# WIGGENS
## THE MAGIC MOTION

THE MAGIC MOTION

# About
# WIGGENS

## What Does Wiggens Stand for?

**W**ide Product Range
**I**nternational Orientation
**G**reat Quality
**G**reat Service
**E**nergetic Team
**N**ew Technology
**S**olutions

Wiggens was established in 2005 with the goal of delivering the best laboratory equipment and service for reliable results. Since then Wiggens has been producing top-quality general laboratory equipment, analysis apparatus and chemical reaction and purification solutions. Our brand Wiggens stands for high quality, durability and remarkable performance.

Wiggens is your reliable laboratory companion and provides products that can be used in different kinds of laboratory environments. The Wiggens product range includes:

| | |
|---|---|
| ChemVak Pumps | ChemTron Reaction & Purification System |
| Wiggens General Lab Equipment | Reactor |
| Life Science Equipment | Rotary Evaporator |
| | Thin film evaporator |
| | Molecular distillation device |
| ChemTron Gas | |
| $H_2$ Generators | |
| $N_2$ Generators | ChemTron Analytics |
| $O_2$ Generators | Viscometer |
| Zero Air Generators | Titrator |
| | Density |

## ChemVak

ChemVak, a brand of Wiggens, is specialized in pump technology offering an extensive range of vacuum pumps, vacuum filtrat and liquid pumps for various applications, including chemical-resistant diaphragm pumps, oil-free pumps and rotary vane vacuum pumps, vacuum filtration equipment for a wide range of different applications. In addition, peristaltic pumps, piston Liquid pumps, solvent recovery systems and bio-suction systems are part of the product range.

## ChemTron

ChemTron is our product brand focusing on analysis apparatus, gas generators, chemical reaction solutions, chemical process separation and purification solutions, includeing efficient chemical separation tools-rotary evaporator, thin film evaporator, molecular distillation device, automatic distillation system, crystalization system etc...

# Thinking the unusual is usual for us.

## Innovation

New concepts and solutions
Customers as generator of ideas
Friendly and modern working atmosphere
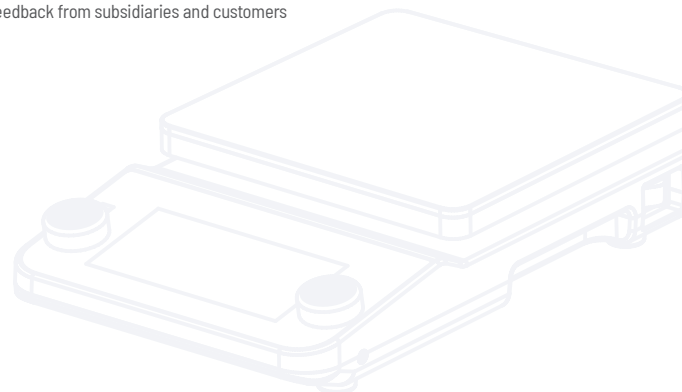
## Competence

Specialists in all teams
Expert knowledge and experience

## Quality

Reliability
ISO 9001
Strong After Sales Service
Made in Germany, China, Switzerland & USA

## Flexibility

Special Design, customized products
Constant feedback from subsidiaries and customers

The Magic Motion

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# Rotary Evaporator

## Laboratory Rotary Evaporator
Up to 2L

STRIKE 185
Rotary Evaporator

STRIKE 285
Rotary Evaporator

STRIKE 385
Rotary Evaporator

## Large Rotary Evaporator
6L、10L、20L

ST20
Pilot Scale Rotary Evaporator

ST20 CRE
Continuous Distallation Rotary Evaporator
Reliable PLC controlling system

ST20 ATEX
Explosion-Proof Rotary Evaporator

Atex

# WIGGENS
### The Magic Motion

# Rotary Evaporator
## Strike 185

Wiggens Strike series rotary evaporators are specially designed for standard distillations, concentration, purification, powder drying and separation of one or several solvents, with maximum safety, efficiency and ease of use. All functions can be viewed and monitored on the large and clear touch screen display, the parameters can be set by touch screen, the turning knob or using both the same time for fast adjustment, the user can reduce the process time by using the programs for automatic distillation with the integrated temperature controller, vacuum controller, timer and other special features.

## Features

### ● Sealing system

> The unique sealing system allows a perfect vacuum-tight and anti-corrosion

> With chemically resistant gasket, suitable for various samples

> This sealing system is a standard feature in all strike models and can be used with all types of glassware set.

### ● Mechanical structure

> With electric lifting device, adjustable stroke, and it can also stop at any position

> With powerful rotation motor, the speed up to 300 rpm

> Adjustable angle of the evaporating flask can be individually set according to your needs

### ● Glassware set

> All glassware sets are also available with a transparent plastic coating for added safety.

> Four types of condensers

> Different volumes of evaporating and receiving flasks

> Standard package includes one 1, 000 ml evaporating flask and one 1, 000 ml receiving flask

> Other accessories are optional, such as adapters, anti-sprinkling bubbles, vapor tubes…

### ● Vapor tube

> Evaporating flasks and vapor tubes come with a standard NS 29/32 joint

> PTFE sleeves provide a tight seal while preventing the glassware from sticking together

> Easy to disassemble, clean and replace the parts

### ● Thread locking design

> The easy clamp is made of highly durable materials, ensuring long-lasting performance

> The easy clamp can't get lost due to a direct connection to the drive

> The integrated screw thread allows an easy removal of the evaporation flasks

## ● Display and operation

> Touch screen with multi-language user interface

> Easy to operate using the turn & push knob

> Multifunction display, for bath temperature, stirring speed, vacuum, vapor and condenser cooling water temperature



## ● Function

> Custom method, one-click start, after booting to save the last settings

> Up to 9 steps programmable distillation conditions

> Timing function distillation: the distillation program will be closed automatically when the setting time is reached
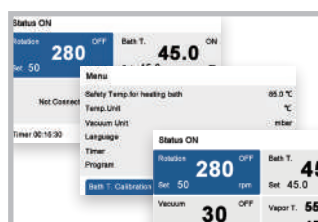


## ● Safety

> A safety heating bath with overheating and dry running protection

> In case of a power outage, the electric lifting device removes the flask from the heating bath to prevent the safety issues and potential thermal damage to your sample



## ● Heating bath

> With the same thermostat bath, you can choose the water or oil bath fluid in the MENU

> Two bath fluid modes: up to 85℃ with water;  up to 180℃ with oil

> High quality stainless steel (304) bath tank

> With high quality protective shell, prevent scald

> The position of the bath can be easily adjusted to fix the evaporation position for different volume evaporating flasks



## ● Optional accessories and peripheral modules

> Vacuum controller: the vacuum can be set and displayed directly on the touch screen

> Vapor temperature sensor with glass sleeve

> Vacuum pumps,  vacuum solvent recovery system, chillers, adapters and tubes

# WIGGENS
## The Magic Motion

# Rotary Evaporator
## STRIKE 285

The rotary evaporator STRIKE 285 combines excellent operating characteristics and high performance levels, all in an ergonomic design, offering excellent separation, concentration and purification solutions. All Functions can be viewed and monitored on the large and clear Touch Screen display, the parameters can be set by touch screen, the turning knob or using both the same time for fast adjustment, the user can reduce the process time by using the programs for automatic distillation with the integrated temperature controller, vacuum controller, timer and other special features.

The evaporation flask is connected to vapor tube via coupling ring for easy fixing and removal of the flask, and the flask ejector design allows you to remove the sticking flasks from vapor tube in easy way by just turning the ejector

## Features

### ● Sealing system

> The unique sealing system allows a perfect vacuum-tight and anti-corrosion

> With chemically resistant gasket, suitable for various samples

> This sealing system is a standard feature in all strike models and can be used with all types of glassware sets

### ● Mechanical structure

> With electric lifting device, adjustable stroke, and it can also stop at any position

> With powerful rotation motor, the speed up to 280 rpm

> Adjustable angle of the evaporating flask can be individually set according to your needs

### ● Glassware set

> All glassware sets are also available with a transparent plastic coating for added safety.

> Four types of condensers

> Different volumes of evaporating and receiving flasks

> Standard package includes one 1,000 ml evaporating flask and one 1,000 ml receiving flask

> Other accessories are optional, such as adapters, anti-sprinkling bubbles, vapor tubes…

### ● Vapor tube

> Evaporating flasks and vapor tubes come with a standard NS 29/32 joint

> PTFE sleeves provide a tight seal while preventing the glassware from sticking together

> Easy to disassemble, clean and replace the parts

### ● Thread locking design

> With screw thread locking function, screw cap is fixed by clip spring to prevent loss

> The screw cap can be removed for installing other evaporating flasks with different connectors

> Made of corrosion-resistant material

## ● Display and operation

> Touch screen with multi-language user interface

> Easy to operate using the turn & push knob

> Multifunction display, for bath temperature, rotation speed, vacuum, vapor and condenser cooling water temperature



## ● Function

> Custom method, one-click start, after booting to save the last settings

> Up to 9 steps programmable distillation conditions

> Timing function distillation: The distillation program will be closed automatically when the setting time is reached
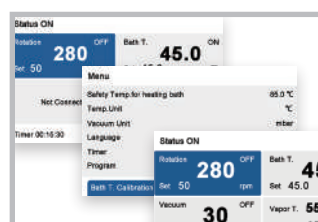


## ● Safety

> A safety heating bath with overheating and dry running protection

> In case of a power outage, electric lifting device remove the flask from the heating bath to prevent the safety issues and potential thermal damage to your sample

> The shield is standard for all models. It can be removed by the operator and fitted beside the instrument



## ● Heating bath

> With the same thermostat bath, you can choose the water or oil bath fluid in the MENU

> Two bath fluid modes:up to 85℃ with water, up to 185℃ with oil

> High strength stamped inner bath and anti-corrosion PTFE coating

> With high quality protective shell, prevent scald

> The position of the bath can be easily adjusted to fix the evaporation position for different volume evaporating flasks



## ● Optional accessories and peripheral modules

> Vacuum controller: the vacuum can be set and displayed directly on the touch screen

> Vapor temperature sensor with glass sleeve

> Vacuum pumps, vacuum solvent recovery system, chillers, adapters and tubes

# Rotary Evaporator
## Strike 185 / 285

## Display and operation

### ① Main interface

Click the touch screen, select the setting icon, set the parameters through the knob, press the knob to save the value
> Rotation switch and speed knob
> Bath temperature switch and settings
> Vacuum switch and settings
> Vapor temperature display, when connected to a vapor temperature sensor
> Cooling temperature display, when connected to a cooling temperature sensor

### ② Menu

> Safety temperature settings for the bath
> Temperature unit
> Vaccum unit
> Delta of vaccum
> Language
> Timer

### ③ Program

All the parameters:
Up to 9 steps programmable distillation conditions including the bath temperature, rotation speed, vacuum, vacuum delta and can be set separately in each step

### ④ Bath temperature calibration ( two points )

### ⑤ Vacuum calibration ( two points )
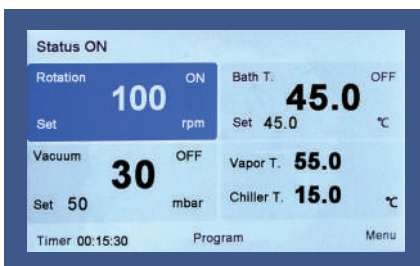
During the experiment, all information can be displayed on the same screen



| Status ON | | | |
|---|---|---|---|
| Rotation | ON | Bath T. | OFF |
| **100** | | **45.0** | |
| Set | rpm | Set 45.0 | ℃ |
| Vacuum | OFF | Vapor T. **55.0** | |
| **30** | | | |
| Set 50 | mbar | Chiller T. **15.0** | ℃ |
| Timer 00:15:30 | | Program | Menu |

①

| Menu | |
|---|---|
| Safety Temp. for heating bath | 200.0 ℃ |
| Temp. Unit | ℃ |
| Vacuum Unit | mbar |
| Delta | 2 mbar |
| Language | Eng |
| Timer | OFF |
| Program | OFF |
| Bath T. Calibration    Vacuum Calibration | Esc |

②

| Bath T. Calibration | |
|---|---|
| Bath fluid | |
| No.1 | |
| Temp. calibration | 12.9 ℃ |
| Actual value | 0.0 ℃ |
| No.2 | |
| Temp. calibration | 0.0 ℃ |
| Actual value | 0.0 ℃ |
| OK | Esc |

④

| Program | | |
|---|---|---|
| Step | Off | 1 |
| Rotary speed | Off | 41 rpm |
| Heating bath | Off | 42.3 ℃ |
| Vacuum | Off | 251 mbar |
| Delta Vacuum | | 2 mbar |
| Timer | | 12 H 00 M |
| Back | Next | Esc |

③

| Vacuum Calibration | |
|---|---|
| No.1 | |
| Vacuum Calibration | 0 mbar |
| Actual value | 0 mbar |
| No.2 | |
| Vacuum Calibration | 0 mbar |
| Actual value | 0 mbar |
| OK | Esc |

⑤

# BEST PERFORMANCE IN SEPARATION & PURIFICATION

From universities to research institutes, laboratories around the world require high-performance rotary evaporators for demanding applications. The new Strike 385 has been specially developed by Wiggens, incorporating pioneering technologies to meet these requirements, and is manufactured to the highest quality standards.

The new Strike 385 is available with a heating bath, rotational device, vacuum system, as well as vapor and cooling temperature monitoring.

The new Strike 385 is intelligent. Operate your Strike 385 intuitively via the touch screen. Its large display offers programming options and is exceptionally easy to read.

Contact us for more information
or quotation on new version of Strike 385

www.wiggens.com

## Specifications

| Model | STRIKE 185 | STRIKE 285 | STRIKE 385 |
|---|---|---|---|
| Type of condenser | 4 types: Diagonal condenser / Vertical condenser (Steam rises or steam sinks) / Dry ice condenser | | |
| Plastic coated saftey glassware | Possible for condenser and receiving flask | | |
| Condensing area | 1500 cm$^2$ (standard) / 2000 cm$^2$(optional) | | |
| Available evaporation flasks | 50/100/250/500/1000/2000/3000 ml | 50/100/250/500/1000/2000 ml | 50/100/250/500/1000/2000 ml |
| Available receiving flasks | 250/500/1000/2000 ml | 250/500/1000/2000 ml | 250/500/1000/2000 ml |
| Motor | DC | DC | AC |
| Speed range | 20-300 rpm | 20-300 rpm | 20-280 rpm |
| Lifting system | Electric drive, the evaporation flask leaves the heating bath automatically after power failure | | |
| Stroke | 130mm, adjustable, and can be stopped at any position | | |
| Bath temperature range | Up to 180 ℃ | Up to 180 ℃ | Up to 185 ℃ |
| Heating power | 1400 W | 1400 W | 1400 W |
| Set temperature resolution | 0.1 ℃ | 0.1 ℃ | 0.1 ℃ |
| Bath volume | 5L (round opening) | 5L (pear-shaped opening) | 5L (pear-shaped opening) |
| Material of heating bath | Stainless steel | PTFE coated aluminum | PTFE coated aluminum |
| Vacuum controller | ST280 (optional) | ST280 (optional) | ST280 (optional) |
| Vacuum range | 1~1014 mbar (ultimate vacuum depends on the performance of the vacuum pump) | | |
| Vacuum accuracy | 1 mbar | 1 mbar | 1 mbar |
| Vapor temperature sensor | Optional | Optional | Optional |
| Cooling temperature senor | Optional | Optional | Optional |
| Timer | Yes | Yes | Yes |
| Storage method | None | None | 21 |
| Distillation procedure | 1x9 steps | 1x9 steps | 21x5 steps (manually) 21x5 steps (Automatically) |
| Vapor temperature detection | Yes (vapor temp. sensor is needed) | Yes (vapor temp. sensor is needed) | Yes (vapor temp. sensor is needed) |
| Vapor temperature protection | No | No | Vapor range / Vapor min / Vapor max |
| Dimensions | 790x410x700mm (M1/M4) 650x410x610mm (M2/M5) 650x410x890mm (M3/M6 ) 650x410x890mm (M7) | 690x700x430mm (vertical version) 690x790x430mm (slanting version) | 790x410x700mm (M1/M4) 650x410x610mm (M2/M5) 650x410x890mm (M3/M6 ) 650x410x890mm (M7) |
| Weight | 30 kg | 26 kg | 30 kg |
| Permissible ambient temperature | 5~40 ℃ | 5~40 ℃ | 5~40 ℃ |
| Permissible relative humidity | 80% | 80% | 80% |
| Protection class | IP20 | — | IP20 |
| RS 232 interface | Yes, for firmware update only | Yes, for firmware update only | Yes, USB disk, PC software |
| Material of cover | Powder coated stainless steel | Plastic | Powder coated stainless steel |
| Power supply | 230VAC, 50/60Hz | 230VAC, 50/60Hz | 230VAC, 50/60Hz |

## Models of STRIKE 185

STRIKE 185 M1 / M4  STRIKE 185 M2 / M5  STRIKE 185 M3 / M6  STRIKE 185 M7

Best-seller!

| | Model | Order No. | Model | Order No. |
|---|---|---|---|---|
| | With standard glassware | | With plastic coated safety glassware | |
| Diagonal condenser | Strike 185 M1 | SQED148113 | Strike 185 M4 | SQED148419 |
| Vertical condenser (steam sinks) | Strike 185 M2 | SQED148112 | Strike 185 M5 | SQED148418 |
| Vertical condenser (steam rises) | Strike 185 M3 | SQED148111 | Strike 185 M6 | SQED148417 |
| Dry ice condenser | | | Strike 185 M7 | SQED148420 |

## Models of STRIKE 285

STRIKE 285 M1 / M4  STRIKE 285 M2 / M5  STRIKE 285 M3 / M6  STRIKE 285 M7

| | Model | Order No. | Model | Order No. |
|---|---|---|---|---|
| | With standard glassware | | With plastic coated safety glassware | |
| Diagonal condenser | STRIKE 285 M1 | SQED158113 | STRIKE 285 M4 | SQED158419 |
| Vertical condenser (steam sinks) | STRIKE 285 M2 | SQED158112 | STRIKE 285 M5 | SQED158418 |
| Vertical condenser (steam rises) | STRIKE 285 M3 | SQED158111 | STRIKE 285 M6 | SQED158417 |
| Dry ice condenser | | | STRIKE 285 M7 | SQED158420 |

## Models of STRIKE 385

STRIKE 385 M3 / M6

| | Model | Order No. | Model | Order No. |
|---|---|---|---|---|
| | With standard glassware | | With plastic coated safety glassware | |
| Diagonal condenser | Strike 385 M1 | SQED160113 | Strike 385 M4 | SQED160419 |
| Vertical condenser (steam sinks) | Strike 385 M2 | SQED160112 | Strike 385 M5 | SQED160418 |
| Vertical condenser (steam rises) | Strike 385 M3 | SQED160111 | Strike 385 M6 | SQED160417 |
| Dry ice condenser | | | Strike 385 M7 | SQED160420 |

Standard delivery: Basic unit Strike, Heating bath, Guard shield, Condenser, 1L Evaporation flask, 1L Receving flask and tube set

# Five steps to building up your rotary evaporator

## Step 1



STRIKE 185 / 285 / 385
Slanting glassware

STRIKE 185 / 285 / 385
Vertical glassware (Vapor sinking)

Best-seller!

STRIKE 185 / 285 / 385
Vertical glassware (Vapor rising)

### Rotary evaporator STRIKE 185 / 285 / 385

> Three sets of glassware available
> Two kinds of glass materials available: Borosilicate glass / Borosilicate glass with safety coating
> Evaporating flasks: 1000ml (optional 50~2000ml)
> Collecting flasks:1000ml (optional 250~2000ml)

## Step 2



Recirculating chiller
-10 ~ +40℃

Recirculating chiller
-20 ~ +40℃

### Chiller
* Various chillers available for different applications

|  | 0.5-1 L | up to 2 L | |
|---|---|---|---|
| STRIKE 185 / 285 / 385 | 1 | 2 | 3-4 |
| Chiller | FL300 | F500 FL601 | F1000 FL1201 |

## Step 3



C420 / C520
Vacuum pump

CSH420 / CSH520
Solvent Recovery System

CSC420 / CSC520
Vacuum solvent recovery system

### Vacuum system
Different vacuum systems are optional according to different experimental requirements

|  | C series | CSH series | CSC series |
|---|---|---|---|
| Vacuum pump | ● | ● | ● |
| Vacuum controller | ○ | ○ | ● |
| Condensers | ○ | ● | ● |
| Separator | ○ | ● | ● |
| Collecting flasks | ○ | ● | ● |

## Step 4



ST280
Vacuum controller

DVR480
Vacuum controller

### Vacuum controller

> If a vacuum controller is selected, different vacuum can be controlled
> ST280 is a mounting vacuum control accessory for Wiggens rotary evaporator, the vacuum setting and display are through the touch screen of rotary evaporator
> DVR480 can set and display the vacuum value directly.
> CSC Vacuum solvent recovery system series already contain the vacuum controller.

## Step 5



Possible to operate according to vapor temperature (if optional probe is present)

### Temperature sensor

> Possible to operate according to vapor temperature (if optional probe is present)
> STRIKE285 can also display cooling water temperature (if optional probe is present)
> Glass temperature sensor, corrosion resistant
> Vapor temperature can be displayed on the screen of rotary evaporators

# Accessories

## Chemical Resistant Pump

Chemical resistant diaphragm pump with double stage

| Model | A410 | A510 | C410 | C510 | C520 | C610 |
|---|---|---|---|---|---|---|
| Order No. | | | 169410 | 169510 | 169520 | 169610 |
| Max.power( W ) | 95 | 245 | 95 | 245 | 150 | 245 |
| Max.vacuum (mbar) | 13 | 8 | 13 | 8 | 8 | 2-4 |
| Max.Flow Rate (l/min) | 25 | 40 | 25 | 34 | 50 | 37 |
| Outlet  (mm) | 10 | 10 | 10 | 10 | 10 | 10 |

The above are the specifications of 220V models. Suitable for Strike 185/285/385

A Pump

C Pump

## Solvent recovery system, *without vacuum control*

Included Chemical resistant diaphragm pump, glassware and support stand

| Model | CSH410 | CSH510 | CSH520 |
|---|---|---|---|
| Order No. | 900512 | 900513 | 900515 |
| Power (W) | 95 | 245 | 150 |
| Ultimate Vacuum (mbar) | 13 | 8 | 8 |
| Max. Flow Rate (l/min) | 25 | 34 | 50 |
| Outlet Size (outer diameter in mm) | 10 | 10 | 10 |

The above are the specifications of 220V models. Suitable for Strike 185/285/385

## Solvent recovery system, *with vacuum control*

Fully controllable stand-alone vacuum pump including vacuum controller

| Model | CSC 410 | CSC 510 | CSC 520 |
|---|---|---|---|
| Order No. | 900522 | 900523 | 900525 |
| Power (W) | 95 | 245 | 150 |
| Ultimate Vacuum (mbar) | 13 | 8 | 8 |
| Max. Flow Rate (l/min) | 25 | 34 | 50 |
| Outlet Size (outer diameter in mm) | 10 | 10 | 10 |

The above are the specifications of 220V models. Suitable for Strike 185/285/385

## Solvent recovery system, *with vacuum control*

Fully controllable stand-alone vacuum pump including vacuum controller

| Model | CSP410 | CSP510 | CSP520 |
|---|---|---|---|
| Order No. | 900542 | 900543 | 900545 |
| Power (W) | 95 | 245 | 150 |
| Ultimate Vacuum (mbar) | 13 | 8 | 8 |
| Max. Flow Rate (l/min) | 25 | 34 | 50 |
| Outlet Size (outer diameter in mm) | 10 | 10 | 10 |

The above are the specifications of 220V models, Suitable for  Strike 185/285/385

## Vacuum controller

ST280 is a mounting vacuum control accessory for Wiggens rotary evaporator, the vacuum setting and display are through the touch screen of rotary evaporator

For accurate vacuum control of Strike 185 Strike 285 and Strike 385 or valve regulated vacuum pumps.

Vacuum reange: 1~1014 mbar

Vacuum accuracy: 1 mbar

| Description | Model | Order No. |
|---|---|---|
| Vacuum controler of Strike 185 /285 /385 | ST280 | SQEF059422 |

## Compact recirculating coolers

The compact recirculating coolers in the F Series are economic models for routine applications in laboratories. The instruments cool in a temperature range of -10 or 0 ℃ to +40 ℃ and achieve a stability of ±0.5℃ .

| Model | F250 | F500 | F1000 |
|---|---|---|---|
| Order No. | 9620025 | 9620050 | 9620100 |
| Working temperature range (℃ ) | -10...+40 | 0...+40 | 0...+40 |
| Temperature stability (℃ ) | ±0.5 | ±0.5 | ±0.5 |
| Cooling capacity (kW) | 0.25 | 0.5 | 1.0 |
| Pump capacity flow pressure (l/min) | 15 | 24 | 23 |
| Pump capacity pressure (bar) | 0.35 | 0.5 | 1.0 |

## FL Recirculating coolers

The FL series offers a new generation of chillers for routine cooling applications within the laboratory and industry. The temperature stability of the PID control is ±0.5℃ . All units can easily be cleaned and are provided with a splash water proof keypad with LED temperature indication. On the front of the units there is an RS232 interface as well as an alarm shutdown. The filling port is easily accessible placed on the top under a lift-up cover.

| Model | FL300 | FL601 | FL1201 |
|---|---|---|---|
| Order No. | 9660003 | 9661006 | 9661012 |
| Working temperature range (℃ ) | -20...+40 | -20...+40 | -20...+40 |
| Temperature stability (℃ ) | ±0.5 | ±0.5 | ±0.5 |
| Cooling capacity (kW) | 0.3 | 0.6 | 1.2 |
| Pump capacity flow pressure (l/min) | 15 | 23 | 23 |
| Pump capacity pressure (bar) | 0.35 | 1.0 | 1.0 |

## Tubing and clamps

| Description | Order No. |
|---|---|
| Vacuum tube, Viton, OD=14mm, ID=8mm | 168001-01 |
| Vacuum tube, PTFE, OD=12mm, ID=10mm | 016.1712.01 |
| Cooling water tube | 8930008 |
| 2 Tube clamps, size 1, tubing 8 mm inner dia. | 8970480 |
| 2 Tube clamps, size 2, tubing 10~12 mm inner dia. | 8970481 |

## Glassware sets

Included condenser, evaporation flask and receiving flask in each glassware set, the ventilation and replenishment valve, clamp and adapter

GS1 / GS4

GS2 / GS5

GS3 / GS6

GS7

| Model | Condenser | Evaporation flask | Receiving flask | Order No. |
|-------|-----------|-------------------|-----------------|-----------|
| GS1 | SQEF059799 | SQFY015937 | SQUA015796 | SQED159113GS |
| GS2 | SQEF059796 | SQFY015937 | SQUA015796 | SQED159112GS |
| GS3 | SQEF059794 | SQFY015937 | SQUA015796 | SQED159111GS |
| GS4 | SQEF059798 | SQFY015937 | SQUA015789 | SQED159419GS |
| GS5 | SQEF059797 | SQFY015937 | SQUA015789 | SQED159418GS |
| GS6 | SQEF059792 | SQFY015937 | SQUA015789 | SQED159417GS |
| GS7 | SQEF059793 | SQFY015937 | SQUA015789 | SQED159420GS |

## Condensers

Made of high quality borosilicate glass or plastic coated saftey glassware

| Type of condenser | Order No. | Order No. |
|-------------------|-----------|-----------|
|  | Standard | Coated |
| Diagonal condenser | SQEF059799 | SQEF059798 |
| Vertical condenser (steam sinks) | SQEF059796 | SQEF059797 |
| Vertical condenser (steam rises) ,1500cm2 | SQEF059794 | SQEF059792 |
| Vertical condenser (steam rises), 2000cm2 | SQEF059894 | SQEF059892 |
| Dry ice condenser |  | SQEF059793 |

Diagonal

Vertical (steam sinks)

Vertical (steam rises)

Dry ice

## Evaporation flasks

The flask is made of high quality borosilicate glass

| Volume | Order No. | Order No. |
|--------|-----------|-----------|
|  | NS 29/32 | NS 24/40 |
| 50 ml | SQFY051171 | SQFY051181 |
| 100 ml | SQFY015948 | SQFY015958 |
| 250 ml | SQFY015949 | SQFY015959 |
| 500 ml | SQFY015941 | SQFY015951 |
| 1000 ml | SQFY015937 | SQFY015947 |
| 2000 ml | SQFY015946 | SQFY015956 |
| 3000 ml (for Strike 185 only) | SQFY015947 | SQFY015957 |

## Powder flasks

The flask is made of high quality borosilicate glass

| Volume | Order No. | Order No. |
|---|---|---|
| | NS 29/32 | NS 24/40 |
| 500 ml | SQFY146060 | SQFY146070 |
| 1000 ml | SQFY146062 | SQFY146072 |
| 2000 ml | SQFY146061 | SQFY146071 |
| 3000 ml (for Strike 185 / 385 only) | SQFY146063 | SQFY146073 |

## Receiving flasks, *Spherical joint 35/20*

The flask is made of high quality borosilicate glass or plastic coated saftey glassware

| Volume | Order No. | Order No. |
|---|---|---|
| | Standard | Coated |
| 250 ml | SQUA015797 | SQUA015788 |
| 500 ml | SQUA015798 | SQUA015791 |
| 1000 ml | SQUA015796 | SQUA015789 |
| 2000 ml | SQUA015792 | SQUA015790 |
| Accessories | | |
| Spherical joint clamp, 35/20, stainless steel | | FLMM016694 |

## Spider

Made of high quality borosilicate glass

| Inner joint | Outer joint | Order No. |
|---|---|---|
| NS 29/32 | 3xNS 24/29 | SQUA162436 |
| NS 29/32 | 4xNS 24/29 | SQUA162437 |
| NS 29/32 | 3xNS 29/32 | SQUA162434 |
| NS 29/32 | 4xNS 29/32 | SQUA162435 |
| Accessories | | |
| Joint clip, PTFE, 24/29 | | JRS-7596-24 |
| Joint clip, PTFE, 29/32 | | JRS-7596-29 |

## Foam brake

The rising foam produces bursts in the glass ball extension. This stops foam from entering the receiving flask. Made of high quality borosilicate glass, the maximum recommended load is 1.5 kg

| Bubble volume | Top Outer | Bottom Inner | Order No. |
|---|---|---|---|
| 50 ml | NS 29/32 | NS 29/32 | SQFW126450 |
| 100 ml | NS 29/32 | NS 29/32 | SQFW126451 |
| 100 ml | NS 29/32 | NS 24/29 | SQFW126452 |
| 250 ml | NS 29/32 | NS 29/32 | SQFW126453 |
| 250 ml | NS 29/32 | NS 24/29 | SQFW126454 |

## Vapor temperature sensor

Vapor temperature can be dispalyed on the screen of Strike 185/285/385 when the vapor temperature sensor is connected. But only vapor temperature can be connected with Strike 385, in addition to monitoring the vapor temperature, safety vapor temperature can be set (vapor max./vapor min./vapor range)

| Description | Order No. |
|---|---|
| Vapor temperature sensor, for Strike 185/285/385. With glass dip tube | SQEF059420 |

## Cooling water temperature sensor

Cooling water temperature can be dispalyed on the screen of Strike 185 / 285 when the following temperature sensor is connected, not for Strike 385

| Description | Order No. |
|---|---|
| M+R in-lin temperature sensor, for Strike 185/285 | SQEF059424 |

## Spare vapor tube, PTFE filling tube, Sealing gasket

| Description | Order No. |
|---|---|
| Glass vapor tube, 29/32 | SQEF082902 |
| Glass vapor tube, 24/40 | SQEF087532 |
| PTFE filling tube | BQRY024329 |
| Sealing gasket | VAJS285022 |

## Ventilation and Replenishment Valve

Used for release the vacuum and refilling during the process

| Description | Order No. |
|---|---|
| Ventilation and replenishment valve | SQEF162449 |

## PTFE sleeves

PTFE sleeves are for use with glass adapters to prevent the joint from freezing, as well as allow ease of removal for ground glass joints. These sleeves are sturdy and reusable.

| Joint size | Order No. |
|---|---|
| NS 29/32 | KAMY011542 |
| NS 24/29 | KAMY011544 |
| NS 19/22 | KAMY011546 |
| NS 14/23 | KAMY011547 |

## Spherical joint clamp

| Description | Order No. |
|---|---|
| Spherical joint clamp, 35/20, stainless steel | FLMM016694 |

## Bath fluid

Thermal H20S is a silicone-based bath fluid, working temperature: 0 ℃ ... +220 ℃
- Additional stabilizer
- Excellent heat conductivity
- Minimum odor
- Long fluid life

| Description | Order No. |
|---|---|
| Silicone-based bath fluid Thermal H20S, 10L | 8940108 |
| Silicone-based bath fluid Thermal H20S, 5L | 8940109 |

## Helpful Hints for rotary evaporator

The graph shows the relationship between the pressure and boiling temperature of a selection of solvents.

The temperature difference between the vapor temperature and the cooling medium shoud be at 20℃ to result in sufficient condensation.

The temperature difference between the heating bath and vapor temperature should be at 20K to result in a sufficient Distillation reat (dT)

i.e.: Set a vacuum for a boiling point at 40℃, set the heating bath temperature at 60℃ .

## Solvent data

| Solvent | Total formula | Boiling point (℃ ) at Atm. | Vacuum for a boiling at 40℃ | |
|---|---|---|---|---|
| Dichloroethane | $CH_2Cl_2$ | 40.7 | Atm. | Atm. |
| Diethyl ether | $C_4H_{10}O$ | 34.6 | Atm. | Atm. |
| Pentane | $C_5H_{12}$ | 36.1 | Atm. | Atm. |
| 1,2 Dichloroethane(trans) | $C_2H_2Cl_2$ | 47.8 | 751 | 563 |
| Acetone | $C_3H_6O$ | 56.5 | 556 | 387 |
| Trichloromethane (chloroform) | $CHCl_3$ | 61.3 | 474 | 356 |
| Diisopropyl ether | $C_6H_{14}O$ | 67.5 | 375 | 281 |
| Tetrahydrofuran (THF) | $C_4H_8O$ | 66 | 357 | 268 |
| Methanol | $CH_4O$ | 64.7 | 337 | 253 |
| Hexane | $C_6H_{14}$ | 68.7 | 335 | 251 |
| 1,1,1-Trichloroethane | $C_2H_3Cl_3$ | 74.1 | 300 | 225 |
| Tetrachloroethylene | $CCl_4$ | 76.7 | 271 | 203 |
| 2-Butanone | $C_4H_8O$ | 79.6 | 243 | 182 |
| Ethyl acetate | $C_4H_8O_2$ | 77.1 | 240 | 180 |
| Benzene | $C_6H_6$ | 80.1 | 236 | 177 |
| Cyclohexane | $C_6H_{12}$ | 80.7 | 235 | 176 |
| Acetonitrile | $C_2H_3N$ | 81.8 | 230 | 173 |
| 1,2 Dichloroethane | $C_2H_4Cl_2$ | 82.4 | 210 | 158 |
| Trichloroethylene | $C_2HCl_3$ | 86.7 | 183 | 137 |

| Solvent | Total formula | Boiling point (℃ ) at Atm. | Vacuum for a boiling at 40℃ | |
|---|---|---|---|---|
| 1,2 Dichloroethane(cis) | $C_2H_2Cl_2$ | 59 | 479 | 134 |
| Ethanol | $C_2H_6O$ | 78.4 | 175 | 131 |
| Isopropyl alcohol | $C_3H_8O$ | 82.5 | 137 | 103 |
| Tert.-butanol | $C_4H_{10}O$ | 82.9 | 130 | 98 |
| Heptane | $C_7H_{16}$ | 98.4 | 120 | 90 |
| 1,4-Dioxane | $C_4H_8O_2$ | 101.1 | 107 | 80 |
| Toluene | $C_7H_8$ | 110.6 | 77 | 58 |
| Water | $H_2O$ | 100 | 72 | 54 |
| N-propyl alcohol | $C_3H_8O$ | 97.8 | 67 | 50 |
| Tetrachloroethylene | $C_2Cl_4$ | 120.8 | 53 | 40 |
| Chlorobenzene | $C_6H_5Cl$ | 132.2 | 36 | 27 |
| 1,1,2,2-Tetrachloroethane | $C_2H_2Cl_4$ | 145.9 | 35 | 26 |
| Xylene (isomers mixture) | $C_8H_{10}$ | 137-143 | 25 | 19 |
| N-butanol | $C_4H_{10}O$ | 117.5 | 25 | 19 |
| Isoamyl alcohol | $C_5H_{12}O$ | 130.6 | 14 | 11 |
| Pentachlorinated Ethane | $C_2HCl_5$ | 160.5 | 13 | 10 |
| Dimethyl formamide | $C_3H_7NO$ | 153 | 11 | 8 |
| Amyl alcohol | $C_5H_{12}O$ | 137.8 | 11 | 8 |

# ST20

## The highest performance proposal for your evaporation processes!

### 3 Options Available

* Standard Rotary Evaporator
* ATEX Version
* Continuous Rotary Evaporator

Each option is available in 6L, 10L, and 20L configurations.

