Vessel Diameter (mm) | φ 300                                  |                     | φ 365               |
| Receiving Flask Capacity (L)            |                      | 10                                     | 20                  | 30                  |
| Glass Material                          |                      | High Borosilicate 3.3                  |                     |                     |
| Material of Frame and Connection Parts  |                      | SUS304                                 |                     |                     |
| Glass Vessel Bearable Temperature Range |                      | -80~200°C                              |                     |                     |
| Operating Pressure (MPa)                |                      | Ordinary pressure or negative pressure |                     |                     |
| Reactor Lid Openings                    | Liquid Charging Port | 40# Flange                             |                     |                     |
|   | Vacuum Port          | 24# standard ground                    |                     |                     |
|   | Exhaust Vent         | 24# standard ground                    |                     |                     |
| Sand Core                               | Material             | PTFE                                   |                     |                     |
|   | Specification        | Optional                               |                     |                     |
| Material of Filter Plate                |                      | PTFE                                   |                     |                     |
| Dimensions (mm)                         |                      | 650W × 650D × 1500H                    | 650W × 650D × 1600H | 650W × 650D × 1800H |



\* Customized products

## Dynamic Temperature Control System

### Applications

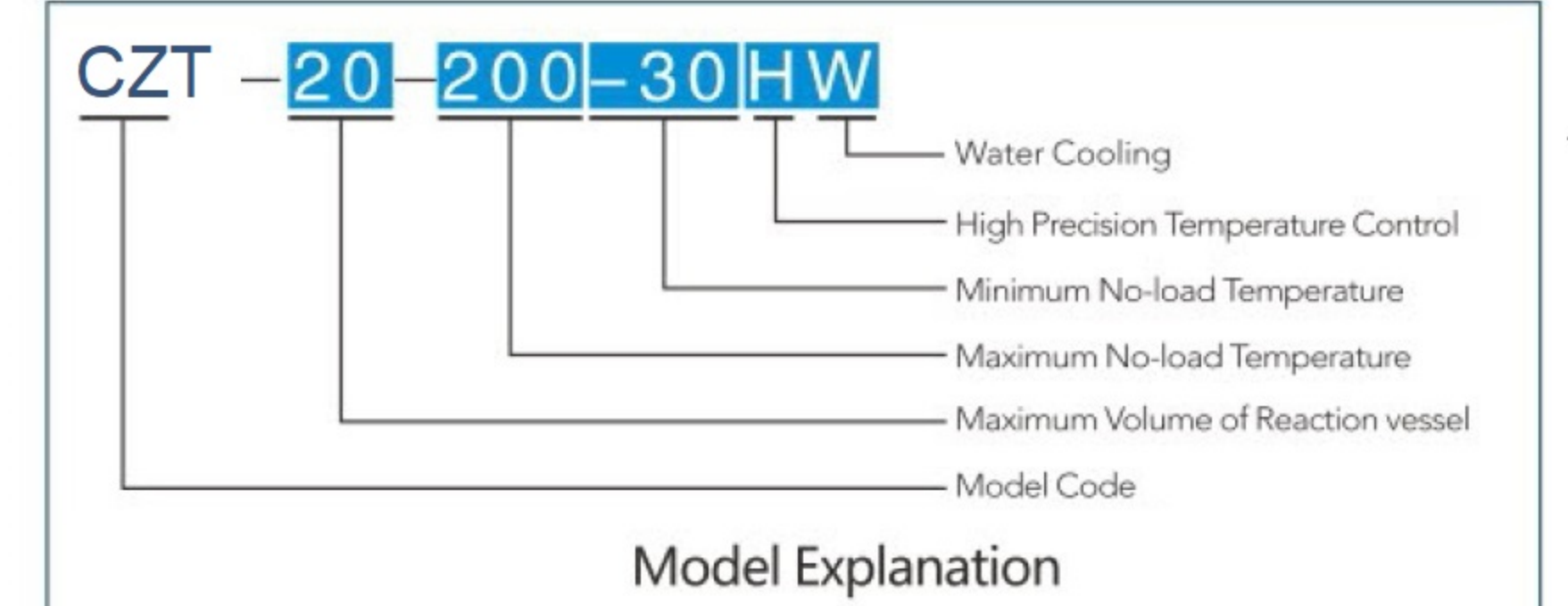
Dynamic temperature control system is a hermetic refrigerated heating circulator which is designed for fast heat-up and cool-down times in external applications. It is widely used to provide cold source and heat source to jacketed reaction vessel, tanks or other demanding applications in fields like pharmaceutical, chemical and biological industries etc.

### Features

- Wide working temperature ranges using one bath fluid: -80°C~200°C.
- Refrigeration system, Heating system and Pre-cooling system can work independently or work together continuously.
- Rapid heat-up or cool-down.
- Cool down directly from high temperature.
- The bath fluid runs in a closed loop.It is not likely to volatilize and oxidize under high temperature, or absorb water from ambient air under low temperature, which increased bath fluid life.
- Maintenance-free heat exchanger provides powerful heat exchanging.
- Designed with bath fluid monitoring window, avoid shortage of liquid.
- Multi safety protections: Over temperature cut-off, electrical leakage protection, over-current protection etc.
- It is available with air cooling and water cooling.

### Patents

#### Touchscreen Control



Advantages

**12 Multi-way of control**  
Two ways of control: Set value and segmented program control.  
Program code range: 1-120  
Segment code range: 0-99

**11 Rapid Heat Transfer**  
Powerful circulating pumps and a large hose cross section ensure maximized flow rates and optimum heat transfer.

**10 Space Saving Design**  
Compact design requiring little space.

**9 Safety Protections**  
Over-temperature protection, electricity leakage protection, over-current protection etc.

**8 Pre-cooling Function**  
Specially designed pre-cooling function for rapid cool-down with less power consumption, which is very efficient and energy saving.

**7 Reservation Function**  
Set the start time and related parameters in advance, the machine will start running automatically when time is due.



**1 Process Safety**  
Pre-cooling system and powerful circulating pump ensure safe cooling down, which extends the service life of the machine.

**2 De-Gassing Design**  
This design helps exhaust the air in the tubing and jacket easily after application set up, which makes the bath fluid flow fast and smoothly into the jacket.

**3 Completely Closed Circulating Loop**  
The bath fluid runs in a closed loop, which increased its service life.

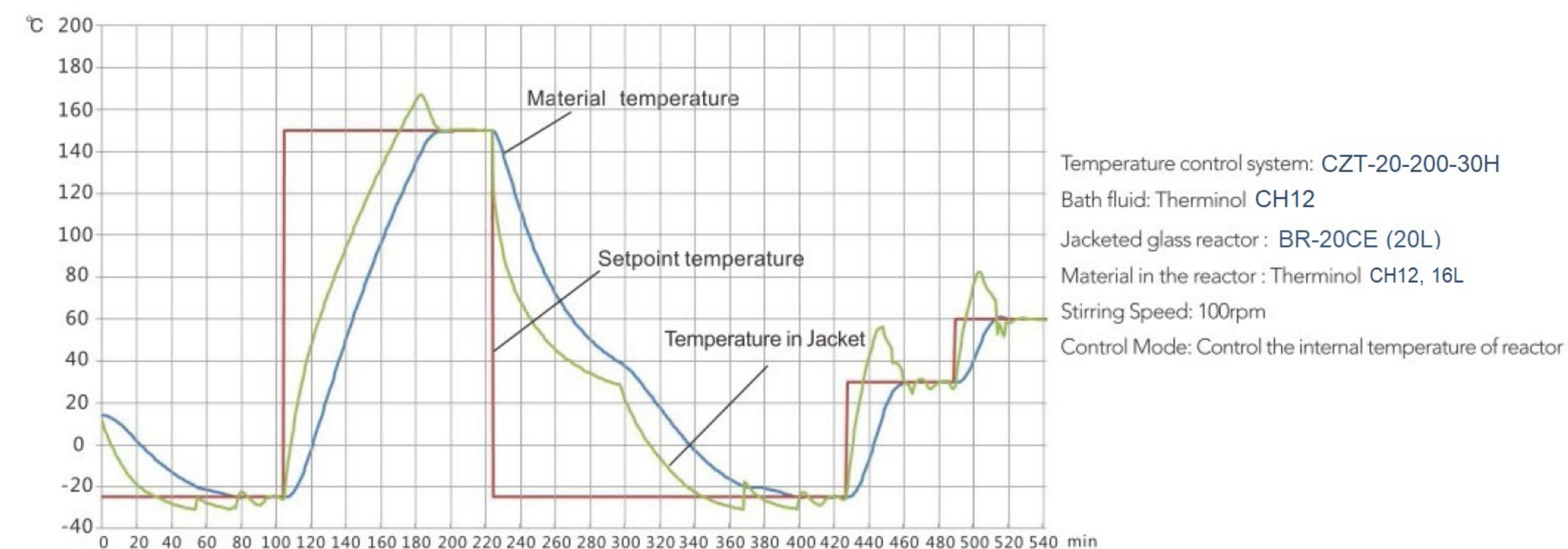
**4 Touchscreen Color Display**  
5.7" Touchscreen for easy operation and shows the working process. Graphic curve of material temperature and time are always in view.

**5 Precise Temperature Control**  
PID intelligent temperature control stability  $\pm 0.5$

**6 Convenient Data-Communication**  
Designed with Rs485, USB interface and external temperature sensor interface.

Typical Applications

- Temperature control of jacketed or double jacketed reactors used in Chemical, Pharmaceutical and Biological industries.
- Temperature control of material testing.
- Temperature control during distillation process.
- Analog control of temperature changes during a certain process.
- Thermostatic control system.
- Temperature control of semiconductor device.
- Temperature control of thermal testing platform.
- Temperature control of vacuum chambers.