### Following on Industrial Relation System Design Concept

Vertical glassware (Vapor sinking)

# ST20 - Large-capacity rotary evaporator

ST20 has both industrial and laboratory rotary evaporation features. It meets all the process needs by using borosilicate glass and PTFE permitting aggressive substance treatment. The plant allows for evaporation of volatile components ( low boiling point ) so as to separate them from the residual ones ( high boiling point) due  to the difference of their boiling points. Easy and totally safe startup, check and stop procedures of the process: ST20 is provided with a transparent protection shield for the evaporation flask and the thermostatic bath.

① Heating bath
The heating bath is lifted by means of a hydraulic system which, in case of power failure, goes automatically down to avoid fluid overheating and bumping.

② Sealing system
A great feature of ST20 is its sealing system made of self-lubricating material which guarantees perfect vacuum tightness. This sealing system does not require any maintenance.
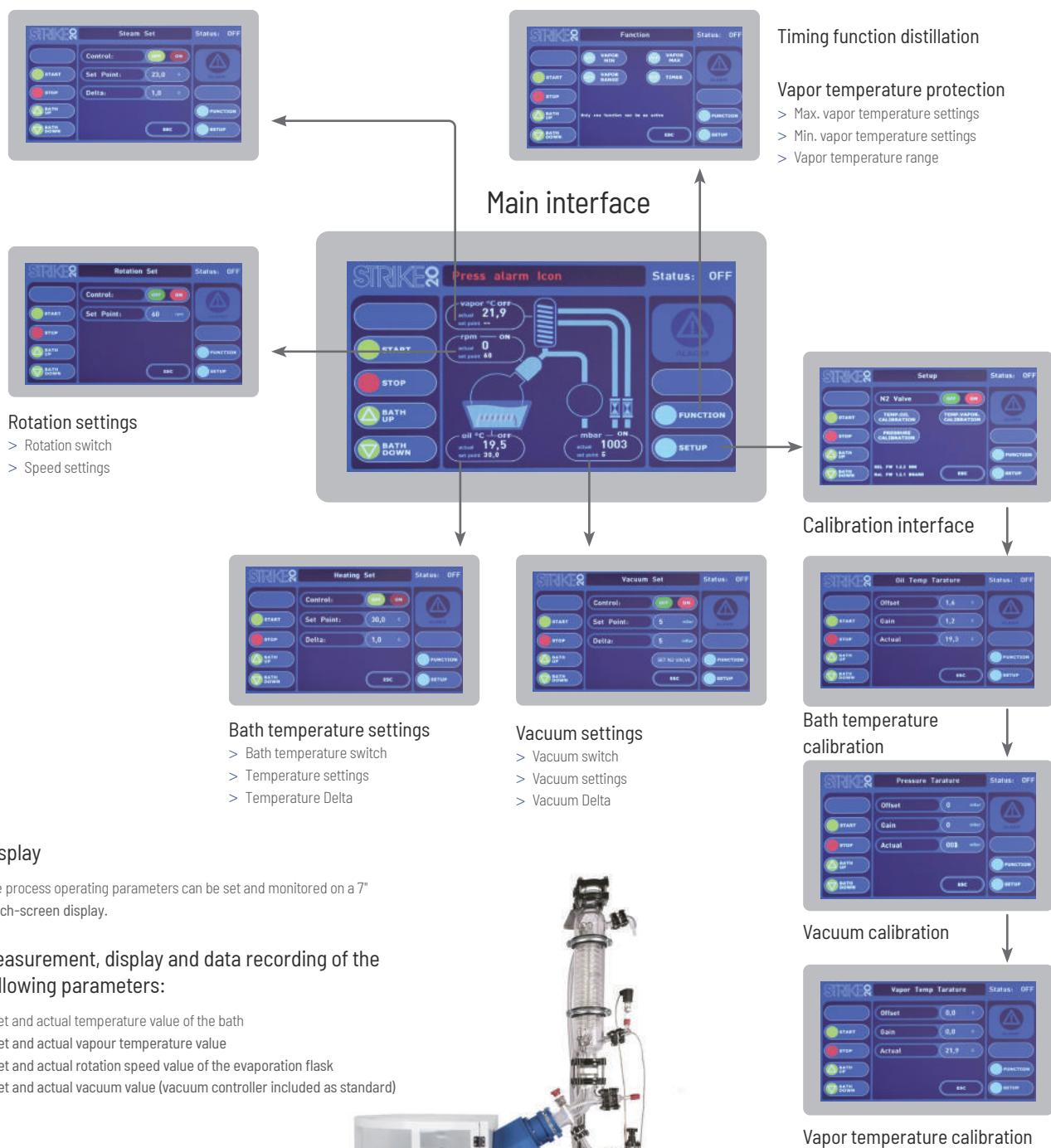
③ Pressure and temperature
ST20 runs under atmospheric pressure conditions or vacuum. It guarantees perfect vacuum tightness up to 5 mbar. The perfect sealing up to 5 mbar allows for reduced process time due to low evaporation temperature of the fluid. The thermostatic bath can run both with water and oil, and the maximum temperature can reach 150℃ ; it also permits evaporation of any solvent under atmospheric pressure conditions. The heating bath is supplied with 3KW electric heaters.

④ Measurement, visual display and recording of the following parameters:
> Bath pre-set and real temperature
> Vapor pre-set and real temperature
> Pre-set and real rotation speed
> Pre-set and real vacuum reading and setting

# Display and operation



Timing function distillation

Vapor temperature protection
> Max. vapor temperature settings
> Min. vapor temperature settings
> Vapor temperature range

## Main interface



Rotation settings
> Rotation switch
> Speed settings



Calibration interface

Bath temperature settings
> Bath temperature switch
> Temperature settings
> Temperature Delta

Vacuum settings
> Vacuum switch
> Vacuum settings
> Vacuum Delta

Bath temperature calibration

Vacuum calibration

Vapor temperature calibration

## Display

The process operating parameters can be set and monitored on a 7" touch-screen display.

## Measurement, display and data recording of the following parameters:

- Set and actual temperature value of the bath
- Set and actual vapour temperature value
- Set and actual rotation speed value of the evaporation flask
- Set and actual vacuum value (vacuum controller included as standard)

ST20

Vertical glassware (Vapor sinking)

# ST20 CRE

## Continuous distillation rotary evaporator ST20 CRE
### Reliable PLC controlling system

All standard functions of the ST20 are included, in addition to an automatic continuous distillation feature.

## ● Parameter

> Bath temperature : RT+5~+150°C

> Rotation speed : 10~150rpm

> Vacuum : 8mbar

## ● Display

> Touch screen

> Bath temperature, speed, vacuum, vapor temperature and safety features

> The distillation mode can be switched by one button

## ● Process mode

> Batch distillation (Conventional mode)

> Continuous distillation (Cascade mode)

## ● Glassware

> Vapor sinking type

> Vapor rising type

> Evaporating flask : 6/10/20L

> Collection flask : 2x6L or 1x10L

## ● Liquid level sensors

> Monitoring the liquid level in evaporation flasks

> Monitoring the liquid level in collection flasks

> Low level alarm for the reservoir of solutions which have to be evaporated;

> High level alarm for the reservoir of the distilled solvent

## ● Solenoid valve set

> Vacuum control valve

> Nitrogen gas valve to have inert atmosphere protection for sample

> Refill valve

> Discharge valve

## ● Safety

> Over temperature protection

> Automatic liquid level monitoring and alarm function

> Standard protective cover

## Order information of ST20 CRE

| Order No. | Model | Configuration |
|---|---|---|
| SQFU079747 | ST20 CRE | ST20 CRE descending glassware (Vapor sinking), 20L evaporating flask, 1x10L collecting flask, 4 x Liquid level sensors, Solenoid valve set |
| SQFU079745 | ST20 CRE | ST20 CRE reflux glassware (Vapor rising), 20L evaporating flask 1x10L collecting flask, 4 x Liquid level sensors, Solenoid valve set |

# WIGGENS
## The Magic Motion

# ST20 ATEX

## Large-Capacity rotary evaporator
## Explosion-proof type - ST20 ATEX

ATEX version for process and environment safety

For more detailed information, please contact WIGGNES

## Order information

| Order No. | Model | Configuration |
|-----------|-------|---------------|
| SQFU079757 | ST20 ATEX | ST20 ATEX descending glassware (Vapor sinking), 20L evaporating flask 1x10L collecting flask |
| SQFU079758 | ST20 ATEX | ST20 ATEX descending glassware (Vapor sinking), 20L evaporating flask, 2x6L collecting flasks |
| SQFU079755 | ST20 ATEX | ST20 ATEX reflux glassware (Vapor rising), 20L evaporating flask 1x10L collecting flask |
| SQFU079756 | ST20 ATEX | ST20 ATEX reflux glassware (Vapor rising), 20L evaporating flask, 2x6L collecting flasks |

## Specifications

| Model | ST20 | ST20 ATEX | ST20 CRE |
|---|---|---|---|
| | Batch processing | Batch processing | Batch or Continuous processing |
| Type of condenser | 2 types: Vertical condenser (Steam rises or steam sinks) | | |
| Plastic coated saftey glassware | Possible for condenser and receiving flask | | |
| Condensing area | 0.6 m2 (standard) / 1.2 m2 (optional) | | |
| Available evaporation flasks | 6/10/20 L | 6/10/20 L | 6/10/20 L |
| Available receiving flasks | 1x10L or 2x6L | 1x10L or 2x6L | 1x10L |
| Motor | AC | AC, EX | AC |
| Speed range | 10~150 rpm | 10~150 rpm | 10~150 rpm |
| Lifting system | Electric drive | Pneumatic drive | Electric drive |
| Stroke | 190mm | 190mm | 225mm |
| Max. bath temperature | 150 ℃ (standard) 180 ℃ (option) | 150 ℃ , EX | 150 ℃ (standard) 180 ℃ (option) |
| Heating power | 3 kW | 3 kW | 3 kW |
| Set temperature resolution | 0.1 ℃ | 0.1 ℃ | 0.1 ℃ |
| Bath volume | 25 | 25 | 25 |
| Material of heating bath | Stainless steel | Stainless steel | Stainless steel |
| Vacuum controller | Integrated | Integrated, EX | Integrated |
| Vacuum range | 0~999mbar | 0~1014mbar | 0~1014mbar |
| Vacuum accuracy | 1 mbar | 1 mbar | 1 mbar |
| Vapor temperature sensor | Integrated | Integrated | Integrated |
| Timer | 0~999min | 0~999min | 0~999min |
| Vapor temperature detection | Yes | Yes | Yes |
| Vapor temperature protection | Yes | Yes | Yes |
| Dimensions | 1355x725x2070 mm | 1355x725x2070 mm | 1355x725x2070 mm |
| Weight | 160 kg | 160 kg | 163 kg |
| Permissible ambient temperature | 5~40 ℃ | 5~40 ℃ | 5~40 ℃ |
| Permissible relative humidity | 80% | 80% | 80% |
| Protection class | IP20 | IP20 | IP20 |
| Interface | USB-B | Without | USB-A / Ethernet |
| Solenoid valve group | — | — | Integrated |
| Sample level sensor | — | — | Integrated |
| Power supply | 230VAC, 50/60Hz | 230VAC, 50/60Hz | 230VAC, 50/60Hz |

# Accessories

## Vacuum pumps

Chemical resistant diaphragm pump with triple stage

| Model | C960T | C960T EX |
|---|---|---|
| Order No. | 169960 | |
| Max.power | 370 kW | 550 kW |
| Ultimate vacuum | <2 mbar | <3 mbar |
| Max. pumping speed | 60 L/min | 60 L/min |
| Inlet connection | 10 mm | KF DN 25 |
| Outlet connection | 10 mm | KF DN 16 |
| Suitable for | ST20, ST20CRE | ST20 ATEX |

## FL Recirculating coolers

The FL series offers a new generation of chillers for routine cooling applications within the laboratory and industry. The temperature stability of the PID control is ±0.5℃ . All units can easily be cleaned and are provided with a splash water proof keypad with LED temperature indication. On the front of the units there is an RS232 interface as well as an alarm shutdown. The filling port is easily accessible placed on the top under a lift-up cover.

| Model | FL2503 | FL4003 |
|---|---|---|
| Order No. | | |
| Working temperature range (℃ ) | -20...+40 | -20...+40 |
| Temperature stability (℃ ) | ±0.5 | ±0.5 |
| Cooling capacity (kW) | 2.5 | 4.0 |
| Pump capacity flow pressure (l/min) | 40 | 40 |
| Pump capacity pressure (bar) | 0.5~3.0 | 0.5~3.0 |

## Glassware set

GS10 andGS 20 suitable for high-boiling distillation
GS30 andGS 40 suitable for liquids with a boiling point up to 100 ℃ and/or foaming liquids.
GS50 andGS 60 suitable for for low-boiling solvents; refrigerated with dry ice
GS11 and GS22 suitable for very high rates of distillation, especially for foaming liquids

| Model | Condenser | Evaporation flask | Receiving flask | Order No. |
|---|---|---|---|---|
| GS10 | Vertical condenser (steam rises) | 20L | 10L | |
| GS20 | Vertical condenser (steam rises) | 20L | 2x6L | |
| GS30 | Vertical condenser (steam sinks) | 20L | 10L | |
| GS40 | Vertical condenser (steam sinks) | 20L | 2x6L | |
| GS50 | Cold trap | 20L | 10L | |
| GS60 | Cold trap | 20L | 2x6L | |
| GS11 | 2pcs of vertical condensers (steam rises & steam sinks) | 20L | 10L | |
| GS22 | 2pcs of vertical condensers (steam rises & steam sinks) | 20L | 2x6L | |
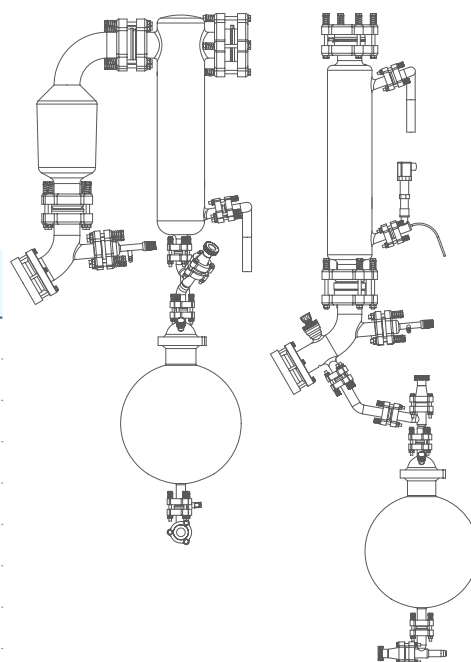
## Evaporation flasks

Replacement borosilicate glass for Wiggens ST20, ST20 CRE and ST20 ATEX rotary evaporators. Evaporation flasks are designed to fit all large capacity rotary evaporators.

| Volume | Order No. |
| --- | --- |
| 6 L | SQFY080951 |
| 10 L | SQFY080952 |
| 20 L | SQFY080953 |

## Evaporation flasks

The flask is made of plastic coated saftey glassware , Plastic coated flasks are clear and will withstand temperatures up to 100℃ .

| Volume | Order No. |
| --- | --- |
| 6 L | SQFY080971 |
| 10 L | SQFY080972 |
| 20 L | SQFY080973 |

## Evaporation flasks

The flask is made of high quality glassware with an amber coating to protect light-sensitive contents
Note: Flasks can be plastic-coated upon request.

| Volume | Order No. |
| --- | --- |
| 6 L | SQFY080961 |
| 10 L | SQFY080962 |
| 20 L | SQFY080963 |

## Powder flasks

Also referred to as drying flasks, particularly suited for drying of powdered samples. The baffles, indented into the glass provide better circulation and mixing of the powders while rotating.

| Volume | Order No. |
| --- | --- |
| 10 L | SQFY080982 |
| 20 L | SQFY080983 |

## Receiving flasks

Replacement borosilicate glass for Wiggens ST20, ST20 CRE and ST20 ATEX rotary evaporators. Receiving flasks are designed to fit all large capacity rotary evaporators. Now available in coated, non-coated, amberized, and jacketed versions
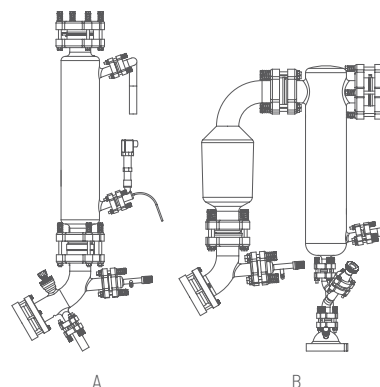
| Volume | Order No. | Order No. | Order No. | Order No. |
| --- | --- | --- | --- | --- |
| | Standard | Coated | Jacketed | Amberized |
| 6 L | SQFY080954 | SQFY080964 | SQFY080974 | SQFY080984 |
| 10 L | SQFY080955 | SQFY080965 | SQFY080975 | SQFY080985 |
| Replacement parts and accessories | | | | |
| Glass lid of receiving flask | | | | SQEG083572 |
| Bottom valve of receiving flask | | | | 20-227-001 |
| Open ring supports with long extension arms for supporting receiving flask | | | | KC29429 |

## Condenser

Replacement borosilicate glass components for Wiggens ST20, ST20 CRE and ST20 ATEX rotary evaporators. Condensers are designed to fit all large capacity rotary evaporators.. Available poly-coated or non-coated.

| Description | Order No. | Order No. |
|---|---|---|
| | Standard | Coated |
| Vertical condenser (steam rises), A | SQQE083567 | SQQE083667 |
| Vertical condenser (steam sinks), B | SQQE083578 | SQQE083678 |



A          B

## Cold trap

Replacement borosilicate glass components for Wiggens ST20, ST20 CRE and ST20 ATEX rotary evaporators. Inner and outer cold trap components for glassware set. Available poly-coated or non-coated.

| Description | Order No. | Order No. |
|---|---|---|
| | Standard | Coated |
| Inner cold trap | SQFY080956 | - |
| Outer cold trap | SQFY080957 | - |
| Outer cold trap | - | SQFY080967 |



## Expansion vessel *for steam sinks version only*

Replacement borosilicate glass components for Wiggens ST20, ST20 CRE and ST20 ATEX rotary evaporators. Upper expansion tanks for glass sets available in either poly-coated or non-coated versions
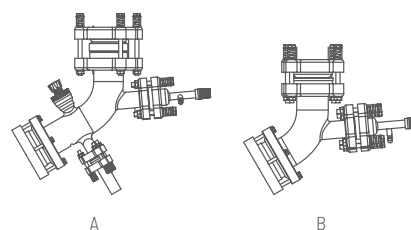
| Volume | Order No. | Order No. |
|---|---|---|
| | Standard | Coated |
| | | |



## Distillation head

Replacement components for ST20, ST20 CRE and ST20 ATEX rotary evaporators, available poly-coated or non-coated

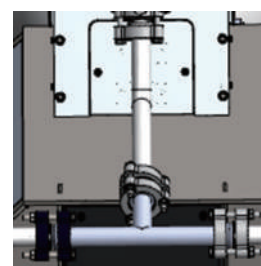| Description | Order No. | Order No. |
|---|---|---|
| | Standard | Coated |
| For ST20 and ST20 ATEX, steam rises version (A) | | |
| For ST20 and ST20 ATEX, steam sinks version (B) | | |
| For ST20 CRE, steam rises version | | |
| For ST20 CRE, steam sinks version | | |



A          B

## Glass tube set

Replacement components for ST20, ST20 ATEX rotary evaporators, available poly-coated or non-coated

| Description | Order No. | Order No. |
|---|---|---|
| | Standard | Coated |
| Glass tube set for connect condenser and 2pcs of 6L receiving flask, for ST20 and ST20 ATEX | | |

## Vacuum sensor and vapor temperature sensor

| Description | Order No. |
|---|---|
| Vacuum sensor for ST20 and ST20 CRE | VAJQ081056 |
| Vacuum sensor for ST20 ATEX | VAJQ070992 |
| Vapor temperature sensor | KC29481 |

## Level sensor and Solenoid valve  *for ST20 CRE only*

Monitoring of low liquid level in evaporation flask and evaporation tank
Monitoring of heigh liquid level in receiving flask and receiving tank
The solenoid valve group can switch automatically according to the program:

| Description | Order No. |
|---|---|
| Level sensor in 20L evaporation flask, quartz | 20-0623-04 |
| Level sensor in the receiving flask, quartz | 20-0623-05 |
| Level sensor in the sample tank | SQAF2000-05 |
| Level sensor in the receiving tank | SQAF2000-06 |
| Solenoid valve (N/O), DN8, G1/4″ | 20-0623-07 |
| Solenoid valve (N/C) , DN15, G1/2″ | 20-0623-09 |

## Bath fluid

Thermal H20S is a silicone-based bath fluid, working temperature: 0 ℃ ... +220 ℃
- Additional stabilizer
- Excellent heat conductivity
- Minimum odor
- Long fluid life

| Description | Order No. |
|---|---|
| Silicone-based bath fluid Thermal H20S, 10L | 8940108 |
| Silicone-based bath fluid Thermal H20S, 5L | 8940109 |

## Flange clamp

| Flange size | Coupling | Insert ring | PTFE gasket | Bolt, compression spring, washer and nut |
|---|---|---|---|---|
| DN15 | | | SQQI011682 | |
| DN25 | | | SQQI011688 | |
| DN50 | | | SQQI011696 | |

## Rupture disc and Nitrogen solenoid valve

Material: SS316L
Size: DN50
Discharge area: 1781 mm$^2$
Burst pressure: 0.46±0.25 bar (20 ℃ )

| Description | Order No. |
| --- | --- |
| Rupture disc | VAJQ077020 |
| Holder of rupture disc | VAJQ077021 |
| Nitrogen solenoid valve, for protect oxygen-sensitive substances | VAJQ077022 |

## Tubing and clamps

Material: SS316L
Size: DN50
Discharge area: 1781 mm$^2$
Burst pressure: 0.46±0.25 bar (20 ℃ )

| Description | Order No. |
| --- | --- |
| Vacuum tube (ID=19 mm) | 8930319 |
| Reinforced tubing for cooling water (ID=12 mm) | 8930312 |
| Tubing insulation (ID=23 mm), for 8930312 | 8930413 |
| 2 Tube clamps, size 3, for Reinforced tubing 12 mm or 1/2 ″ ID | 8970482 |
| 2 Tube clamps, size 4, for Reinforced tubing 3/4 ″ ID | 8970483 |

## Guard shield

with safety design, the distillation process can be started only when the guard shield of heating bath is closed

| Description | Order No. |
| --- | --- |
| Guard shield of heating bath | 8930319 |
| Guard shield of condenser and receiving flask | 8930312 |

## Trolley

for evaporaing flask handling

| Description | Order No. |
| --- | --- |
| Stainless steel trolley for evaporaing flask handling, for ST20, ST20 CRE | SQFW080270 |
| Stainless steel trolley for evaporaing flask handling, for ST20 ATEX | SQFW080271 |

# Industrial Rotary Evaporator
## STRIKE100 / STRIKE100 ATEX

STRIKE100 is a large capacity rotary evaporator designed for industrial plants. It meets all the process needs by using Borosilicate glass and PTFE permitting aggressive substances treatment.

The unit works under vacuum or atmosphere conditions. The rotation of the 50 or 100L evaporation flask in the heating bath results in a forced convection and homogenous distribution of the product, thus preventing sedimentation. Moreover, it ensures high evaporating exchange surface. The sealing system guarantees the perfect vacuum tightness and maintenance-free operation. Possibility to customize glassware as for Clients needs.

## The highest performance proposal
## For your evaporation processes!

### Safety

STRIKE100 series is supplied with an optional transparent protection shield for the evaporation flask.
The special shaped and robust shield ensures utmost protection from evaporation flask breakage and spray during process at high temperature.

> The heating bath and the protective shield are lifted by an electronically monitored system.
> An automatic system lowers the heating bath in case of power failure, overheating and any other bad occurrences.
> STRIKE100 series is supplied with a rupture disk, a safety device, positioned on the glassware to prevent overpressure.

### Vacuum sealing system

> Made of lubrificating material allowing perfect vacuum tightness.
> No maintenance required
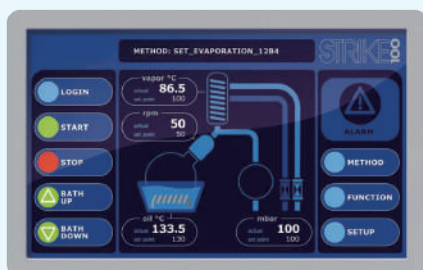
### Heating bath

Lifted by means of a powered system, the heating bath, in case of power failure or alarms, goes automatically down to prevent fluid overheating, and the process will immediately stop.
Its electric heater enhanced to 8Kw ensures continuous evaporation of a wide range of products even in critical working conditions.

### Measurement, display and data recording of the following parameters:

> Set and actual temperature value of the bath
> Set and actual vapor temperature value
> Set and actual rotation speed value of the evaporation flask
> Set and actual vacuum value (vacuum controller included as standard)

Screen of STRIKE 100

Parameters measurement, visual display and recording of the following:

- Bath pre-set and real temperature
- Vapor pre-set and real temperature
- Pre-set and real rotation speed
- Pre-set and real vacuum reading and setting

## Specifications

| Model | STRIKE 100 | STRIKE 100 ATEX |
|---|---|---|
| | Batch processing | Batch processing |
| Type of condenser | 2 types: Vertical condenser (Steam rises or steam sinks) | 2 types: Vertical condenser (Steam rises or steam sinks) |
| Plastic coated saftey glassware | Possible for condenser and receiving flask | Possible for condenser and receiving flask |
| Condensing area | 0.6 m$^2$ (50L system) / 1.43 m$^2$(100L system) | 0.6 m$^2$ (50L system) / 1.43 m$^2$(100L system) |
| Available evaporation flasks | 50/100 L | 50/100 L |
| Available receiving flasks | 20L, 2x20L, 50L(optional) , 100L(optional) | 20L, 2x20L, 50L(optional) , 100L(optional) |
| Motor | AC | AC, EX |
| Speed range | 5~100 rpm | 5~100 rpm |
| Lifting system | Electric drive | Pneumatic drive |
| Stroke | 300mm, adjustable, and can be stopped at any position | 300mm, adjustable, and can be stopped at any position |
| Max. bath temperature | 150 ℃ (standard) | 150 ℃ , EX |
| Temperature accuracy | ±2 ℃ | ±2 ℃ |
| Heating power | 8 kW | 8 kW |
| Set temperature resolution | 0.1 ℃ | 0.1 ℃ |
| Bath volume | 110L | 110L |
| Material of heating bath | Stainless steel | Stainless steel |
| Vacuum controller | Integrated | Integrated, EX |
| Vacuum range | 0-999mbar | 0-1014mbar |
| Vacuum accuracy | 1 mbar | 1 mbar |
| Vapor temperature sensor | Integrated | Integrated |
| Timer | Yes | Yes |
| Vapor temperature detection | Yes | Yes |
| Vapor temperature protection | Yes | Yes |
| Dimensions | 1830x890x2110 mm | 1830x890x2110 mm |
| Weight | | |
| Permissible ambient temperature | 5~40 ℃ | 5~40 ℃ |
| Permissible relative humidity | 80% | 80% |
| Interface | USB-B | Without |
| RS 232 interface | Yes, for firmware update only | Yes, for firmware update only |
| Power supply | 400V/3PNPE/50Hz | 400V/3PNPE/50Hz |

# Accessories

## Vacuum pumps

Chemical resistant diaphragm pump with triple stage

| Model | C2000T |
| --- | --- |
| Order No. | W032002 |
| Max.power | 750 kW |
| Ultimate vacuum | <2 mbar |
| Max. pumping speed | 180 L/min |
| Inlet connection | KF25 |
| Outlet connection | G1/2 |

## FL Recirculating coolers

The FL series offers a new generation of chillers for routine cooling applications within the laboratory and industry. The temperature stability of the PID control is ±0.5℃ . All units can easily be cleaned and are provided with a splash water proof keypad with LED temperature indication. On the front of the units there is an RS232 interface as well as an alarm shutdown. The filling port is easily accessible placed on the top under a lift-up cover.

| Model | FL7006 | FL11006 |
| --- | --- | --- |
| Order No. | 9666070 | 9666110 |
| Working temperature range (℃ ) | -20...+40 | -20...+40 |
| Temperature stability (℃ ) | ±0.5 | ±0.5 |
| Cooling capacity (kW) | 7 | 11 |
| Pump capacity flow pressure (l/min) | 60 | 60 |
| Pump capacity pressure (bar) | 0.5~6.0 | 0.5~6.0 |

## Evaporation flasks

Replacement borosilicate glass for Wiggens STRIKE 100 and STRIKE 100 ATEX rotary evaporators. Evaporation flasks are designed to fit all large capacity rotary evaporators.

| Volume | Order No. |
| --- | --- |
| 50 L | SQEG034290 |
| 100 L | SQEG034291 |

## Evaporation flasks

The flask is made of plastic coated saftey glassware , Plastic coated flasks are clear and will withstand temperatures up to 100℃ .

| Volume | Order No. |
| --- | --- |
| 50 L | SQEG034280 |
| 100 L | SQEG034281 |

## Evaporation flasks

The flask is made of high quality glassware with an amber coating to protect light-sensitive contents
Note: Flasks can be plastic-coated upon request.

| Volume | Order No. |
| --- | --- |
| 50 L | SQEG034270 |
| 100 L | SQEG034271 |

## Powder flasks

Also referred to as drying flasks, particularly suited for drying of powdered samples. The baffles, indented into the glass provide better circulation and mixing of the powders while rotating.

| Volume | Order No. |
| --- | --- |
| 50 L | SQEG034260 |
| 100 L | SQEG034261 |

## Receiving flasks

Replacement borosilicate glass for Wiggens STRIKE 100 and STRIKE 100 ATEX rotary evaporators. Receiving flasks are designed to fit all large capacity rotary evaporators. Now available in coated, non-coated, amberized, and jacketed
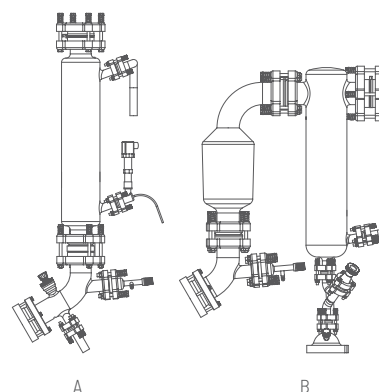
| Volume | Order No. | Order No. | Order No. | Order No. |
| --- | --- | --- | --- | --- |
| | Standard | Coated | Jacketed | Amberized |
| 20 L | SQEG036866 | SQEG036856 | SQEG036846 | SQEG036836 |
| Replacement parts and accessories | | | | |
| Glass lid of receiving flask | | | SQEG083572 | |
| Bottom valve of receiving flask | | | 20-227-001 | |
| Open ring supports with long extension arms for supporting receiving flask | | | KC29429 | |

## Condenser

Replacement borosilicate glass components for Wiggens STRIKE 100 and STRIKE 100 ATEX rotary evaporators. Condensers are designed to fit all large capacity rotary evaporators.. Available poly-coated or non-coated.

| Description | Order No. | Order No. |
| --- | --- | --- |
| | Standard | Coated |
| Vertical condenser (steam rises), A | SQEG034294 | SQEG034284 |
| Vertical condenser (steam sinks), B | SQEG034293 | SQEG034283 |

A                                    B

## Expansion vessel *for steam sinks version only*

Replacement borosilicate glass components for Wiggens STRIKE 100 and STRIKE 100 ATEX rotary evaporators. Upper expansion tanks for glass sets available in either poly-coated or non-coated versions
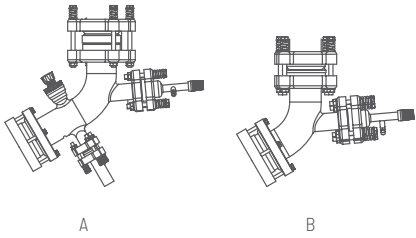
| Volume | Order No. | Order No. |
| --- | --- | --- |
| | Standard | Coated |
| | | |

## Distillation head

Replacement components for STRIKE 100, STRIKE 100 ATEX rotary evaporators, available poly-coated or non-coated

| Description | Order No. | Order No. |
|---|---|---|
| | Standard | Coated |
| For STRIKE 100 and STRIKE 100 ATEX, steam rises version (A) | | |
| For STRIKE 100 and STRIKE 100 ATEX, steam sinks version (B) | | |



A          B

## Glass tube set

Replacement components for STRIKE 100, STRIKE 100 ATEX rotary evaporators, available poly-coated or non-coated

| Description | Order No. | Order No. |
|---|---|---|
| | Standard | Coated |
| Glass tube set for connect condenser and 2pcs of 20L receiving flask, for STRIKE 100 and STRIKE 100 ATEX | | |
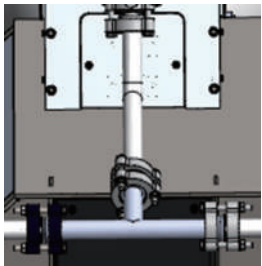


## Vacuum sensor and vapor temperature sensor

| Description | Order No. |
|---|---|
| Vacuum sensor for STRIKE 100 | VAJQ081056 |
| Vacuum sensor for STRIKE 100 ATEX | VAJQ070992 |
| Vapor temperature sensor | KC29481 |



## Bath fluid

Thermal H20S is a silicone-based bath fluid, working temperature: 0 ℃ … +220 ℃
- Additional stabilizer
- Excellent heat conductivity
- Minimum odor
- Long fluid life

| Description | Order No. |
|---|---|
| Silicone-based bath fluid Thermal H20S, 10L | 8940108 |
| Silicone-based bath fluid Thermal H20S, 5L | 8940109 |



## Flange clamp

| Flange size | Coupling | Insert ring | PTFE gasket | Bolt, compression spring, washer and nut |
|---|---|---|---|---|
| DN15 | | | SQQI011682 | |
| DN25 | | | SQQI011688 | |
| DN50 | | | SQQI011696 | |

## Rupture disc and Nitrogen solenoid valve

Material: SS316L
Size: DN50
Discharge area: 1781 mm$^2$
Burst pressure: 0.46±0.25 bar (20 ℃ )



| Description | Order No. |
|---|---|
| Rupture disc | VAJQ077020 |
| Holder of rupture disc | VAJQ077021 |
| Nitrogen solenoid valve, for protect oxygen-sensitive substances | VAJQ077022 |

## Tubing and clamps

Material: SS316L
Size: DN50
Discharge area: 1781 mm$^2$
Burst pressure: 0.46±0.25 bar (20 ℃ )



| Description | Order No. |
|---|---|
| Vacuum tube (ID=19 mm) | 8930319 |
| Reinforced tubing for cooling water (ID=12 mm) | 8930312 |
| Tubing insulation (ID=23 mm), for 8930312 | 8930413 |
| 2 Tube clamps, size 3, for Reinforced tubing 12 mm or 1/2 ″ ID | 8970482 |
| 2 Tube clamps, size 4, for Reinforced tubing 3/4 ″ ID | 8970483 |

## Guard shield

with safety design, the distillation process can be started only when the guard shield of heating bath is closed



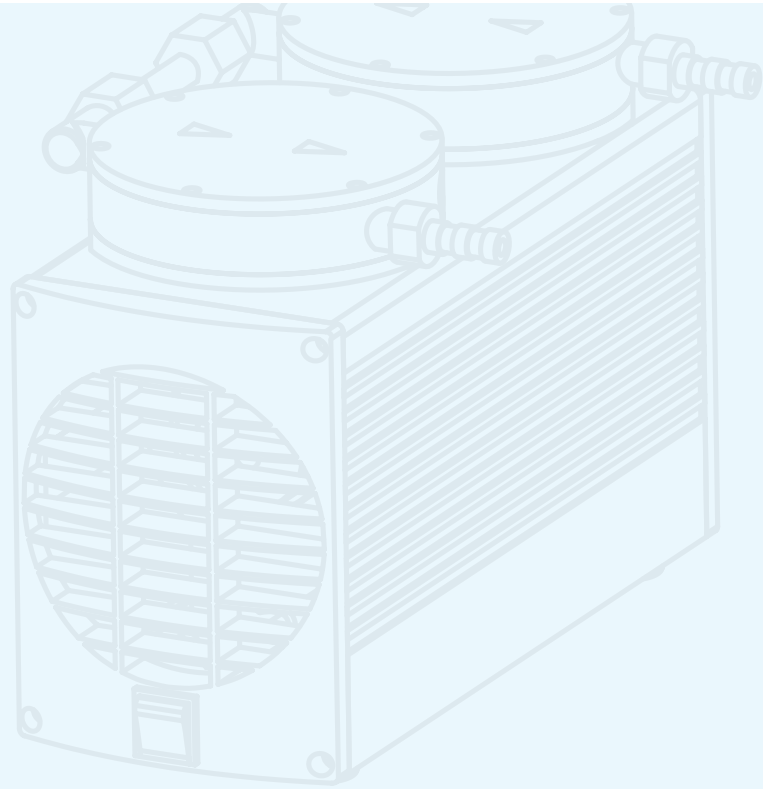| Description | Order No. |
|---|---|
| Guard shield of heating bath | |
| Guard shield of condenser and receiving flask | |

## Trolley

for evaporaing flask handling



| Description | Order No. |
|---|---|
| Stainless steel trolley for evaporaing flask handling, for STRIKE 100 | SQFW078521 |
| Stainless steel trolley for evaporaing flask handling, for STRIKE 100 ATEX` | SQFW078522 |

Vacuum Pump
Vacuum Solvent Recovery System
Vacuum Meter and Controller
Vacuum Filtration

# Vacuum Pump

## The ability to handle difficult and different vacuum challenges quickly.

Wiggens is your general laboratory companion and provides products that can be used in all kinds of laboratory environments. ChemVak is a product line in vacuum technology offering an extensive range of vacuum pumps for all applications,Including :

Chemical resistant diaphragm vacuum pumps which can be used in the chemical, pharmaceutical, petrochemical and other industries

Chemical resistant diaphragm pump
Frequency conversion chemical resistant vacuum pump

Chemical resistant diaphragm pump

Vacuum solvent recovery, which can be utilized to achieve the correct vacuum conditions for diverse applications.