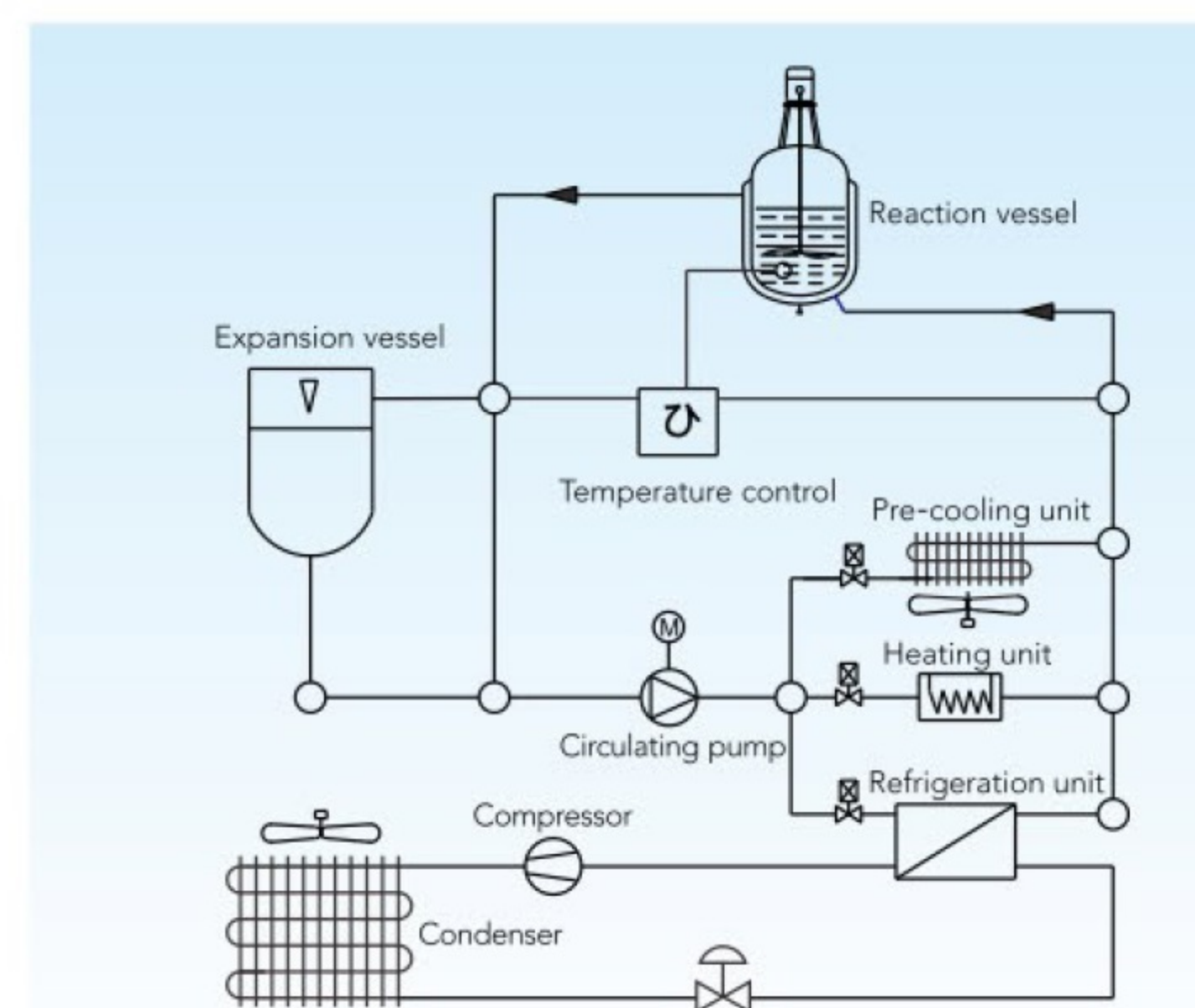
Case Study of CZT-20-200-30H & BR-20CE jacketed glass reactor (20L)

Technical Specifications

| Model            | Working Temperature Range (°C) | Temperature Stability (°C) | Power Supply  | Overall Power (KW) | Cooling Capacity (W) |      |       |       |       |       |       |       | Refrigerant | Bath Fluid Filling Volume (L) | Heating Power (KW) | Pump Capacity     |                      | Dimensions (mm)     | Net Weight (kg)       |     |
|------------------|--------------------------------|----------------------------|---------------|--------------------|----------------------|------|-------|-------|-------|-------|-------|-------|-------------|-------------------------------|--------------------|-------------------|----------------------|---------------------|-----------------------|-----|
|                  |                                |                            |               |                    | 200°C                | 10°C | -10°C | -20°C | -30°C | -35°C | -60°C | -78°C |             |                               |                    | Flow Rate (L/min) | Pressure (bar)       |                     |                       |     |
| CZT-5-200-30H    | -30~200                        | ±0.5                       | 220-240V-50Hz | 3                  | 0.6                  | 0.6  | 0.4   | 0.3   | 0.17  | -     | -     | -     | R404A       | 3.5                           | 2                  | 25                | 1.5                  | 420W × 640D × 850H  | 106                   |     |
| CZT-20-200-30H   | -30~200                        |                            |               | 4.7                | 1.7                  | 2.6  | 1.1   | 0.7   | 0.3   | -     | -     | -     | R22         | 8                             | 3                  |                   |                      | 550W × 820D × 1365H | 177                   |     |
| CZT-20-200-40H   | -40~200                        |                            |               | 5.7                | 1.7                  | 4.3  | 3.1   | 2.3   | 1.2   | 0.3   | -     | -     | R404A       |                               |                    |                   |                      | 730W × 840D × 1470H | 223                   |     |
| CZT-20-200-80H   | -80~200                        |                            |               | 7.9                | 1.7                  | 4.3  | 3.1   | 2.3   | 1.2   | 2     | 1.4   | 0.45  | R404A/R23   | 12                            | 6                  |                   |                      |                     | 885W × 1315D × 1565H  | 393 |
| CZT-50-200-30H   | -30~200                        |                            |               | 9.2                | 3                    | 7.5  | 4.6   | 2.5   | 1.0   | -     | -     | -     | R22         | 13                            |                    |                   |                      |                     | 850W × 945D × 1465H   | 251 |
| CZT-50-200-40H   | -40~200                        |                            |               | 11.2               | 3                    | 8.2  | 6.2   | 4.5   | 2.5   | 1.0   | -     | -     | R404A       | 855W × 1140D × 1465H          |                    |                   |                      |                     | 347                   |     |
| CZT-50-200-80H   | -80~200                        |                            |               | 15                 | 3                    | 8.2  | 6.2   | 4.5   | 2.5   | 5.0   | 3.0   | 1.0   | R404A/R23   | 17                            | 12                 |                   |                      |                     | 885W × 1340D × 1580H  | 465 |
| CZT-100-200-30H  | -30~200                        |                            |               | 18                 | 3                    | 8.2  | 6.2   | 4.5   | 2.5   | -     | -     | -     | R404A       | 20                            |                    |                   |                      |                     | 45                    | 1.4 |
| CZT-100-200-40H  | -40~200                        |                            |               | 24.1               | 3                    | 18   | 12    | 7.3   | 4.0   | 1.7   | -     | -     | R404A       | 25                            | 12                 |                   |                      |                     | 1000W × 1350D × 1760H | 461 |
| CZT-100-200-80H  | -80~200                        |                            |               | 35.1               | 3                    | 18   | 12    | 7.3   | 4.0   | 10    | 6.0   | 2.5   | R404A/R23   |                               |                    |                   |                      |                     | 40                    | 1.2 |
| CZT-100-200-80AH | -80~200                        |                            |               | 21                 | 3                    | 8.2  | 6.2   | 4.5   | 2.5   | 5.0   | 3.0   | 1     | R404A/R23   | 22                            | 30                 | 1                 | 950W × 1355D × 1730H | 504                 |                       |     |

Note: The interface size of CZT circulation pipeline is 3/4". Outer circulation hose is triple insulation stainless steel, hose connection size 3/4", hose length is 2.6m.  
The interface size of CZT-5-200-30H circulation pipeline is 1/2", connected circulation hose interface is 1/2".

Working Theory



The bath fluid is cooled down by compressor, and heated up by electrical heating, and it is transferred by circulating pump. The temperature of whole system is controlled by electronic control parts.



## CH - series Recirculating Chiller

### Applications

Chiller is usually used to provide constant low temperature condition for inspections, chemical, biological and physical experiments which need to be carried on under low temperature, mainly used for medicine and health care, food process, chemical industry and teaching in colleges and research institutes.

### Advantages

- Applications in Chemistry and Biology, like biological fermenter, chemical synthetic vessel etc.
- Equipped with world famous brand compressor, ensure low noise, high reliability, stable performance and long life span.
- Completely closed circulation system prevents bath fluid from evaporation or contamination.
- Built-in filters in circulation hose avoids possible blockage.
- Environmental friendly CFC-free refrigerant meets international standards.
- Compact design with good-looking appearance.
- Designed with liquid level monitor, which make it easier to check the bath fluid left in the tank.
- Pressure of bath fluid can be measured by the pressure gauge which is fixed near the fluid outlet.
- Variable models to meet customer's different requirements.
- Removable side panels for quick and easy cleaning and maintenance.



### Typical Application Sample

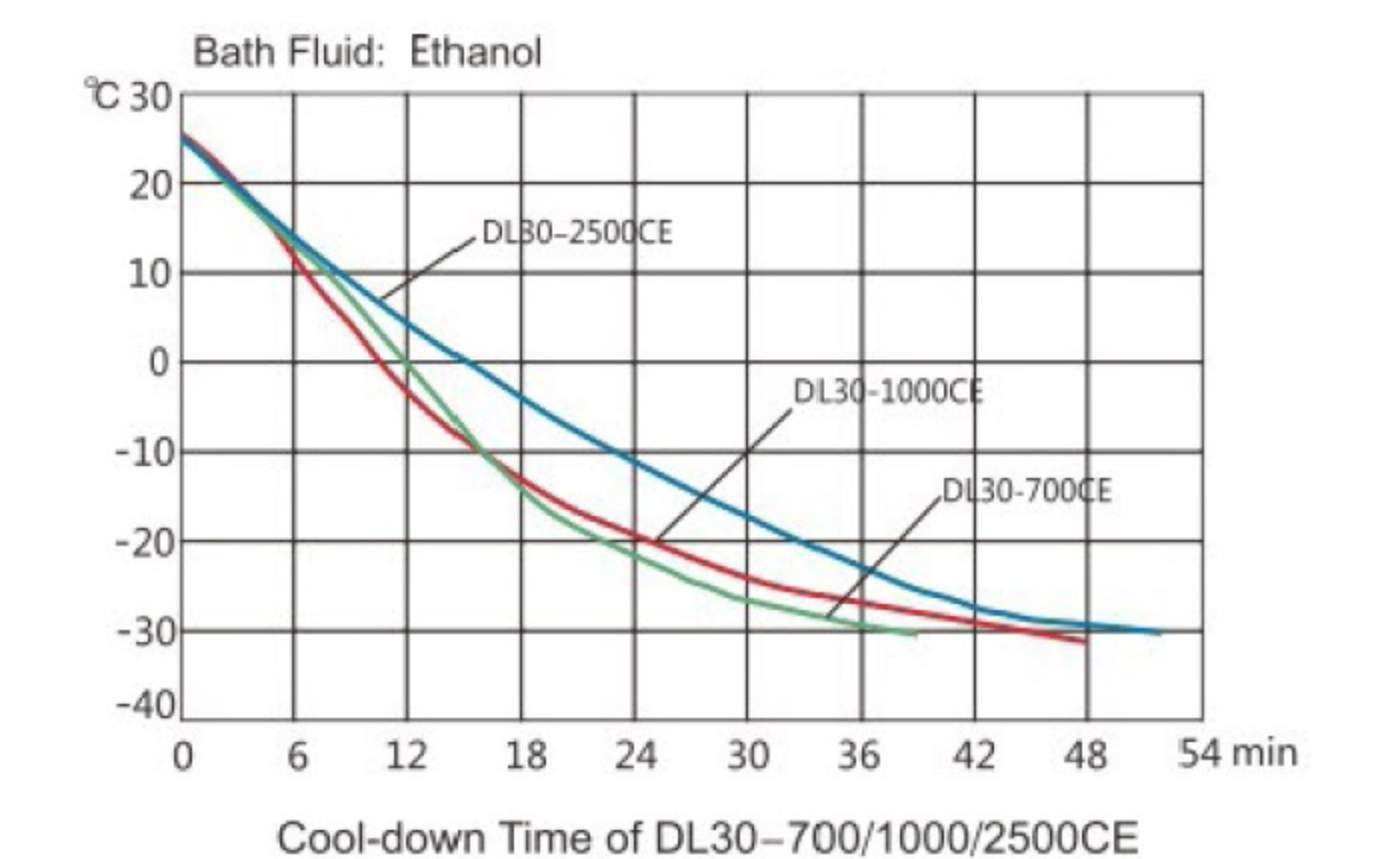
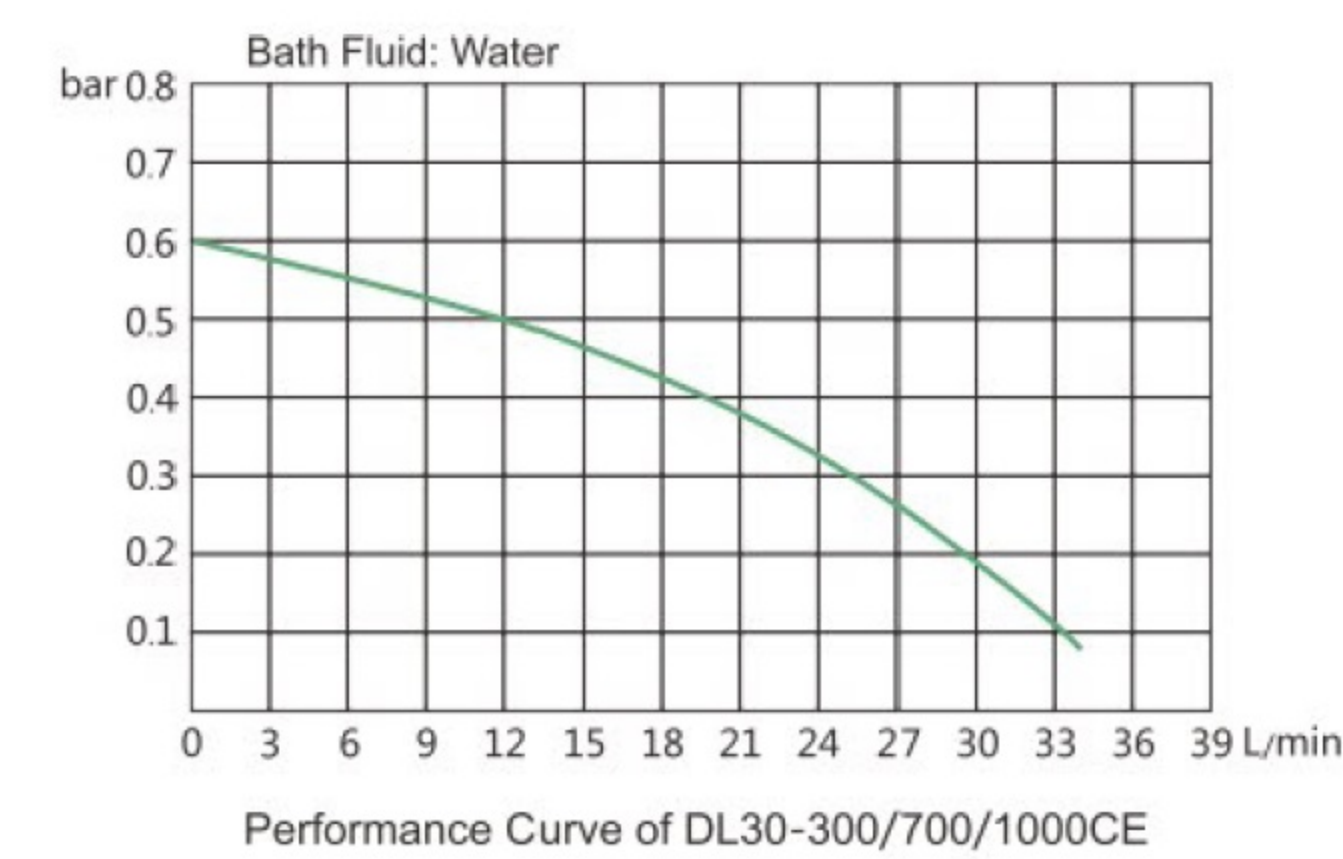


CH-30-1000CE

REV-1020CE

PM-401

### Pump Capacity



- Eco-friendly refrigerant meets international environmental protection standard; Intelligent control system will prevent compressor from overloading which will extend its service life; closed circulation system reduced evaporation of refrigerant.

**Technical Specifications**

| Model                         | CH20-900CE         | CH30-300CE         | CH30-700CE |      |
|-------------------------------|--------------------|--------------------|------------|------|
| Working Temperature Range*    | -20 ~ 25°C         | -30 ~ 5°C          |            |      |
| Temperature Stability         | ± 2°C              |                    |            |      |
| Power Supply                  | 220-240V~, 50/60Hz |                    |            |      |
| Rated power                   | 1275               | 1070               | 1475       |      |
| Cooling Capacity (W)          | 0°C                | 1650               | 1250       | 1750 |
|                               | -10°C              | 950                | 800        | 1100 |
|                               | -20°C              | 500                | 300        | 700  |
|                               | -25°C              | -                  | 150        | 300  |
| Refrigerant                   | R410A              |                    |            |      |
| Bath Fluid Filling Volume (L) | 10                 | 17                 |            |      |
| Circulating Pump Flow Rate    | 20L/min            |                    |            |      |
| Pressure (bar)                | 0.4                |                    |            |      |
| Hose Connection Size          | 1 / 2"             |                    |            |      |
| Dimensions (mm)               | 435W × 690D × 720H | 465W × 690D × 820H |            |      |
| Net Weight (Kg)               | 70                 | 80                 |            |      |

\*\*\*\*\*

| Model                         | CH30-1000CE        | CH30-1800CE          | CH30-2500CE          |      |
|-------------------------------|--------------------|----------------------|----------------------|------|
| Working Temperature Range*    | -30 ~ 5°C          |                      |                      |      |
| Temperature Stability         | ± 2°C              |                      |                      |      |
| Power Supply                  | 220-240V~, 50/60Hz | 220-240V~, 60Hz      | 3~, 380V, 50Hz       |      |
| Rated power                   | 1275               | 1070                 | 1475                 |      |
| Cooling Capacity (W)          | 0°C                | 2800                 | 500                  | 6000 |
|                               | -10°C              | 1800                 | 300                  | 4000 |
|                               | -20°C              | 1000                 | 1800                 | 2500 |
|                               | -25°C              | 500                  | 1000                 | 1100 |
| Refrigerant                   | R410A              | R404A                |                      |      |
| Bath Fluid Filling Volume (L) | 30                 | 40                   | 40                   |      |
| Circulating Pump Flow Rate    | 20L/min            | 30L/min              | 30L/min              |      |
| Pressure (bar)                | 0.4                | 1                    |                      |      |
| Hose Connection Size          | 1 / 2"             | 3 / 4"               |                      |      |
| Dimensions (mm)               | 495W × 760D × 860H | 635W × 1105D × 1066H | 650W × 1055D × 1070H |      |
| Net Weight (Kg)               | 100                | 180                  | 195                  |      |

\* Working Temperature ≤ Room Temp-5°C

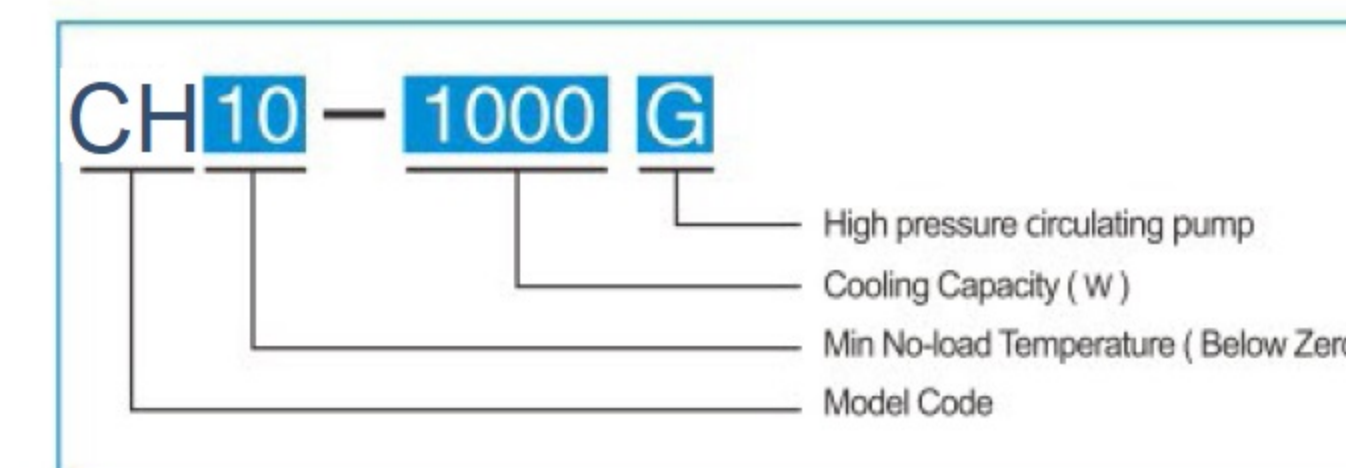
## CH - series Recirculating Chiller

### Applications

This series of chiller is usually used to provide constant low temperature condition for inspections, chemical, biological and physical experiments which need to be carried on under low temperature, mainly used for medicine and health care, food process, chemical industry and teaching in colleges and research institutes.