Vacuum solvent recovery system

Oil-free piston vacuum pump, no pollution, no need for oil changes

Oil-free piston vacuum pump

Oil-sealed rotary vane vacuum pumps are widely used traditional vacuum pumps in research and production

Rotary vane vacuum pump

ChemVak
A brand of Wiggens

# Vacuum pump selection guide

Before selecting a vacuum pump,
please let us introduce a few basic concepts about vacuum.

## Vacuum

The degree of vacuum refers to the pressure level in a vacuum state. The value shown on the vacuum gauge represents the degree of vacuum, which indicates how much lower the system pressure is compared to atmospheric pressure. This value is also called gauge pressure or ultimate relative pressure.
In other words:
Vacuum = Atmospheric Pressure - Absolute Pressure
(Note: Atmospheric pressure is generally taken as 1013.25 mbar.)
The ultimate vacuum of an oil-free piston pump can reach approximately 30 mbar.
The ultimate vacuum of a chemical-resistant diaphragm pump can reach 1 mbar.
The ultimate vacuum of a rotary vane oil pump can reach about 0.0004 mbar.

## Ultimate relative pressure

Relative pressure refers to how much lower the measured internal pressure is compared to atmospheric pressure, indicating that the internal pressure of the system is lower than the atmospheric pressure. As the air inside the container is evacuated, the pressure inside the container remains lower than the pressure outside the container. Therefore, when expressing relative pressure or gauge pressure, a negative sign is typically used to indicate that the internal pressure is lower than the external pressure.

## Ultimate absolute pressure

Absolute pressure refers to how much higher the measured internal pressure is compared to the theoretical vacuum, where the theoretical vacuum pressure value is 0 Pa. The comparison is made with the absolute vacuum pressure value in the theoretical state. Due to technological limitations, it is impossible to reduce the internal pressure to an absolute vacuum of 0 Pa. As a result, the vacuum level achieved by the vacuum pump will always be higher than the theoretical vacuum value. Therefore, when expressed in terms of absolute pressure, the value is always positive, and no negative sign is used.

## Pumping speed

The pumping speed is a measure of the vacuum pump's ability to evacuate air from a container, typically expressed in units of liters per minute (l/min) or cubic meters per hour ($m^3$/h). It serves as a parameter to compensate for air leakage. To understand this concept, consider that when evacuating a container of the same volume, a vacuum pump with a higher pumping capacity can achieve the desired vacuum more easily, while a pump with a lower pumping capacity may be slow or even unable to reach the required vacuum level. This is because it is impossible for the pipeline or container to be completely air-free. The larger pumping capacity compensates for the loss of vacuum caused by air leakage, allowing the pump to reach the ideal vacuum level more efficiently. Therefore, it is recommended to select a vacuum pump with a higher pumping capacity when calculating theoretical pumping requirements. The specific formula for calculating pumping volume will be introduced below.

After understanding the basic parameters of vacuum pumps such as vacuum degree, absolute pressure and relative pressure, we can enter the formal selection of vacuum pumps.

## The required vacuum of the experimental process

The operating pressure of the vacuum pump should meet the pressure requirements of the process.

## The required pumping speed of the experimental process

The vacuum pump requires the pumping rate (that is, the ability of the vacuum pump to discharge gas, liquid, and solid under its working pressure), the general unit: $m^3/h$, l/min, L/s, etc. The specific calculation method can refer to the following formula to calculate and select by yourself. Of course, the selection of vacuum pumps is a comprehensive process involving relevant experience and other factors.
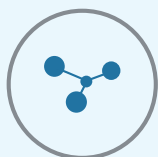
$S=(V/t)\times\ln(P1/P2)$

S is the pumping rate of the vacuum pump (L/s)

V is the volume of the vacuum chamber (L)

t is the time required to reach the required vacuum (s)

P1 is the initial pressure (Pa)

P2 is the required pressure (Pa)

## Determine the composition of the gas being pumped

1. Gas, Liquid, or Particulate Matter:

If the pumped substance is a gas, liquid, or contains particles (e.g., dust), and the gas includes water vapor or impurities such as dust and small particles, a rotary vane vacuum pump should be carefully considered. If high vacuum levels are required, a filter device must be added. The rotary vane vacuum pump can only be used effectively as a vacuum generation device if the impurities are properly filtered.

2. Corrosive Properties of the Gas:

Please inform us if the pumped gas is corrosive, either acidic or alkaline (including its pH value). If the gas contains corrosive acid-base or organic compounds, appropriate filtration or neutralization should be performed before selecting a rotary vane vacuum pump. If the vacuum meets the required specifications, it is recommended to use an anti-corrosion diaphragm pump for better resistance to such gases.

3. Contamination of Rubber or Oil:

If the pumped gas or liquid may contaminate rubber or oil, the appropriate vacuum equipment must be selected based on the nature of the pumped media. For gases that contain large amounts of vapor, particles, or corrosive elements, attention should be given to the pump's intake. Corresponding auxiliary equipment should be installed on the pipeline, such as a condenser, filter, etc. (Please contact WIGGENS for further details).

4. Noise and Vibration Considerations:

If the noise and vibration produced by the vacuum pump could have an impact on the surrounding environment or equipment, it is crucial to assess these factors during the selection process.

# Application Guide

| Application | Picture | Description | Pump speed / Vacuum | Recommended vacuum pump |
|---|---|---|---|---|
| Conventional vacuum requirements | | Compact, portable, with certain corrosion resistance | 25l/min<br>13mbar | A410 |
| Vacuum filtration system | | The filtered sample is non-corrosive | 34l/min<br>100mbar | V400 |
| | | The filtered sample is corrosive and requires high corrosion resistance of the vacuum pump | 34l/min<br>120mbar | C400 |
| Glass vacuum dryer | | It is recommended to use a chemical resistant diaphragm vacuum pump. In addition, a vacuum gauge and a vacuum regulating valve are also required | 35 l/min<br>13mbar | C420 |
| Vacuum drying oven | | The samples are usually aqueous, acidic or alkaline solutions, so chemical resistant diaphragm vacuum pumps are often recommended | 37l/min<br>2-4mbar | C920Z |
| Vacuum centrifugal concentrator | | A vacuum centrifugal concentrator speeds up sample concentration by using a vacuum to lower solvent boiling points, avoiding high heat. This method often deals with harsh chemicals that can become vapors, requiring careful handling. Chemical resistant diaphragm pumps, recommended for this, reach vacuum of 1-2 mbar. | 37l/min<br>2-4mbar | C920Z |
| | | For extremely low vacuum levels, a rotary vane oil pump is used due to its ability to achieve deeper vacuums. However, it must be paired with a cold trap to prevent vapors from entering and damaging the pump. | 180l/min<br>$4×10^{-4}$mbar | R-8D |
| Freeze dryer | | Rotary vane oil pump is usually used, equipped with oil mist filter and cold trap | 180l/min<br>$4×10^{-4}$mbar | R-8D |

| Application | Picture | Description | Pump speed / Vacuum | Recommended vacuum pump | |
|---|---|---|---|---|---|
| Rotary evaporator |  | 0.5~3L evaporating flask, which requires high corrosion resistance of the vacuum pump, and usually needs to be used with a vacuum controller | 35 l/min  13mbar | C420 |  |
| |  | A 6–20L evaporating flask requires a vacuum pump with high corrosion resistance and is typically used in conjunction with a vacuum controller. | 60l/min  2mbar | C960T |  |
| |  | A 50–100L evaporating flask has high corrosion resistance requirements for the vacuum pump and is typically used with a vacuum controller. | 180l/min  2mbar | C2000T |  |
| Multi-channel vacuum applications |  | The rotary vane oil pump can provide a sufficiently high pumping rate, but it requires a matching cold trap. | 360l/min  $4 \times 10^{-4}$ mbar | R-24D |  |
| Biochemical liquid suction pump | | After biochemical culture, it is used to separate tissues from the culture medium. | 25~40l/min  100mbar | BioVac series |  |
| Vacuum controller | | Able to set and control the system's vacuum level | Vacuum control range: 0.1~1000mbar | DVR series |  |
| Digital vacuum gauge | | Able to display the system's vacuum level in real time. | Vacuum measurement range: 0.1~1000mbar | VDM series |  |

New Entry Level for Anti-corrosion Pumps

A410

A510

# Chemical Resistant Diaphragm Pump (A Series)

> Chemvak A series are chemical resistant diaphragm vacuum pumps which can be used in the chemical, pharmaceutical, petrochemical and other industries, such as suction filtration, vacuum distillation, rotary evaporator, vacuum concentration, centrifugal concentration, solid phase extraction and so on.
> A series pumps can be widely used for hard acidic, basic and solvent vapors by utilizing corrosion proof PTFE on all the wetted surfaces. The vacuum chamber and the drive chamber are separated and sealed, ensuring a longer working life of mechanical components
> Chemvak A series pumps are driven by diaphragm, without the need of lubricant, regular oil changes and maintenance; with no oil pollution.
> Driven direct by motor with no additional belt-driven transmission; the quality vibration-proof assembly makes Chemvak A series run at the lowest noise level among all other equivalent pumps.
> Cost-effective, reliable, unique structural design, noise less than 50dB.
> A variety of models are available to meet the various needs of the laboratory, with a minimum vacuum of up to 8 mbar.
> Every motor of Chemvak A series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.
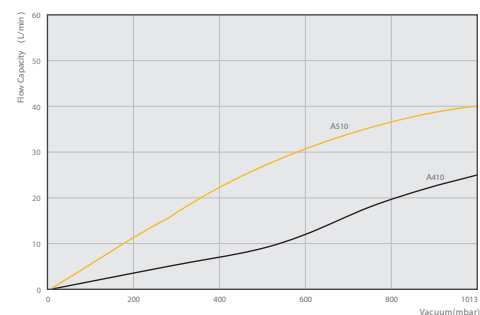
## Features

> No pollution when working
> Overheat protection and power insurance
> Chemical resistant design
> Suitable for corrosive gases and steam media
> Environmentally friendly design
> Strong tightness
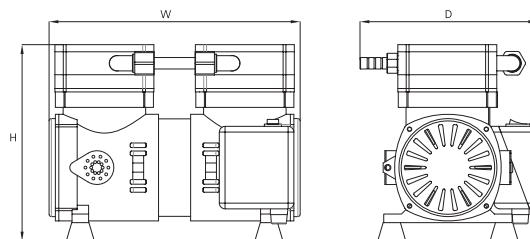


| Model / Specifications | A410 | A510 |
|---|---|---|
| Order No. | 170410 | 170510 |
| Flow rate [m³/h] at atm. pressure | 1.5 | 2.4 |
| Flow rate [l/min] at atm. pressure | 25 | 40 |
| Ultimate vacuum [mbar] | 13 | 8 |
| Max. Power P [W] | 95 | 245 |
| Max. current [A] | 0.6 | 1 |
| Motor speed [rpm] | 1450 | 1450 |
| Pump head | Double stage | Double stage |
| Hose connections [mm] | 10 | 10 |
| IP code | IP20 | IP20 |
| Sound pressure level [dB] | 50 | 60 |
| Dimensions W x D x H [mm] | 230×155×173 | 290×190×210 |
| Weight [kg] | 4.5 | 10 |
| Power supply | 220V/50Hz | 220V/50Hz |

Chemical Resistant Diaphragm Pumps Flow curve



Note: Above data is based on the 220V/50Hz instrument

C300　　　C400 / C410 / C420　　　C510 / C520　　　C600　　　C610

# Chemical Resistant Diaphragm Pump (C Series)

C series construction with PTFE makes them very resistant to chemical vapors from inlet to exhaust and very tolerant to condensates. Pumping chambers are hermetical ensuring long lifetimes of mechanical parts.

Most importantly, diaphragm pumps are oil-free, with vastly reduced service demands compared with oil sealed pumps. They eliminate the cost of water and its contamination well-known from water-jet aspirators, and the waste-oil disposal of rotary vane pumps.

They are chemical resistant diaphragm vacuum pumps which can be widely used for hard acidic, basic and solvent vapors by utilizing corrosion proof PTFE on all the wetted surfaces. Through innovative mechanical technology and human considerations, we have made C series to be quiet, safe, maintenance-free and cost effective vacuum pumps.

## Features

### High chemical resistant
All wetted parts of C series pump are made of PTFE which is ideal for extremely aggressive / corrosive gases and vapors.

### Long-term durable
Head cover and diaphragm made of PTFE/PTFE-coated with stability core for unsurpassed long-term performance

### No air pollution, maintenance free
Chemvak C series pumps are driven by diaphragm, without the need of lubricant, regular oil changes and maintenance; with no oil pollution.

### Practical
> smooth surfaces for easy cleaning
> sealing system provides reduced leakage rates for improved ultimate vacuum

### Quiet and low vibration
Driven direct by motor with no additional belt-driven transmission; the quality vibration-proof assembly makes Chemvak C series run at the lowest noise level among all other equivalent pumps.

### Thermal protection device
Every motor of Chemvak C series pumps has a built-in thermal protection device to shut off the pump automatically when overheated and then resume working when the temperature cools down.

### The stability core principle:
### for unprecedented long-term performance
chemistry diaphragm pumps provide optimum performance and unsurpassed service intervals even in harsh chemical applications. We achieve this unmatched reliability by manufacturing the most highly stressed components – the head cover and clamping disk.
> high quality PTFE coated EPDM provides long term chemical resistance
> this thick-walled, diffusion resistant, molded fluoroplastic is supported by a stable metallic core for durability
> mechanical precision finishing ensures reproducible WIGGENS quality

## Application

> Chemical and petrochemical Industry

> Pharma Industry

> Filtration processes

> Vacuum distillation

> Rotary evaporation

> Vacuum and centrifugal concentration

> Solid phase extraction

> Conventional drying and gel drying

> Advanced substitute for water-jet pumps

## Chemical Resistant Diaphragm Pumps Flow curve
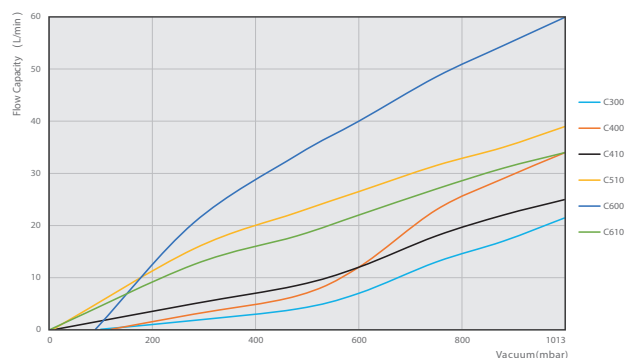


Note: Above data is based on the 220V/50Hz instrument
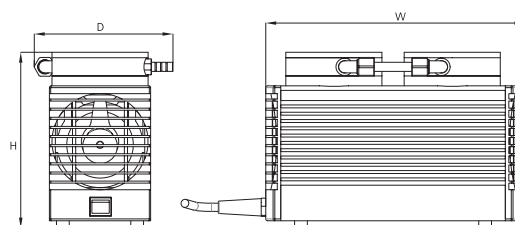


## Vacuum display and control

| Set 1 | Set2 | Set 3 |
|---|---|---|
| Order No. :169311-06 | Order No.: 169312-06 | Order No. : 169314-06 |
| Included vacuum trap, regulator and vacuum gauge | Included vacuum trap, regulator and digital meter DVM150C | Included vacuum trap, regulator, chemical resistantvacuum controller DVR480 |

| Model / Specifications | C300 | C400 | C410 | C420 NEW! | C510 | C520 NEW! | C600 | C602 NEW! | C610 |
|---|---|---|---|---|---|---|---|---|---|
| Order No. | 169300 | 169400 | 169410 | 169420 | 169510 | 169520 | 169600 | 169602 | 169610 |
| Flow rate [m³/h] at atm. pressure | 1.32 | 2.04 | 1.5 | 1.5 | 2.04 | 3.0 | 3.6 | 4.2 | 2.22 |
| Flow rate [l/min] at atm. pressure | 22 | 34 | 25 | 35 | 34 | 50 | 60 | 70 | 37 |
| Ultimate vacuum [mbar] | 100 | 120 | 13 | 13 | 8 | 8 | 90 | 80 | 2~4 |
| Max. Power P [W] | 60 | 95 | 95 | 95 | 245 | 245 | 270 | 270 | 270 |
| Motor speed [rpm] | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 |
| Pump head | Single stage | Single stage | Double stage | Double stage | Double stage | Double stage | Single stage | Single stage | Double stage |
| Hose connections [mm] | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| IP code | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 |
| Sound pressure level [dB] | 50 | 50 | 50 | 50 | 60 | 55 | 60 | 55 | 60 |
| Dimensions W x D x H [mm] | 233×110×210 | 294×156×195 | 294×156×195 | 294×156×195 | 380×156×226 | 380×156×226 | 380×162×226 | 380×156×226 | 380×171×226 |
| Weight [kg] | 6 | 8.5 | 8.5 | 8.5 | 13.2 | 14.5 | 13.2 | 14.5 | 13.8 |
| Power supply | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz |

# Chemical Resistant Diaphragm Pump

## Fast pumping speed

The C900 series chemical resistant diaphragm pumps are specifically designed for handling aggressive gases and vapors, offering a vacuum range down to 1 mbar and a pumping speed of up to 95 l/min.

## Features

> All wetted parts are made of chemical resistant materials
> Fast pumping speed
> Low noise
> Overheat protection
> Vacuum can be controlled by manual valve, vacuum controller
> Easy and convenient for maintenance

### The motor drives the pump head to vacuum
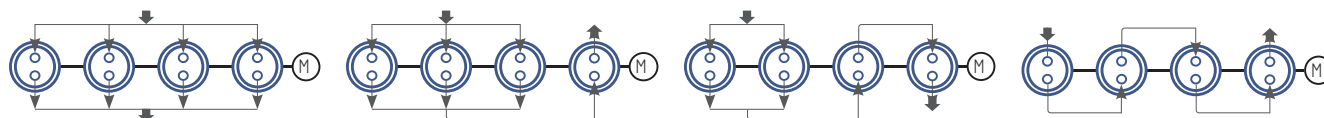
C900E with single stage of pump head

C920Z with double stage of pump head

C960T with Triple stage of pump head

C980V with quadruple stage of pump head

Order No. :169311-06
Included vacuum trap, regulator and vacuum gauge

Set 1

Order No.: 169312-06
Included vacuum trap, regulator and digital meter DVM150C

Set 2

Order No. : 169314-06
Included vacuum trap, regulator, chemical resistantvacuum controller DVR480

Set 3

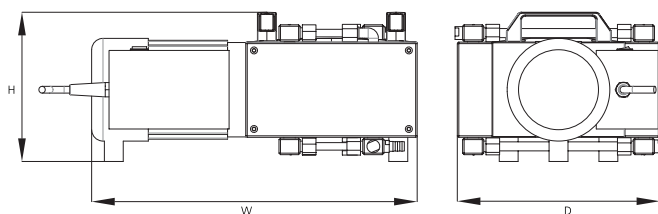| Model / Specifications | C900E | C920Z | C960T | C980V |
|---|---|---|---|---|
| Order No. | 169900 | 169920 | 169960 | 169980 |
| Flow rate [m$^3$/h] at atm. pressure | 5.7 | 4.5 | 3.6 | 2.4 |
| Flow rate [l/min] at atm. pressure | 95 | 75 | 60 | 40 |
| Ultimate vacuum [mbar] | < 30 | < 8 | < 2 | < 1 |
| Max. Power P [W] | 370 | 370 | 370 | 370 |
| Motor speed [rpm] | 1425 | 1425 | 1425 | 1425 |
| Pump head | Single stage | Double stage | Triple stage | Quadruple stage |
| Hose connections [mm] | 10 | 10 | 10 | 10 |
| IP code | IP20 | IP20 | IP20 | IP20 |
| Sound pressure level [dB] | 50 | 50 | 50 | 50 |
| Dimensions W x D x H [mm] | 440×270×240 | 440×270×240 | 440×270×240 | 440×270×240 |
| Weight [kg] | 21.5 | 21.5 | 21.5 | 21.5 |
| Power supply | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz |

# Chemical Resistant Diaphragm Pump

## Variable-frequency vacuum pump, fast pumping speed

The chemical resistant diaphragm pumps are specifically designed for handling aggressive gases and vapors, offering a vacuum range down to 1 mbar and a pumping speed of up to 95 l/min.

The variable-frequency pump must be connected to a variable-frequency controller to regulate the vacuum by adjusting the motor speed. This setup is particularly suitable for vacuum control in large-capacity systems, ensuring both faster pumping speeds and stable vacuum levels.

Variable-frequency vacuum pump without frequency controller

## Features

> All wetted parts are made of chemical resistant materials
> Variable frequency motor for fast pumping speed
> Low noise
> Overheat protection
> Vacuum can be controlled by manual valve, vacuum controller or variable frequency controller
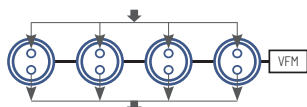> Easy and convenient for maintenance
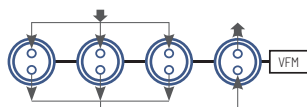
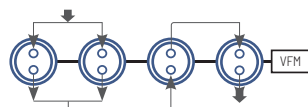Variable-frequency vacuum pump with frequency controller

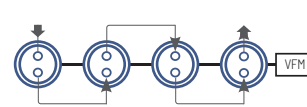## The motor drives the pump head to vacuum

C900EF with variable frequency motor and single stage of pump head

C920ZF with variable frequency motor and double stage of pump head

C960TF with variable frequency motor and triple stage of pump head

C980VF with variable frequency motor and quadruple stage of pump head

| Model / Specifications | C900EF | C920ZF | C960TF | C980VF |
|---|---|---|---|---|
| Order No. (w/o frequency controller) | 169900B | 169920B | 169960B | 169980B |
| Order No. (w/ frequency controller) | 169901B | 169921B | 169961B | 169981B |
| Flow rate [m³/h] at atm. pressure | 5.7 | 4.5 | 3.6 | 2.4 |
| Flow rate [l/min] at atm. pressure | 95 | 75 | 60 | 40 |
| Ultimate vacuum [mbar] | < 30 | < 8 | < 2 | < 1 |
| Max. Power P [W] | 370 | 370 | 370 | 370 |
| Motor speed [rpm] | 0~1380/0~1680 [1] | 0~1380/0~1680 [1] | 0~1380/0~1680 [1] | 0~1380/0~1680 [1] |
| Pump head | Single stage | Double stage | Triple stage | Quadruple stage |
| Hose connections [mm] | 10 | 10 | 10 | 10 |
| IP code | IP20 | IP20 | IP20 | IP20 |
| Sound pressure level [dB] | 50 | 50 | 50 | 50 |
| Dimensions W x D x H [mm] | 440×270×240 | 440×270×240 | 440×270×240 | 440×270×240 |
| Weight [kg] | 21.5 | 21.5 | 21.5 | 21.5 |
| Power supply | 200 - 240V, 50/60Hz | 200 - 240V, 50/60Hz | 200 - 240V, 50/60Hz | 200 - 240V, 50/60Hz |

[1] means the motor speed range of 50Hz and 60Hz models respectively

# WIGGENS
## The Magic Motion

# Frequency Conversion Chemical Resistant Vacuum Systems
## Integrated variable frequency controller

> A new generation of intelligent vacuum technology features a modular design with integrated variable-frequency pumps and control units. Its compact and lightweight structure makes it highly efficient. The system adjusts the diaphragm pump's speed using a frequency conversion motor and controller, enabling more precise vacuum pressure control.

> PID self-turing for vacuum cotronl, the controller automatically changes the PID value according to the artificial intelligence logic algorithm, accurately adjusting the motor speed and stabilizing the precise vacuum degree.

> This series of chemical resistant vacuum pumps are suitable for the treatment of corrosive gases in the chemical, pharmaceutical, petrochemical and other industries, such as extraction, vacuum distillation, rotary evaporator, vacuum concentration, centrifugal concentration, solid phase extraction and other uses.

> All parts in contact with gas and condensate are made of high-quality PTFE. The gas chamber and drive chamber are separated and sealed to ensure a long life of the mechanical parts

> Overheat protection, automatic shutdown when the temperature is too high, and automatic start when it goes back to the normal temperature, to ensure the security and stability of the system.

## Features

> Vacuum stability, easy to control, high control precision
> Excellent chemical and vapour resistance
> In the high vacuum degree, the performance is still very good.
> Long life, simple and convenient for maintenance.
> Simple and convenient to work in a stable and lasting way
> Small structural size, energy conservation and environmental protection
> High level of protection for motor, suitable for various environments

## Application

> Vacuum distillation for large volume
> Large capacity reaction kettle
> Large capacity vacuum filtration
> Vacuum enrichment
> Vacuum drying
> Various applications in the semiconductor industry

C960TEF

### Standard Configuration:
The vacuum system integrated variable frequency controller, and also includes vacuum trap, regulator and vacuum gauge (Order No. 169311-06)

| Model / Specifications | C900EEF | C920ZEF | C960TEF | C980VEF |
|---|---|---|---|---|
| Order No. | 169900C | 169920C | 169960C | 169980C |
| Flow rate [m³/h] at atm. pressure | 5.7 | 4.5 | 3.6 | 2.4 |
| Flow rate [l/min] at atm. pressure | 95 | 75 | 60 | 40 |
| Ultimate vacuum [mbar] | < 30 | < 8 | < 2 | < 1 |
| Vacuum setting range [mbar] | 0.1~1000 | 0.1~1000 | 0.1~1000 | 0.1~1000 |
| Max. Power P [W] | 400 | 400 | 400 | 400 |
| Motor speed [rpm] @50Hz | 0~1380 | 0~1380 | 0~1380 | 0~1380 |
| Motor speed [rpm]@60Hz | 0~1680 | 0~1680 | 0~1680 | 0~1680 |
| Pump head | Single stage | Double stage | Triple stage | Quadruple stage |
| Hose connections [mm] | 10 | 10 | 10 | 10 |
| IP code | IP20 | IP20 | IP20 | IP20 |
| Sound pressure level [dB] | 50 | 50 | 50 | 50 |
| Dimensions W x D x H [mm] | 220×400×495 | 220×400×495 | 220×400×495 | 220×400×495 |
| Weight [kg] | 21.5 | 21.5 | 21.5 | 21.5 |
| Power supply | 200 - 240V, 50/60Hz | 200 - 240V, 50/60Hz | 200 - 240V, 50/60Hz | 200 - 240V, 50/60Hz |

# Chemical Resistant Diaphragm Pump
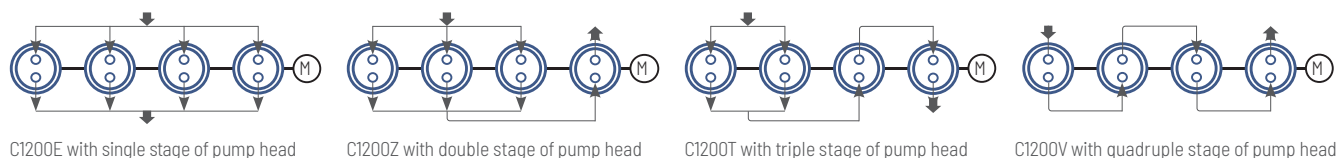## Fast pumping speed for industrial applications

The C1200 series chemical resistant diaphragm pumps are specifically designed for handling aggressive gases and vapors, offering a vacuum range down to 1 mbar and a pumping speed of up to 120 l/min.

## Features

> All wetted parts are made of chemical resistant materials
> Fast pumping speed
> Low noise
> Overheat protection
> Vacuum can be controlled by manual valve, vacuum controller
> Easy and convenient for maintenance

The pump with chemical resistant vacuum controller DVR480

Package

Outlet,OD 16mm barbed fitting
Inlet,KF25 flange

## The motor drives the pump head to vacuum

C1200E with single stage of pump head

C1200Z with double stage of pump head

C1200T with triple stage of pump head

C1200V with quadruple stage of pump head

| Model / Specifications | C1200E | C1200Z | C1200T | C1200V |
|---|---|---|---|---|
| Order No. | W1031201 | W1031202 | W1031203 | W1031204 |
| Flow rate [m$^3$/h] at atm. pressure | 7.2 | 5.7 | 4.2 | 3 |
| Flow rate [l/min] at atm. pressure | 120 | 95 | 70 | 50 |
| Ultimate vacuum [mbar] | < 80 | < 8 | < 2 | < 1 |
| Max. Power P [W] | 370 | 370 | 370 | 370 |
| Max. current [A] | 2 | 2 | 2 | 2 |
| Motor speed [rpm] | 1380 | 1380 | 1380 | 1380 |
| Pump head | Single stage | Double stage | Triple stage | Quadruple stage |
| Hose connections of inlet | KF25 [1] | KF25 [1] | KF25 [1] | KF25 [1] |
| Hose connections of outlet | G1/2 [1] | G1/2 [1] | G1/2 [1] | G1/2 [1] |
| IP code | IP20 | IP20 | IP20 | IP20 |
| Sound pressure level [dB] | 50 | 50 | 50 | 50 |
| Dimensions W x D x H [mm] | 440×270×240 | 440×270×240 | 440×270×240 | 440×270×240 |
| Weight [kg] | 21.5 | 21.5 | 21.5 | 21.5 |
| Power supply | 220~240V/50Hz | 220~240V/50Hz | 220~240V/50Hz | 220~240V/50Hz |

1) Included : KF25 flange clamp, with sealing ring and barbed fitting OD16mm for tubing

# Chemical Resistant Diaphragm Pump

## Fast pumping speed for industrial applications

The C2000 series chemical resistant diaphragm pumps are specifically designed for handling aggressive gases and vapors, offering a vacuum range down to 1 mbar and a pumping speed of up to 245 l/min.

## Features

> All wetted parts are made of chemical resistant materials
> Fast pumping speed
> Low noise
> Overheat protection
> Vacuum can be controlled by manual valve, vacuum controller
> Easy and convenient for maintenance

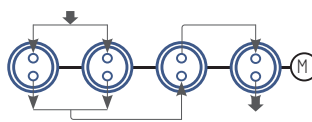The pump with chemical resistant vacuum controller DVR480

Package

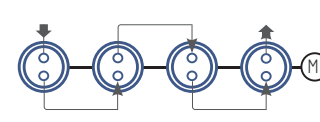Outlet,OD 16mm barbed fitting
Inlet,KF25 flange

### The motor drives the pump head to vacuum
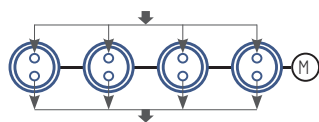
C2000E with single stage of pump head

C2000T with triple stage of pump head

C2000V with quadruple stage of pump head

| Model / Specifications | C2000E | C2000T | C2000V |
|---|---|---|---|
| Order No. | W1032003 | W1032001 | W1032002 |
| Flow rate [$m^3$/h] at atm. pressure | 14.7 | 10.8 | 9.0 |
| Flow rate [l/min] at atm. pressure | 245 | 180 | 150 |
| Ultimate vacuum [mbar] | < 70 | < 2 | < 1 |
| Max. Power P [W] | 750 | 750 | 750 |
| Motor speed [rpm] | 1380 | 1380 | 1380 |
| Pump head | Single stage | Triple stage | Quadruple stage |
| Hose connections of inlet | KF25 [1] | KF25 [1] | KF25 [1] |
| Hose connections of outlet | G1/2 [1] | G1/2 [1] | G1/2 [1] |
| IP code | IP20 | IP20 | IP20 |
| Sound pressure level [dB] | 60 | 60 | 60 |
| Dimensions W x D x H [mm] | 615×285×386 | 615×285×386 | 615×285×386 |
| Weight [kg] | 41 | 41 | 41 |
| Power supply | 220~240V/50Hz | 220~240V/50Hz | 220~240V/50Hz |

1) Included : KF25 flange clamp, with sealing ring and  barbed fitting OD16mm for tubing

# Chemical Resistant Diaphragm Pump

## Variable-frequency vacuum pump, fast pumping speed

The chemical resistant diaphragm pumps are ideally suited for handling aggressive gases and vapors, offering a vacuum range down to 1 mbar.

## Features

> All wetted parts are made of chemical resistant materials
> Variable frequency motor for fast pumping speed
> Low noise
> Overheat protection
> Vacuum can be controlled by manual valve, vacuum controller or variable frequency controller
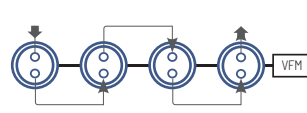> Easy and convenient for maintenance

### The motor drives the pump head to vacuum
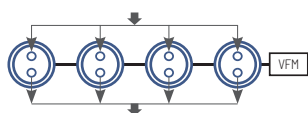
C2000EEF with variable frequency motor and single stage of pump head
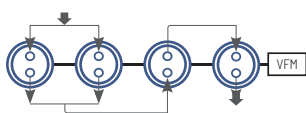
C2000TEF with variable frequency motor and triple stage of pump head

C2000VEF with variable frequency motor and quadruple stage of pump head

The variable-frequency pump must be connected to a variable-frequency controller to regulate the vacuum by adjusting the motor speed. This setup is particularly suitable for vacuum control in large-capacity systems, ensuring both faster pumping speeds and stable vacuum levels.
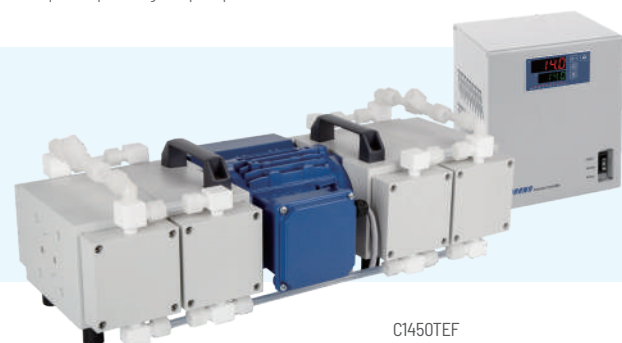
C1450TEF

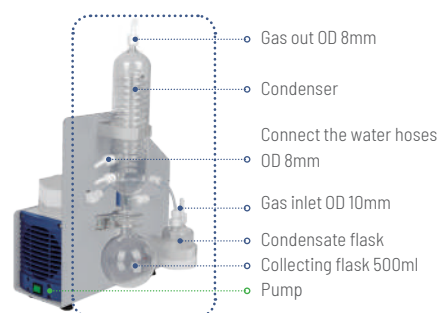| Model / Specifications | C2000EEF | C2000TEF | C2000VEF | C1450TEF |
|---|---|---|---|---|
| Order No. (w/ frequency controller) | W1032013 | W1032011 | W1032012 | 1691450C |
| Flow rate [m³/h] at atm. pressure | 16.2 | 12.6 | 9.6 | |
| Flow rate [l/min] at atm. pressure | 270 | 210 | 160 | 145 |
| Ultimate vacuum [mbar] | < 70 | < 2 | < 1 | < 8 |
| Max. Power P [W] | 750 | 750 | 750 | 600 |
| Motor speed [rpm] | 0~1380 | 0~1380 | 0~1380 | 0~1400 |
| Pump head | Single stage | Triple stage | Quadruple stage | Triple stage |
| Hose connections of inlet | KF25[1] | KF25[1] | KF25[1] | 10mm |
| Hose connections of outlet | G1/2[1] | G1/2[1] | G1/2[1] | G1/2 |
| IP code | IP20 | IP20 | IP20 | IP20 |
| Sound pressure level [dB] | 60 | 60 | 60 | 65 |
| Dimensions W x D x H [mm] | 615×285×386 | 615×285×386 | 615×285×386 | 635×280×200 |
| Weight [kg] | 41 | 41 | 41 | 36.5 |
| Power supply | 200 - 240V, 50/60Hz | 200 - 240V, 50/60Hz | 200 - 240V, 50/60Hz | 200 - 240V, 50/60Hz |

1) Included : 2 barbed fittings for tubing 16 mm inner dia.

# Vacuum Solvent Recovery System

This chemical vacuum system offers a wide range of applications, including evacuation, evaporation, and the handling of gases and vapors in chemical, biological, and pharmaceutical laboratories. It is particularly suited for high vacuum requirements involving high-boiling-point solvents. Typical applications include rotary evaporators and drying ovens.

The inlet separator, made of glass with a protective coating, effectively retains particles and liquid droplets, ensuring system efficiency and reliability. At the outlet, the waste vapor condenser is both highly efficient and compact. It enables effective solvent recycling and provides active environmental protection. Additionally, the system features exceptional chemical resistance and superior vapor tolerance.