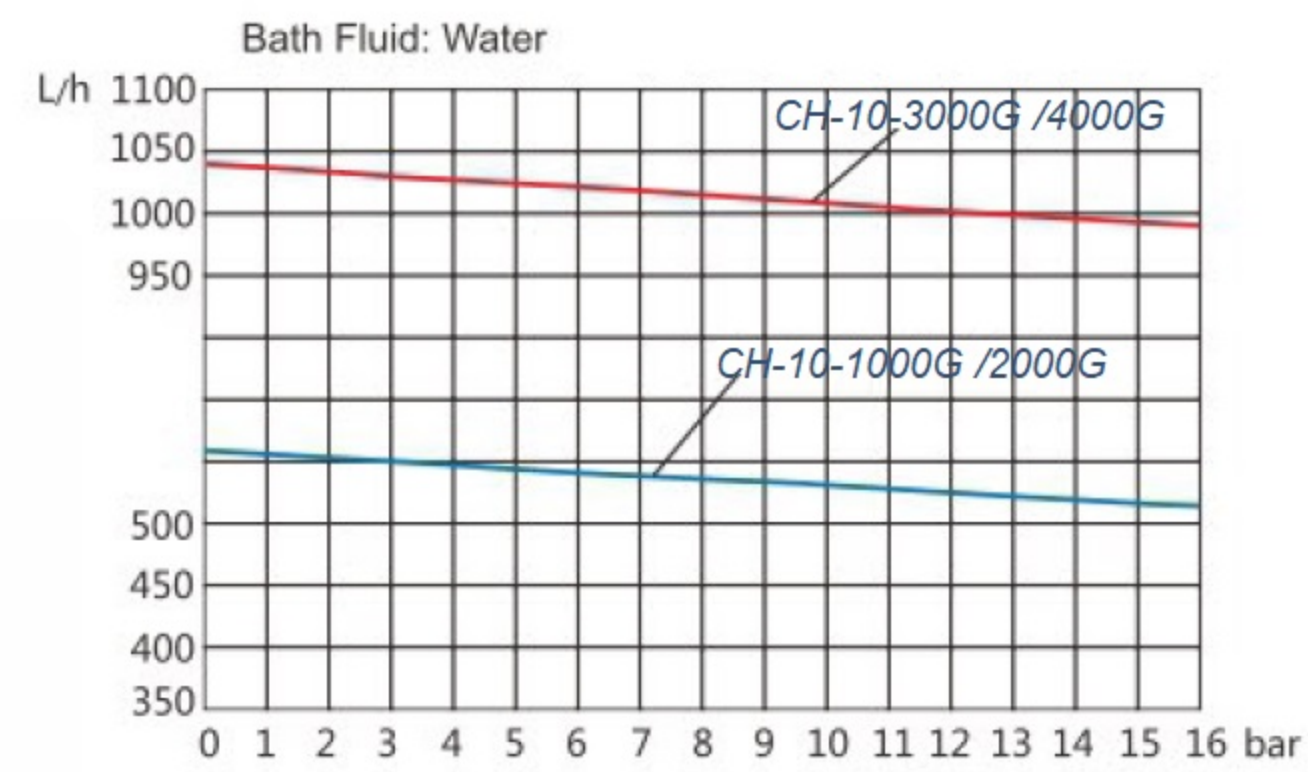
### Advantages

- Applications in Chemistry and Biology, like Atomic absorption, ICP-MS, Nuclear Magnetic Resonance, biological fermenter, chemical reaction vessel (synthetic vessel) etc.
- Material Area: Electron Microscopy, X-ray diffraction, X fluorescence, Magnetron sputtering, vacuum coating machine, Laser machine etc.
- Equipped with world famous brand compressor, ensure low noise, high reliability, stable performance and long life span.
- High performance circulating pump or imported high pressure vane pump with stable and reliable quality. Pump pressure is adjustable.
- Completely closed circulation system prevents bath fluid from evaporation or contamination.
- Built-in filters in circulation hose avoids possible blockage.
- Environmental friendly CFC-free refrigerant meets international standards.
- Compact design with good-looking appearance.
- Designed with liquid level monitor, which make it easier to check the bath fluid left in the tank.
- Pressure of bath fluid can be measured by the pressure gauge which is fixed near the fluid outlet.
- Variable models to meet customer's different requirements.
- Removable side panels for quick and easy cleaning and maintenance.

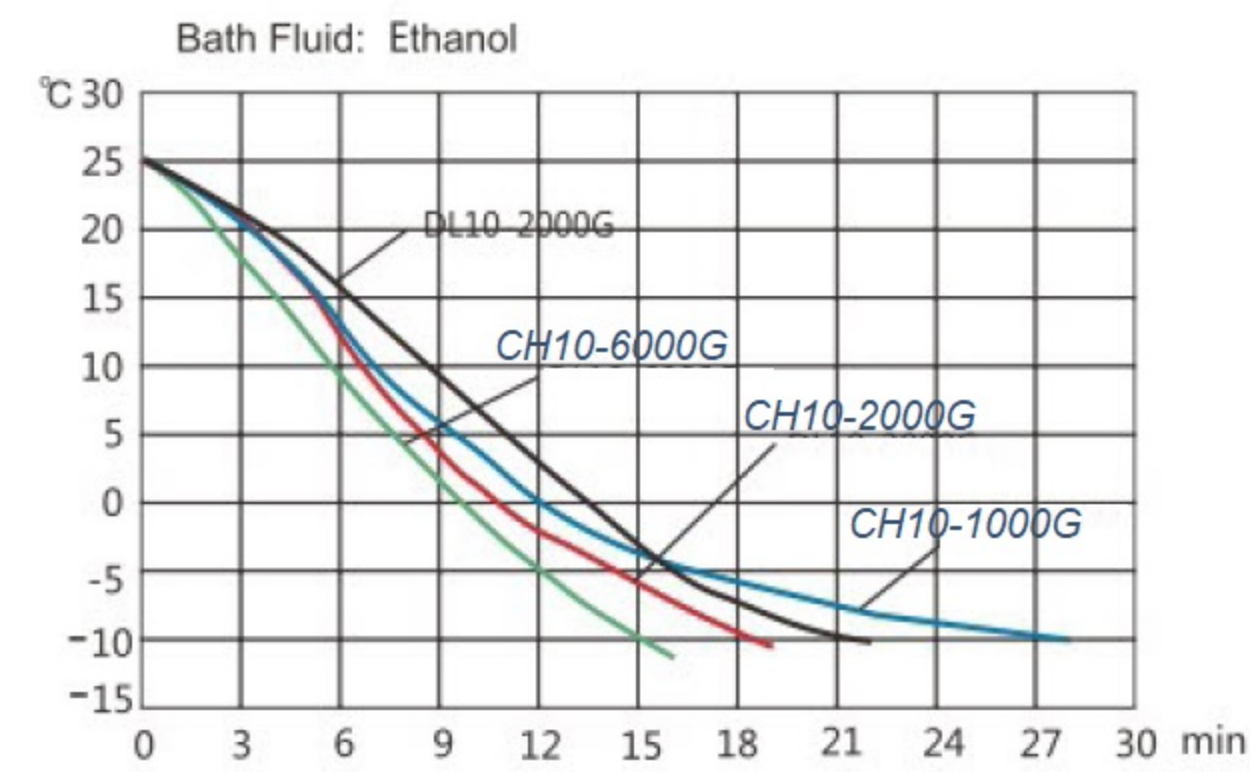


- Eco-friendly refrigerant meets international environmental protection standard; Intelligent control system will prevent compressor from overloading which will extend its service life; closed circulation system reduced evaporation of refrigerant.

### Pump Capacity



Performance Curve of CH10-1000G/2000G/3000G/6000G



Cool-down Time of CH10-1000G/2000G/3000G/6000G

### Technical Specifications

| Model                         | DL10-1000G         | DL10-2000G         | DL10-3000G         | DL10-6000G           |
|-------------------------------|--------------------|--------------------|--------------------|----------------------|
| Working Temperature Range*    | -10 ~ 25°C         |                    |                    |                      |
| Temperature Stability         | ± 2°C              |                    |                    |                      |
| Power supply                  | 220~240V~, 50Hz    |                    |                    | 3~, 380V, 50Hz       |
| Bath Fluid Filling Volume (L) | 10                 | 17                 | 30                 | 40                   |
| Cooling Capacity (W)          | 1000@15°C          | 2000@15°C          | 3000@15°C          | 6000@15°C            |
| Refrigerant                   | R134a              |                    |                    |                      |
| Circulating Pump Flow Rate    | 7L/min             |                    | 16L/min            |                      |
| Pressure (bar)                | 1-10               |                    |                    |                      |
| Hose Connection Size          | 1 / 2"             |                    |                    |                      |
| Dimensions (mm)               | 435W × 690D × 720H | 465W × 690D × 820H | 495W × 760D × 860H | 650W × 1055D × 1070H |
| Net weight (Kg)               | 73                 | 86                 | 108                | 195                  |