> exceptionally high performance even at low vacuum
> excellent ultimate vacuum even with gas ballast
> whisper quiet and very low vibration
> excellent environmental friendliness due to efficient solvent recovery

> Sealed system to enable a good distillation environment
> Precise control of the evaporation process
> Compact and environmental friendly design
> Low noise

> Buffer bottle prevents particles from damaging the pump
> Direct electric connection
> Ultimate vacuum range: 1-30 mbar
> Flow rate range: 25-95 l/min

Gas out OD 8mm
Condenser
Connect the water hoses OD 8mm
Gas inlet OD 10mm
Condensate flask
Collecting flask 500ml
Pump

## CSH System

The inlet of the CSH System is connected to a segregation bottle, while the outlet is connected to a condenser designed to condense and recover the solvent.

| Model | CSH410 | CSH510 | CSH520 | CSH610 |
|---|---|---|---|---|
| Power (W) | 95 | 245 | 150 | 245 |
| Ultimate Vacuum (mbar) | 13 | 8 | 8 | 2 |
| Max. Flow Rate (l/min) | 25 | 34 | 50 | 34 |
| Outlet Size (outer diameter in mm) | 10 | 10 | 10 | 10 |
| IP code | IP20 | IP20 | IP20 | IP20 |
| Dimensions W x D x H [mm] | 341 x 255 x 545 | 341 x 255 x 545 | 341 x 255 x 545 | 341 x 255 x 545 |
| Weight (kg) | 12.5 | 15.8 | 17.1 | 16.6 |
| Order No. | 900512 | 900513 | 900515 | 900514 |

CSH System
Standard package includes: Includes chemical resistant diaphragm pump, separator, condenser

## CSC System

The inlet of the CSC System is connected to a segregation flask, while the outlet is connected to a condenser that condenses and recovers solvents. Additionally, the system includes a vacuum controller to set, display, and regulate the vacuum.

This fully automated vacuum generation system features a chemical-resistant diaphragm vacuum pump, a base plate, a high-performance condenser, a segregation flask, a vacuum control device, and integrated valves.

| Model | CSC410 | CSC510 | CSC520 | CSC610 |
|---|---|---|---|---|
| Power (W) | 95 | 245 | 150 | 245 |
| Ultimate Vacuum (mbar) | 13 | 8 | 8 | 2 |
| Max. Flow Rate (l/min) | 25 | 34 | 50 | 34 |
| Outlet Size (outer diameter in mm) | 10 | 10 | 10 | 10 |
| IP code | IP20 | IP20 | IP20 | IP20 |
| Dimensions W x D x H [mm] | 323 x 267 x 545 | 323 x 267 x 545 | 323 x 267 x 545 | 323 x 267 x 545 |
| Weight (kg) | 16 | 19.3 | 20.6 | 20.1 |
| Order No. | 900522 | 900523 | 900525 | 900524 |

OD 8mm
OD 8mm
OD 10mm
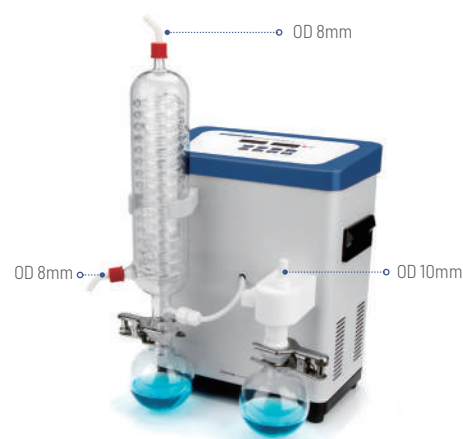
CSC System
Standard package includes: Includes chemical resistant diaphragm pump, vacuum controller, separator, condenser

## CSP System

The inlet of the CSP System is connected to a segregation bottle, while the outlet is connected to a condenser designed to condense and recover solvents. Additionally, the system is equipped with a vacuum controller to set, monitor, and regulate the vacuum.

| Model | CSP410 | CSP510 | CSP520 | CSP610 |
|---|---|---|---|---|
| Power (W) | 95 | 245 | 150 | 245 |
| Ultimate Vacuum (mbar) | 13 | 8 | 8 | 2 |
| Max. Flow Rate (l/min) | 25 | 34 | 50 | 34 |
| Outlet Size (outer diameter in mm) | 10 | 10 | 10 | 10 |
| IP code | IP20 | IP20 | IP20 | IP20 |
| Dimensions W x D x H [mm] | 320 x 425 x 500 | 320 x 425 x 500 | 320 x 425 x 500 | 320 x 425 x 500 |
| Weight (kg) | 16 | 19.3 | 20.6 | 20.1 |
| Order No. | 900542 | 900543 | 900545 | 900544 |

OD 8mm
OD 10mm
OD 8mm
OD 8mm

**CSP System**
Standard package includes: Includes chemical resistant diaphragm pump, vacuum controller, separator, condenser

## CSC Systems (Frequency conversion model)

A new generation of intelligent vacuum technology featuring a modular design with integrated variable-frequency pumps and control units, offering a compact and lightweight structure.

> PID self-turing for vacuum cotronl,the controller automatically changes the PID value according to the artificial intelligence logic algorithm, accurately adjusting the motor speed to get the precise vacuum value.

> All parts in contact with gas and condensate are made of high-quality PTFE. The gas chamber and drive chamber are separated and sealed to ensure a long life of the mechanical parts

> It can be directly connected to the power supply and working system.

> Recovery flasks at air inlet to prevent solid particles and liquid water from entering the pump chamber.

OD 8mm
OD 10mm
OD 8mm

| Model | CSC900E | CSC920Z | CSC960T | CSC980V |
|---|---|---|---|---|
| Power (W) | 400 | 400 | 400 | 400 |
| Resolution (mbar) | 0.1 | 0.1 | 0.1 | 0.1 |
| Setting range (mbar) | 0.1-1000 | 0.1-1000 | 0.1-1000 | 0.1-1000 |
| Max. vacuum (mbar) | < 30 | < 8 | < 2 | < 1 |
| Max. Flow Rate (l/min) | 95 | 75 | 60 | 40 |
| Outlet (mm) | 10 | 10 | 10 | 10 |
| IP code | IP20 | IP20 | IP20 | IP20 |
| Dimensions W x D x H [mm] | 220 x 400 x 495 | 220 x 400 x 495 | 220 x 400 x 495 | 220 x 400 x 495 |
| Weight (kg) | 25 | 25 | 25 | 25 |
| Sound pressure level Level (dB) | 50 | 50 | 50 | 50 |
| Order No. | 900532 | 900533 | 900534 | 900535 |

**CSC System (Frequency conversion)**
Standard package includes: Includes chemical resistant diaphragm pump, variable frequency controller, separator, condenser
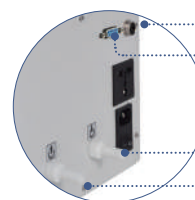
# Chemical Resistant Vacuum Controller

> Wide measurement and control range
> Control the vacuum down to 0.1 mbar
> Up to 5-step program control
> All parts that come into contact with gases and vapors are made of PTFE or highly durable ceramic to ensure high chemical resistance
> Bright LED display and convenient on-touch control
> RS-232 and analog connection available
> Pressure release feature for easy vacuum system installation
> Direct electric control of the vacuum pump
> Energy saving and environmental friendly
> Suitable for continuous operation

| Model | DVR480 | DVR480-Pro |
|---|---|---|
| Order No. | 900414-1 | 900414-2 |
| Voltage | 100-240V, 50/60Hz | 100-240V, 50/60Hz |
| Displayed Vacuum Accuracy (mbar) | 0.1 | 0.1 |
| Controllable Range (mbar) | 0.1...1000 | 0.1...1000 |
| Measurement Accuracy | 0.25%F.S | 0.1%F.S |
| Display | LED | LED |
| Control Mode | On-Touch | On-Touch |
| Timer / Program | Yes / Up to 5 Steps | Yes / Up to 5 Steps |
| Pressure Release Feature | Yes | Yes |
| Electrical Control of the Pump | Yes | Yes |
| Protection Category | IP40 | IP40 |
| Corrosion resistance | All parts that come into contact with gases are made of PTFE or highly durable ceramic to ensure the resistance to various acid, base, or organic solvent gases. | |

DVR480

- Analog Signal Input and Output Port
- RS-232 / RS-485, Modbus
- Inlet OD 10mm
- Outlet OD 10mm

# Chemical Resistant Vacuum Controller

Wiggens introduces the DVR580, a new-generation vacuum controller featuring innovative vacuum control technology. Designed for demanding vacuum applications, it simplifies the management of complex processes with precision and ease. The DVR580 is the ideal solution for laboratories requiring precise, reliable, and user-friendly vacuum control. Its advanced design and innovative technology make it perfect for a wide range of applications.

> Continuously adjustable
> Large, high-resolution TFT touch display with multilingual user interface
> Parts being in contact with the medium made of chemical resistant material
> Integrated programmer
> USB connection
> RS232 / RS485 interface for communication
> Integrated two vacuum control modes, valve control and frequency conversion control

| Model | DVR580 |
|---|---|
| Order No. | 900580 |
| Voltage | 100~240V / 50Hz |
| Hose connections of inlet / outlet (mm) | OD 10 |
| Displayed Vacuum Accuracy (mbar) | 0.1 |
| Controllable Range (mbar) | 0.1~1010 |
| Measurement Accuracy | 0.25%F.S |
| Display | Touch screen |
| Control Mode | Turning knob |
| Timer / Program | Yes, Max. 6 steps |
| Pressure Release Feature | Continuous / intermittent pressure relief |
| Protection Category | IP40 |
| Communicate interface. | RS232, RS485, USB |
| Corrosion resistance | All parts that come into contact with gases are made of PTFE or highly durable ceramic to ensure the resistance to various acid, base, or organic solvent gases. |
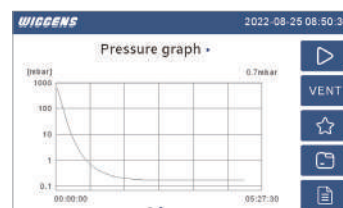
# Accessories for chemical resistant diaphragm pumps

## General purpose valves

A range of plug valves for applications with demand for pressure and temperature, with max. pressure at 1 bar and max. vacuum at 7mbar.

Note: Rapid changes in temperature in excess of 25℃ /min may cause these valves to leak due to the expansion properties of PTFE. It can be sterilised at 135℃ .

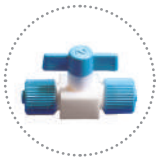### Straight Through Bayonet

| Order No. | Outer Diameter [mm] | Inner Diameter [mm] |
| --- | --- | --- |
| 016.702.5.2 | 4.5 | 2 |
| 016.702.2 | 6.0 | 2 |
| 016.703.7.2 | 6.8 | 3 |
| 016.703.2 | 8.0 | 3 |
| 016.704.9.2 | 9.0 | 4 |
| 016.704.2 | 10.0 | 4 |
| 016.705.2 | 11.0 | 5 |
| 016.706.2 | 16 | 10 |

### Straight Through Screw

| Order No. | Outer Diameter [mm] | Inner Diameter [mm] |
| --- | --- | --- |
| 016.1202.6.2 | 6 | 2 |
| 016.1203.2 | 8 | 3 |
| 016.1204.2 | 8 | 4 |

### T-Shape Bayonet

| Order No. | Outer Diameter [mm] | Inner Diameter [mm] |
| --- | --- | --- |
| 016.802.5.2 | 4.5 | 2 |
| 016.802.2 | 6.0 | 2 |
| 016.803.7.2 | 6.8 | 3 |
| 016.803.2 | 8.0 | 3 |
| 016.804.9.2 | 9.0 | 4 |
| 016.804.2 | 10.0 | 4 |
| 016.805.2 | 11.0 | 5 |

### T-Shape Screw

| Order No. | Outer Diameter [mm] | Inner Diameter [mm] |
| --- | --- | --- |
| 016.1302.6.2 | 6 | 2 |
| 016.1303.2 | 8 | 3 |
| 016.1304.2 | 8 | 4 |

### Straight Through Connector

| Order No. | Outer Diameter [mm] | Inner Diameter [mm] |
| --- | --- | --- |
| 016.902.5.2 | 4.5 | 2 |
| 016.902.2 | 6.0 | 2 |
| 016.903.7.2 | 6.8 | 3 |
| 016.903.2 | 8.0 | 3 |
| 016.904.9.2 | 9.0 | 4 |
| 016.904.2 | 10.0 | 4 |
| 016.905.2 | 11.0 | 5 |
| 016.907.2 | 16 | 10 |

### L-Shape Connector

| Order No. | Outer Diameter [mm] | Inner Diameter [mm] |
| --- | --- | --- |
| 016.1002.5.2 | 4.5 | 2 |
| 016.1002.2 | 6.0 | 2 |
| 016.1003.7.2 | 6.8 | 3 |
| 016.1003.2 | 8.0 | 3 |
| 016.1004.9.2 | 9.0 | 4 |
| 016.1004.2 | 10.0 | 4 |
| 016.1005.2 | 11.0 | 5 |
| 016.1006.2 | 16 | 10 |

### T-Shape Connector

| Order No. | Outer Diameter [mm] | Inner Diameter [mm] |
| --- | --- | --- |
| 016.1102.5.2 | 4.5 | 2 |
| 016.1102.2 | 6.0 | 2 |
| 016.1103.7.2 | 6.8 | 3 |
| 016.1103.2 | 8.0 | 3 |
| 016.1104.9.2 | 9.0 | 4 |
| 016.1104.2 | 10.0 | 4 |
| 016.1105.2 | 11.0 | 5 |
| 016.1106.2 | 16 | 10 |

### 4-Way Connector

| Order No. | Outer Diameter [mm] | Inner Diameter [mm] |
| --- | --- | --- |
| 016.1112.5.2 | 4.5 | 2 |
| 016.1112.2 | 6.0 | 2 |
| 016.1113.7.2 | 6.8 | 3 |
| 016.1113.2 | 8.0 | 3 |
| 016.1114.9.2 | 9.0 | 4 |
| 016.1114.2 | 10.0 | 4 |
| 016.1115.2 | 11.0 | 5 |
| 016.1116.2 | 16 | 10 |

# Accessories For Chemical Resistant Diaphragm Pumps

## PTFE Connector

| Order No. | Description |
|-----------|-------------|
| C410015 | Barbed fitting for tubing 10 mm ID, M10x1, suitable for C300 / 400 / 500 / 600 / 900 series |

PTFE Connector with O-ring

## Adapter

| Order No. | Description |
|-----------|-------------|
| C410055 | Barbed fitting for tubing 10 mm to KF25 adapter, suitable for C300 / 400 / 510 / 600 / 900 series |
| C410056 | Barbed fitting for tubing 12 mm ID, KF25, suitable for C1200 / 2000 series |
| C410057 | Barbed fitting for tubing 19 mm ID, KF25 , suitable for C1200 / 2000 series |
| C410058 | Barbed fitting for tubing 25 mm ID, KF25, suitable for C1200 / 2000 series |
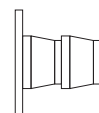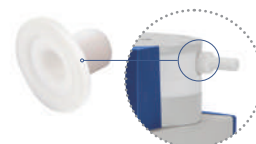
C410056          C410055

## Silencer

The use of silencer will slightly effect the flow rate.

| Order No. | Description |
|-----------|-------------|
| C900E030 | Suitable for chemical resistant diaphragm pumps |

Outlet

Silencer
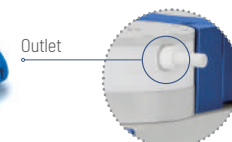
## Diaphragm and Valve Plate Sets

| Suitable for | diaphragm | valve plates | Number of pump heads * |
|--------------|-----------|--------------|------------------------|
| C300 | C410005 | C510013 | 1 |
| C400/410 | C410005 | C510013 | 2 |
| C510/600/610/ | C510011 | C510013 | 2 |
| C420 | C2000005 | C2000013 | 2 |
| C520/602 | C2000006 | C2000013 | 2 |
| C 900E/Z/T/V | C510011 | C510013 | 4 |
| C1200 E/Z/T/V | C2000005 | C2000013 | 4 |
| C2000 E/Z/T/V | C2000005 | C2000013 | 8 |

*Notes. Replacement of consumables for one pump head requires replacement of one diaphragm and two valve plates

Diaphragm

Valve Plate

## Diaphragm and valve plates set

| Order No. | Description |
|-----------|-------------|
| 410001 | Diaphragm and valve plates set, 1 diaphraqm and 2 valve plate, Suitable for C300/400/410 |
| 510001 | Diaphragm and valve plates set, 1 diaphragm and 2 valve plates, Suitable for C500/510/600/610/900 |
| 1200001 | Diaphragm and valve plates set, 1 diaphraqm and 2 valve plate, Suitable for 420 |
| 1200002 | Diaphragm and valve plates set, 1 diaphraqm and 2 valve plate, Suitable for 520/602 |
| 1200003 | Diaphragm and valve plates set, 1 diaphraqm and 2 valve plate, Suitable for C1200 series |
| 1200004 | Diaphragm and valve plates set, 1 diaphraqm and 2 valve plate, Suitable for C2000 series |

Diaphragm and valve plates set

## Tubing

| Order No. | Outer Diameter, mm | Inner Diameter, mm | Thickness, mm | Length, m |
|---|---|---|---|---|
| PTFE Tubing | | | | |
| 016.1706.01 | 6 | 4 | 1 | 1 |
| 016.1708.01 | 8 | 6 | 1 | 1 |
| 016.1712.01 | 12 | 10 | 1 | 1 |
| 016.1714.01 | 14 | 12 | 1 | 1 |
| 016.1716.01 | 20 | 18 | 1 | 1 |
| 016.1718.01 | 28 | 25 | 1.5 | 1 |
| Viton Tubing | | | | |
| 168000-01 | 12 | 6 | 3 | 1 |
| 168001-01 | 14 | 8 | 3 | 1 |
| 168002-01 | 16 | 10 | 3 | 1 |
| 168003-01 | 18 | 12 | 3 | 1 |
| 168004-01 | 25 | 19 | 3 | 1 |
| 168005-01 | 31 | 25 | 3 | 1 |

Length upon request (min. 1 m)
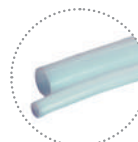
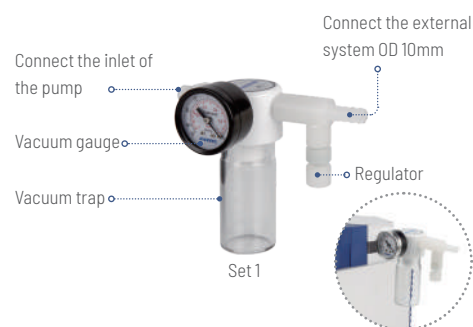

PTFE Tubing



Viton Tubing

## Chemical Resistant Vacuum Regulator / Filter Equipment

| Order No. | Description |
|---|---|
| 169311-06 | Set 1 (Includes vacuum trap, regulator and vacuum gauge ) |
| 169312-06 | Set 2 (Includes vacuum trap, regulator and digital meter DVM150C ) |
| 169313-06 | Basic model without vacuum gauge, includes vacuum trap and regulator |

| Part | Material | Part | Material |
|---|---|---|---|
| Pressure Regulating Valve | PVDF | Filter Bottle | Borosilicate Glass |
| Filter cartridge | PTFE | Adapter | PTFE |
| Filter Bracket | ABS | Vacuum Sensor | Stainless Steel |



Connect the external system OD 10mm

Connect the inlet of the pump

Vacuum gauge

Vacuum trap

Regulator

Set 1

Regulator

Digital meter

Vacuum trap

Set 2

## Digital Vacuum Meter

> Designed for chemical resistant diaphragm pumps
> Compact design, flange connector, strong tightness
> TFT high brightness screen, easy for observation from multiple angles or long distance
> Can be directly connected to a vacuum pump via a flange connection

| Models | DVM150C |
|---|---|
| Voltage | 100-240V, 50/60Hz |
| Display screen | High brightness TFT |
| Display resolution | 0.1mbar |
| Testing range | 0.1-1000mbar |
| Material of sensor | Ceramic |
| Material for contact parts of the gas | PTFE and Ceramic |
| Connection | KF25 or 1/4NPT female |
| Size of the meter | 100*65*55mm |
| Order No. | 15060-01 |



DVM150C



1/4 NPT
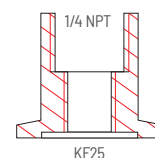
KF25

# Application Guide



## For rotary evaporator

| Pump models | Max. vacuum (mbar) | Flow Rate (l/min) | Suitable for |
|---|---|---|---|
| C420 | 13 mbar | 35 l/min | 1 L / 2.5 L |
| C520 | 8 mbar | 50 l/min | 5 L |
| C600 | 90 mbar | 60 l/min | 10 L |
| C610 | 2 mbar | 34 l/min | 5 L |
| C920Z | 8 mbar | 75 l/min | 50 L, 100 L |



## For vacuum oven

| Pump models | Max. vacuum (mbar) | Flow Rate (l/min) | Suitable for |
|---|---|---|---|
| C420 | 13 mbar | 35 l/min | 15L |
| C520 | 8 mbar | 50 l/min | 45L |
| C600 | 90 mbar | 60 l/min | 60L |
| C610 | 2 mbar | 34 l/min | 30L |



## For vacuum centrifugal concentrator

| Pump models | Max. vacuum (mbar) | Flow Rate (l/min) |
|---|---|---|
| C420 | 13 mbar | 35 l/min |
| C520 | 8 mbar | 50 l/min |
| C600 | 90 mbar | 60 l/min |
| C610 | 2 mbar | 34 l/min |



## For vacuum freeze dryer

| Pump models | Max. vacuum (mbar) | Flow Rate (l/min) |
|---|---|---|
| R-8D | $4 \times 10^{-4}$ mbar | 180 l/min |
| R-17D | $4 \times 10^{-4}$ mbar | 283 l/min |
| R-24D | $4 \times 10^{-4}$ mbar | 360 l/min |
| R-36D | $4 \times 10^{-4}$ mbar | 540 l/min |

# Oil-free piston vacuum pump

The Chemvak V Series vacuum pump is a piston-powered, oil-free pump. It combines innovative electronic and mechanical technology with a user-friendly design concept, offering a compact, lightweight structure that is clean, maintenance-free, safe, and comfortable to use.

## Features

### No air pollution, maintenance free
The Chemvak V Series pumps are piston-driven, requiring no lubrication or oil changes, ensuring maintenance-free operation and no risk of oil contamination.

### Moisture trap with filter cartridge
The Chemvak V Series pumps are equipped with a filter cartridge at the air inlet to remove particles and moisture, effectively extending the pump's lifespan.

### Oil-free
The oil-free piston vacuum pump provides continuous, reliable, high flow vacuum for your container.

### Vacuum regulator
The ChemVak V series pumps are equipped with vacuum regulator to adjust vacuum.

### Thermal protection device
Each motor in the Chemvak V Series pumps features built-in thermal protection, which automatically shuts off the pump when it overheats and resumes operation once the temperature cools down.
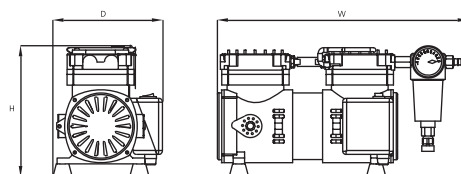
## Application

> Biology laboratories
> Food industry
> Microbiological detection
> Vacuum extraction
> Liquid filtration
> Vacuum drying
> Suspended solids measurement

### Oil-Free Piston Vacuum Pumps flow curve



Note: Above data is based on the 220V/50Hz instrument
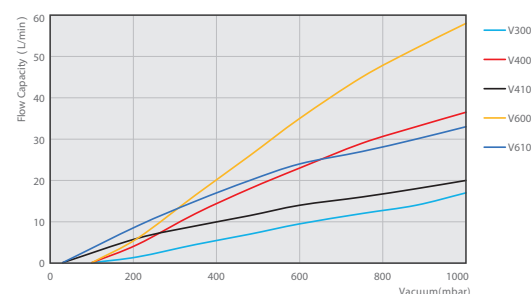




| V300 | V400 | V410 | V430 | V600 / V610 | V800 / V810 |

| Model / Specifications | V300DC | V300 | V400 | V410 | V430 | V600 | V610 | V800 | V810 |
|---|---|---|---|---|---|---|---|---|---|
| Order No. | 167330 | 167300 | 167400 | 167410 | 167430 | 167600 | 167610 | 167800 | 167810 |
| Flow rate [m³/h] at atm. pressure | 1.02 | 1.02 | 2.04 | 1.14 | 1.68 | 3.6 | 2.4 | 4.8 | 3 |
| Flow rate [l/min] at atm. pressure | 17 | 17 | 34 | 19 | 28 | 60 | 40 | 80 | 50 |
| Ultimate vacuum [mbar] | 150 | 100 | 100 | 30 | 150/5500 | 120 | 30 | 100 | 30 |
| Max. Power P [W] | 35 | 60 | 80 | 80 | 125 | 190 | 210 | 220 | 220 |
| Max. current [A] | 3 | 0.3 | 0.4 | 0.4 | 0.6 | 1 | 1 | 1 | 1 |
| Motor speed [rpm] | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 |
| Hose connections [OD mm] | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| IP code | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 |
| Sound pressure level [dB] | 50 | 50 | 60 | 50 | 50 | 52 | 65 | 75 | 75 |
| Dimensions W x D x H [mm] | 272x142x165 | 272x142x165 | 310x152x165 | 310x152x165 | 247x235x200 | 350x170x195 | 350x170x195 | 350x170x195 | 350x170x195 |
| Weight [kg] | 4.4 | 4.4 | 5.4 | 5.4 | 5.5 | 8.6 | 8.6 | 8.6 | 8.6 |
| Power supply | DC12 | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz |

# Accessories For Oil-Free Piston Pumps

## Connector
Replace the inlet port on the pump

| Description | Suitable for | Order No. |
|---|---|---|
| Connectors | | |
| Outlet Diameter  9.5 mm | Oil-Free Piston Pumps | 167300-20 |
| Outlet Diameter  8 mm | Oil-Free Piston Pumps | 167300-21 |
| Outlet Diameter  6.4 mm | Oil-Free Piston Pumps | 167300-26 |
| Outlet Diameter  4.8 mm | Oil-Free Piston Pumps | 167300-23 |
| Outlet Diameter  3.2 mm | Oil-Free Piston Pumps | 167300-24 |
| | | |
| L- Shape Connector | | |
| Outlet Diameter  8 mm | Oil-Free Piston Pumps | 167300-25 |
| | | |
| Quick Connection Outlet | | |
| Outlet Diameter  12 mm | Oil-Free Piston Pumps | 168100-12 |
| Outlet Diameter  10 mm | Oil-Free Piston Pumps | 168100-10 |
| Outlet Diameter  8 mm | Oil-Free Piston Pumps | 168100-08 |
| Outlet Diameter  6 mm | Oil-Free Piston Pumps | 168100-06 |
| Outlet Diameter  4 mm | Oil-Free Piston Pumps | 168100-04 |

## Silencer
Replace the outlet silencer on the pump

| Description | Suitable for | Order No. |
|---|---|---|
| Silencer | V300/400/410/V430 | 167300-42 |
| Silencer | V600/610/V800/V810 | 167600-42 |

## Tubing

| Outer Diameter mm | Inner Diameter mm | Thickness mm | Length m | Suitable for | Order No. |
|---|---|---|---|---|---|
| PER Tubes | | | | | |
| 6 | 4 | 1 | 1 | A,C,V Pumps | 168010-01 |
| 8 | 6 | 1 | 1 | A,C,V Pumps | 168011-01 |
| 10 | 8 | 1 | 1 | A,C,V Pumps | 168012-01 |
| 12 | 10 | 1 | 1 | A,C,V Pumps | 168013-01 |
| Silicon Tubes | | | | | |
| 12 | 6 | 3 | 1 | V Pumps | 168020-01 |
| 14 | 8 | 3 | 1 | V Pumps | 168021-01 |
| 16 | 10 | 3 | 1 | V Pumps | 168022-01 |

Length upon request (min. 1m)

## Foot switch

| Description | Suitable for | Order No. |
|---|---|---|
| Foot switch* | Applicable to C and V Series Vacuum Pumps | 167200-41 |

*Factory installation

## Non-Chemical-Resistant Filtration Device

| Description | Suitable for | Order No. |
|---|---|---|
| Non-Chemical-Resistant Filtration Device Set 1(incl. pressure gauge) | V300/400/410/V430 | 167300-05 |
| Non-Chemical-Resistant Filtration Device Set 1(incl. pressure gauge) | V600/610 | 167300-06 |
| Non-Chemical-Resistant Filtration Device Set 1(incl. pressure gauge) | V800/V810 | 167300-09 |

Connect the inlet of the pump
Connect the external system
Vacuum gauge
Vacuum trap
Regulator
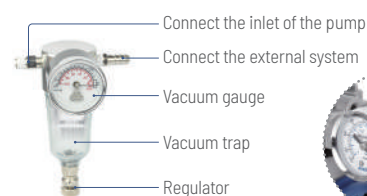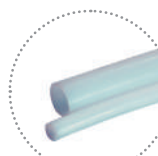
167300-05/06

167300-09

# Rotary Vane Vacuum Pump

Oil-sealed Rotary Vane vacuum pumps are widely used traditional vacuum pumps in research and production, which can be used independently, or serve as backing pumps for molecular pumps or diffusion pumps. Wiggens' direct driven rotary vane pumps are available as one and two-stage versions, covering the range from desktop lab pumps to production line pumps, with low noise and stable working temperature for common voltages and frequencies, long lifespan, and outstanding reliability for chemical applications. Various application areas may include vacuum distillation, vacuum filtration, vacuum inspection, vacuum freeze drying, vacuum coating, vacuum leak detection, vacuum packaging, vacuum adsorption, etc.



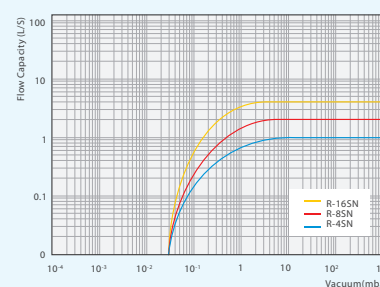R-4SN                    R-8SN                    R-16SN



Oil level indication

Connector and adapter

Inlet, UNF 7/16"-20
SAE 3/8"
Outlet, KF25
Oil Mist Filter

### Pumping rate curve



Note: Above data is based on the 220V/50Hz instrument

| Model / Specifications | R-4SN | R-8SN | R-16SN |
|---|---|---|---|
| Order No. | 900101 | 900102 | 900104 |
| Flow rate [$m^3$/h] at atm. pressure | 3 | 7.2 | 14.4 |
| Flow rate [l/min] at atm. pressure | 50 | 120 | 240 |
| Ultimate vacuum [mbar] | $2.5 \times 10^{-2}$ | $2.5 \times 10^{-2}$ | $2.5 \times 10^{-2}$ |
| Max. Power P [W] | 180 | 250 | 550 |
| Motor speed [rpm] | 1400 | 1400 | 1400 |
| Hose connections of inlet | SAE 3/8″ / UNF 7/16-20 | SAE 3/8″ / UNF 7/16-20 | DN25KF |
| Hose connections of outlet | DN25KF | DN25KF | DN25KF |
| Oil filling volume [L] | 0.25 | 0.33 | 1 |
| IP code | IP20 | IP20 | IP20 |
| Sound pressure level [dB] | 54 | 54 | 54 |
| Dimensions W x D x H [mm] | 314×280×122 | 314×288×142 | 512×300×158 |
| Weight [kg] | 9 | 11 | 22 |
| Power supply | 220V/50Hz | 220V/50Hz | 220V/50Hz |
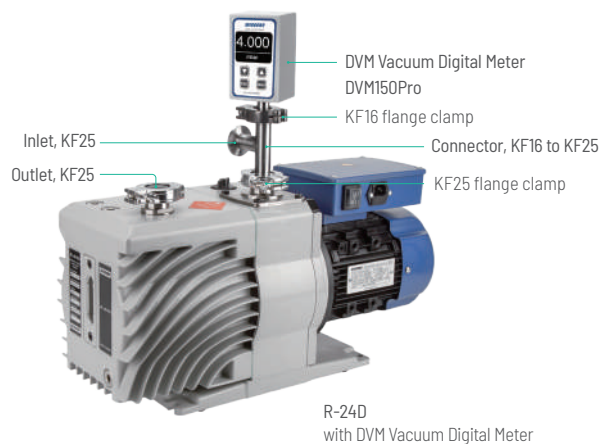
## Features

> Compact structure
> Very good sealing
> No returning throughput
> Oil-spout prevention
> Low noise
> Oil-observation window
> Handle for easy transportation
> High flow rate
> Low and stable ultimate vacuum
> High evaporation resistance
> Comparatively high chemical resistance
> High longevity
> Low maintenance rate
> Low oil mist
> Gas ballast valve
> Overcurrent protection

DVM Vacuum Digital Meter
DVM150Pro
KF16 flange clamp
Inlet, KF25
Connector, KF16 to KF25
Outlet, KF25
KF25 flange clamp
R-24D
with DVM Vacuum Digital Meter

## Application

> Vacuum distillation
> Vacuum filtration
> Vacuum testing
> Vacuum freeze drying
> Vacuum plating
> Leak detection
> Vacuum packaging
> Vacuum sorption
> As a backing pump for turbo-molecular pumps or diffusion pumps

## Pumping rate curve
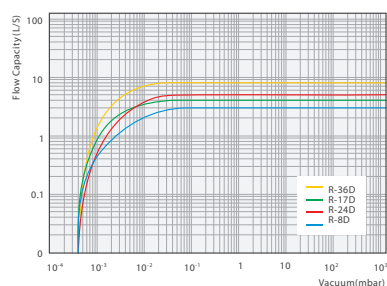


R-36D
R-17D
R-24D
R-8D

Note: Above data is based on the 220V/50Hz instrument

| Model / Specifications | R-8D | R-17D | R-24D | R-36D |
|---|---|---|---|---|
| Order No. | 900111 | 900112 | 900025 | 900035 |
| Flow rate [m³/h] at atm. pressure | 10.8 | 16.8 | 21.6 | 32.4 |
| Flow rate [l/min] at atm. pressure | 180 | 280 | 360 | 540 |
| Ultimate vacuum [mbar] | $4.0 \times 10^{-4}$ | $4.0 \times 10^{-4}$ | $4.0 \times 10^{-4}$ | $4.0 \times 10^{-4}$ |
| Max. Power P [W] | 550 | 750 | 750 | 1100 |
| Motor speed [rpm] | 1400 | 1400 | 1400 | 1400 |
| Hose connections of inlet | DN25KF | DN25KF | DN25KF | DN25KF |
| Hose connections of outlet | DN25KF | DN25KF | DN25KF | DN25KF |
| Oil filling volume [L] | 1.1 | 1.4 | 1.9 | 2.1 |
| IP code | IP20 | IP20 | IP20 | IP20 |
| Sound pressure level [dB] | 54 | 54 | 56 | 56 |
| Dimensions W x D x H [mm] | 485 x 252 x 165 | 510 x 252 x 165 | 570 x 288 x 205 | 600 x 288 x 205 |
| Weight [kg] | 29 | 31 | 37 | 39 |
| Power supply | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz |

# Chemical Hybrid Vacuum Pump

The Wiggens chemical hybrid vacuum pump is an optimized, corrosion-resistant combination of a two-stage rotary vane pump and a chemistry diaphragm pump. The diaphragm pump continuously maintains the oil reservoir of the rotary vane pump under vacuum, preventing condensation in the oil-sealed components under specific pressure and temperature conditions.

This design significantly reduces oxidation and the condensation of corrosive gases, thereby extending the overall service life of the pump while retaining the high vacuum performance characteristic of rotary vane pumps.

The chemical hybrid vacuum pump is ideal for high-vacuum experiments involving chemical reagents. Typical applications include lyophilization, distillation, vacuum drying ovens, and concentrators.