\* Working Temperature ≤ Room Temp-5°C

## Recirculating Chiller CH - 400CE

### Applications

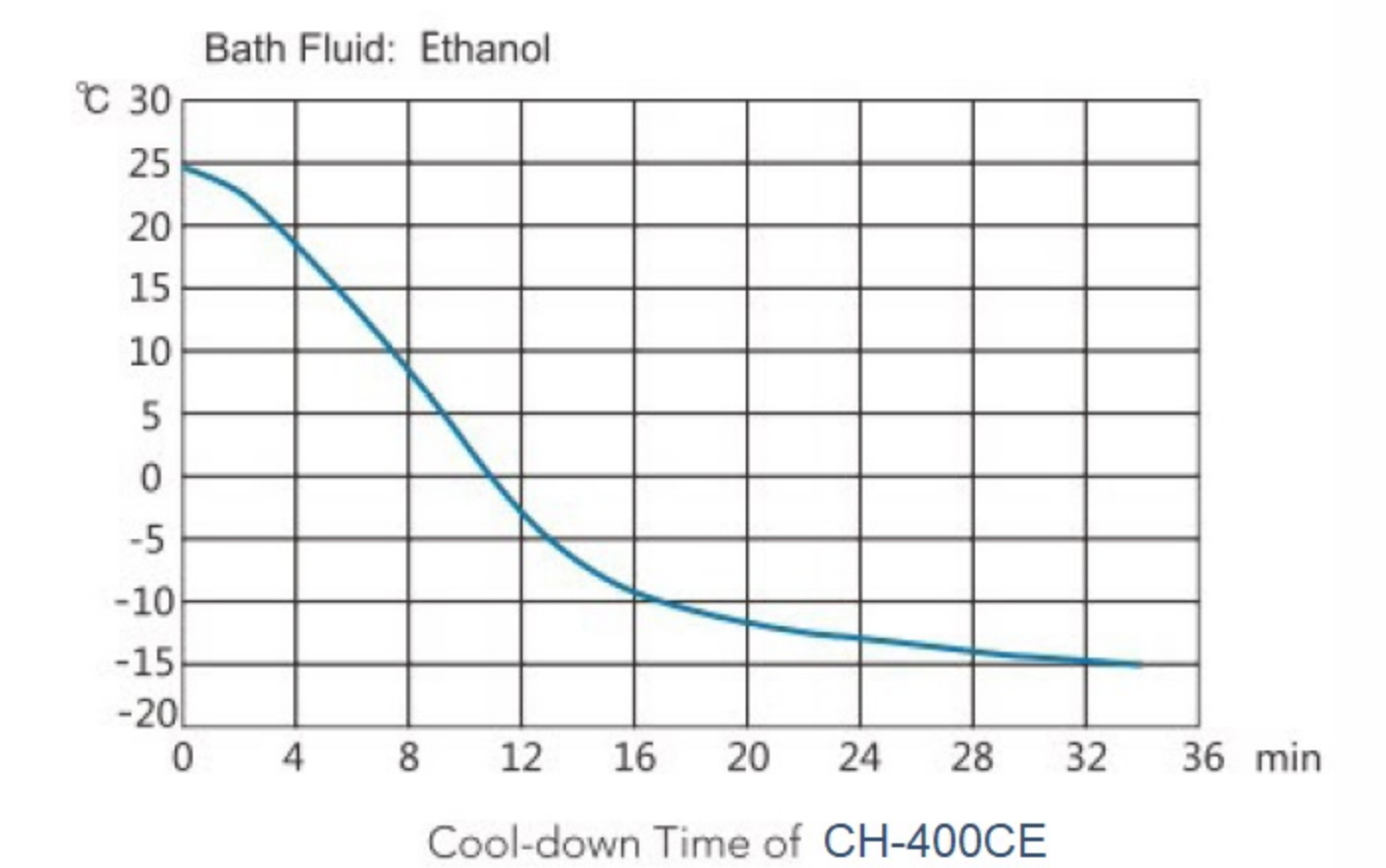
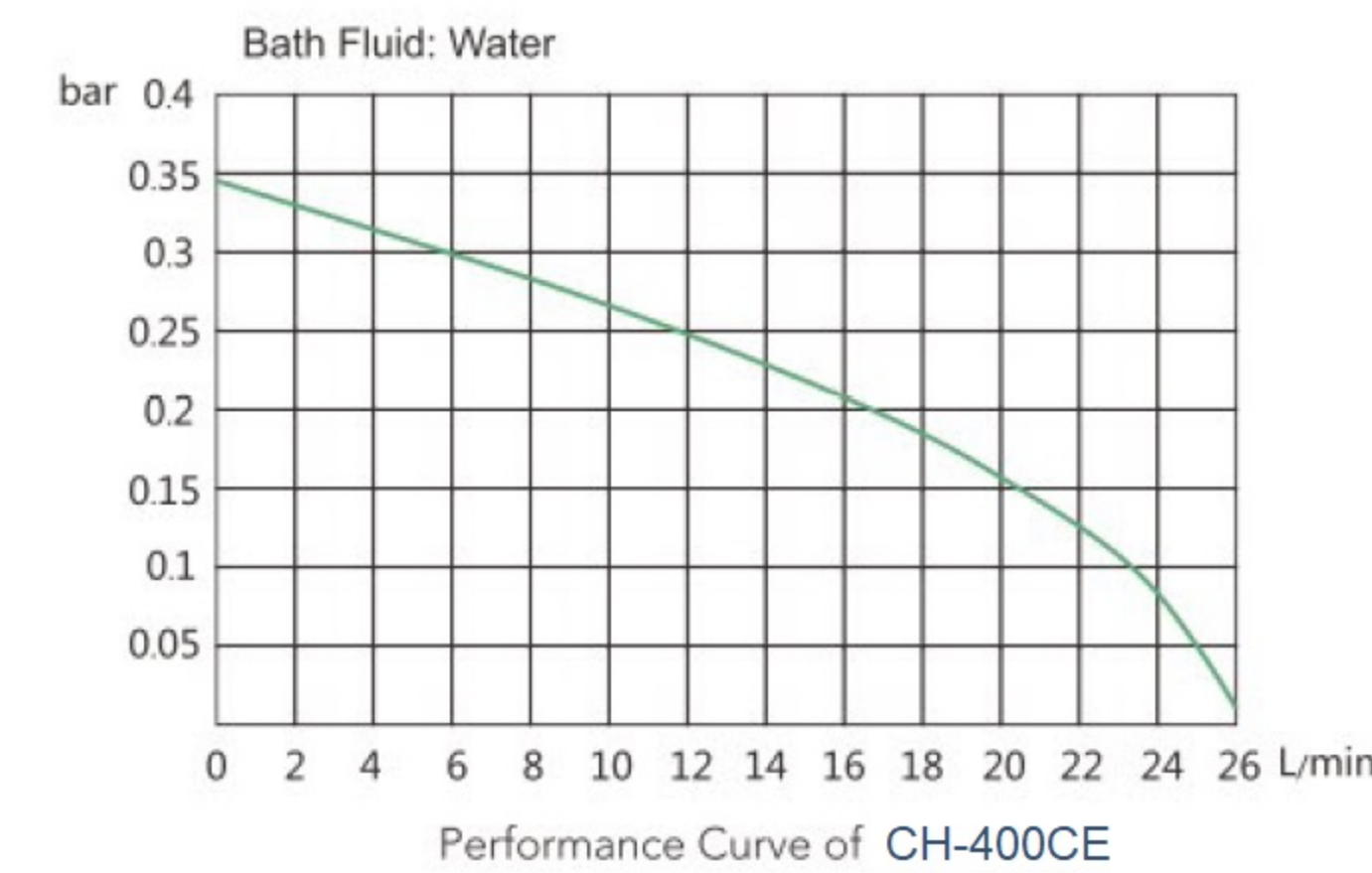
This compact chiller is particularly designed for lab scale Rotary Evaporator. It is reasonably structured with small foot-print, which can be placed on bench or on floor.

### Advantages

- Circulating joint nozzle can be rotated 360° which makes it easy to connect with corollary equipment.
- All parts contacting refrigerant is made of stainless steel 304 and macromolecule anti-corrosive material.
- World famous brand compressor ensures high reliability and long life-span.



### Pump Capacity



### Technical Specifications

| Model     | Working Temperature Range (°C)* | Power Supply    | Overall Power (W) | Cooling Capacity (W) | Refrigerant | Bath Fluid Filling Volume (L) | Material of bath fluid tank | Circulating Pump Flow Rate | Pressure (bar) | Dimensions (mm) | Net Weight (Kg) |
|-----------|---------------------------------|-----------------|-------------------|----------------------|-------------|-------------------------------|-----------------------------|----------------------------|----------------|-----------------|-----------------|
| CH-400-CE | -15~25                          | 220-240V~, 50Hz | 450               | 400                  | R134a       | 3                             | Stainless Steel 304         | 17L/min                    | 0.2            | 245W×430D×550H  | 26              |

\* Working Temperature ≤ Room Temp-5°C

\* Working Temperature ≤ Room Temp-5°C



## Cold Trap

### Applications

Cold Trap is used to capture water vapor and harmful gases emission from vacuum drying oven and pressure reduced concentration device, improving efficiency of vacuum system, extending life-span of vacuum pump.

### Advantages

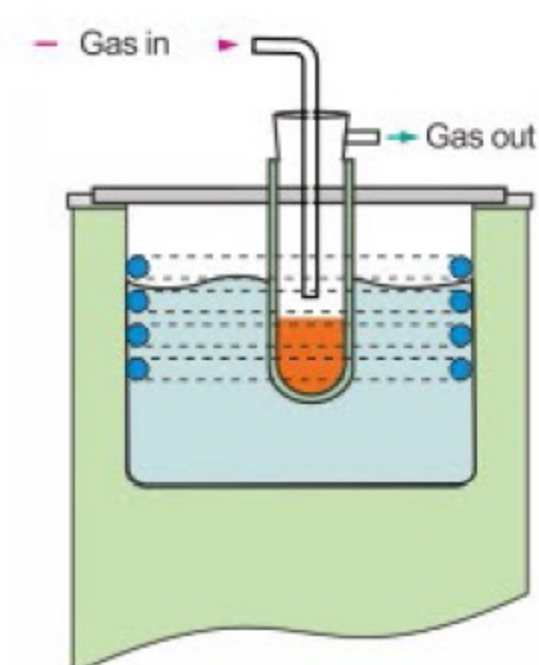
- It can be used in drying system for capacitor, battery pole and battery cell.
- It also can be used as pre-freezing bath and low temperature bath.
- Digital display for better control of the bath temperature, which makes it easier to start the vacuum pump at right time.
- Stainless steel 304 liquid bath can be used to do water or ethanol cooling experiments. If equipped with glass condenser, it also can be used to deal with acid or organic solvents.
- Designed with drain valve for easy discharge of collected liquid.



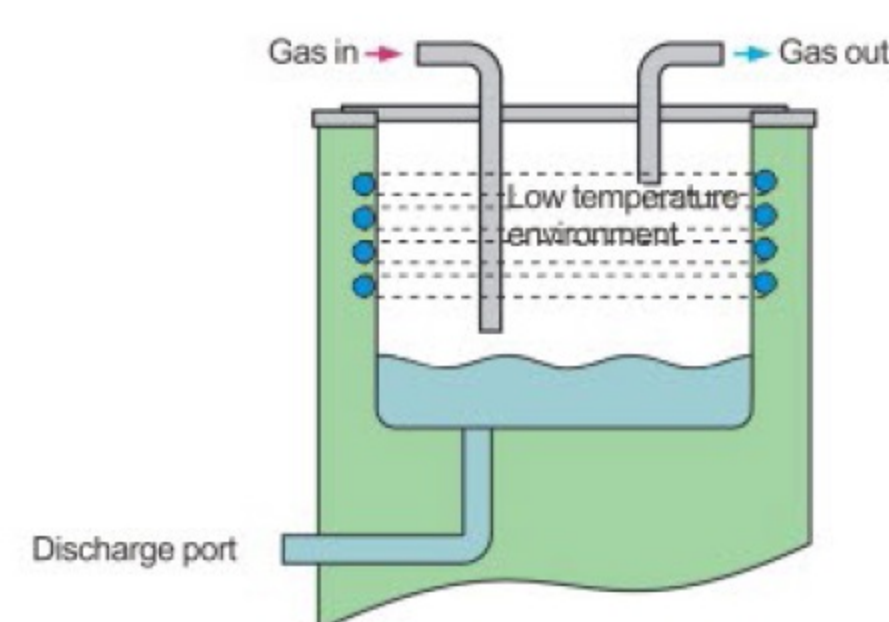
CT-40 / CT-80



CT-40x / CT-80x



Indirect Cooling



Direct cooling

### Technical Specifications

| Model  | Min. Temperature of Unloading (°C) | Power Supply                        | Cooling Method   | Cooling Capacity (W) | Refrigerant | Bath Fluid Filling Volume (L) | Material of bath fluid tank | Dimensions (mm) | Net Weight (Kg) | Bath Tank Size |
|--------|------------------------------------|-------------------------------------|------------------|----------------------|-------------|-------------------------------|-----------------------------|-----------------|-----------------|----------------|
| CT-40  | -40                                | 110V, 60Hz<br>or 220-240V~, 50/60Hz | Indirect cooling | 300                  | R404A       | 5                             | SUS 304                     | 350W×454D×780H  | 45              | Φ160*250mm     |
| CT-40x |                                    |                                     | Direct cooling   |                      |             |                               | SUS 316                     | 350W×470D×800H  |                 |                |
| CT-80  | -80                                | 110V, 60Hz<br>or 220V, 60Hz         | Indirect cooling |                      |             |                               | SUS 304                     | 438W×528D×1210H |                 |                |
| CT-80x |                                    |                                     | Direct cooling   |                      |             |                               | SUS 316                     | 438W×528D×1200H |                 |                |

## Heating Circulator

### Applications

This is a water-cooled type heating circulator. The bath fluid is heated up by electricity and transferred to reactors by circulating pump, which can be applied to pharmaceutical plants, chemical industry and petrochemical industry.

### Advantages

- Designed with exhaust valve, which makes it easy and smooth when filling in bath fluid.
- Using oil as bath fluid will extend the service life of circulator.
- Over-temperature alarm, overload protection, overcurrent protection  
Intelligent PID control with high precision
- Bath fluid tank is made of anti-corrosive stainless steel.
- Heating bath fluid circulates in a closed system, which extends its service time.
- Tap water cooling design can cool down the high temperature bath fluid rapidly.

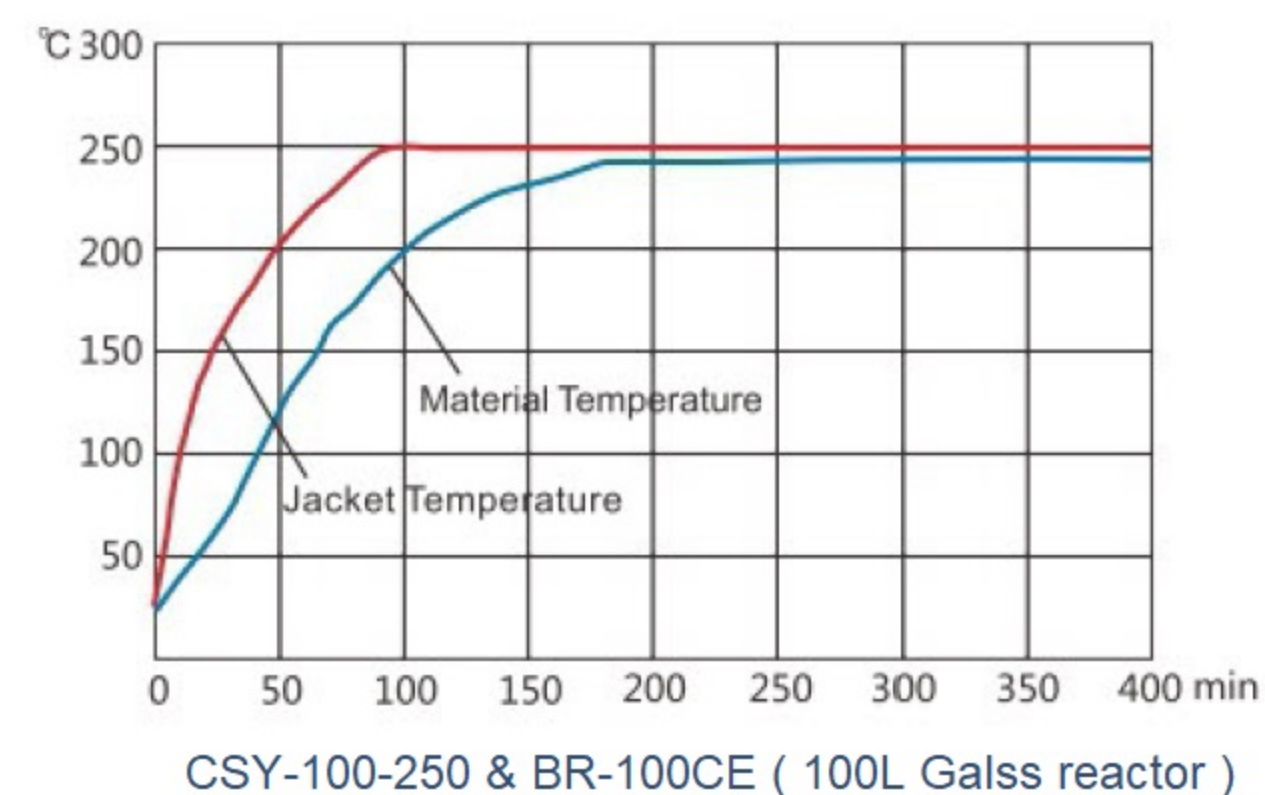
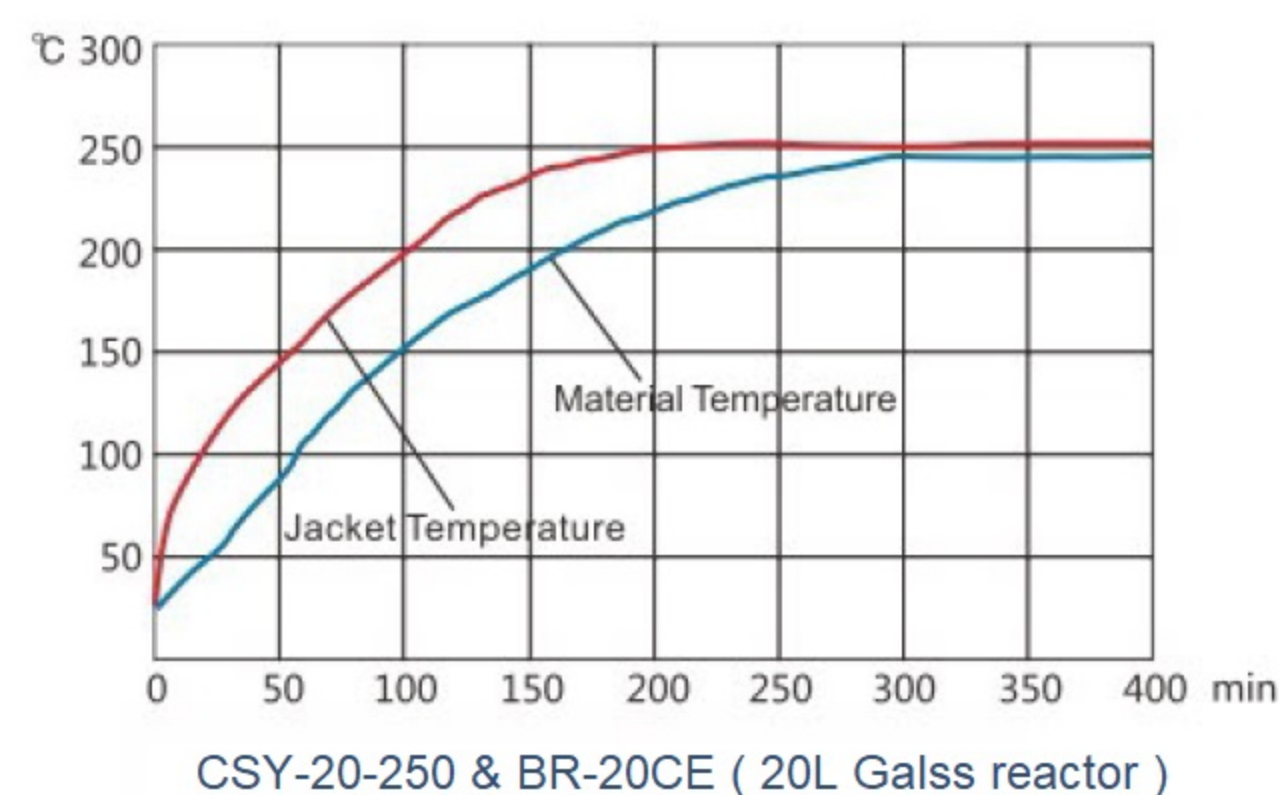


CSY-20-250

### Heat - up Time

Heating Circulator: CSY-20-250  
 Bath Fluid: Polydimethyl Siloxane (PMX-200-50cst)  
 Jacketed Glass Reactor: BR-20CE (20L)  
 Material in Reactor Polydimethyl Siloxane (PMX-200-50cst, 16L)  
 Stirring Speed: 100rpm

Heating Circulator: CSY-100-250  
 Bath Fluid: Polydimethyl Siloxane (PMX-200-50cst)  
 Jacketed Glass Reactor: BR-100CE (100L)  
 Material in Reactor Polydimethyl Siloxane (PMX-200-50cst, 80L)  
 Stirring Speed: 100rpm



### Technical Specifications

| Model                           | CSY-20-250            | CSY-50-250      | CSY-100-250     | CSY-200-250     |
|---------------------------------|-----------------------|-----------------|-----------------|-----------------|
| Maximum Temperature             | 250°C                 | 250°C           | 250°C           | 200°C           |
| Working Temperature Range       | RT+5 ~ 250°C          |                 |                 | RT+5 ~ 200°C    |
| Temperature Stability           | ±0.5°C                |                 |                 |                 |
| Ambient Temperature             | 5~40°C                | 5~40°C          | 5~40°C          | 5~40°C          |
| Ambient Humidity                | ≤70%                  | ≤70%            | ≤70%            | ≤70%            |
| Power Supply                    | 220~240V~, 50Hz       | 3~, 380V, 50Hz  | 3~, 380V, 50Hz  | 3~, 380V, 50Hz  |
| Pump Capacity                   | Power ( W )           | 370             | 370             | 750             |
|                                 | Max Flow Rate (L/min) | 42              | 42              | 75              |
|                                 | Max Pressure ( bar )  | 2.8             | 2.8             | 1.5             |
| Connection Size                 | 3/4"                  | 3/4"            | 3/4"            | 1"              |
| Bath Fluid Filling Volume ( L ) | 9                     | 13              | 17              | 22              |
| Heating Power ( W )             | 3                     | 6               | 12              | 24              |
| Dimensions ( mm )               | 430W×690D×1075H       | 430W×690D×1225H | 640W×940D×1585H | 640W×920D×1580H |
| Net Weight ( Kg )               | 60                    | 120             | 185             | 240             |

Tubing: Insulated stainless steel, hose length is 2 m.