## Features

> Ultra-high vacuum up to $4 \times 10^{-3}$ mbar, max. flow rate 75 l/min
> High vacuum and chemical-resistant design
> Integrated gas-liquid separator to collect oil mist condensation
> Spy glass for easy monitoring of oil level and quality
> Cost-effective design eliminates the need for a cold trap
> DN25 vacuum inlet with multiple adapter options
> Integrated safety vacuum gauge for real-time oil chamber monitoring
> Available accessories: vacuum tubes, adapters, valves, and digital vacuum meter

## Structure introduction



Gas-liquid separator  Gas ballast

Side drain port  Main drain port



Safety vacuum gauge  Vacuum inlet  Power box
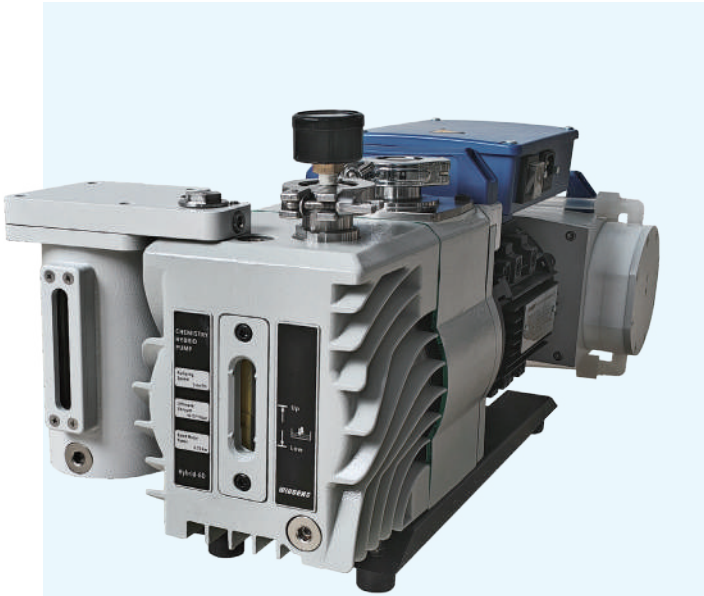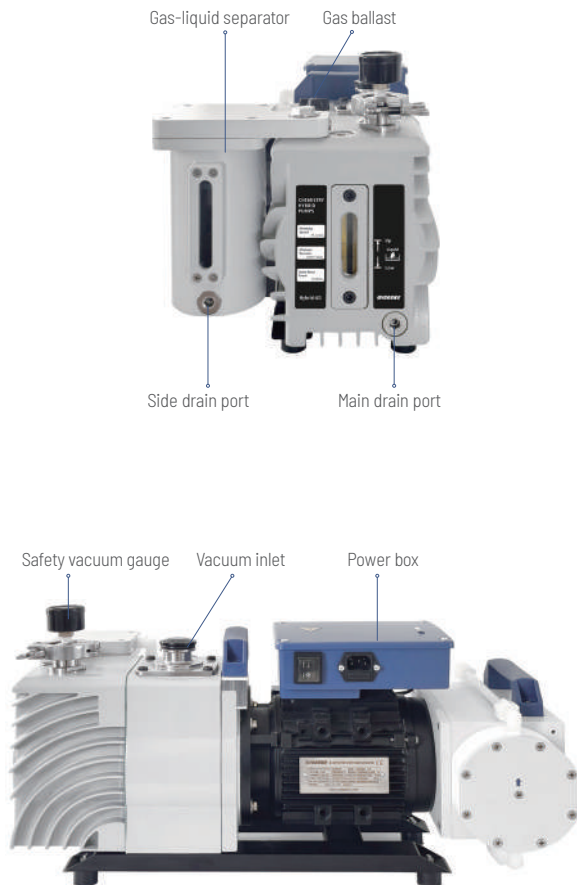
| Model / Specifications | Hybrid-6D | Hybrid-8D |
|---|---|---|
| Order No. | W1062010 | W1062020 |
| Pump head | 2 + 2 | 2 + 2 |
| Flow rate [m3/h] at atm. pressure | 4.5 | 10.8 |
| Flow rate [l/min] at atm. pressure | 75 | 180 |
| Ultimate vacuum [mbar abs.] | $4 \times 10^{-4}$ | $4 \times 10^{-4}$ |
| Ultimate vacuum with gas ballast [mbar] | $4 \times 10^{-2}$ | $4 \times 10^{-2}$ |
| Water vapor tolerance with gas ballast [mbar] | 50 | 50 |
| Oil filling volume [L] | 0.65~0.85 | 0.65~0.9 |
| Max. outlet pressure [bar] | 1.1 | 1.1 |
| Hose connections of inlet [mm] | KF DN 25 | KF DN 25 |
| Hose connections of outlet [mm] | 12 | 12 |
| Max. Power [kW] | 0.55 | 0.75 |
| Motor speed [rpm] | 1400 | 1400 |
| IP code | IP 40 | IP 40 |
| Dimensions W x D x H [mm] | 600 x 310 x 305 | 680 x 310 x 310 |
| Weight [kg] | 37.5 | 45.5 |
| Sound pressure level [dB] | 55 | 60 |
| Power supply | AC230V 50Hz | AC230V 50Hz |

# WIGGENS
## The Magic Motion

# Accessories for Rotary Vane Vacuum Pumps

## Oil Mist Filter

The gas discharged from the outlet often contains oil mist, which can affect the surrounding environment and may sometimes pose health risks. ChemVak's exhaust filter effectively eliminates nearly all oil mist, redirecting it back into the pump to minimize environmental impact. Additionally, it helps to reduce operational noise for a quieter working environment.

| Name | Suitable for | Order No. |
|------|-------------|-----------|
| Oil mist trap | R-4SN, R-8SN (Direct connection,outlet DN25KF) | 900101-1 |
| Oil mist trap | R-16SN, R-8D, R-17D, R-24D, R-36D (Direct connection,outlet DN25KF) | 900111-1 |

900111-1     900101-1

## Condensate Separator, Dust Filter
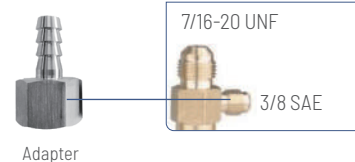
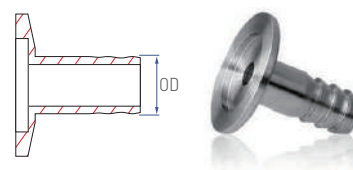| Name | Suitable for | Order No. |
|------|-------------|-----------|
| Filter element for oil mist trap | Replacement for 900111-1 oil mist trap | 900111-2 |
| Condensate separator | R-16SN, R-8D, R-17D, R-24D, R-36D | 900111-3 |
| Dust filter | R-16SN, R-8D, R-17D, R-24D, R-36D | 900111-4 |

Dust Filter

## Adapter

| Name | Description | Order No. |
|------|-------------|-----------|
| Adapter | Barbed fitting for tubing 8mm ID, 3/8 SAE. Suitable for R-4SN / R-8SN | 168900-82 |
| Adapter | Barbed fitting for tubing 10mm ID, 3/8 SAE. Suitable for R-4SN / R-8SN | 168900-83 |
| Adapter | Barbed fitting for tubing 12mm ID, 3/8 SAE. Suitable for R-4SN / R-8SN | 168900-84 |

7/16-20 UNF

3/8 SAE

Adapter

## Flange adapter

| Name | Description | Order No. |
|------|-------------|-----------|
| Flange adapter | Barbed fitting for tubing 8mm ID, KF25. Suitable for R-16SN, R-8D, R-17D, R-24D, R-36D | 168900-08 |
| Flange adapter | Barbed fitting for tubing 10mm ID, KF25. Suitable for R-16SN, R-8D, R-17D, R-24D, R-36D | 168900-10 |
| Flange adapter | Barbed fitting for tubing 12mm ID, KF25. Suitable for R-16SN, R-8D, R-17D, R-24D, R-36D | 168900-12 |
| Flange adapter | Barbed fitting for tubing 19mm ID, KF25. Suitable for R-16SN, R-8D, R-17D, R-24D, R-36D | 168900-19 |
| Flange adapter | Barbed fitting for tubing 25mm ID, KF25. Suitable for R-16SN, R-8D, R-17D, R-24D, R-36D | 168900-25 |

OD

KF25 to pump
KF16 to DVM 150 Pro
KF25 inlet
SAE 3/8"

① ②

④③

## Adapter

| No. | Description | Order No. |
|-----|-------------|-----------|
| ① | Connector, KF16 to KF25, suitable for R-16SN, R-8D, R-17D, R-24D, R-36D | DVM150BJFL001 |
| ② | Connector, KF16 to threaded connector, suitable for R-4SN, R-8SN | DVM150BJFL002 |
| ③ | KF16 flange clamp, with sealing ring | BJFL003 |
| ④ | KF25 flange clamp, with sealing ring | BJFL004 |
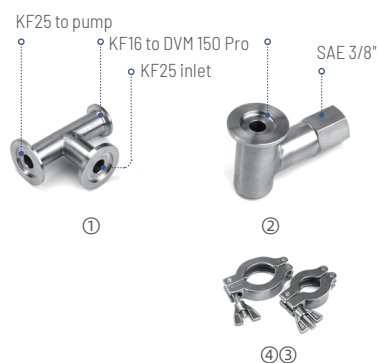
## Highspeed Pump Oil

ChemVak highspeed oil offers excellent lubrication performance with superior resistance to emulsification and oxidation. It enhances system durability and helps achieve a stable ultimate vacuum, ensuring reliable and long-lasting operation.

|  | Order No. |
| --- | --- |
| 500 ml | 900100-04 |
| 1 L | 900100-05 |
| 5 L | 900100-02 |
| 10 L | 900100-03 |

## Thick Vacuum Tubing

Thick rubber tubing designed for use in very high-vacuum applications, offering excellent durability, flexibility, and airtight performance to ensure reliable operation under extreme conditions.

| Inner Diameter(mm) | Thickness (mm) | Length(m) | Order No. |
| --- | --- | --- | --- |
| 8 | 5 | 1 | 22690-06 |
| 10 | 9.5 | 1 | 22690-11 |
| 12 | 9.5 | 1 | 22690-13 |
| 19 | 9.5 | 1 | 22690-21 |
| 25 | 9.5 | 1 | 22690-26 |
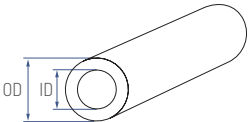
## Krytox LVP High-Vacuum Grease

Highly inert, nonflammable grease with exceptionally low vapor pressure, specifically designed for high-vacuum systems. Delivers superior performance as both a lubricant and sealant for stopcocks, valves, fittings, and O-rings operating in high-vacuum or hostile environments. Ideal for use in laboratory and pilot plant equipment.

|  | Order No. |
| --- | --- |
| 50g | 8116-10 |

## Digital Vacuum Meter

> Designed for rotary vane pumps
> Compact design with flange connection, ensuring strong sealing performance
> High-brightness TFT screen for easy observation from multiple angles or long distances
> Direct flange connection to vacuum pumps, with stainless steel materials for gas-contacting parts
> Standard KF16 connection

| Model | Display resolution | Testing range | Material of sensor | Size of the meter | Order No. |
| --- | --- | --- | --- | --- | --- |
| DVM150Pro | 0.001mbar | 0.001-9.999mbar | PIRANI | 100*65*55mm | 15060-02 |

KF16 Flange adapter

DVM150Pro

# COLD TRAP with refrigerated system

Cold traps are designed to capture condensation from humidity or solvents by providing a low-temperature surface where vapors condense into liquids or solids. Commonly used alongside vacuum pumps, they play a critical role in protecting pumps and maintaining system integrity.

These devices are essential in applications involving vacuum distillation, freeze-drying, and volatile compound separation. They are particularly effective in high-vacuum setups, such as those using oil diffusion or turbo-molecular pumps, where they prevent contamination and reduce pump load. Cold traps are also widely employed in systems with rotating evaporators to efficiently collect solvent vapors.

## Features

> Compact design with a small footprint

> Cooling temperature reaches -40℃

> State-of-the-art control technology for fast and precise results

> User-friendly and intuitive operation

> Extra-bright display, easy to read from a distance

> Removable venting grid for quick and easy cleaning

> Two glass cold traps can be configured in series or parallel

Bath lid
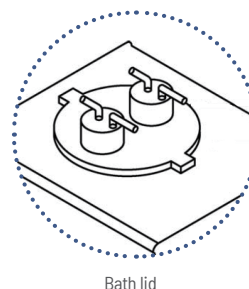
## Additional advantages of CTB-40C

Comfortable and easy to operate (3 keys)
Protective functions, adjustable high temperature cut-off or dry-running protection
With just three keys, the CTB-40C allows for easy temperature settings. Additionally, it features protective functions such as an adjustable high-temperature cut-off and dry-running protection for enhanced safety and reliability.

## Specifications

| Model | CTB-40 | CTB-40C |
|---|---|---|
| Working temperature range | Up to -40℃ | -40℃ ~+20℃ |
| Temperature display resolution | 0.1℃ | 0.1℃ |
| Temperature control model | Without control | PID control |
| Bath volume | 4.8L | 4.8L |
| Dimensions (W × L × H) | 360x465x555mm | 360x465x555mm |
| Power supply | 220V/50Hz, 3A | 220V/50Hz, 3A |
| Tube connection | Barbed fittings for tubing 10mm inner dia | Barbed fittings for tubing 10mm inner dia |
| Scope of delivery | Standard with two glass cold traps | Standard with two glass cold traps |

## Accessories

| Order No. | Part | Description |
|---|---|---|
| W8603040 | CTB-40 | Refrigerated system with cold trap, without temperature control |
| W8603041 | CTB-40C | Refrigerated system with cold trap, with temperature control |
| W01110 | Glass cold trap | Borosilicate glass material, 2 each barbed fittings for tubing 10mm inner dia |

# Electrical aspirator pump

# Portable dual-channel, water-jet aspirator pump.

VE-11 creates a vacuum using an aspirator pump that is dependent on the vapor pressure of water.
Ideal for rotary vacuum evaporators, decompressing distillatories, vacuum dryers, and vacuum filtering units.

## Features

> Economic use of resources
> High flow rate up to 36 l/min
> Vacuum can be regulated between 20 mmHg and 74 mmHg
> Employs two water flow and gas suction devices, a check valve, and an upstream prevention device
> Housing is made of PP to enhance longevity
> Small amounts of liquid in the machine don't harm the system. Built-in circulating pump and water tank makes this unit portable and eliminates water waste.
> Circulating pump continuously forces water quietly across a set of aspirators, and therefore clean and efficient.
> Included (2) metal aspirators to create a vacuum with a built-in check valve to prevent backflow of water into the aspirator pump.
> Submerged parts: 304 stainless steel, polypropylene silicone, and nickel-coated brass.
> Tank features a drain port and spigot for easy water changes.
> Unlike other vacuum pumps the VE-11 can suck a little bit of solvent. (water)

## Standard

> Tank / Aspirating pump / Tank closure.
> Two aspirators.
> Two ø6mm (0.02″) silicone rubber tube 20cm (0.7 ft) in length and an additional ø6mm (0.02″) silicone rubber tube 100cm (3.3 ft)in length.
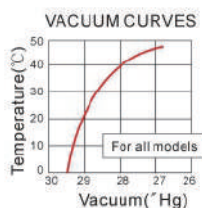


## VE-11

Vacuum gauge / regulator are optional

## Specifications & Ordering Information

| Model | | VE-11 |
|---|---|---|
| Max. Flow Rate | | 36 l/min (18 l/min*2) |
| Water Tank Capacity(L) | | 9.5 L |
| Motor Power(W) | | 150 W |
| Material (Water Tank) | | Polypropylene |
| Dimensions | Water Tank(WxDxH mm) | 298 x 210 x 227 |
| | Case(WxDxH mm) | 330 x 265 x 390 |
| | Absorption nozzle (mm) | Ø9.5 x 2 |
| | Overflow nozzle (mm) | Ø17 |
| Safety Devices | | Fuse, check valve, overheat protection |
| IP code | | IP20 |
| Weight (kg) | | 5.7 |
| Order No. | | 900701 |

## Application Area

> Filtration
> Distillation
> Rotary evaporation



Vacuum Gauge / Regulator (Option)

## Optional Accessories

> Vacuum gauge / regulator: to monitor and control the vacuum pressure. (between 0.0267~0.0998MPa / 7.9~29.5″ Hg)
> Cooling coil: to prevent vacuum from decreasing due to temperature increase.

## Accessories

| Description | Order No. |
|---|---|
| Vacuum Gauge / Regulator | 900701-1 |
| VC-10 Cooling Coil | 900701-2 |
| ET-02 Aspirator | 900701-3 |



VC-10 Cooling Coil     ET-02 Aspirator

# Vacuum Filtration

## Single position vacuum filtration system

### Portable vacuum filtration system

P64

VF203A

VF203B

VF205A

VF205B

VF204

VF214

### Bench-top vacuum filtration system

P65

V300A

V300B

V300SS

C300A

### Vacuum pump and filtration sets

P66

VF1

VF2

VF3

VF5

VF6

VF7

VF8

VF9

VF10

VF11

VF12

VF30

VF32

VF33

P54

P39

V300

V400

C300

# Multi-position vacuum filtration system

## Spin-lock type

P71

BioVac 330B

Quick installation, easy to clean

BioVac 630B

## Quick-insert type

P71

BioVac 320A

Suitable for magnetic funnel, glass funnel, quick installation

BioVac 320B

## Vacuum pump and filtration sets

Spin-lock type of Manifold P72

Step 1. Manifold selection

P72 Quick-insert type of Manifold

BioVac 330

BioVac 630

BioVac 320

BioVac 620

Filter cup P76

Step 2. Funnels and filter cup selection

P75 Funnels

Stainless Steel Filter Cup
(Cylinder Type)

Stainless Steel Filter Cup
(Cone Type)

PES magnetic funnels

Glass funnels

PS funnels

Step 2. Vacuum pump selection

V400

P54

V600

# WIGGENS
### THE MAGIC MOTION

# Portable vacuum filtration system

## All-In-One Systems

> Compact and portable design
> Combines all necessary items for filtration
> Large varieties of filtration flasks
> Oil-free vacuum provision
> Easy maintenance
> Low noise level
> Manual pressure control
> Availability of chemical resistant systems

| Product | Standard | Application | Contained Filtration Glass Set |
|---|---|---|---|
| VF203A | > Oil-free vacuum pump<br>> VF6 filtration flask set<br>> Silicone tube<br>> 0.2 μm water-blocking filter<br>> Fiberglass filter membrane fiberglass filter membrane (47mm / 1 μm) | Normal filtration<br>Suspended solids measurement | |
| VF203B | > Oil-free vacuum pump<br>> VF2 filtration flask set<br>> Dragon 100 lab burner<br>> Silicone tube<br>> 0.2 μm water-blocking filter<br>> Fiberglass filter membrane fiberglass filter membrane (47mm / 1 μm) | Normal filtration<br>Microorganism determination | |
| VF205A | > Strong oil-free vacuum pump<br>> VF6 filtration flask set<br>> Silicone tube<br>> 0.2 μm water-blocking filter<br>> Fiberglass filter membrane fiberglass filter membrane (47mm / 1 μm) | Normal filtration<br>Suspended solids measurement | |
| VF205B | > Strong Oil-free vacuum pump<br>> VF2 filtration flask set<br>> Dragon 100 lab burner<br>> Silicone tubee<br>> 0.2 μm water-blocking filter<br>> Fiberglass filter membrane fiberglass filter membrane (47mm / 1 μm) | Normal filtration<br>Microorganism determination | |
| VF204 | > Chemical resistant vacuum pump<br>> VF3 filtration flask set<br>> High-pressure resistant tube<br>> 0.2 μm water-blocking filter | HPLC<br>Gas chromatography<br>AA micro-analysis<br>Mobile phase decontamination | |
| VF214 | > Strong chemical resistant vacuum pump<br>> VF3 filtration flask set<br>> High-pressure resistant tube<br>> 0.2 μm water-blocking filter | HPLC<br>Gas chromatography<br>AA micro-analysis<br>Mobile phase decontamination | |

## Specifications

| Model | VF 203A | VF 203B | VF 205A | VF 205B | VF 204 | VF 214 |
|---|---|---|---|---|---|---|
| Working mode | All-In-One Filtration System | | All-In-One Filtration System | | Chemical Resistant Vacuum Filtration System | |
| Power (W) | 60 | 60 | 80 | 80 | 60 | 95 |
| Ultimate vacuum(mbar) | 150 | 150 | 150 | 150 | 100 | 13 |
| Max. Flow Rate(l/min) | 17 | 17 | 34 | 34 | 22 | 25 |
| Tube I.D. (mm) | 8 | 8 | 8 | 8 | 8 | 8 |
| Motor Speed (rpm) | 1450 | 1450 | 1450 | 1450 | 1450 | 1450 |
| Weight (kg) | 7.1 | 7.1 | 7.5 | 7.5 | 7.1 | 8.3 |
| Sound pressure level (dB) | 50 | 50 | 60 | 60 | 50 | 50 |
| Contained Filtration Glass Set | VF6 | VF2 | VF6 | VF2 | VF3 | VF3 |
| Order No. | 167203A | 167203B | 167205A | 167205B | 169204 | 169214 |

# Bench-top vacuum filtration system

## Features
> Wide range of pumps and filtration flasks
> High quality components
> Quick filtration results
> Easily exchangeable elements

## Application
> Suspended solids measurement
> HPLC
> Gas chromatography
> AA micro-analysis
> Mobile phase decontamination
> Food and beverages industry
> Pharma industry



V300A  V300B  V300SS  C300A

| Product | Features | Standard content | Application |
|---|---|---|---|
| V300A | > Modular design<br>> Environmental friendly<br>> Maintenance-free<br>> Low noise<br>> Added filters for enhanced pump longevity | > Oil-free vacuum pump<br>> VF6 filtration flask set<br>> Silicone tube<br>> Fiberglass filter membranes (47mm / 1 µm)<br>> PTFE disc filter | Water quality measurement<br>Normal liquid filtration |
| V300B | > Modular design<br>> Magnetic Stability Cup<br>> Environmental friendly<br>> Maintenance-free<br>> Low noise<br>> Added filters for enhanced pump longevity | > Oil-free vacuum pump<br>> VF1 magnetic filtration flask set<br>> Silicone tube<br>> Fiberglass filter membranes (47mm / 1 µm)<br>> PTFE disc filter | Suspended solids measurement<br>Normal liquid filtration |
| V300SS | > Modular design<br>> Flame-sterilizable<br>> Spin-Lock system<br>> Environmental friendly<br>> Maintenance-free<br>> Low noise<br>> Added filters for enhanced pump longevity | > Oil-free vacuum pump<br>> VF2 filtration flask set<br>> Dragon 100 lab burner<br>> Silicone tube<br>> Fiberglass filter membranes (47mm / 1 µm)<br>> PTFE disc filter | Microbiological detection<br>All kinds of liquid filtration |
| C300A | > Chemical Resistance<br>> Modular design<br>> Environmental friendly<br>> Low maintenance<br>> Low noise<br>> Added filters for enhanced pump longevity | > Chemical resistant vacuum pump<br>> VF3 filtration flask set<br>> High-pressure resistant tube<br>> PTFE disc filter | Sample pretreatment for HPLC, GC, and AA analysis<br>All kinds of solvent purification (mobile phase) |

## Specifications

| Model | V300A | V300B | V300SS | C300A |
|---|---|---|---|---|
| Flow Rate of the Pump(l/min) | 17 | 17 | 17 | 22 |
| Ultimate Vacuum(mbar) | 150 | 150 | 150 | 210 |
| Filtration Glass Set | VF6 | VF1 | VF2 | VF3 |
| Suction Bottle Capacity (ml) | 1000 | 1000 | 1000 | 1000 |
| Filter Diameter (mm) | 47/50 | 47/50 | 47/50 | 47/50 |
| Filter Flask Capacity (ml)<br>Filter Flask Material | 300<br>(Glass Filter Cup) | 300<br>(Magnetic Filter Cup) | 100<br>(Stainless Steel Filter Cup) | 300<br>(Glass Filter Cup) |
| Effective Filtration Area (cm$^2$) | 8 | 9.6 | 9.6 | 8 |
| Tube I.D. (mm) | 8 | 8 | 8 | 8 |
| Order No. | 167301 | 167302 | 167303 | 169301 |

# WIGGENS
THE MAGIC MOTION

# Filtration set

> Vacuum filtration technique is widely used in liquid filtration in microbiological detection, suspended solid detection, sample pre-process or solvent purification, mostly for microanalysis of HPLC, GC, or AA in food, medicine, beverage, drinking water, etc.
> This unique design combines a filtration funnel with a receiver flask with drain, together with magnetic weighted base, guaranteeing the efficiency and stability.

| Model | | VF1 | VF2 | VF3 | VF5 | VF6 | VF7 | VF8 |
|---|---|---|---|---|---|---|---|---|
| Material | Funnel | PES | SUS316 | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass |
| | Funnel Base | PES | SUS316 | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass |
| | Membrane Support | PP | SUS316 | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass | Stainless Steel Micro-Strainer | Stainless Steel Micro-Strainer |
| | Stopper | Silicon | Silicon | — | Silicon | Silicon | Silicon | Silicon |
| | Receiver Flask with Drain | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass |
| Funnel Capacity (ml) | | 300 | 100 | 250 | 15 | 250 | 250 | 15 |
| Filtration Flask Capacity (ml) | | 1000 | 1000 | 1000 | 125 | 1000 | 1000 | 125 |
| Filter Diameter (mm) | | 47 | 47 | 47 | 25 | 47 | 47 | 25 |
| Effective Filtration Area (cm$^2$) | | 9.6 | 9.6 | 8 | 2.2 | 8 | 8 | 2.2 |
| Tube I.D. (mm) | | 8 | 8 | 8 | 8 | 8 | 8 | 8 |

## Drawing for filtration principle

Fibreglass filter membrane

Filter membrane support

WIGGENS
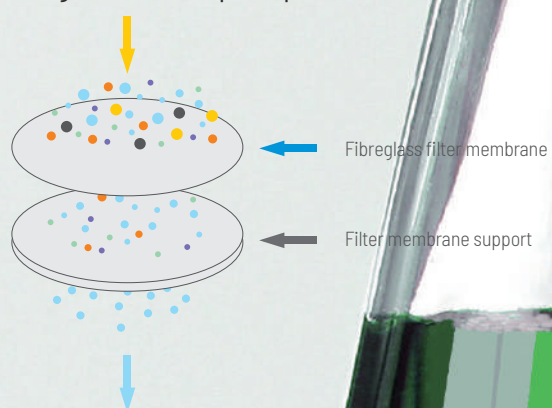
| Model | | VF9 | VF10 | VF11 | VF12 | VF30 | VF32 | VF33 |
|---|---|---|---|---|---|---|---|---|
| Material | Funnel | SUS316 | Borosilicate Glass | SUS316 | Borosilicate Glass | PES | SUS316 | SUS316 |
| | Funnel Base | SUS316 | Borosilicate Glass | SUS316 | Borosilicate Glass | PES | SUS316 | SUS316 |
| | Membrane Support | SUS316 | Borosilicate Glass | SUS316 | Borosilicate Glass | PP | SUS316 | SUS316 |
| | Stopper | Silicon | — | Silicon | Silicon | Silicon | Silicon | Silicon |
| | Receiver Flask with Drain | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass | Borosilicate Glass |
| Funnel Capacity (ml) | | 300 | 1000 | 500 | 250 | 300 | 100 | 300 |
| Filtration Flask Capacity (ml) | | 1000 | 4000 | 2000 | 1000 | 1000 | 1000 | 1000 |
| Filter Diameter (mm) | | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| Effective Filtration Area (cm$^2$) | | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 |
| Tube I.D. (mm) | | 8 | 8 | 8 | 8 | 8 | 8 | 8 |

## Order Information

### 300ml Magnetic Filtration set

47mm, PP membrane support

For solvent purification, general filtration and waste inhalation
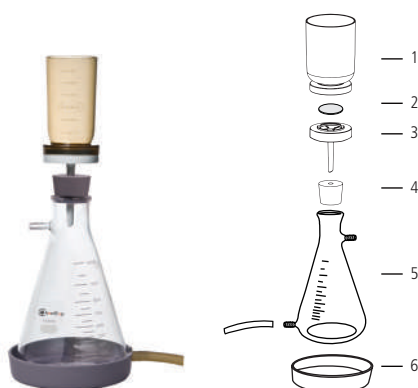


| VF1 | 167200-01 |
|---|---|
| Magnetic filter funnel 300 ml （1+2+3+4） | 167100-18 |
| 1    300 ml Magnetic filter cup | 167000-34 |
| 2    PP Membrane support | 167000-37 |
| 3    PES Filtration base | 167000-35 |
| 4    Silicone stopper | 167110-17 |
| 5    Receiver flask with drain, 1000 ml | 167300-08 |
| 6    Weighted base | 167200-04 |

### 100ml Stainless Steel Filtration Set

47mm, Stainless steel membrane support

For filtration requiring the sterilization such as microbiology test or use for purification of corrosive liquid, solvent etc.



| VF2 | 167200-02 |
|---|---|
| 100ml Stainless steel filter set （1+2+3+4） | 167103-10 |
| 1    Stainless steel funnel, 100 ml | 167103-61 |
| 2    Stainless steel support screen | 167100-31 |
| 3    Stainless steel support base | 167103-60 |
| 4    Silicone stopper | 167110-17 |
| 5    Receiver flask with drain, 1000 ml | 167300-08 |
| 6    Weighted base | 167200-04 |

## 300ml Stainless Steel Filtration Set

### 47mm, Stainless steel membrane support

For filtration requiring the sterilization such as microbiology test or use for purification of corrosive liquid, solvent etc.



| VF9 | 167200-09 |
|---|---|
| 300ml Stainless steel filter set（1+2+3+4） | 167103-30 |
| 1　Stainless steel funnel, 300 ml | 167103-63 |
| 2　Stainless steel  membrane support | 167100-31 |
| 3　Stainless steel support base | 167103-60 |
| 4　Silicone stopper | 167110-17 |
| 5　Receiver flask with drain, 1000 ml | 167300-08 |
| 6　Weighted base | 167200-04 |

## 500ml Stainless Steel Filtration Set

### 47mm, Stainless steel membrane support

For filtration requiring the sterilization such as microbiology test or use for purification of corrosive liquid, solvent etc.



| VF11 | 167200-11 |
|---|---|
| 500ml Stainless steel filter set（1+2+3+4） | 167103-50 |
| 1　Stainless steel funnel, 500 ml | 167103-65 |
| 2　Stainless steel  membrane support | 167100-31 |
| 3　Stainless steel support base | 167103-60 |
| 4　Silicone stopper | 167110-17 |
| 5　Receiver flask with drain, 2000 ml | 167200-13 |

## 250ml Glass Filtration Set

### 47mm, Sintered glass membrane support

Ideal for the purification of organic, corrosive liquid such as solvent (mobile phase) for HPLC analysis.
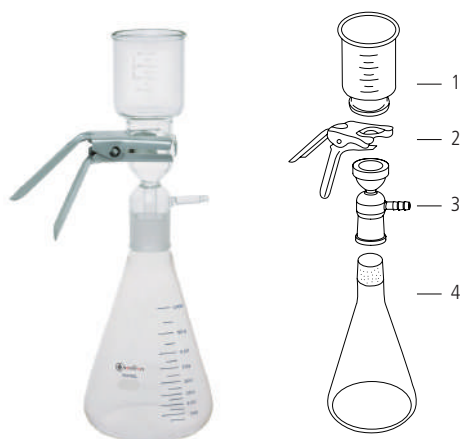


| VF3 | 167200-03 |
|---|---|
| 250ml Glass filter set（1+2+3） | 167120-30 |
| 1　Glass funnel, 250 ml | 167210-03 |
| 2　Aluminum magnesium alloy clamp | 167240-01 |
| 3　Glass support base & tubulated cap | 167230-01 |
| 4　Ground joint flask, 1000 ml | 167250-01 |

## 1000ml Glass Filtration Set

### 47mm, Sintered glass membrane support

Ideal for the purification of organic, corrosive liquid such as solvent (mobile phase) for HPLC analysis.
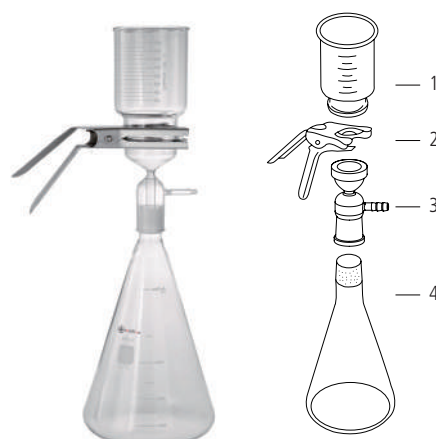


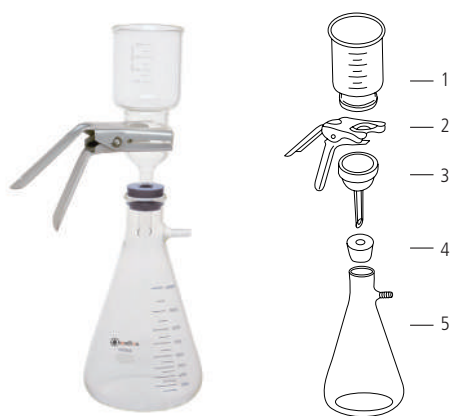| VF10 | 167200-10 |
|---|---|
| 1000ml Glass filter set（1+2+3） | 167210-35 |
| 1　Glass funnel, 1000 ml | 167210-10 |
| 2　Anodized aluminum clamp | 167240-01 |
| 3　Glass support base & tubulated cap | 167230-01 |
| 4　Ground joint flask, 4000 ml | 167250-06 |

## 15ml Small Volume Glass Filtration Set

**25mm, Sintered glass membrane support**
Ideal for small volume vacuum filtration for biological analysis or particulate contamination analysis.
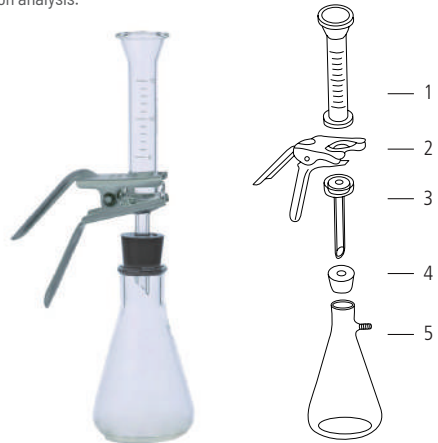


| VF5 | 167200-05 |
|---|---|
| 15 ml Glass filter set（1+2+3+4） | 167120-32 |
| 1   Glass funnel, 15 ml | 167220-15 |
| 2   Anodized aluminum clamp | 167240-05 |
| 3   Glass support base | 167230-04 |
| 4   Silicone stopper | 167110-18 |
| 5   125 ml Receiver flask | 167250-05 |

## 15ml Small Volume Glass Filtration Set

**25mm, Stainless steel membrane support**
Ideal for small volume vacuum filtration for biological analysis or particulate contamination analysis.



| VF8 | 167200-08 |
|---|---|
| 15 ml Glass filter set（1+2+3+4+5） | 167120-40 |
| 1   Glass funnel, 15 ml | 167220-15 |
| 2   Anodized aluminum clamp | 167240-05 |
| 3   Stainless steel support screen | 167230-32 |
| 4   Glass support base | 167230-08 |
| 5   Silicone stopper | 167110-18 |
| 6   125 ml Receiver flask | 167250-05 |

## 250ml Glass Filtration Set

**47mm, Sintered glass membrane support**
Ideal for solvent purification and general filtration for microbiology, suspended solid analysis etc.



| VF6 | 167200-06 |
|---|---|
| 250ml Glass filter set（1+2+3+4） | 167120-31 |
| 1   Glass funnel, 250 ml | 167210-03 |
| 2   Anodized aluminum clamp | 167240-01 |
| 3   Glass support base | 167230-03 |
| 4   Silicon stopper | 167110-17 |
| 5   Receiver flask, 1000 ml | 167250-03 |

## 250ml Glass Filtration Set

**47mm, Stainless steel membrane support**
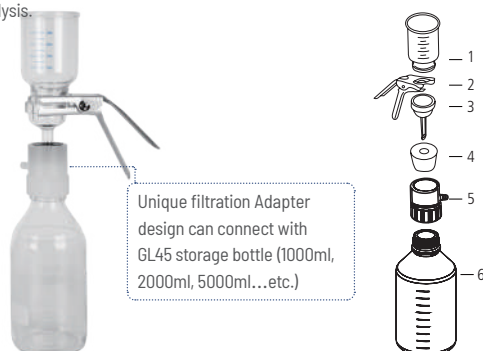Ideal for solvent purification and general filtration for microbiology, suspended solid analysis etc.



| VF7 | 167200-07 |
|---|---|
| 250ml Glass filter set（1+2+3+4+5） | 167120-33 |
| 1   250 ml Glass Filter Cup | 167210-03 |
| 2   Anodized aluminum clamp | 167240-01 |
| 3   Stainless steel support screen | 167230-31 |
| 4   Glass support base | 167230-07 |
| 5   Silicon stopper | 167110-17 |
| 6   Receiver flask, 1000 ml | 167250-03 |

## 250ml Glass Filtration Set

**47mm, Sintered glass membrane support**

Ideal for the purification of organic, corrosive liquid such as solvent (mobile phase) for HPLC analysis.