### Thermostatic Magnetic Stirring Bath

#### Features

It can be used as water bath or oil bath. Built-in strong magnetic stirrer in the bath.

- Stainless steel 304 heater.
- The magnetic stirring system drives the stirrer to rotate synchronistically, so that the solution in the bath can be heated and stirred evenly.
- DC brushless motor ensures stable performance and continuous working.
- High temperature magnet can continuously work at 300°C without losing magnetism.
- PID temperature controller ensures accurate temperature control.
- Key setting and digital display make it easy to operate.
- Equipped with two sensors make bath temperature and container temperature display alternately.



#### Technical Specifications

| Model                          | BHWCL-3                           | BHWCL-3S           | BHWCL-5            |
|--------------------------------|-----------------------------------|--------------------|--------------------|
| Temperature Range              | Room Temperature+5 ~ 200°C        |                    |                    |
| Temperature Stability          | ± 1°C                             |                    |                    |
| Temperature Display            | Keypad Input, Digital Display     |                    |                    |
| Stirring Speed Setting         | Knob Setting                      |                    |                    |
| Stirring Speed ( rpm )         | 0 ~ 2000                          |                    |                    |
| Bath Dimensions ( mm )         | Φ220 × 110                        | φ 220 × 160        | Φ254 × 130         |
| Bath Capacity ( L )            | 4                                 | 6                  | 6.5                |
| Heating Power ( W )            | 500                               | 500                | 1050               |
| Max.Flask can be placed ( ml ) | 3000                              | 3000               | 5000               |
| Power Supply ( V/Hz )          | 110V~, 60Hz or 220-240V~, 50/60Hz |                    |                    |
| Dimensions ( mm )              | 260W × 280D × 230H                | 260W × 280D × 280H | 260W × 280D × 260H |
| Net Weight ( Kg )              | 5                                 | 5                  | 6                  |

## PM Diaphragm Vacuum Pump

### Applications

PM series diaphragm vacuum pump provides negative pressure condition for processes of evaporation, distillation, crystallization, drying, sublimation, reduced pressure filtration etc. It can be used to extract a variety of highly toxic, flammable and explosive, strong acid, and alkali sample.

### Advantages

- A substitute for water circulating vacuum pump and rotary vane vacuum pump.
- No need of any working medium. No friction between working parts.
- Vacuum level can be adjusted according to experiment requirements.
- All parts that contacting gases are made of PTFE + FV rubber with chemical resistance.
- Valve plate adopts imported materials.
- Motor is supplied by famous manufacturer.
- With reasonable design, transmission runs smoothly.
- With small volume and light weight, easy to move. Saving space.



filter



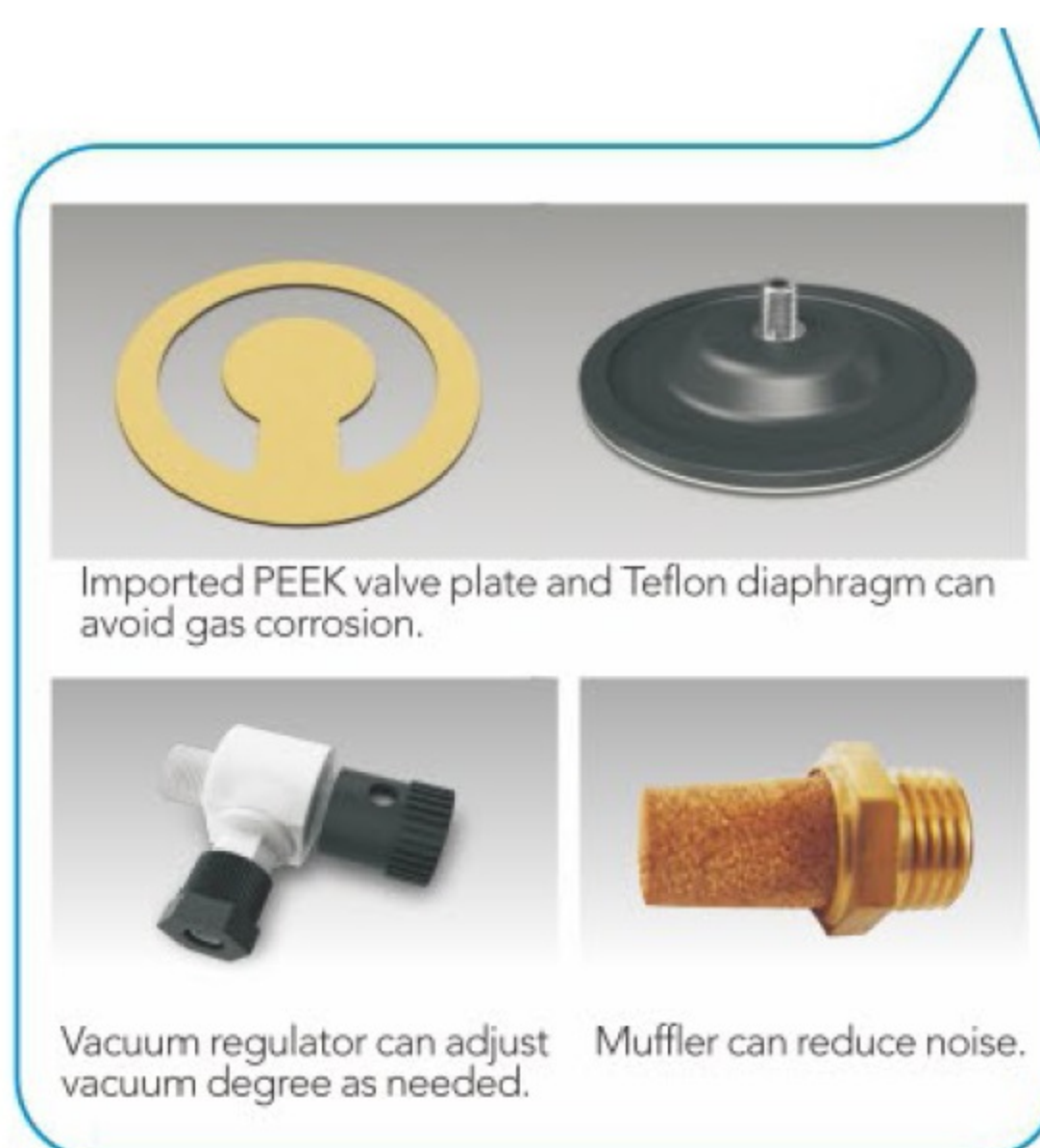
PM-201

National Patent



PM-401

Filter bottle can prevent entry of solid particles and water into pump.



### Technical Specifications

| Model  | Motor Power (W) | Power Supply    | Inlet Diameter (mm) | Ultimate Vacuum (MPa) / Extreme pressure (mbar) | Pumping Speed (L/min) | Dimensions (mm) | Net Weight (Kg) |
|--------|-----------------|-----------------|---------------------|---|-----------------------|-----------------|-----------------|
| PM-201 | 180             | 220-240V~, 50Hz | φ 10 × φ 6          | 0.095/50  | 25                    | 310W×225D×168H  | 10              |
| PM-401 | 300             | 220-240V~, 50Hz | φ 10 × φ 7          |   | 45                    | 195W×440D×310H  | 23              |

Recommended connection hose: φ12×φ6



## PM Diaphragm Vacuum Pump

### Features

It provides negative pressure condition for processes of evaporation, distillation, crystallization, drying, sublimation, reduced pressure filtration etc. It can be used to extract a variety of highly toxic, flammable and explosive, strong acid, and alkali sample.

- After 1500 hours of fatigue testing, it can work stably.
- Low temperature motor, keeps the pump working at low temperature.
- New designed structure improve the vacuum and pumping rate significantly.
- A substitute for water circulating vacuum pump and rotary vane vacuum pump.
- No need of water, clean and eco-friendly.
- All parts that contacting gases are made of PTFE + FV rubber with chemical resistance.
- Valve plate adopts imported materials.
- Small size, light weight, easy to move, save space.
- Easy to maintain and repair.