Unique filtration Adapter design can connect with GL45 storage bottle (1000ml, 2000ml, 5000ml…etc.)

| VF12 | | 167200-12 |
|---|---|---|
| 250ml Glass filter set (1+2+3+4) | | 167120-31 |
| 1 | Glass funnel, 250 ml | 167210-03 |
| 2 | Anodized aluminum clamp | 167240-01 |
| 3 | Glass support base | 167230-03 |
| 4 | Silicone stopper | 167110-16 |
| 5 | Filtration adapter | 167000-65 |
| 6 | 1000ml Glass storage bottle (Duran) | 21801545 |

## 300ml PES Magnetic Filtration set

**47mm, PP membrane support, float to prevent overflow**

For general filtration and waste inhalation

| VF30 | | 197010-30 |
|---|---|---|
| Magnetic filter funnel 300 ml (2+3+4+5) | | 167100-18 |
| 1 | PP Funnel Lid | 167130-32 |
| 2 | Magnetic filter cup, 300ml | 167000-34 |
| 3 | PP Membrane support | 167000-37 |
| 4 | PES support base | 167000-35 |
| 5 | Silicone stopper | 167110-17 |
| PC waste bottle with cover,1000 ml (6+7+8) | | 197000-11-PC |
| 6 | PC cover | 197000-32-PC |
| 7 | Overflow protection | 197000-39 |
| 8 | PC bottle, 1000 ml | 197000-31-PC |

## 100ml Stainless Steel Filtration Set

**47mm, Stainless steel membrane support, float to prevent overflow**

For filtration requiring the sterilization such as microbiology test or use for purification of corrosive liquid, solvent etc.

| VF32 | | 197010-32 |
|---|---|---|
| 100ml Stainless steel filter set (1+2+3+4) | | 167103-10 |
| 1 | Stainless steel funnel, 100 ml | 167103-61 |
| 2 | Stainless steel  membrane support | 167100-31 |
| 3 | Stainless steel support base | 167103-60 |
| 4 | Silicone stopper | 167110-17 |
| PC waste bottle with cover,1000 ml (5+6+7) | | 197000-11-PC |
| 5 | PC cover | 197000-32-PC |
| 6 | Overflow protection | 197000-39 |
| 7 | PC bottle, 1000 ml | 197000-31-PC |

## 300ml Stainless Steel Filtration Set

**47mm, Stainless steel membrane support, float to prevent overflow**

For filtration requiring the sterilization such as microbiology test or use for purification of corrosive liquid, solvent etc.

| VF33 | | 197010-33 |
|---|---|---|
| 300ml Stainless steel filter set (1+2+3+4) | | 167103-30 |
| 1 | Stainless steel funnel, 300 ml | 167103-63 |
| 2 | Stainless steel  membrane support | 167100-31 |
| 3 | Stainless steel support base | 167103-60 |
| 4 | Silicone stopper | 167110-17 |
| PC waste bottle with cover,1000 ml (5+6+7) | | 197000-11-PC |
| 5 | PC cover | 197000-32-PC |
| 6 | Overflow protection | 197000-39 |
| 7 | PC bottle, 1000 ml | 197000-31-PC |

# Multi-position filtration system

## Features

**Durable SS316 construction**
The entire manifold is made of SS316 stainless steel, providing excellent chemical resistance and compatibility with autoclave sterilization.

**Spin-lock design**
Features a spin-lock connection for quick, stable installation without the need for clamps.

**Individual control valves**
Each branch is equipped with an individual control valve for precise operation.

**Versatile funnel compatibility**
Supports 100 mL, 300 mL, and 500 mL funnels, offering flexibility for various applications.

**Magnetic filter set**
Allows one-handed operation, ensuring reliable and efficient performance while preventing potential twisting or tearing of the membrane.

### Application

> Biological laboratories
> Chemical industry
> Microbiological detection
> All kinds of liquid filtration

BioVac330B

BioVac630B

BioVac320A

BioVac320B

## Specifications

| Model | BioVac330B | BioVac630B | BioVac320A | BioVac320B |
|---|---|---|---|---|
| Max. Flow Rate (l/min) | 34 | 58 | 34 | 34 |
| Ultimate Vacuum(mbar) | 150 | 150 | 150 | 150 |
| Waste Bottle (Capacity in ml/ Material) | 3000 , PC | 3000, PC | 3000, PC | 3000, PC |
| Number of Branches | 3 | 6 | 3 | 3 |
| Manifold Material | Stainless Steel | Stainless Steel | Stainless Steel | Stainless Steel |
| Filter Diameter (mm) | 47 / 50 | 47 / 50 | 47 / 50 | 47 / 50 |
| IP code | IP20 | IP20 | IP20 | IP20 |
| Filter Cup (Capacity in ml/ Material) | 100 Stainless Steel | 100 Stainless Steel | 300 Magnetic | 250 Glass |
| Effective Filtration Area(cm$^2$) | 9.6 | 9.6 | 9.6 | 9.6 |
| Tube I.D. (mm) | 8 | 8 | 8 | 8 |

## configuration

| | Model | Order No. | Model | Order No. | Model | Order No. | Model | Order No. |
|---|---|---|---|---|---|---|---|---|
| Model | BioVac330B | 167403 | BioVac630B | 167601 | BioVac320A | 167405 | BioVac320B | 167406 |
| **Contains** | | | | | | | | |
| Pump | V400 | 167400 | V600 | 167600 | V400 | 167400 | V400 | 167400 |
| Manifold | BioVac330 3-branch Stainless steel | 167103-23 | BioVac630 6-branch Stainless steel | 167103-26 | BioVac320 3-branch Stainless steel | 167110-23 | BioVac320 3-branch Stainless steel | 167110-23 |
| Filter Cups | 3 x 100 ml Stainless steel | 167103-61 | 6 x 100 ml Stainless steel | 167103-61 | 3 x 300 ml PES (magnetic base) | 167100-18 | 3 x 250 ml Glass | 167120-31 |
| Waste Bottle | 3000 ml / PC | 167200-33 | 3000 ml / PC | 167200-33 | 3000 ml / PC | 167200-33 | 3000 ml / PC | 167200-33 |
| Bunsen Burner | Dragon 100 | 177100-00 | Dragon 100 | 177100-00 | Without | Without | Without | Without |
| Filter Membranes | Pall GN-6 MCE * | 167100-52 | Pall GN-6 MCE * | 167100-52 | Pall GN-6 MCE * | 167100-52 | Pall GN-6 MCE * | 167100-52 |
| Silicon Tube | 2 x 1m | 168021-01 | 2 x 1m | 168021-01 | 2 x 1m | 168021-01 | 2 x 1m | 168021-01 |

* Pall GN-6 MCE / 0.45μm, 200 pcs

# Multi-position manifolds

Vacuum filtration is widely used in laboratory for various tests such as microorganism test in food, pharmacy, beverage, drinking water industries and suspended solid test in environment protection field, sample or solution pretreatment before HPLC, GC, AA analysis etc.

WIGGENS is one of the leading suppliers of vacuum filtration apparatuses in the world.  WIGGENS manufactures quality and cost effective vacuum pumps, compressors, manifolds as well as funnels and filters for different applications,  wiggens offer you total solution for vacuum filtration.

## Features

**Manifold made of SS316**
The BioVac 330 and 630 manifolds are constructed entirely from SS316 stainless steel, ensuring excellent chemical resistance. They are also designed for quick sterilization using either flame or steam.

**Spin-Lock Design**
The innovative spin-lock connection enables fast and secure installation without the need for clamps, enhancing ease of use and efficiency.

**Individual control Valves**
Each branch features an individual control valve, allowing for precise and independent operation.

**Compatible with various funnel sizes**
The BioVac 330 and 630 manifolds are compatible with 100 ml, 300 mL, and 500 ml funnels, offering flexibility to suit your application needs.



3-Branch stainless steel manifold BioVac330
Order No.: 167103-23

Stainless steel filter cup (Cylinder type)

3-Branch stainless steel manifold set （100ml, 300ml, 500ml）
Order No.: 167103-24, 167101-23, 167101-24

## 3-Branch stainless steel manifold set

| Model | BioVac330 | BioVac331 | BioVac333 | BioVac335 |
|---|---|---|---|---|
| Order No. | 167103-23 | 167103-24 | 167101-23 | 167101-24 |
| Number of Branches | 3 | 3 | 3 | 3 |
| Filter Diameter (mm) | 47/50 | 47/50 | 47/50 | 47/50 |
| Effective Filtration Area (cm$^2$) | 9.6 | 9.6 | 9.6 | 9.6 |
| Tube I.D. (mm) | 8 | 8 | 8 | 8 |
| Dimensions(L×W×H) cm | 50×15×15 | 80×15×20 | 50×15×23 | 50×15×26 |
| Filter Cup Material | / | Stainless steel | Stainless steel | Stainless steel |
| Filter Cup Capacity (ml) | / | 100 | 300 | 500 |
| Product Description | 3-Branch stainless steel manifold BioVac 330 | 3-Branch stainless steel manifold BioVac 330 + 3 x 100 ml stainless steel filter cups | 3-Branch stainless steel manifold BioVac 330 +3 x 300 ml stainless steel filter cups | 3-Branch stainless steel manifold BioVac 330+3 x 500 ml stainless steel filter cups |



The 6-branch stainless steel manifold BioVac 630
Order No.: 167103-26

Stainless steel filter cup (Cylinder type)

6-Branch stainless steel manifold set BioVac 631
Order No.: 167103-27

## 6-Branch stainless steel manifold set

| Model | BioVac630 | BioVac631 | BioVac633 | BioVac635 |
|---|---|---|---|---|
| Order No. | 167103-26 | 167103-27 | 167101-26 | 167101-27 |
| Number of Branches | 6 | 6 | 6 | 6 |
| Filter Diameter(mm) | 47/50 | 47/50 | 47/50 | 47/50 |
| Effective Filtration Area (cm$^2$) | 9.6 | 9.6 | 9.6 | 9.6 |
| Tube I.D. (mm) | 8 | 8 | 8 | 8 |
| Dimensions(L×W×H) cm | 80×15×15 | 80×15×20 | 80×15×23 | 80×15×26 |
| Filter Cup Material | / | Stainless steel | Stainless steel | Stainless steel |
| Filter Cup Capacity (ml) | / | 100 | 300 | 500 |
| Product Description | 6-Branch stainless steel manifold BioVac 630 | 6-Branch stainless steel manifold BioVac 630 + 6 x 100 ml stainless steel filter cups | 6-Branch stainless steel manifold BioVac 630 +6 x 300 ml stainless steel filter cups | 6-Branch stainless steel manifold BioVac 630+6 x 500 ml stainless steel filter cups |

# Multi-position filtration manifolds

## 3-branch stainless steel manifold set



Manifold only

| Model | BioVac320 | BioVac341 | BioVac343 | BioVac345 | BioVac351 | BioVac353 | BioVac355 | BioVac363 | BioVac364 |
|---|---|---|---|---|---|---|---|---|---|
| Order No. | 167110-23 | 167111-31 | 167111-33 | 167111-35 | 167112-31 | 167112-33 | 167112-35 | 167113-33 | 167113-34 |
| Number of Branches | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Filter Diameter(mm) | 47/50 | 47/50 | 47/50 | 47/50 | 47/50 | 47/50 | 47/50 | 47/50 | 47/50 |
| Effective Filtration Area (cm$^2$) | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 |
| Tube I.D. (mm) | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Dimensions(L×W×H) cm | 50×15×12 | 50×15×23 | 50×15×27 | 50×15×30 | 50×15×30 | 50×15×30 | 50×15×33 | 50×15×30 | 50×15×30 |
| Filter Cup Material | Without | Stainless Steel | Stainless Steel | Stainless Steel | Magnetic | Magnetic | Magnetic | Borosilicate Glass | Glass funnel with Micro-Strainer |
| Filter Cup Capacity (ml) | Without | 100 | 300 | 500 | 150 | 300 | 500 | 250 | 250 |

## 6-branch stainless steel manifold set



Manifold only

| Model | BioVac620 | BioVac641 | BioVac643 | BioVac645 | BioVac651 | BioVac653 | BioVac655 | BioVac663 | BioVac664 |
|---|---|---|---|---|---|---|---|---|---|
| Order No. | 167110-26 | 167111-61 | 167111-63 | 167111-65 | 167112-61 | 167112-63 | 167112-65 | 167113-63 | 167113-64 |
| Number of Branches | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Filter Diameter(mm) | 47/50 | 47/50 | 47/50 | 47/50 | 47/50 | 47/50 | 47/50 | 47/50 | 47/50 |
| Effective Filtration Area (cm$^2$) | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 |
| Tube I.D. (mm) | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Dimensions(L×W×H) cm | 80×15×12 | 80×15×23 | 80×15×27 | 80×15×30 | 80×15×30 | 80×15×30 | 80×15×33 | 80×15×30 | 80×15×30 |
| Filter Cup Material | Without | Stainless Steel | Stainless Steel | Stainless Steel | Magnetic | Magnetic | Magnetic | Borosilicate Glass | Glass funnel with Micro-Strainer |
| Filter Cup Capacity (ml) | Without | 100 | 300 | 500 | 150 | 300 | 500 | 250 | 250 |

# Customized assembling options for multi-position filtration system

Wiggens offers free assembling options, allowing customers to design their own filtration system based on different application requirements.

Filtration System Components Package Ⅰ

Vacuum pump ①、PP/PC Waste Bottle ②、Filter Membranes ④、Silicon Tubing ⑤、Filtration combination ⑥



① + ② + ④ + ⑤ + ⑥ = BioVac XXXA

Multi-Position Filtration System

## Configuration table for multi-position filtration system

| No. | Name | | | | |
|-----|------|---|---|---|---|
| 1 | Vacuum pump | V400 | V600 | V410 | V610 |
| | Order No. | 167400 | 167600 | 167410 | 167610 |
| 2 | Suction bottle | 1000 ml | 2000 ml | 3000 ml | - |
| | Order No. | 167200-31 | 167200-32 | 167200-33 | - |
| 4 | Filter Membranes | Fiberglass Filter Membranes | MCE Filter Paper | - | - |
| | Order No. | 167100-20 | 167100-52 | - | - |
| 5 | Silicon Tubing | Outer Diameter 14 mm, Inner Diameter 8 mm, Length 1 m | | | - |
| | Order No. | 167021-01 | | | - |
| 6 | Combination | BioVac351, BioVac353, BioVac355, BioVac363, BioVac364, BioVac651, BioVac653, BioVac655, BioVac663, BioVac664, BioVac311, BioVac313, BioVac315, BioVac301, BioVac303, BioVac305, BioVac323, BioVac324, | | | |

Filtration System Components Package Ⅱ

Vacuum pump ①、PP/PC Waste Bottle ②、Lab Burners ③、Filter Membranes ④、Silicon Tubing ⑤、Filtration combination ⑥



① + ② + ③ + ④ + ⑤ + ⑥ = BioVac XXXB

Multi-Position Filtration System

## Configuration table for multi-position filtration system

| No. | Name | | | | |
|-----|------|---|---|---|---|
| 1 | Vacuum pump | V400 | V600 | V410 | V610 |
| | Order No. | 167400 | 167600 | 167410 | 167610 |
| 2 | Suction bottle | 1000 ml | 2000 ml | 3000 ml | - |
| | Order No. | 167200-31 | 167200-32 | 167200-33 | - |
| 3 | Lab Burners | Dragon 100 | Dragon 220 | - | - |
| | Order No. | 177100-00 | 177220-00 | - | - |
| 4 | Filter Membranes | Fiberglass Filter Membranes | MCE Filter Paper | - | - |
| | Order No. | 167100-20 | 167100-52 | - | - |
| 5 | Silicon Tubing | Outer Diameter 14 mm, Inner Diameter 8 mm, Length 1 m | | | - |
| | Order No. | 167021-01 | | | - |
| 6 | Combination | BioVac331, BioVac333, BioVac335, BioVac631, BioVac633, BioVac635, BioVac341, BioVac343, BioVac345, BioVac641, BioVac643, BioVac645 | | | |

# Accessories for filtration system

## 47mm glass funnel holder

### Features

> Made of chemical-resistant borosilicate glass
> High temperature resistant
> Autoclavable

### Specifications

| Name | Glass Funnel | Glass funnel with support screen |
|---|---|---|
| Funnel | Borosilicate Glass | Borosilicate Glass |
| Funnel Base | Borosilicate Glass | Borosilicate Glass |
| Membrane Support | Sintered Glass | Stainless Steel Support Screen + PTFE Gasket |
| Clamp | Aluminum | Aluminum |

| Type | | |
|---|---|---|
| Funnel Capacity (ml) | 250 | 250 |
| Filter Diameter (mm) | 47 | 47 |
| Effective Filtration Area (cm2) | 9.6 | 9.6 |

### Ordering information

| 47mm Glass Funnel | 167120-31 |
|---|---|
| 250ml Glass Filter Cup ① | 167210-03 |
| Aluminum Clamp ② | 167240-01 |
| 47mm Glass Filter Base ③ | 167230-03 |
| Silicon Stopper ④ | 167110-16 |

| 47mm glass funnel with micro strainer | 167120-33 |
|---|---|
| 250ml Glass Filter Cup ① | 167210-03 |
| Aluminum Clamp ② | 167240-01 |
| Stainless Steel Support Screen ③ | 167230-31 |
| 47mm Glass Filter Base ④ | 167230-07 |
| Silicon Stopper ⑤ | 167110-16 |



Glass Funnel
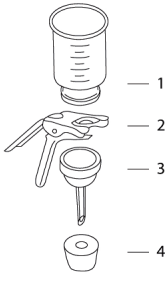


Glass funnel with support screen
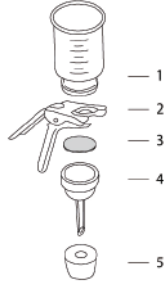
## PES funnels with magnetic base

> Unique magnetic connection design
> No clamps needed
> High temperature sterilization possible

| Name | Materious |
|---|---|
| Filter Cup | PES |
| Membrane Support | PP |
| Filter Base | PES |
| Rubber | Silicon |

| Specifications | |
|---|---|
| Magnetic filter funnel 150 ml | 167130-15 |
| Magnetic filter funnel 300 ml | 167100-18 |
| Magnetic filter funnel 500 ml | 167130-50 |
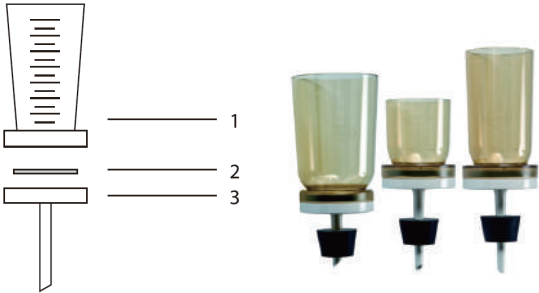
## 47mm Stainless steel funnel

> Quick and effective spin-lock system
> No clamp needed
> SUS316 stainless steel
> Heat sterilization can be applied

167103-10    167103-30    167103-50



167103-10    167103-30    167103-50

### Specification

| Name | 100 ml | 300 ml | 500 ml |
|---|---|---|---|
| Funnel | SUS316 | SUS316 | SUS316 |
| Funnel base | SUS316 | SUS316 | SUS316 |
| Membrance support | SUS316 | SUS316 | SUS316 |
| Funnel lid | SUS316 | SUS316 | SUS316 |
| Specifications | | | |
| Funnel capacity (ml) | 100 | 300 | 500 |
| Filter diameter (mm) | 47 / 50 | 47 / 50 | 47 / 50 |
| Effective filtration area (cm$^2$) | 9.6 | 9.6 | 9.6 |
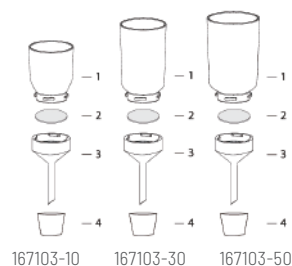
### Odering Information

| 100 ml Stainless steel funnel | 167103-10 |
|---|---|
| 100ml stainless steel filter cup ① | 167103-61 |
| Stainless steel support screen ② | 167100-31 |
| 47mm stainless steel filter base ③ | 167103-60 |
| Silicon stopper ④ | 167110-17 |
| 300 ml Stainless steel funnel | 167103-30 |
| 300 ml ① | 167103-63 |
| Stainless steel support screen ② | 167100-31 |
| 47mm stainless steel filter base ③ | 167103-60 |
| Silicon stopper ④ | 167110-17 |
| 500 ml Stainless steel funnel | 167103-50 |
| 500ml stainless steel filter base ① | 167103-65 |
| Stainless steel support screen ② | 167100-31 |
| 47mm stainless steel filter base ③ | 167103-60 |
| Silicon stopper ④ | 167110-17 |

## Stainless steel filter cup (Cylinder type)



| Order No. | 167103-61 | 167103-63 | 167103-65 |
|---|---|---|---|
| Filter cup | SUS316 | SUS316 | SUS316 |
| Funnel capacity (ml) | 100 | 300 | 500 |
| Filter diameter (mm) | 47 / 50 | 47 / 50 | 47 / 50 |
| Effective filtration area (cm$^2$) | 9.6 | 9.6 | 9.6 |
| Suitable for | BioVac 330/630 | BioVac 330/630 | BioVac 330/630 |

## Stainless steel filter cup (Cone type)



| Order No. | 167102-50 | 167102-75 | 167102-99 |
|---|---|---|---|
| Filter cup | SUS316 | SUS316 | SUS316 |
| Funnel capacity(ml) | 500 | 700 | 1000 |
| Filter diameter(mm) | 47 / 50 | 47 / 50 | 47 / 50 |
| Effective filtration area(cm$^2$) | 9.6 | 9.6 | 9.6 |
| Suitable for | BioVac 330/630 | BioVac 330/630 | BioVac 330/630 |

## Stainless steel funnel lid

OD=10mm



| Description | Order No. |
|---|---|
| 100 ml stainless steel funnel lid, suitable for 100 ml stainless steel filter cup (Cylinder type) | 167103-11 |
| 300 ml stainless steel funnel lid, suitable for 300 ml stainless steel filter cup (Cylinder type) | 167103-13 |
| 500 ml stainless steel funnel lid, suitable for 500 ml stainless steel filter cup (Cylinder type) | 167103-15 |
| Stainless steel funnel lid, suitable for 500 ml / 750 ml / 1000 ml stainless steel filter cups (Cone type) | 167110-20 |

## PP Funnel lid



| Order No. | 167130-32 | | |
|---|---|---|---|
| Specification | | Material | |
| Suitable for funnel | Pall 4242 / 167100-18 | Main body | PP |
| Number of inlets | 3 | Cover | Silicon |
| Inlet type | Female luer slip | Filter material | PTFE |
| Filter diameter | 25 mm | Pore size | 0.2 μm |
| Package | 1 | | |

## Filtration flask for liquid

| Order No. | 167100-13 | 167100-14 |
|---|---|---|
| Includes | | |
| Glass bottle | 167300-08 | 167300-08 |
| Rubber stopper | 167110-16 | 167110-17 |
| Weighted base | 167200-04 | 167200-04 |
| Specification | | |
| Capacity (ml) | 1000 | 1000 |
| Inlet / outlet diameter (mm) | 8 | 8 |
| Water outlet | Yes | Yes |
| The diameter of hole in center of rubber stopper (mm) | Ø15 | Ø9.5 |

Filtration Flask for Liquids

Weighted Base

## Weighted base

| Description | Order No. |
|---|---|
| 1000ml Filtration flask base with a unique stabilization design | 167200-04 |

## Disc filter

| Name | Pinhead filter | Small disc filter | Big disc filter |
|---|---|---|---|
| Order no. | 194225-01 | 167200-35 | 167200-36 |
| Brand | Pall | Pall | Pall |
| Filter diameter / pore size | 25 mm / 0.2 µm | 37 mm / 0.2 µm | 50 mm / 0.2 µm |
| Outer diameter (mm) | 30 | 45 | 63 |
| Material | PTFE | PTFE | PTFE |
| Outer material | PP | PP | PP |
| Number of filters per package | 1 | 1 | 1 |
| Suitable for | PP Funnel Lid | BioVac 225 / 235 | BioVac 240 |

## Filter membrane

| Name | Fiberglass filter membranes | MCE filter paper |
|---|---|---|
| Order no. | 167100-20 | 167100-52 |
| Brand | Pall | Pall |
| Filter diameter (mm) | 47 | 47 |
| Filter pore size (µm) | 1 | 0.45 |
| Material | Fiberglass | MCE |
| Number of filters per package | 100 | 200 |

## Silicon tubing

| Order No. | Outer diameter (mm) | Inner diameter (mm) | Thickness (mm) | Length (m) |
|---|---|---|---|---|
| 168020-01 | 12 | 6 | 3 | 1 |
| 168021-01 | 14 | 8 | 3 | 1 |
| 168022-01 | 16 | 10 | 3 | 1 |

Length upon request (min. 1 m)

| 167201-31 | 167200-31 | 167200-33 |
|---|---|---|

## PP/PC Waste bottle

| Material | | | |
|---|---|---|---|
| Order no. | 167200-31 | 167200-32 | 167200-33 |
| Bottle | PC | PC | PC |
| Bottle cover | PC | PC | PC |
| Spill-proof buoy | PP | PP | PP |
| Description | | | |
| Capacity (ml) | 1000 | 2000 | 3000 |
| Outlet (mm) | 8 | 8 | 8 |
| Spill-proof buoy | Yes | Yes | Yes |
| Autoclavability (121℃ ) | Yes | Yes | Yes |

## PC Waste bottle

| Description | | Material | |
|---|---|---|---|
| Order no. | 167120-34 | | |
| Capacity (ml) | 4000 | Bottle | PC |
| Outlet (mm) | 8 | Bottle Lid | ABS |
| Spill-proof buoy | Yes | Float Switch | PP |
| Autoclavability (121℃ ) | Yes | | |
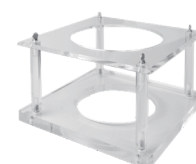
## Stand for waste bottle

| Description | Order No. |
|---|---|
| Stand for waste bottle designed for Stabilizing the bottle in filtration work | 167200-39 |

Suitable for 1L, 2L, 3L waste bottle, please specify when ordering

## Foot switch

| Description | Order No. |
|---|---|
| Suitable for c series and v series vacuum pumps* | 167200-41 |

*Factory installation

## Silicon drainage tubing

| Order No. | Outer diameter (mm) | Inner diameter (mm) | Thickness (mm) | Length (m) |
|---|---|---|---|---|
| 168030-01 | 12 | 8 | 2 | 1 |

Length upon request (min. 1 m)
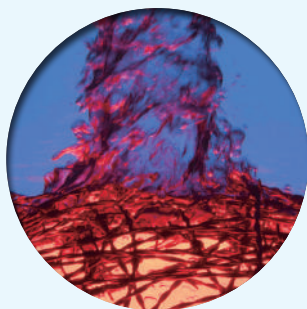
# Hot Plate / Stirrer
# Heating Element

# WIGGENS
## THE MAGIC MOTION

# Laboratory Hotplate Stirrer

Attractive design for demanding heating & mixing application

Our new complete range laboratory hotplate stirrers will meet your high demands every day!

**More Powerful Units**

WH380 / WH385

WH390/ WH395-NH/ WH395

Intelligent heating technology
for your very demanding applications
UP to 1800W heating power

IR Heating

WH280-AH

WH280-H

WH280-R

WH280-NH

Elite series
High bright TFT touch screen
Intelligent Cascade Control
Two external sensors can be connected
RS485
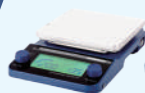
IR Heating

WH260-AH

WH260-NH

WH260-R

WH420R-L

Pro series
large and clear LCD display
Intelligent PID
USB interface

IR Heating

WH200

WH210

WH420

WH620

New entry level for
lab heating & mixing

# Why Infrared Radiation Heating?

Infrared radiation heating involves the emission and transmission of light waves within the spectrum range of 700 nm to 100 μm (0.7 μm to 100 μm), enabling noticeable and directional energy transfer. Unlike conduction or convection, this transfer does not require any medium and can occur even in a vacuum. Infrared heating specifically utilizes electromagnetic waves with wavelengths between 2.5 μm and 15 μm, a range commonly used in heating applications. These waves propagate at the speed of light, significantly faster than energy transfer via conduction or convection.

Wavelengths (nm) of Light

| Ultraviolet | Visible Light | Infrared |
|---|---|---|

nm 200    300    400    500    600    700    800    900    1000
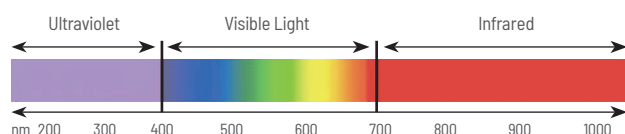
The magnetic heating stirrer incorporates advanced infrared radiation (IR) technology, providing direct, clean, and safe heating. This innovative heating method allows the WIGGENS hotplate-stirrer to quickly heat various shaped vessels, including round-bottom flasks, with the solution inside reaching a maximum temperature of 450℃ in a short time. Unlike oil heating, infrared radiation heating eliminates the need for bath oil, ensuring a direct and clean heating process without oil splashing.

The high infrared permeability facilitates fast and efficient transfer of heating energy with minimal loss, resulting in faster heating of liquids and significant time and energy savings. With PID control or advanced ICC technology, excellent temperature stability can be achieved. By connecting a Pt-100 sensor, temperature-controlled operations with a stability of ± 2　℃ can be achieved in most applications.

WH260-R ( Infrared Radiation heating)

t=32min, T=95℃

WH260-R (Oil heating)

t=21min, T=97℃

t=25min, T=95℃

Glass bath :
Used for sample splashing or other accidents occurring protection

Wiggens IR Heating

Oil bath

Dirty

Disadvantages of conventional heating method
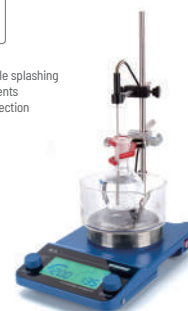
Wiggens IR Heating (Oil Bath)

# Digital Hot Plate / Stirrer  New entry level for lab heating & mixing

## WH200 / WH210 / WH220

> Our laboratory hotplates and stirrers are designed and manufactured in compliance with high international quality standards to ensure superior performance and durability. Equipped with an advanced microprocessor control system, they offer exceptional reliability and precise temperature stability for consistent experimental results. A bright and clear LED digital display allows convenient monitoring and adjustment of the working temperature and stirring speed.

> The built-in memory function retains stirring speed and temperature settings, making it ideal for experiments requiring fixed conditions. A liquid drainage system above the control board prevents liquids from entering and damaging the system. Direct connection for the thermocouple sensor allows precise control of the sample temperature.

> The new entry level hot plate and stirrers are suitable for general laboratory applications, offering reliable performance across a variety of use cases. A hot-top indicator lights up above 60° C to ensure user safety.

**Standard thermocouple sensor**
Ensures accurate sample temperature control within ±1 ℃

**Temperature and speed display**
WH200 and WH210 simultaneously display temperature and speed while retaining the last operation settings.

**Safety protection**
A flashing high-temperature indicator provides a warning to prevent accidental contact and potential injury.

**Liquid drainage**
A groove above the control panel prevents solution splashes.

**Top plate material**
WH200 features an aluminum plate, while WH210 and WH220 are equipped with an SS304 plate coated with ceramic.

## Specifications

| Model | WH200 | WH210 | WH220 |
|---|---|---|---|
| Order No. | 400302 | 400402 | 400400 |
| Maximum temperature setting [℃ ] | 250 | 350 | 380 |
| Maximum temperature setting with E-sensor [℃ ] | 250 | 350 | 380 |
| Safety temperature [℃ ] | 280 | 380 | 50~430 adjustable |
| Temperature stability with E-sensor [℃ ] | ±2 | ±2 | ±2 |
| Heat output [W] | 300 | 500 | 500 |
| External temperature sensor | Thermocouple | Thermocouple | Pt100 |
| PID parameter | 1 set | 1 set | 2 sets |
| Speed setting range [rpm] | 100~1500 | 100~1500 | 100~1500 |
| Temperature and Speed display | LED display | LED display | LCD display |
| Temperature and Speed setting | Turning knob | Turning knob | Turning knob |
| IP code | IP21 | IP21 | IP21 |
| Top plate material | Aluminium alloy | Stainless steel coated with ceramic | Stainless steel coated with ceramic |
| Top plate dimensions [mm] | 165 x150 | 180 x145 | 180 x145 |
| Dimensions W x D x H [mm] | 230X200X100 | 270X230X100 | 230X200X100 |
| Weight [kg] | 1.5 | 3.0 | 3.1 |
| Power supply | 220V/50Hz | 220V/50Hz | 220V/50Hz |

* Measured with 500ml water at 80 ℃

Standard package includes: Hot plate / stirrer, temperature sensor  with holder and clamp, stirrer bar

# Digital Hot Plate / Stirrer Multi-position heating & mixing

WH420 / WH620

> Advanced microprocessor controlling system guarantees the reliability and temperature stability
> Bright and clear LED digital display and setting for the working temperature, stirring speed, working time, and safety temperature
> Memory function for stirring speed and temperature setting, convenient for experiments with fixed conditions
> Liquid drainage above the control board to prevent liquids from accessing the system
> Direct connection for Pt100 temperature sensor for convenient solution temperature control
> Sealed outer shell and isolated critical parts design for enhanced longevity even in a harsh laboratory environment
> When the temperature of the top plate is above 60℃ , hot-top indicator will light up for the user's safety protection
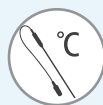
### Standard PT100 temperature sensor
Ensures accurate sample temperature control within ±1 ℃

### LED selectable
Display temperature and speed at the same time, and remember the last working parameters

### Ceramic top plate
Great anti-corrosive ability to acid, base, or organic solvents.

### Safety protection
A flashing high-temperature indicator provides a warning to prevent accidental contact and potential injury.

### Liquid drainage
A groove above the control panel prevents solution splashes.
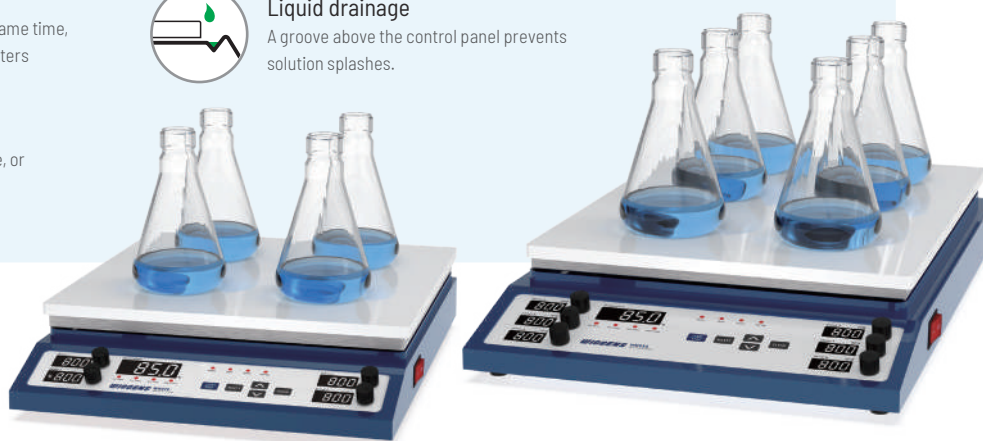


## Specifications

| Model | WH420 | WH620 |
|---|---|---|
| Order No. | 400315 | 400316 |
| Number of stirring positions | 4 | 6 |
| Maximum temperature setting [℃ ] | 300 | 300 |
| Maximum temperature setting with E-sensor [℃ ] | 300 | 300 |
| Safety temperature [℃ ] | 370 | 370 |
| Temperature stability with E-sensor [℃ ]* | ±1 | ±1 |
| Total heating output [W] | 1000 | 1500 |
| External temperature sensor | Pt100 | Pt100 |
| PID parameter | 1 set | 1 set |
| Speed setting range [rpm] | 150~1500 | 150~1500 |
| Stirring quantity max [L / $H_2O$] | 2 | 2 |
| Temperature and Speed display | LED display | LED display |
| Temperature and Speed setting | Turning knob | Turning knob |
| Time setting | 1~9959min / continuous | 1~9959min / continuous |
| IP code | IP21 | IP21 |
| Top plate material | Aluminium coated with ceramic | Aluminium coated with ceramic |
| Top plate dimensions [mm] | (160×155) x4 | (150×133) x6 |
| RS 232 interface | Yes | Yes |
| Dimensions W x D x H [mm] | 405x320x80 | 525x320x87 |
| Weight [kg] | 8.5 | 9.0 |
| Power supply | 220V/50Hz | 220V/50Hz |

*Measured with 500ml water at 80 ℃
Standard package includes: Hot plate / stirrer, temperature sensors (4 or 6 pcs) PT100-01 with holder and clamp，stirrer bars 4 or 6 pcs

# Multi-position hot plate/stirrer

WH420R-L / 620R-L / WH420R-D / 620R-D

> WIGGENS multi-position heat magnetic stirrer, each position can work independently, ceramic glass plate has excellent chemical corrosion resistance, easy to clean. Efficient infrared heating technology ensures high efficiency and accuracy of temperature control. Ceramic glass plate are resistant to heat impact over 700℃ .

> The control panel is made of waterproof and anti-corrosion material, which protects the panel from damage caused by splashing or spilling of liquid.

> The WH420R /WH620R series is configured with three sets of PID parameters, which are optional from the menu. PID1 is suitable for small sample heating (small volume or small specific heat capacity), PID 3 is suitable for a large vol of samples for rapid heating.

> Each position is independent display, control system; Each of them is equipped with separate safety temperature control and monitoring.

WH420R-L

WH620R-D

## Specifications

| Model | WH420R-L | WH620R-L | WH420R-D | WH620R-D |
|---|---|---|---|---|
| Order no. | W3010415 | W3010416 | W3010425 | W3010426 |
| Maximum temperature setting [℃ ] | 450 | 450 | 450 | 450 |
| Maximum temperature setting with E-sensor [℃ ] | 300 | 300 | 300 | 300 |
| Safety temperature [℃ ] | 50-500 adjustable | 50-500 adjustable | 50-500 adjustable | 50-500 adjustable |
| High temperature protection [℃ ] | 10-50 adjustable | 10-50 adjustable | 10-50 adjustable | 10-50 adjustable |
| Temperature stability with E-sensor [℃ ]* | ±1 | ±1 | ±1 | ±1 |
| Heat output,  each position/set [W] | 500W/2000W | 500W/3000W | 500W/2000W | 500W/3000W |
| External temperature sensor | Pt100 | Pt100 | Pt100 | Pt100 |
| PID parameter | 3 sets | 3 sets | 3 sets | 3 sets |
| Speed setting range [rpm] | 100-1500 | 100-1500 | 100-1500 | 100-1500 |
| Stirring quantity max [L / H$_2$0] | 20L | 20L | 20L | 20L |
| Display/Control | Independent control LCD digital display/knob operation | | | |
| Time setting | 1~1999min/continuous | 1~1999min/continuous | 1~1999min/continuous | 1~1999min/continuous |
| Top plate material | Ceramic glass | Ceramic glass | Ceramic glass | Ceramic glass |
| Top plate dimension [mm] | Ø135 | Ø135 | Ø135 | Ø135 |
| Communicate interface. | USB-A | USB-A | USB-A | USB-A |
| Dimensions W*D*H（Sensor set's not included) | 786*309*113mm | 1180*309*113mm | 388*473*138mm | 582*473*138mm |
| Weight（Kg） | 15.5 | 23.5 | 15.8 | 23.8 |
| Power supply | 220V/50Hz | 220V/50Hz (2xpower plugs) | 220V/50Hz | 220V/50Hz (2xpower plugs) |

*Measured with 500ml water at 80 ℃
Standard package includes: Hot plate / stirrer, temperature sensors (4 or 6 pcs) PT100-01 with holder and clamp , stirrer bars 4 or 6 pcs

# Infrared Hot Plate / Stirrer Attractive design for demanding heating & mixing

WH260-NH / WH260-H / WH260-R / WH260-RL

The WIGGENS new hotplate stirrer offers several advantages due to its ceramic glass top plate. It provides chemical resistance, high surface quality, and can withstand temperature shocks of over 700℃ , making it a superior choice compared to conventional heating surface materials. The high infrared permeability ensures efficient transfer of heating energy with minimal loss, resulting in fast heating of liquids and significant time and energy savings. PID control ensures good temperature stability, and when a Pt-100 sensor is connected, temperature-controlled work with a stability of ± 1℃ can be achieved in most applications.

The device features a large and clear LCD display that allows users to view and monitor essential parameters such as working temperature, stirring speed, working time, and safety temperature. It also includes a memory function for stirring speed and temperature settings, making it convenient for experiments with fixed conditions. To prevent liquids from reaching the touching board and electronics, there is liquid drainage above the control board. Additionally, a direct connection for a Pt100 temperature sensor enables easy solution temperature control.

The hotplate stirrer is designed with a sealed outer shell and isolated critical parts to enhance its longevity, even in harsh laboratory environments. It offers high safety protection, automatically shutting off the heating when exceeding the safety range of the hotplate (adjustable between 10-50℃ ) to ensure user safety. With three sets of PID parameters, it is suitable for accurate control of smallvolume samples, rapid heating, and stable temperature control of large-volume

### Standard PT100 temperature sensor
Ensures accurate sample temperature control within ±1 ℃

### LCD display
Simultaneously displaying various parameters, memory of the last working parameters.

### Ceramic glass top plate
Great anti-corrosive ability to acid, base, or organic solvents.

### Safety protection
A flashing high-temperature indicator provides a warning to prevent accidental contact and potential injury.

### Liquid drainage
A groove above the control panel prevents solution splashes.

### Intelligent PID
Suitable for different application, for accurately controlling the quick heating of small sample and the stable temprature control of large sample.

### Overheating protection
If the internal temperature exceeds the permissible temperature that may damage the internal electronic components, the heating power will be reduced automatically.

### RS232 interface
Enable the unit to be connected to a PC for operating
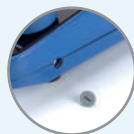
### Safety temperature
The safety temperature is an adjustable circuit designed to prevent the unit from exceeding a specified set temperature. It can be adjusted using a special tool provided with the product.

### Ceramic glass top plate
Ceramic Glass by Schott combines chemical resistance, top quality surfaces and resistance to temperature shocks of greater than 700℃ .
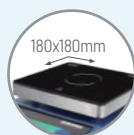
### WH260-H / NH / AH
Plate dimension: 180x180mm

### WH260-R / AR
Plate dimension: Ø135cm
Suitable for parallel application

### Compact
Height: Only 85mm

### Rotating knob
Easy to operate

# Strong & Robust



WH260-R

WH260-NH

In addition to speedy heating up and good temperature control, WH260-NH also offers well controlled liquids mixing from gentle to intense, being suitable for big volume viscous media as well.



| WH260-AH | WH260-NH | WH260-H | WH260-R |
| --- | --- | --- | --- |

## Specifications

| Model | WH260-AH | WH260-NH | WH260-H | WH260-R | WH260-RL |
| --- | --- | --- | --- | --- | --- |
| Order No. | W3012601 | W3012602 | W3012603 | W3012605 | W3012606 |
| Maximum temperature setting [°C ] | 380 | 450 | 450 | 450 | 450 |
| Maximum temperature setting with E-sensor [°C ] | 200 | 300 | 300 | 300 | 300 |
| Safety temperature [°C ] | 50~430 adjustable | 50~500 adjustable | 50~500 adjustable | 50~500 adjustable | 50~500 adjustable |
| High temperature protection [°C ] | 10~50 adjustable | 10~50 adjustable | 10~50 adjustable | 10~50 adjustable | 10~50 adjustable |
| Temperature stability with E-sensor [°C ]* | ±1 | ±1 | ±1 | ±1 | ±1 |
| Heat output [W] | 800 | 1000 | 800 | 800 | 800 |
| External temperature sensor | Pt100 | Pt100 | Pt100 | Pt100 | Pt100 |
| PID parameter | 3 sets | 3 sets | 3 sets | 3 sets | 3 sets |
| Speed setting range [rpm] | 100~1500 | 100~1500 | 100~1500 | 100~1500 | 100~1500 |
| Stirring quantity max [L / $H_2O$] | 20 | 20 | 20 | 20 | 20 |
| Temperature and Speed display | LCD display | LCD display | LCD display | LCD display | LCD display |
| Temperature and Speed setting | Turning knob | Turning knob | Turning knob | Turning knob | Turning knob |
| Time setting | 1~1999min / continuous | 1~1999min / continuous | 1~1999min / continuous | 1~1999min / continuous | 1~1999min / continuous |
| IP code | IP21 | IP21 | IP21 | IP21 | IP21 |
| Top plate material | Aluminium coated with ceramic | Ceramic glass | Ceramic glass | Ceramic glass | Ceramic glass |
| Top plate dimensions [mm] | 180×180 | 180×180 | 180×180 | Ø135 | Ø145 |
| RS232 interface | Yes | Yes | Yes | Yes | Yes |
| Dimensions W x D x H [mm] | 190x320x70 | 190x320x70 | 190x320x85 | 190x320x90 | 190x320x90 |
| Weight [kg] | 2.8 | 2.8 | 3.1 | 3.0 | 3.0 |
| Power supply | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz |

*Measured with 500ml water at 80 °C
Standard package includes: Hot plate / stirrer, temperature sensor PT100-01 with holder and clamp, stirrer bar

# Infrared Hot Plate / Stirrer Attractive design for demanding heating & mixing

WH280-AH / WH280-NH / WH280-H / WH280-R / WH280-RL

The WIGGENS new hotplate stirrer enjoys the benefits of ceramic glass top plate, such as chemical resistance, a high surface quality, and a resistance to temperature shocks of more than 700℃ , providing the users with optimal solution compared to conventional heating surface materials. The high infrared permeability ensures that the heating energy is transferred quickly and with very limited loss. i.e. it heats liquids fast and thus saves time and energy. PID control enables good temperature stability. If the Pt-100 sensor is connected, temperature-controlled work with stability of ± 1℃ can be reached in most applications.

All functions can be viewed and monitored on a large and clear LCD display, including most frequently used parameters like working temperature, stirring speed, working time, and safety temperature etc.

> Memory function for stirring speed and temperature setting, convenient for experiments with fixed conditions.
> Liquid drainage above the control board to prevent liquids from accessing the touching board and the electronics.
> Direct connection for Pt100 temperature sensor for convenient solution temperature control.
> Sealed outer shell and isolated critical parts design for enhanced longevity even in a harsh laboratory environment.
> High safety protection: When exceeding the safety range of the hotplate (10-50 ℃ adjustable) , the heating can be shut off immediately and automatically for the safety protection.
> ICC technology to self-optimize for optimal heating results.

### TFT high-definition color touch screen
Synchronous display of set temperature, actual temperature, and rotational speed. Automatic memory of the last set working parameters.

### Ceramic glass top plate
Great anti-corrosive ability to acid, base, or organic solvents.

### Safety protection
A flashing high-temperature indicator provides a warning to prevent accidental contact and potential injury.

### Liquid drainage
A groove above the control panel prevents solution splashes.

### Intelligent Cascade Control
Self-optimizing technology ensures optimal performance with excellent temperature stability.

### Overheating protection
If the internal temperature exceeds the permissible temperature that may damage the internal electronic components, the heating power will be reduced automatically.

### RS 232/485 interface
Enable the unit to be connected to a PC for operating

### Safety Temperature
The safety temperature is an adjustable circuit designed to prevent the unit from exceeding a specified set temperature. It can be adjusted using a special tool provided with the product.

### Direction of rotation
Clockwise or counterclockwise

### WH280-H / NH / AH
Plate dimension: 180x180mm

### WH280-R / AR
Plate dimension: Ø135cm
Suitable for parallel application

### Compact
Height: Only 85mm

# Strong & Robust
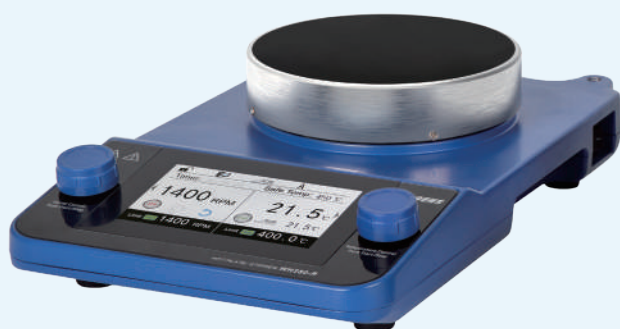


WH280-R



**WH280-NH**

In addition to speedy heating up and good temperature control, WH280-NH also offers well controlled liquids mixing from gentle to intense, being suitable for big volume viscous media as well.
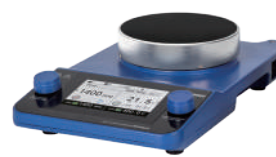


WH280-AH



WH280-NH



WH280-H



WH280-R

## Specifications

| Model | WH280-AH | WH280-NH | WH280-H | WH280-R | WH280-RL |
|---|---|---|---|---|---|
| Order no. | W3012801 | W3012802 | W3012803 | W3012805 | W3012806 |
| Maximum temperature setting [°C ] | 380 | 450 | 450 | 450 | 450 |
| Maximum temperature setting with E-sensor [°C ] | 200 | 300 | 300 | 300 | 300 |
| Safety temperature [°C ] | 50~430 adjustable | 50~500 adjustable | 50~500 adjustable | 50~500 adjustable | 50~500 adjustable |
| High temperature protection [°C ] | 2~50 adjustable | 2~50 adjustable | 2~50 adjustable | 2~50 adjustable | 2~50 adjustable |
| Temperature stability with E-sensor [°C ]* | ±1 | ±1 | ±1 | ±1 | ±1 |
| Heat output [W] | 800 | 1000 | 800 | 800 | 800 |
| External temperature sensor | Pt100 | Pt100 | Pt100 | Pt100 | Pt100 |
| Temperature control | ICC | ICC | ICC | ICC | ICC |
| Speed setting range [rpm | 100~1500 | 100~1500 | 100~1500 | 100~1500 | 100~1500 |
| Stirring quantity max [L / H2O] | 20 | 20 | 20 | 20 | 20 |
| Display | TFT | TFT | TFT | TFT | TFT |
| Mixing direction | Clockwise or counterclockwise | | | | |
| Time setting | 1~1999min / continuous | | | | |
| IP code | IP21 | IP21 | IP21 | IP21 | IP21 |
| Top plate material | Aluminium coated with ceramic | Ceramic glass | Ceramic glass | Ceramic glass | Ceramic glass |
| Top plate dimensions [mm] | 180×180 | 180×180 | 180×180 | Ø135 | Ø145 |
| Communicate interface. | RS232/485 | RS232/485 | RS232/485 | RS232/485 | RS232/485 |
| Dimensions W x D x H [mm] | 190x320x90 | 190x320x85 | 190x320x85 | 190x320x90 | 190x320x90 |
| Weight（Kg) | 2.8 | 2.8 | 3.1 | 3.0 | 3.0 |
| Power supply | 220V/50HZ | 220V/50HZ | 220V/50HZ | 220V/50HZ | 220V/50HZ |

*Measured with 500ml water at 80 °C
Standard package includes: Hot plate / stirrer, temperature sensor PT100-01 with holder and clamp,  stirrer bar

# WIGGENS
THE MAGIC MOTION

## Infrared Hot Plate / Stirrer
Intelligent heating technology for your very demanding applications

**1.2kW**

WH380 / WH385  UP to 1200W heating power

**Standard PT100 temperature sensor**
Ensures accurate sample temperature control within ±1 ℃ .

**Ceramic glass top plate**
Great anti-corrosive ability to acid, base, or organic solvents.

**550℃**
**Rapid heating up speed.**
Temperature can reach up to 550℃ , and one liter of water can be boiled in approx. 9 minutes
( Measured in 2L glass flask at 25℃  ambient temperature and 1bar air pressure)

**Touch controller  （WH385）**
with comfortable and easy operation

**Heating power**
With 1200W heating power, rapid heating speed.
**1200W**

**Extra large heating plate**
Top plate dimensions: 280×280mm
Heating zone: Ø190mm

WH380

WH385

**Attractive designs for heating, stirring and controlling**

WH380 presets 3 sets of PID for different volume heating application. WH385 uses advanced ICC technology to self-optimize  for optimal results.   WH380 has LCD display and WH385 has TFT

## Specifications

| Model | WH380 | WH385 |
|---|---|---|
| Order no. | W3013803 | W3013853 |
| Maximum temperature setting [℃ ] | 550 | 550 |
| Maximum temperature setting with E-sensor [℃ ] | 300 | 300 |
| Safety temperature [℃ ] | 50~600 adjustable | 50~600 adjustable |
| High temperature protection [℃ ] | 10~50 adjustable | 2~50 adjustable |
| Temperature stability with E-sensor [℃ ]* | ±1 | ±1 |
| Heat output [W] | 1200 | 1200 |
| External temperature sensor | Pt100 | Pt100 |
| Temperature control | PID, 3 sets | ICC |
| Speed setting range [rpm | 100~1500 | 100~1500 |
| Stirring quantity max [L / H2O] | 30 | 30 |
| Display | LCD | TFT |
| Mixing direction | Clockwise | Clockwise or counterclockwise |
| Time setting | 1~1999min / continuous | 1~1999min / continuous |
| IP code | IP21 | IP21 |
| Top plate material | Ceramic glass | Ceramic glass |
| Top plate dimensions [mm] | 280×280 | 280×280 |
| Communicate interface. | RS232 | RS232/485 |
| Dimensions W x D x H [mm] | 282x450x115 | 282x450x115 |
| Weight（Kg） | 4.0 | 4.0 |
| Power supply | 220V/50Hz | 220V/50Hz |

*Measured with 500ml water at 80 ℃
Standard package includes: Hot plate / stirrer, temperature sensor PT100-01 with holder and clamp,  stirrer bar

# Infrared Hot Plate / Stirrer
**Intelligent heating technology for powerful heating**

WH390 / WH395-NH / WH395    UP to 1800W heating power

**1.8kW**

### Standard PT100 temperature sensor
Ensures accurate sample temperature control within ±1 ℃ .

### Ceramic glass top plate
Great anti-corrosive ability to acid, base, or organic solvents.

### Rapid heating up speed.
**550℃**
Temperature can reach up to 550℃ , and one liter of water can be boiled in approx. 9 minutes
(Measured in 2L glass flask at 25℃ ambient temperature and 1bar air pressure)

### Intelligent PID (WH390)
**PID**
Suitable for different application, for accurately controlling the quick heating of small samples and the temperature stability of large samples..

### Intelligent Cascade Control (WH395)
**ICC**
Self-optimizing technology ensures optimal performance with excellent temperature stability.

### Heating power
**1800W**
With 1800W heating power, rapid heating up speed. 2000W (WH390-NH)

WH390 presets 3 sets of PID for different volume heating application. WH395 uses advanced ICC technolgy to self-optimize  for optimal results. WH390 has LCD display and WH395 has TFT

## Specifications

| Model | WH390 | WH390-NH | WH395 |
|---|---|---|---|
| Order no. | W3013902 | W3013903 | W3013953 |
| Maximum temperature setting [℃ ] | 550 | 450 | 450 |
| Maximum temperature setting with E-sensor [℃ ] | 300 | 300 | 300 |
| Safety temperature [℃ ] | 50~600 adjustable | 50~500 adjustable | 50~500 adjustable |
| High temperature protection [℃ ] | 10~50 adjustable | 10~50 adjustable | 2~50 adjustable |
| Temperature stability with E-sensor [℃ ]* | ±1 | ±1 | ±1 |
| Heat output [W] | 1800 | 2000 | 1800 |
| External temperature sensor | Pt100 | Pt100 | Pt100 |
| Temperature control | PID, 3 sets | PID, 3 sets | ICC |
| Speed setting range [rpm | 100~1500 | 100~1500 | 100~1500 |
| Stirring quantity max [L / H2O] | 30 | 30 | 30 |
| Display | LCD | LCD | TFT |
| Mixing direction | Clockwise | Clockwise | Clockwise or counterclockwise |
| Time setting | 1~1999min / continuous | 1~1999min / continuous | 1~1999min / continuous |
| IP code | IP21 | IP21 | IP21 |
| Top plate material | Ceramic glass | Ceramic glass | Ceramic glass |
| Top plate dimensions [mm] | 280×280 | 280×280 | 280×280 |
| Communicate interface. | RS232 | RS232 | RS232/485 |
| Dimensions W x D x H [mm] | 290x450x120 | 290x450x80 | 290x450x120 |
| Weight（Kg） | 4.1 | 4.1 | 4.1 |
| Power supply | 220V/50HZ | 220V/50HZ | 220V/50HZ |

*Measured with 500ml water at 80 ℃

Standard package includes: Hot plate / stirrer, temperature sensor PT100-01 with holder and clamp , stirrer bar

# WIGGENS
### THE MAGIC MOTION

## Soft Dry Bath -one for all shapes of vessels

### Heating in reflux, distillation and rectification, Oil free heating, completely new experience

The Soft Dry Bath launched by Wiggens like a versatile heating solution for various vessel shapes in the laboratory. Its uniform heat transfer and fast heat conduction make it a suitable alternative to small oil baths, electric heating sleeves, and other heating methods commonly used in labs. The aluminum bottom aids in quick heat transfer to alloy particles, while the PTFE material provides insulation and anticorrosion properties. With infrared heating (IR) technology and ICC self-tuning temperature control, the Soft Dry Bath offers faster heating and improved temperature stability. It seems like a reliable and efficient tool for laboratory heating applications

The high-quality soft dry bath developed by Wiggens offers uniform heat transfer and fast heat conduction. This makes it a great replacement for small oil baths, dry bath modules, electric heating sleeves, and other heating methods commonly used in laboratories. The aluminum bottom of the bath facilitates rapid heat transfer to alloy particles, while the PTFE material surrounding it provides insulation and protects against corrosion.

Additionally, Wiggens has incorporated infrared heating (IR) technology and ICC self-tuning temperature control into their soft dry bath. This combination allows for faster heating and improved temperature stability, making it a reliable and efficient heating solution for laboratory applications.

Suitable for **containers of any shape**

Replacement of Silicon oil

Replacement of thermostat module

High temperature

Safety

New experience

No cleaning required

Energy conservation and environmental protection

The exclusive technology
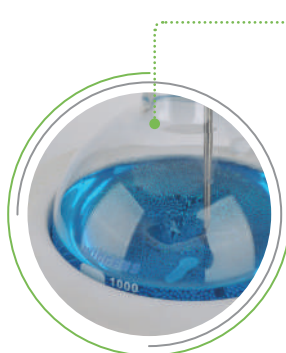
## One For All

Suitable for **containers of any shape**
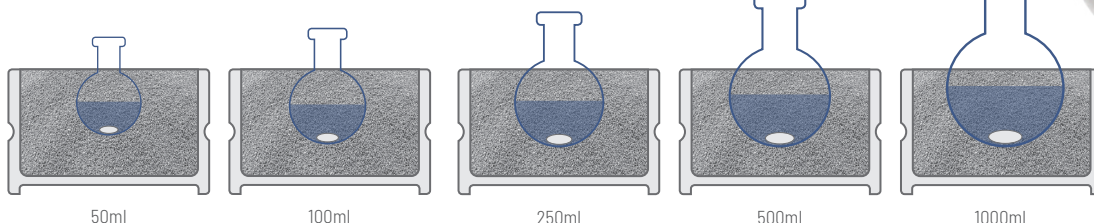
Suitable for containers of different volumes

| 50ml | 100ml | 250ml | 500ml | 1000ml |

For stirrer bars, please reference Page 97

## Order information

| Order No. | Model | Description |
|-----------|-------|-------------|
| SDB-1 | Dry bath tank and jacket | Usable bath opening Ø140×98mm |
| SDB-2 | Alloy seeds | The alloy seeds, 2kg |

Heating magnetic stirrer needs to be separately selected, recommended to use WH260 or 280

# Accessories for Hot Plate / Stirrer

## Thermometer

| Order No. | Description |
|---|---|
| PR5500 | Temperature resolution: 1℃ or 0.1℃<br>Standard package with two sensors:<br>Pt100 (250×Ø4mm), temperature range: -50.0~ 400.0℃ ;<br>Type K thermocouple (170×Ø4mm, temperature range: -50.0~ 500.0℃ |
| PR5600 | Temperature resolution: 0.01℃ or 0.001℃<br>Standard with two sensors:<br>Pt100 (250×Ø4mm), temperature range: -50.0~ 400.0℃ ;<br>Type K thermocouple (170×Ø4mm, temperature range: -50.0~ 500.0℃ |

| Order No. | Description |
|---|---|
| PR5000-1 | Pt100 (250×Ø4mm), temperature range: -50.0~ 400.0℃ ; Suitable for PR5500 or PR5600 |
| PR5000-2 | Type K thermocouple (170×Ø4mm, temperature range: -50.0~ 500.0℃ ; Suitable for PR5500 or PR5600 |

## Protective Cover

| Order No. | Description |
|---|---|
| 400-0011 | Silicone, suitable for WH260-NH and WH260-H |
| 400-0012 | Silicone, suitable for WH260-R and WH260-RL |
| 400-0013 | Silicone, suitable for WH280-NH and WH280-H |
| 400-0014 | Silicone, suitable for WH280-R and WH280-RL |

## Temperature sensor Suitable for all Hot Plate / Stirrer

| Order No. | Description |
|---|---|
| PT100-01 | PT100, Type I; -30~300℃ ; Length: 170 mm; Diameter: 4 mm; Material: Stainless steel; |
| PT100-02 | PT100, Type II; -30~300℃ ; Length: 300 mm; Material: Stainless steel, Fig. ① |
| PT100-03 | PT100, Type III; -30~250℃ ; Length: 170 mm; Material: Stainless steel, PTFE coated, Fig. ② |
| PT100-04 | PT100, Type IV; -30~250℃ ; Length: 300 mm; Material: Stainless steel, PTFE coated |
| PT100-06 | PT100, Type VI; -30~300℃ ; Length: 250 mm; Diameter: 4 mm; Material: Glass; Fig. ③ |
| 600.170.1 | K type thermocouple  0-500℃ ; Length: 170 mm; Diameter: 4 mm; Material: Stainless steel; |

① ② ③
Temperature sensor

## Holder for temperature sensor Suitable for all Hot Plate / Stirrer

| Order No. | Description |
|---|---|
| PT100-05 | Holder and clamp for PT100 temperature sensor, Fixed temperature sensor |
| | PT100-05: ①②③ |
| WH220017 | ①  installation stand |
| WH220026 | ②  Boss head clamp |
| WH220027 | ③  Sensor holde |

Holder and clamp
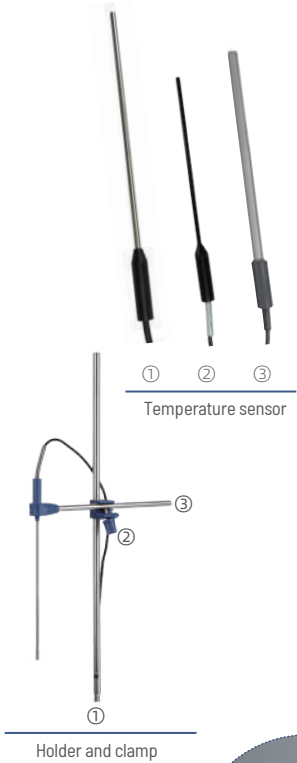
## Clamps for oil bath

| Order No. | Description |
|---|---|
| WA00-56 | Suitable for oil bath with the diameter up to 160mm |
| WA00-56A | Suitable for oil bath with the diameter up to 280mm |

## Glass oil bath with spout

| Order No. | Model | Description |
| --- | --- | --- |
| 213115407 | G1000 | Oil bath, Glass, 900 ml, inner Ø 140 mm, 75 mm height |
| 213115904 | G2000 | Oil bath, Glass, 2 L, inner Ø 190 mm, 90 mm height |
| 213116309 | G3500 | Oil bath, Glass, 3.5 L, inner Ø 230 mm, 100 mm height |

## Stainless steel oil bath
for WH260-R, WH280-R, Ø 135mm

| Order No. | Model | Description |
| --- | --- | --- |
| H220000 | H1000 | Oil Bath, stainless steel, 1.9L, inner Ø 177 mm, 83 mm height |

## Cylindrical heating block

| Order No. | Description | For |
| --- | --- | --- |
| 13696-01W | Stainless T-shape handle, length: 20 cm, width：80 mm | All types of heating block |
| 13696-02W | Stainless T-shape handle, length: 30 cm, width：80 mm | All types of heating block |
| 13697-01W | 28×30 (ID x H in mm) 11 Holes | WH260-R |
| 13697-02W | 28×50 (ID x H in mm) 11 Holes | WH260-R |
| 13697-03W | 26×30 (ID x H in mm) 11 Holes | WH260-R |
| 13697-04W | 26×50 (ID x H in mm) 11 Holes | WH260-R |
| 13697-11W | 28×30 (ID x H in mm) 15 Holes | WH260-R |
| 13697-12W | 28×50 (ID x H in mm) 15 Holes | WH260-R |
| 13697-13W | 26×30 (ID x H in mm) 15 Holes | WH260-R |
| 13697-14W | 26×50 (ID x H in mm) 15 Holes | WH260-R |
| 13699-04W | 60.3 mm Diameter, 4 holes | WH260-R |
| 13699-03F | 69 mm Diameter, 3 Holes | WH260-R |
| 13699-05W | 48.5 mm Diameter, 5 Holes | WH260-R |
| 13699-150 | 62.2 mm Diameter, 4 Holes | WH260-R |
| 13699-01W | 100 ml round-bottom flask, 3 Holes | WH260-R |
| 13699-02W | 62.2 mm Diameter, 3 Holes | WH260-R |
| 13707-250 | 250 ml round-bottom flask | WH260-R |
| 13707-500 | 500 ml round-bottom flask | WH260-R |
| 13707-1000 | 1000 ml round-bottom flask | WH260-R |
| 13707-2000 | 2000 ml round-bottom flask | WH260-R |

13696-01W / 02W

13697-01W  13697-02W  13697-03W  13697-04W

13697-11W  13697-12W  13697-13W  13697-14W

13699-04W

13699-03F  13699-05W  13699-150  13699-01W 13699-02W

13707-250  13707-500  13707-1000  13707-2000

# Magnetic Stirrer

> LED Display: Convenient control and real-time monitoring of stirring speed
> Microprocessor Technology: Accurate and stable stirring speed control
> Stirring Plate Surface: Powder-coated stainless steel for durability and corrosion resistance
> Speed Range: 150 to 1500 rpm, suitable for various applications
> Individual Plate Control: Independent operation for each plate

Best-seller!

## Specifications

| Model | WH-210D | WH-410D | WH-610D |
|---|---|---|---|
| Order No. | 400214 | 400215 | 400216 |
| Number of stirring positions | 1 | 4 | 6 |
| Stirring quantity max. per stirring position (H2O) [L] | 3 | 2 | 2 |
| Speed setting range [rpm] | 150~1500 | 150~1500 | 150~1500 |
| Speed display | LED display | LED display | LCD display |
| Speed setting | Turning knob | Turning knob | Turning knob |
| IP code | IP21 | IP21 | IP21 |
| Top plate material | Powder coated stainless steel | Powder coated stainless steel | Powder coated stainless steel |
| Top plate dimensions [mm] | 158 x143 | (151 x156) x4 | (151 x156) x6 |
| Dimensions W x D x H [mm] | 189 x 215 x 48 | 344 x 377 x 48 | 504 x 377 x 48 |
| Weight [kg] | 1.8 | 2.5 | 4.0 |
| Power supply | 220V/50Hz | 220V/50Hz | 220V/50Hz |

Standard package includes: Stirrer, stirrer bar 4/6 ( Corresponding to the mixing position Order No. 1.230.8)

## Corrosion resistant mat for magnetic stirrer

> Corrosion Resistant: Protects the magnetic stirrer surface from wear and damage
> Non-Slip Design: Ensures stability during operation
> Reusable and Replaceable: Designed for repeated use and easy replacement when needed

| Order No. | 400214-PTFE | 400215-PTFE | 400216-PTFE |
|---|---|---|---|
| Suitable for | WH-210D | WH-410D | WH-610D |
| Material | PTFE | PTFE | PTFE |
| Thickness | 0.18mm | 0.18mm | 0.18mm |
| Attachment strength | 25N/100mm | 25N/100mm | 25N/100mm |
| Max temperature | 260℃ | 260℃ | 260℃ |
| Size | 158mmx170mm | 317mmx325mm | 317mmx485mm |
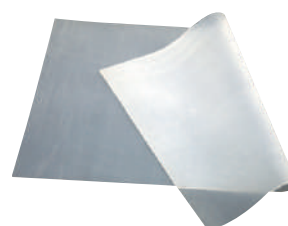
# Magnetic Stirrer WH200-C series

The magnetic stirrer features a cycle stirring mode, enabling alternating active stirring and idle periods for a predefined number of cycles. This function is particularly beneficial for cell culture applications, especially in the initial stages, where cells require controlled idle periods within the growth cycle. Both active stirring and idle durations can be independently adjusted to meet specific experimental requirements.

> Designed for low-speed, shear-sensitive mixing to preserve delicate cells
> Available in single position and four positions stirring configurations
> Speed range from 5 RPM to 200 RPM
> Programmable settings for stirring speed and cycles
> The remote control design enables convenient and flexible operation.

# Magnetic Stirrer WH1200-C series

Perfectly suited for biological culture, general mixing, and solutes that are challenging to dissolve, this device offers:

> Available in single position and four positions stirring configurations
> Speed range from 5 RPM to 200 RPM
> Programmable settings for stirring speed and cycles
> The remote control design enables convenient and flexible operation.



WH200-C1



rpm
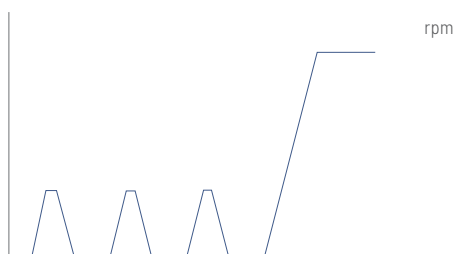
A stirring cycle consists of one running period and one idle period as shown above.



rpm
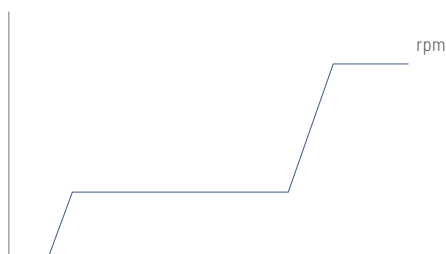
The device can be set to run in two speed stirring mode, as shown above.