PM-201Z



PM-301E

| Model  | PM-201Z         | IPM-301E  |
|--|-----------------|-----------|
| Motor Power (W)                                    | 180             |           |
| Power Supply (V/Hz)                                | 220-240V~, 50Hz |           |
| Inlet Diameter (mm)                                | φ 10 × φ 6      |           |
| Max. Vacuum Degree (Mpa) / Ultimate Pressure (bar) | 0.0992/8        | 0.0935/65 |
| Max. Pumping Speed (L/min)                         | 25              | 40        |
| Dimensions (mm)                                    | 300W×230D×170H  |           |
| Net Weight (kg)                                    | 10              |           |

Recommended connection hose: φ12×φ6



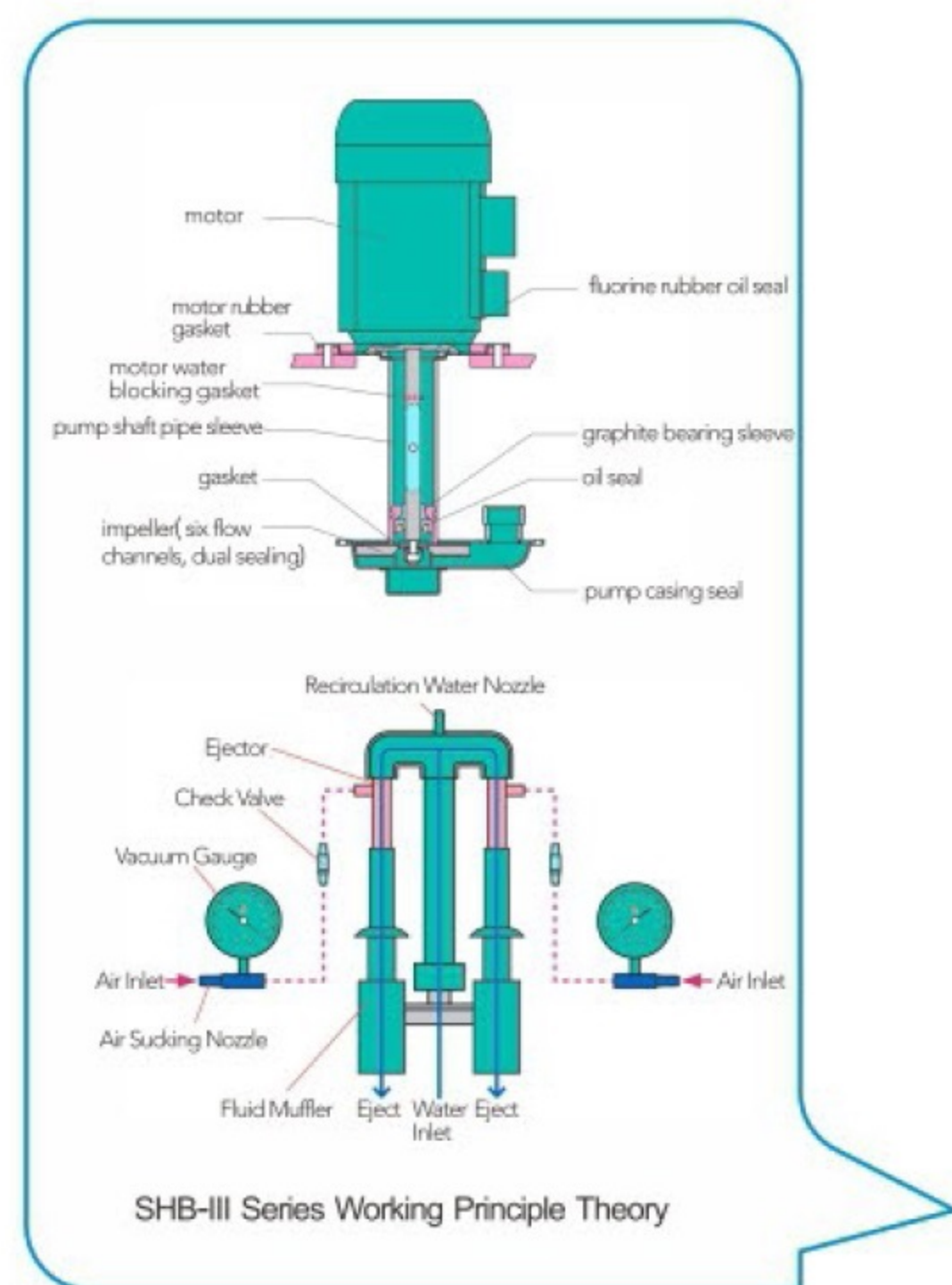


## Water Circulating Vacuum Pump

P-SHB3 / A / S

### Features

Water Circulating Vacuum Pump takes circulating water as working fluid to create negative pressure by fluid jet. It can provide negative pressure condition for the processes of evaporation, distillation, crystallization, drying, sublimation, pressure-reducing filtration and so on, particularly be suitable for labs and small scale test of industries such as universities and colleges, scientific research institutes, chemical industry, pharmacy, biochemistry, foodstuff, pesticide, agricultural engineering, biological engineering.



P-SHB3

### Complete Set



CH-400CE

REV-3001

P-SHB3

## Water Circulating Vacuum Pump

P-SHB3G

### Features

- Spray Paint Teflon ( PTFE ) plus FV Rubber on the ejector and suction nozzle. Hose is made of fluorine rubber.
- Better corrosion resistance and more reliability and longer service life.

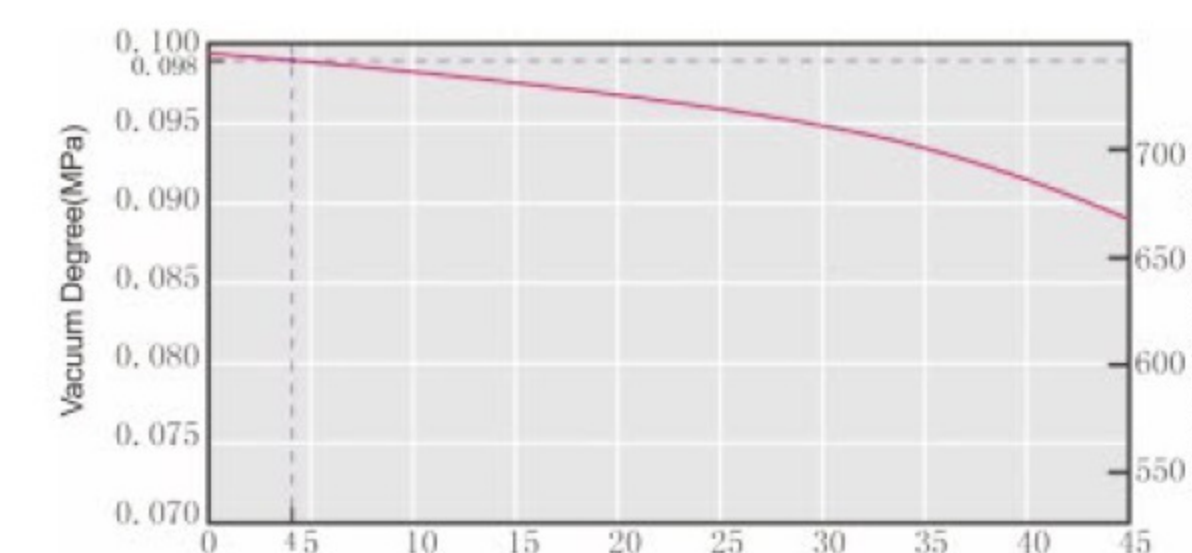
| Model                         | P-SHB3 / A / S / G                   | P-SHB4             |
|-------------------------------|--------------------------------------|--------------------|
| Power ( W )                   | 180                                  | 250                |
| Power Supply                  | 110V~, 60Hz or 220-240V~, 50/60Hz    | 220-240V~, 50Hz    |
| Flow ( L/min )                | 80                                   |                    |
| Lift ( m )                    | 10                                   |                    |
| Ultimate Vacuum ( MPa )       | 0.098 ( 2KPa )                       | 0.098 ( 2KPa )     |
| Single Tap Air Suction Amount | 10L/min                              |                    |
| Number of Tap                 | 2                                    | 4                  |
| Safety                        | Check valve, over-current protection |                    |
| Water Tank Capacity ( L )     | 15                                   | 18                 |
| Water Tank Material           | PP                                   | PP                 |
| Dimensions ( mm )             | 385W × 280D × 420H                   | 470W × 260D × 516H |
| Net Weight ( kg )             | 11                                   | 17                 |



P-SHB3G



P-SHB4



Relation Between Vacuum Degree And Water Temperature

Water temperature (°C)

### Main parts comparison

| Material / Part Name \ Model | P-SHB3    | P-SHB3A   | P-SHB3S   | P-SHB3G     |
|------------------------------|-----------|-----------|-----------|-------------|
| Ejector                      | PP        | SUS304    | PP        | Copper+PTFE |
| Tee Junction                 | PP        | PP        | PP        | PP          |
| Check Valve                  | PP+Copper | PP+Copper | PP+Copper | PP+Copper   |
| Suction Nozzle               | PP        | SUS304    | PP        | Copper+PTFE |
| Pump Body                    | SUS304    | SUS304    | PP        | SUS304      |
| Impeller                     | SUS304    | SUS304    | PA        | SUS304      |
| Connection Pipe              | NR        | NR        | NR        | FPM         |



P-SHB3A

# Water Circulating Vacuum Pump

## P-SHB95

### Features

Widely applied to research experiments, small scale tests and small scale production with the process of evaporation, distillation, crystallization, drying, sublimation, pressure-reducing filtration.

- Working principle is the same as that of desk-top vacuum pump.
- Compared with desk-top vacuum pump, larger air sucking amount can meet negative pressure requirements of large air sucking amount.
- Five taps can be used alone or in parallel. A five-way adapter can connect five taps to increase air sucking amount, which can meet the experiment requirements of large scale rotary evaporator or reactor.
- Motor is supplied by famous manufacturer with fluorine rubber sealing which can avoid the invasion of corrosive gas.
- Water tank PVC material. Housing adopts carbon steel and the surface adopts electrostatic spraying.
- Copper ejector; Tee junction, check valve and suction nozzle are PP material.
- Pump body and impeller adopt stainless steel 304.
- Equipped with casters for convenient moving.
- Replace water regularly to keep water clean to ensure perfect vacuum condition.
- Shorten the water replacing period when it is used to pump corrosive gas.
- P-SHB95: Housing adopts stainless steel. Other components are the same as that of P-SHB95



P-SHB95T



P-SHB95

### Technical Specifications

| Model    | Power (W) | Power Supply                    | Flow (L/min) | Lift (m) | Safety                               | Housing Material       | Ultimate Vacuum (MPa) | Single Tap Air Suction Amount | Number of Tap | Water Tank Capacity (L) | Water Tank Material | Dimensions (mm) | Weight (kg) |
|----------|-----------|---------------------------------|--------------|----------|--------------------------------------|------------------------|-----------------------|-------------------------------|---------------|-------------------------|---------------------|-----------------|-------------|
| P-SHB95  | 550       | 110V~60Hz or 220-240V~, 50/60Hz | 100          | 12       | Check valve, over-current protection | electrostatic spraying | 0.098 (2KPa)          | 10L/min                       | 5             | 57                      | PE                  | 450W×350D×820H  | 36          |
| P-SHB95T |           |                                 |              |          |                                      | SUS304                 |                       |                               | 5             |                         |                     | 450W×350D×820H  |             |

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