WH200-C4

## Specifications

| Model | WH200-C1 | WH200-C4 | WH1200-C1 | WH1200-C4 |
|---|---|---|---|---|
| Order No. | W3022101 | W3022104 | W3022111 | W3022114 |
| Number of stirring positions | 1 | 4 | 1 | 4 |
| Speed setting range [rpm] | 5-200 | 5-200 | 150-1200 | 150-1200 |
| Stirring quantity max [L] | 3 | 3 | 3 | 3 |
| Power | 15W | 15W | 15W | 15W |
| Operating Temperature: | 15 to 40℃ | 15 to 40℃ | 15 to 40℃ | 15 to 40℃ |
| Humidity: | 95% up to 37℃ | 95% up to 37℃ | 95% up to 37℃ | 95% up to 37℃ |
| Dimensions W x D x H [mm] (Without controller) | 203x249x92 | 203x249x92 | 203x249x92 | 203x249x92 |
| Communicate interface | RS232 | RS232 | RS232 | RS232 |
| Weight [kg] | 1.9 | 4.5 | 1.9 | 4.5 |
| Operating Voltage | 100-240 VAC, 50/60 Hz | 100-240 VAC, 50/60 Hz | 100-240 VAC, 50/60 Hz | 100-240 VAC, 50/60 Hz |

# Mixing culture flask for biological culture

> With magnetic coupling, suitable for culture in suspension cells or microcarriers
> Height adjustable blade and aseptic design, the mixing part is all in the flask
> Wide mouth design facilitates gas exchange
> The borosilicate glass meets the USP I and ASTM E 438I standards, Class A requirements
> Autoclavable

| Order No. | Volume (ml) | Dia. x Height (mm) | Center neck | Side neck | MPQ |
|-----------|-------------|--------------------|-------------|-----------|-----|
| W3023125  | 125         | 65 x 155           | 51-400      | 33-430    | 1 pc |
| W3023250  | 250         | 85 x 175           | 51-400      | 33-430    | 1 pc |
| W3023500  | 500         | 110 x 190          | 100-400     | 45 mm     | 1 pc |
| W3023103  | 1000        | 130 x 250          | 100-400     | 45 mm     | 1 pc |
| W3023303  | 3000        | 178 x 341          | 100-400     | 45 mm     | 1 pc |

# Mixing culture flask for Microcarrier

> With simple and flexible coupling, suitable for culture in microcarriers
> Thanks to glass ball, it provides a very gentle mixing effect, reduces shear stress and protects cells
> Wide Mouth design facilitates gas exchange
> The borosilicate glass meets the USP I and ASTM E 438I standards, Class A requirements
> Autoclavable

| Order No. | Volume (ml) | Dia. x Height (mm) | Center neck | Side neck | MPQ |
|-----------|-------------|--------------------|-------------|-----------|-----|
| W3023225  | 125         | 65 x 155           | 51-400      | 33-430    | 1 pc |
| W3023350  | 250         | 85 x 175           | 51-400      | 33-430    | 1 pc |
| W3023600  | 500         | 110 x 190          | 100-400     | 45 mm     | 1 pc |
| W3023203  | 1000        | 130 x 250          | 100-400     | 45 mm     | 1 pc |
| W3023403  | 3000        | 178 x 341          | 100-400     | 45 mm     | 1 pc |

# Accessories and spare parts

### Stirring kit with PTFE paddle blades

| Order No. | Description | Suitable for |
|-----------|-------------|--------------|
| W3023126  | Lid for 125 ml Glass culture flask, glass shaft, magnetic coupling and magnetic paddle blades | 125 ml Glass culture flask |
| W3023251  | Lid for 250 ml Glass culture flask, glass shaft, magnetic coupling and magnetic paddle blades | 250 ml Glass culture flask |
| W3023501  | Lid for 500 ml Glass culture flask, glass shaft, magnetic coupling and magnetic paddle blades | 500 ml Glass culture flask |
| W3023104  | Lid for 1000 ml Glass culture flask, glass shaft, magnetic coupling and magnetic paddle blades | 1000 ml Glass culture flask |
| W3023304  | Lid for 3000 ml Glass culture flask, glass shaft, magnetic coupling and magnetic paddle blades | 3000 ml Glass culture flask |

W3023251      W3023501

### Stirring kit with glass ball impeller

| Order No. | Description | Suitable for |
|-----------|-------------|--------------|
| W3023226  | Lid for 125 ml Glass culture flask, glass ball impeller and connecting tube | 125 ml Glass culture flask |
| W3023351  | Lid for 250 ml Glass culture flask, glass ball impeller and connecting tube | 250 ml Glass culture flask |
| W3023601  | Lid for 500 ml Glass culture flask, glass ball impeller and connecting tube | 500 ml Glass culture flask |
| W3023204  | Lid for 1000 ml Glass culture flask, glass ball impeller and connecting tube | 1000 ml Glass culture flask |
| W3023404  | Lid for 3000 ml Glass culture flask, glass ball impeller and connecting tube | 3000 ml Glass culture flask |

### Glass culture flask

| Order No. | Description | Suitable for |
|-----------|-------------|--------------|
| W3023127  | 125 ml glass Glass culture flask with three necks, 1 pc | 125 ml Glass culture flask |
| W3023252  | 250 ml glass Glass culture flask with three necks, 1 pc | 250 ml Glass culture flask |
| W3023502  | 500 ml glass Glass culture flask with three necks, 1 pc | 500 ml Glass culture flask |
| W3023105  | 1000 ml glass Glass culture flask with three necks, 1 pc | 1000 ml Glass culture flask |
| W3023305  | 3000 ml glass Glass culture flask with three necks, 1 pc | 3000 ml Glass culture flask |

# Submersible Magnetic Stirrer

Fully encapsulated and hermetically sealed PP housing, and suitable for the use in incubators and ovens. water-,dust-, and germ proof, submersible in water. Suitable for working temperature range，0~60℃ .

| Stirrer Model | S-1 | B-1 |
|---|---|---|
| Number of stirring positions | 1 | 1 |
| Stirring quantity max. per stirring position (H2O) [L] | 1 | 3 |
| IP code | IP60 | IP60 |
| Top plate material | PP housing | PP housing |
| Dimensions W x D x H [mm] | 70 x70 x28 | 155 x155 x45 |
| Power supply | The power supplied by remote controller | |

S-1

S-1-01

B-1

B-1-01

| Order No. | Description |
|---|---|
| S-1-01 | Connection adapter to fix several stirrers together as one multi-position stirrer, Suitable for S-1 |
| B-1-01 | Connection adapter to fix stirrers together as one multi-position stirrer, Suitable for B-1 |
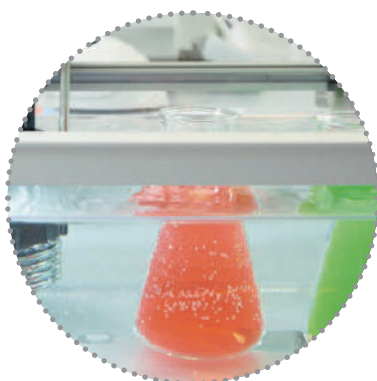
Working inside with the thermostatic bath

Same speed for all connected stirrers
CS-1 and CB-1 controller

Different speed for connected stirrers
CS-4 and CB-4 controller

## Controller for submersible magnetic stirrers

| Controller Model | CS-1 | CS-4 | CB-1 | CB-4 |
|---|---|---|---|---|
| Suitable for | S-1 | S-1 | B-1 | B-1 |
| Working mode | Same speed for all connected stirrers | Different speed for connected stirrers | Same speed for all connected stirrers | Different speed for connected stirrers |
| Maximum number of stirrer to connect | 4 | 4 | 4 | 4 |
| IP code | IP60 | IP60 | IP60 | IP60 |
| Speed setting range [rpm] | 100~1500 | 100~1500 | 100~1500 | 100~1500 |
| Speed setting | Turning knob | Turning knob | Turning knob | Turning knob |
| Dimensions W x D x H [mm] | 95 × 158 × 56 | 95 × 158 × 56 | 95 × 158 × 56 | 95 × 158 × 56 |
| Power supply | 220V/50Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz |

# Stirrer Bar

## Cylindrical Stirrer Bar

Cylindrical Stirrer Bars have a smooth round profile.
A popular general purpose stirrer for a wide varity of
applications.
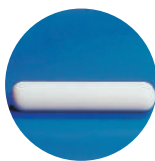
| Order No. | Name | Description |
|-----------|------|-------------|
| 1.110.6 | Cylindrical Stir Bar | Length: 10 mm, Diameter: 6 mm |
| 1.115.6 | Cylindrical Stir Bar | Length: 15 mm, Diameter: 6 mm |
| 1.120.7 | Cylindrical Stir Bar | Length: 20 mm,  Diameter: 7 mm |
| 1.120.8 | Cylindrical Stir Bar | Length: 20 mm, Diameter: 8 mm |
| 1.125.8 | Cylindrical Stir Bar | Length: 25 mm,  Diameter: 8 mm |
| 1.130.8 | Cylindrical Stir Bar | Length: 30 mm, Diameter: 8 mm |
| 1.140 | Cylindrical Stir Bar | Length: 40 mm, Diameter: 8 mm |
| 1.145 | Cylindrical Stir Bar | Length: 45 mm, Diameter: 8 mm |
| 1.150 | Cylindrical Stir Bar | Length: 50 mm, Diameter: 8 mm |
| 1.180 | Cylindrical Stir Bar | Length: 80 mm, Diameter: 10 mm |

## Plain Stirrer Bar

Plain Stirrer Bars have similar functions as the cylindrical
but give more turbulence at low speed.

| Order No. | Name | Description |
|-----------|------|-------------|
| 1.215.6 | Plain Stir Bar | Length: 15 mm, Diameter: 6 mm |
| 1.220.7 | Plain Stir Bar | Length: 20 mm, Diameter: 7 mm |
| 1.230.7 | Plain Stir Bar | Length: 30 mm, Diameter: 7 mm |
| 1.240 | Plain Stir Bar | Length: 40 mm, Diameter: 8 mm |
| 1.250 | Plain Stir Bar | Length: 50 mm, Diameter: 8 mm |
| 1.260 | Plain Stir Bar | Length: 60 mm, Diameter: 10 mm |
| 1.270 | Plain Stir Bar | Length: 70 mm, Diameter: 10 mm |
| 1.280 | Plain Stir Bar | Length: 80 mm, Diameter: 10 mm |

## Glass Covered Stirrer Bar

For use with very abrasive media which may erode PTFE
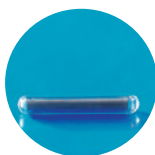
| Order No. | Name | Description |
|-----------|------|-------------|
| 1.1212 | Glass Covered Stir Bar | Length: 12 mm, Diameter: 5 mm |
| 1.1225 | Glass Covered Stir Bar | Length: 25 mm, Diameter: 6 mm |
| 1.1245 | Glass Covered Stir Bar | Length: 45 mm, Diameter: 8 mm |
| 1.1260 | Glass Covered Stir Bar | Length: 60 mm, Diameter: 8 mm |

## Cross Stirrer Bar

Cross Stirrer Bars are very stable general purpose stirrers.

| Order No. | Name | Description |
|-----------|------|-------------|
| 1.2402 | Cross-Shaped Stir Bar | Length: 20 mm, Diameter: 8 mm |
| 1.2405 | Cross-Shaped Stir Bar | Length: 38 mm, Diameter: 11 mm |
| 1.2407 | Cross-Shaped Stir Bar | Length: 60 mm, Diameter: 20 mm |

## Oval Stirrer Bar

Oval Stirrer Bars are for round bottom flasks.

| Order No. | Name | Description |
|-----------|------|-------------|
| 1.620 | Oval Stir Bar | Length: 20 mm, Diameter: 10 mm |
| 1.625.10 | Oval Stir Bar | Length: 25 mm, Diameter: 10 mm |
| 1.630 | Oval Stir Bar | Length: 30 mm, Diameter: 16 mm |
| 1.635 | Oval Stir Bar | Length: 35 mm, Diameter: 16 mm |
| 1.640 | Oval Stir Bar | Length: 40 mm, Diameter: 20 mm |
| 1.650.17 | Oval Stir Bar | Length: 50 mm, Diameter: 17 mm |
| 1.650 | Oval Stir Bar | Length: 50 mm, Diameter: 20 mm |

## Octahedral Stirrer Bar

Octahedral Stirrer Bars use have similar functions as Pivot
Ring type but withincreased turbulence at low speeds.

| Order No. | Name | Description |
|-----------|------|-------------|
| 1.515 | Octahedral Stir Bar | Length: 15 mm, Diameter: 8 mm |
| 1.525 | Octahedral Stir Bar | Length: 25 mm, Diameter: 8 mm |
| 1.538.10 | Octahedral Stir Bar | Length: 38 mm, Diameter: 10 mm |
| 1.551.10 | Octahedral Stir Bar | Length: 51 mm, Diameter: 10 mm |
| 1.575.10 | Octahedral Stir Bar | Length: 75 mm, Diameter: 13 mm |

# Double Ended Stirrer Bar

Double Ended Stirrer Bars have a double paddle action for efficient stirring plus high stability.

| Order No. | Name | Description |
| --- | --- | --- |
| 1.1335 | Double Ended Stir Bar | Length: 35 mm, Diameter: 8 mm |
| 1.1355 | Double Ended Stir Bar | Length: 55 mm, Diameter: 8 mm |
| 1.1335-R/B/Y | Double Ended Stir Bar | Length: 35 mm, Diameter: 8 mm |
| 1.1355-R/B/Y | Double Ended Stir Bar | Length: 55 mm, Diameter: 8 mm |

# Micro Stirrer Bar

Micro Stirrer Bars are for the smallest containers.
Note: Always use the largest stirrer bar possible.
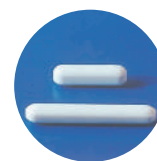
| Order No. | Name | Description |
| --- | --- | --- |
| 1.515-R,B/Y | Colored Octahedral Stir Bar | Length: 15 mm, Diameter: 8 mm |
| 1.525-R,B/Y | Colored Octahedral Stir Bar | Length: 25 mm, Diameter: 8 mm |
| 1.538-R,B/Y | Colored Octahedral Stir Bar | Length: 38 mm, Diameter: 8 mm |
| 1.551.-R,B/Y | Colored Octahedral Stir Bar | Length: 51 mm, Diameter: 8 mm |
| 1.575-R,B/Y | Colored Octahedral Stir Bar | Length: 75 mm, Diameter: 13 mm |

# Tube Stirrer Bar

Tube Stirrer Bars are designed for use with standard cuvettes.

| Order No. | Name | Description |
| --- | --- | --- |
| 1.420 | Triangular Stir Bar | Length: 20 mm, Diameter: 8 mm |
| 1.440 | Triangular Stir Bar | Length: 40 mm, Diameter: 14 mm |
| 1.450 | Triangular Stir Bar | Length: 50 mm, Diameter: 12 mm |
| 1.480 | Triangular Stir Bar | Length: 80 mm, Diameter: 14 mm |
| 1.4136 | Triangular Stir Bar | Length: 136 mm, Diameter: 36 mm |

# Turbo Cylindrical Bar

Exceptional strength coupled with almost total resistance to demagnetisation. Identified by an inert carbon black spot.

| Order No. | Name | Description |
| --- | --- | --- |
| 1.802 | Micro Stir Bar | Length: 2 mm, Diameter: 2 mm |
| 1.806 | Micro Stir Bar | Length: 6 mm, Diameter: 3 mm |
| 1.808 | Micro Stir Bar | Length: 8 mm, Diameter: 1.5 mm |
| 1.813 | Micro Stir Bar | Length: 13 mm, Diameter: 3 mm |
| 001-350-8 | Turbo Stir Bar | Length 35 mm, Diameter: 8 mm |
| 1.160.RE | Turbo cylindrical | Length: 60 mm, Diameter: 10 mm |

# Colored Octahedral Stirrer Bar

Colored Octahedral Stirrer Bars are for use where identification is of prime importance.

| Order No. | Name | Description |
| --- | --- | --- |
| 1.1609 | Tube Stir Bar | Length: 6 mm, Diameter: 9 mm |

# Infrared Hot Plate

> Smooth and corrosion resistant ceramic glass top plate
> Excellent transmittance of the infrared light
> Material can resist a thermal shock of up to 700°C
> Corrosion-resistant, solid casing which is hermetically sealed
> Fast heating and excellent temperature stability
> Temperature can be externally controlled by the connection of a Pt100 temperature sensor
> Large LCD screen displays the set and actual temperature
> A high-temperature indicator warns the user and prevents burning injuries
> Rod holder can be conveniently used to connect diverse accessories such as a temperature sensor
> Can be connected to an external temperature sensor for direct and precise temperature control

SLK2-T heating up 1L water up to 80°C with external control mode in 15min
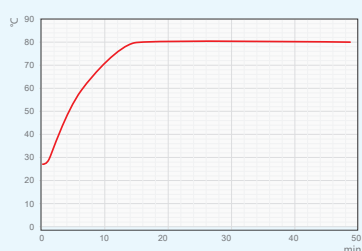
SLK2-T heating up 1L oil up to 160°C with external control mode in 18min
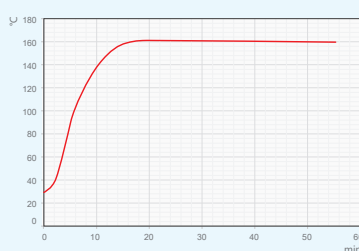
SLK1-T / SLK2-T

Note: Above data is based on the 220V/50Hz instrument with pure water ($H_2O$) and simethicone (Silicon Oil).

## Specifications

| Model | SLK1-T | SLK2-T |
|---|---|---|
| Order No. | W3032391 | W3032392 |
| Maximum temperature setting | 550 [°C ] / 24 steps | 550 [°C ] / 24 steps |
| Maximum temperature setting with E-sensor [°C ] | 300 | 300 |
| Safety temperature [°C ] | 50~600 adjustable | 50~600 adjustable |
| High temperature protection [°C ] | 10~50 adjustable | 10~50 adjustable |
| Temperature stability with E-sensor [°C ]* | ±1 | ±1 |
| Heat output [W] | 1200 | 1800 |
| External temperature sensor | Pt100 | Pt100 |
| PID parameter | 3 sets | 3 sets |
| Temperature display | LCD display | LCD display |
| Temperature setting | Turning knob | Turning knob |
| Time setting | 1~1999min / continuous | 1~1999min / continuous |
| IP code | IP21 | IP21 |
| Top plate material | Ceramic glass | Ceramic glass |
| Top plate dimensions [mm] | 280×280 | 280×280 |
| Heating zone [mm] | Ø190 | Ø190 |
| USB interface | Yes | Yes |
| Dimensions W x D x H [mm] | 290x450x120 | 290x450x120 |
| Weight [kg] | 4.1 | 4.1 |
| Power supply | 220V/50Hz | 220V/50Hz |

*Measured with 500ml water at 80 °C
Standard package includes: hot plate, temperature sensor PT100-01 with holder and clamp

# WIGGENS
THE MAGIC MOTION

# High power hot plate

The high-power hotplate features a ceramic glass top plate, offering exceptional chemical resistance, high surface quality, and the ability to withstand temperature shocks exceeding 700 ℃ .
This provides an optimal solution compared to conventional heating surface materials.

> Nano-Coating Heating Technology: Ensures efficient energy transfer for rapid and consistent heating.

> Precise PID Control: Delivers excellent temperature stability, with the capability to achieve ±1 ℃ accuracy when paired with a Pt-100 sensor in most applications.

> User-Friendly LCD Display: A large, clear screen displays essential parameters such as working temperature, working time, and safety temperature, ensuring easy monitoring and operation.

> Memory Function: Retains temperature settings, ideal for experiments requiring fixed conditions.

> Liquid Drainage Design: Prevents liquids from reaching the touch panel and electronics by directing spills away from critical components.

> Direct Pt100 Sensor Connection: Allows precise and convenient solution temperature control.

> Durable Construction: Sealed outer shell and isolated critical components ensure longevity, even in harsh laboratory environments.

> Enhanced Safety Protection: Automatically shuts off heating if the safety range (adjustable between 10-50 ℃ ) is exceeded, providing robust safety measures.

> ICC Technology: Self-optimizes heating performance for consistent and efficient results.

For external temperature sensor
Please refer to Page 113

## Specifications

| Model | WH500D-1K | WH500D-2K |
|---|---|---|
| Order No. | W3032501 | W3032502 |
| Temperature setting range | 0-450 | 0-450 |
| Maximum temperature setting with E-sensor [℃ ] | 0-300 | 0-300 |
| Safety temperature [℃ ] | 500 | 500 |
| High temperature protection [℃ ] | 2-50 | 2-50 |
| Temperature stability with E-sensor [℃ ]* | ±1* | ±1* |
| Heat output [W] | 1000 | 2000 |
| External temperature sensor | PT100 | PT100 |
| Temperature control | ICC | ICC |
| Temperature display | TFT | TFT |
| Time setting | 1~1999min / continuous | |
| IP code | IP21 | IP21 |
| Top plate material | Ceramic glass | Ceramic glass |
| Top plate dimensions [mm] | 180x180 | 280x287 |
| Communicate interface. | RS232/485 | RS232/485 |
| Dimensions W x D x H [mm] | 240x280x70 | 320x360x70 |
| Power supply | 220V/50Hz | 220V/50Hz |

*Measured with 500ml water at 80 ℃ .
Standard package includes: hot plate, temperature sensor PT100-01 with holder and clamp.

# Digital Hot Plate

> PID temperature control technology for accurate and reliable results
> Suitable for complicated temperature control requirements
> Bright LED screen can display both set value and actual temperature
> Convenient temperature setting via on-touch control
> Timer function for automatic heating up to 100 hours
> Alarm signal output which can be applied to stop the operation of the hot plate and other connected devices
> External Pt100 temperature sensor connection for direct and precise control of the actual sample temperature

The data for H200D-2K heating up the high-temperature oil from 50 to 150℃ (with external temperature sensor)
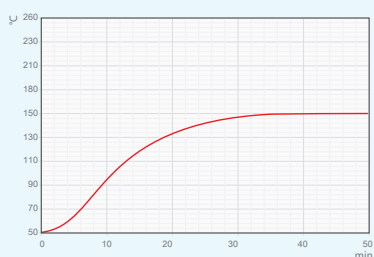
The surface temperature stability data for WH200D-2K (250℃ )
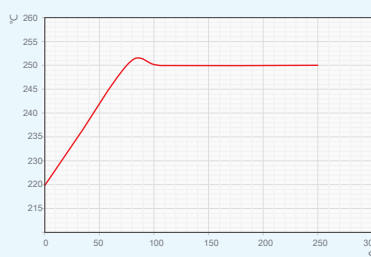
Note: Above data is based on the 220V/50Hz instrument with pure water ($H_2O$) and simethicone (Silicon Oil).

For external temperature sensor Please refer to Page 113

WH200D-1K

WH200D-2K
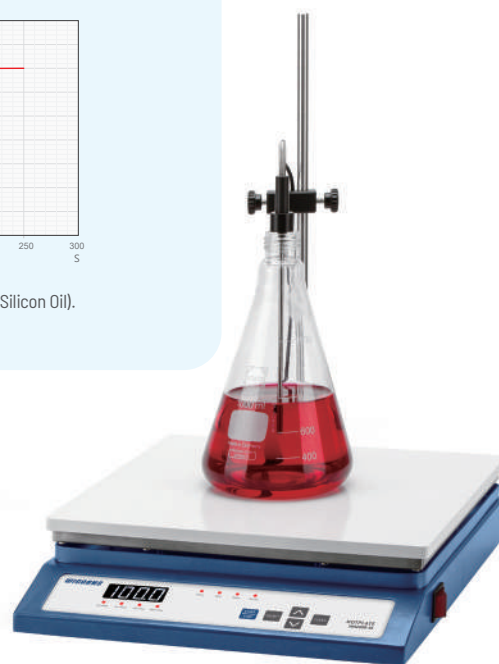
WH200D-3K

## Specifications

| Model | WH200D-1K | WH200D-2K | WH200D-3K |
|---|---|---|---|
| Order No. | 400110 | 400111 | 400112 |
| Maximum temperature setting | 300 | 300 | 300 |
| Maximum temperature setting with E-sensor [℃ ] | 300 | 300 | 300 |
| Temperature stability [℃ ]* | ±1 | ±1 | ±1 |
| Heat output [W] | 680 | 1000 | 1500 |
| External temperature sensor | Pt100 | Pt100 | Pt100 |
| Temperature display | LED display | LED display | LED display |
| Temperature setting | Turning knob | Turning knob | Turning knob |
| IP code | IP21 | IP21 | IP21 |
| Top plate material | Aluminum coated with ceramic | Aluminum coated with ceramic | Aluminum coated with ceramic |
| Top plate dimensions [mm] | 170×170 | 320×320 | 400×300 |
| Dimensions W x D x H [mm] | 240 x280 x70 | 320 x360 x70 | 470 x410 x70 |
| Weight [kg] | 2.5 | 7.5 | 9.0 |
| Power supply | 220V/50Hz | 220V/50Hz | 220V/50Hz |

*Measured with 500ml water at 80 ℃
Standard package includes: hot plate, temperature sensor PT100-01 with holder and clamp

# Multi-Purpose Heater / Dry Bath

WIGGENS dry block heaters are highly versatile suitable for broad range of applications.

> DNA extractions
> DNA analysis
> Melting point determination
> Nucleic acid hybridization
> Coagulation studies
> Biochemical processes
> Incubation and activation of cultures
> Blood examinations
> Fertile ground processing
> Restriction digest
> Denaturation
> Boiling point determination
> Enzymatic processes
> Enzyme activity studies
> Blood-urea-nitrogen determinations
> Immunoassays
> Enzyme reactions
> In situ hybridization

| Picture | Model | Temperature setting range [°C ] | Mountable Capacity of Blocks (block size W×L×Hmm) | Dimensions W x D x H [mm] |
|---------|-------|----------------------------------|---------------------------------------------------|----------------------------|
| | WD310 | 50.0~150.0 °C  Temperature setting range with E-sensor 40.0~150.0 °C | 1  79×104×50 | 200 x270 x80 |
| | WD320 | 50.0~150.0 °C  Temperature setting range with E-sensor 40.0~150.0 °C | 2  79×104×50 | 200 x270 x80 |
| | WD325 | Fixed 150.0 °C for COD, 60.0~200.0 °C adjustable | 1  140×140×61.5 | 189 x315x116 |
| | WB-350HC | 4~95 °C | 1  99 x 77.5 x 36 | 249×330×168 |
| | WB-350T | Amb. +5 to 130 °C | 2  98×76.5×51 | 249×330×250 |
| | WB-350S | Amb. +5 to 130 °C | 2  98×76.5×51 | 249×330×125 |

# Multi-Purpose Heater / Dry Bath

### Microprocessor control
The built-in unique microprocessor can provide precise temperature control for a variety of biochemical experiments.

### Heating chamber in one piece
The heating tank is made of molded aluminum bath coated with PTFE

### Various optional heating blocks
Various types of heating block are available for option, and customized block is optional.

### Three types of timer modes
OFF, OFF-TIME, and WAIT-TIME

### Certification
CE certification

### Application
> Molecular biology
> Biochemistry

### Precise temperature control!
> Rapid heat up speed
> Exceptional temperature uniformity
> External PT 100 temperature sensor included

Best-seller!

WD320

WD310

For external temperature sensor
Please refer to Page 113

## Specifications

| Model | WD310 | WD320 |
| --- | --- | --- |
| Order No. | 179310 | 179320 |
| Temperature setting range [°C ] | 50.0~150.0 | 50.0~150.0 |
| Temperature setting range with E-sensor [°C ] | 40.0~150.0 | 40.0~150.0 |
| Safety temperature [°C ] | Cut off at 170.0 | Cut off at 170.0 |
| Temperature stability [°C ] | ±0.1 | ±0.1 |
| Temperature accuracy [°C ] | ±0.1 | ±0.1 |
| Time setting [min] | 1~9959 / off | 1~9959 / off |
| External temperature sensor | Pt100 | Pt100 |
| IP code | IP21 | IP21 |
| Temperature display | LED display | LED display |
| Temperature setting | Touch button | Touch button |
| Number of heating blocks × (block size W×L×Hmm) | 1×(79×104×50) | 2×(79×104×50) |
| Dimensions W x D x H [mm] | 200 x270 x80 | 200 x270 x80 |
| Weight [kg] | 2.6 (w/o the block) | 2.8 (w/o the block) |
| Power supply | 220V/50Hz,1A | 220V/50Hz,2A |

Standard package includes: Multi-Purpose Heater ,removing block rod, block need to be ordered separately.
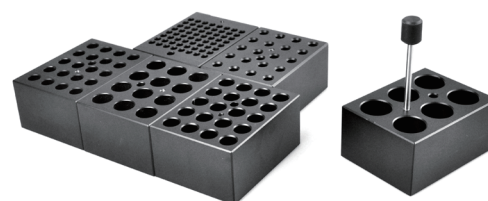
### Heating Blocks for WD310 and WD320

| Order No. | Size | Number of Holes | Ø x H (mm) |
| --- | --- | --- | --- |
| 179300-01 | 0.2 ml | 64 | 6x17 mm |
| 179300-02 | 0.5 ml | 20 | 8x25 mm |
| 179300-03 | 1.5 ml(or 2.0) | 20 | 11x35 mm |
| 179300-04 | 10 ml | 20 | 10x33 mm |
| 179300-05 | 13 ml | 20 | 13x36 mm |
| 179300-06 | 20 ml | 12 | 20x48 mm |
| 179300-07 | 25 ml | 6 | 25x45 mm |
| 179300-10 | 17 ml | 12 | 17x44 mm |

# COD Reactor

## Features

**Compliance with regulations**

WD325 COD reactor is used to digest closed micro reflux COD vial and can meet USEPA 410. 4. It is easier and safer than traditional open macro reflux method.

**Special COD program**

Just press start/stop button, and the reactor will start to heat up to 150℃ and keep for 2-hour countdown then shut down automatically with 10-sec audio alarm.

**3 additional program settings**

Temperature range setting 60℃ - 200℃ and timer from 1 - 999. 3 Built-in additional heating program settings available for users to store and execute as needed.

**Auto shut off and audio alarm**

WD325 can stop heating, and then shut off automatically with audio alarm when every program is completed.

## Application

> Waste water from factories
> Water quality in lake, pond and river

For external temperature sensor
Please refer to Page 113

## Specifications

| Model | WD325 |
| --- | --- |
| Order No. | 179200 |
| Temperature setting range [℃ ] | Fixed 150.0 ℃ for COD, 60.0~200.0 ℃ adjustable |
| Temperature accuracy [℃ ] | ±2 (at 150.0 ℃ ) |
| Hot top indicator | Flashing when block temperature is over 70.0 ℃ |
| Automatic shutoff | The temperature of block is over 240.0 ℃ |
| Time setting [min] | 1~1999 with audible alarm and automatic shutoff or continuous operation |
| Heat output [W] | 220 |
| Temperature display | LED display |
| Temperature setting | Touch button |
| IP code | IP21 |
| Number of heating block ( block size ) | 1 (25 holes, Ø16.5×55 mm) |
| Housing material | Stainless steel with powder paint coating |
| Heating block material | Aluminium alloy |
| Dimensions W x D x H [mm] | 189 x315x116 |
| Weight [kg] | 4.5 |
| Power supply | 110V/60Hz or 220V/50Hz |

Standard package includes:COD Reactor, 1 block (25 holes, Ø16.5×55mm ). Other heating blocks need to consult WIGGENS

# Heating & Cooling Bath

Rapid cooling and heating in centrifuge tubes, sample vials, micro tubes within the broad temperature range of 4 to 95℃ . Outstanding temperature compensation function guarantees precise temperature control.

## Features

> Precision accuracy of ±0.1℃ is ensured by its PID controller.
> Wide temperature control range from 4 to 95℃ with rapid cool down and heat-up times.
> Maximum 9 temperature range-specific calibration.
> Memory function of programmed protocols allowing relevant parameters of each protocol step to be stored.
　- Up to 10 protocols allowed for memory storage.
　- Up to 10 steps allowed for each protocol.
> Two types of timer modes:
　- Timer 1 starts only after reaching the set temp.
　- Timer 2 starts right after the timer setting.

## Convenience

> Cooling is controlled by Peltier elements for an energy efficient compact design.
> Bright VFD display with responsive touch buttons.
> Its polypropylene main body is highly chemical-resistant and easy-to-clean.
> Optimal heat transfer is achieved by the tight coupling design of the main body and the corrosion-resistant anodized aluminum blocks.
> Transparent lid allows easy sample monitoring and even temperature distribution.
> Blocks can be easily interchanged by the included block lifter.

## Specifications

| Model | | WB-350HC |
|---|---|---|
| Order No. | | W3033350 |
| Control system | | Feedback control PID |
| Display | | VFD (0.1 ℃ resolution) |
| Temperature | Range (℃ ) | 4 to 95 |
| | Stability at 37℃ (±℃ ) | 0.1 |
| | Variation at 37℃ (±℃ ) | 0.5 |
| Safety | Over temp. | Heating plate |
| | | PCB |
| | Over current | Current limit protection |
| Dimension (W×D×H) | Interior (mm) | 99 x 77.5 x 36 |
| | Exterior (mm) | 249×330×168 |
| | Net weight (kg ) | 5.0 |
| IP code | | IP21 |
| Electrical requirements | | 230V, 50 / 60Hz/2A |

Permissible environmental conditions: temperature (2-60℃ ) and relative humidity (up to 80%)
Standard package includes: Heating & Cooling bath, cover,removing block rod, block need to be ordered separately.

# Multi-Purpose Heater / Dry Bath

Ideal for simultaneous sample heating of multiple vials or test tubes with uniform and precise temperature control.

## Features

> Precision accuracy of ±0.1℃ is ensured by its PID controller from ambient + 5℃ to 130℃ .
> Its built-in temperature limit setting feature (with max. 0.2℃ overshooting) allows you to perform highly temp.
  sensitive reactions such as isothermal amplifications.
> Automatic power cut off.
  - If the temperature of the main body exceeds 150℃ .
  - If the internal circuit is overheated.
> Two types of timer modes:
  - Timer 1 starts only after reaching the set temp.
  - Timer 2 starts right after the timer setting.

## Convenience

> Its polypropylene main body is highly chemical-resistant and easy-to-clean.
> Optimal heat transfer is achieved by the tight coupling design of the main
  body and the corrosion-resistant anodized aluminum blocks.
> Bright VFD display with responsive touch buttons.
> Transparent lid allows easy sample monitoring and even temperature
  distribution.
> Blocks can be easily interchanged by the included block lifter.

## Specifications

| Model | | WB-350T | WB-350S |
|---|---|---|---|
| Order No. | | W3033351 | W3033352 |
| Control system | | Feedback control PID | Feedback control PID |
| Display | | VFD (0.1℃ resolution) | VFD (0.1℃ resolution) |
| Temperature | Range (℃ ) | Amb. +5 to 130 | Amb. +5 to 130 |
| | Stability at 37℃ (±℃ ) | 0.1 | 0.1 |
| | Variation at 37℃ (±℃ ) | 0.5 | 0.5 |
| Safety | Over temp. | Heating plate | Heating plate |
| | | PCB | PCB |
| | Over current | Current limit protection | Current limit protection |
| Dimension (W×D×H) | Interior (mm) | 154×99×37 | 154×99×37 |
| | Exterior (mm) | 249×330×250 | 249×330×125 |
| | Net weight (kg ) | 4.3 | 3.9 |
| IP code | | IP21 | IP21 |
| Electrical requirements | | 230V, 50 / 60Hz/2.8A | 230V, 50 / 60Hz/2.8A |

Standard package includes: Multi-Purpose Heater, cover,removing block rod, block need to be ordered separately.

## Blocks for WB-350S / 350T / 350HC

| Block | Order No. | Description | WxDxH (mm) | Mountable Capacity of Blocks | | |
| --- | --- | --- | --- | --- | --- | --- |
| | | | | WB-350S | WB-350T | WB-350HC |
| | W3033001 | 0.2ml x 96 holes（microtube） | 153×98×41 | 1 | 1 | - |
| | W3033002 | 0.5ml x 48 holes（microtube） | 98×76.5×41 | 2 | 2 | 1 |
| | W3033003 | 1.5ml x 48 holes（microtube） | 153×98×41 | 1 | 1 | - |
| | W3033004 | 15ml x 15 holes（centrifuge tube） | 98×76.5×51 | 2* | 2 | 1* |
| | W3033005 | 50ml x 6 holes（centrifuge tube） | 98×76.5×51 | 2* | 2 | 1* |
| | W3033006 | 50ml x 6 holes（centrifuge tube） | 98×76.5×87 | 2 | 2 | 1* |
| | W3033007 | Ø10 x 35 holes | 98×76.5×51 | 2* | 2 | 1* |
| | W3033008 | Ø12 x 24 holes | 98×76.5×51 | 2* | 2 | 1* |
| | W3033009 | Ø13 x 24 holes | 98×76.5×51 | 2* | 2 | 1* |
| | W3033010 | Ø15 x 20 holes | 98×76.5×51 | 2* | 2 | 1* |
| | W3033011 | Ø16 x 16 holes | 98×76.5×51 | 2* | 2 | 1* |
| | W3033012 | Ø18 x 12 holes | 98×76.5×51 | 2* | 2 | 1* |
| | W3033013 | Ø20 x 12 holes | 98×76.5×51 | 2* | 2 | 1* |

* Available to use only when the lid is opened.

# Soxhlet Extraction System (SES)

Wiggens Soxhlet Extraction System is based on the Soxhlet extraction principle and integrates such functions as soaking, extraction, leaching, heating, condensation and solvent recovery. It features sealed metal bath heating with automatic temperature control, ensuring uniform heating and safe operation; six samples can be tested at the same time, and optimal temperature can be selected according to the difference between reagent boiling point and RT so as to achieve quick analysis; reagents can also be recycled to reduce test cost; and soaking,extraction and solvent recovery can be done in one step. Therefore, this device is characterized by reasonable design, stable performance, good reproducibility, high accuracy, easy operation, saving time and effort, and so on.

SES can quickly separate one substance from solid or semi-solid mixtures, can determine the soluble organic compounds contained in foods, feeds,medicines, soil, sludge, polymers, fiber products, petrochemical products, detergent, rubbers, plastics and other materials.

### LED display
The set temperature and actual temperature can be displayed simultaneously

### Extremely high temperature
450℃
Temperature can reach up to 450℃
Display resolution is 0.1℃

### Independent temperature control
According to the experimental requirements, different position can be run at the same or different temperature

### Glassware
Both round and flat bottom flasks can be ordered with 300ml and 500ml volume

### Cellulose fiber extraction thimbles
Optional, good retention. seamless, high quality extraction thimbles, single thickness.
Readily permeable to the flow of ether and other organic solvents.

## Specifications

| Order No. | Model | Temperature range | Heat output | Flask volume | | Glass extraction thimbles | |
|---|---|---|---|---|---|---|---|
| | | ℃ | Each position [W] | volume [ml] | Bottom | ID x H [mm] | Sintered glass |
| 3-place Soxhlet Extraction System ( Multi-position heating mantle with stand ) | | | | | | | |
| W3030350 | SES350 | RT +5~450 | 180W | 500 | Flat | 45 x 130 | 20-35μm / 100-200 μm |
| W3030355 | SES355 | RT +5~450 | 180W | 500 | Round | 45 x 130 | 20-35μm / 100-200 μm |
| W3030395 | SES395 | RT +5~450 | 290W | 1000 | Round | 45 x 130 | 20-35μm / 100-200 μm |
| 6-place Soxhlet Extraction System ( Multi-position heating mantle with stand ) | | | | | | | |
| W6030630 | SES630 | RT +5~450 | 125W | 300 | Flat | 45 x 130 | 20-35μm / 100-200 μm |
| W6030635 | SES635 | RT +5~450 | 125W | 300 | Round | 45 x 130 | 20-35μm / 100-200 μm |

Glassware need to be ordered seperately
Standard package includes: Multi-position heating mantle with stand

# Multi-Position Heating Mantle

WIGGENS Multi-position heating mantle has always been the mantle of choice for repetitive extracting, refluxing, and distilling procedures in labs of the food, textile fiber, water and waste-water, petroleum, and many other industries. WIGGENS latest version offers safety and convenience never before available in a multi-place heating mantle.

> Lower profile for space-saving convenience
> Revolutionary heating element container system makes replacing burned-out elements a simple task
> Clear anodized aluminum cabinet with blue PTFE resin coated top for chemical resistance.
> Offered in two space-saving configurations; six-place for 100 - 300 ml flasks and three-place for 500 - 1,000 ml flasks
> Available in low-temperature (450°C RX version) and high-temperature (650°C RJ version) for greater versatility
> The ideal mantle for Kjeldahl, Soxhlet, and other extraction procedures.

### LED display
The set temperature and actual temperature can be displayed at the same time

### 450°C Extremely high temperature
Temperature can reach up to 450°C
Display resolution is 0.1°C

### 650°C Extremely high temperature
Temperature can reach up to 650°C
Display resolution is 0.1°C

### Independent temperature control
According to the experimental requirements, each position can be set at the same or different temperature

### Replaceable element containers
The replaceable element containers provide spill containment and can be replaced in a matter of a few minutes.

| Order No. | Model | Flask Size ml | Maximum Diameter mm | Bottom | Rating Per Position | Replacement Element Order No. |
|---|---|---|---|---|---|---|
| **Three-Place - medium temperature** (450°C) | | | | | | |
| W3031350 | RX350 | 500 | 103 | Flat | 180W | RX50024E |
| W3031354 | RX354 | 500 | 101 | Round | 180W | RX50224E |
| W3031394 | RX394 | 1000 | 130 | Round | 290W | RX100024E |
| **Three-Place - high temperature** (650°C) | | | | | | |
| W3031356 | RJ356 | 500 | 103 | Flat | 300W | RJ50024E |
| W3031358 | RJ358 | 500 | 101 | Round | 300W | RJ50224E |
| **Six-Place - medium temperature** (450°C) | | | | | | |
| W3031630 | RX630 | 250/300 | 87 | Flat | 125W | RX30024E |
| W3031634 | RX634 | 250/300 | 87 | Round | 125W | RX30424E |
| **Six-Place - high temperature** (650°C) | | | | | | |
| W3031636 | RJ636 | 250/300 | 87 | Flat | 210W | RJ30024E |
| W3031638 | RJ638 | 250/300 | 87 | Round | 210W | RJ30424E |

Standard package includes: Multi-position heating mantle

### Table C - Soxhlet Lipid Extraction Apparatus ( for Combo Mantles)

| Size | Flask volume (ml) | Extractor Top Joint | Extractor Bottom Joint | Package Order No. | Condenser Order No. | Extractor Order No. | Extraction Thimbles Order No. | Flask volume Order No. |
|------|------|------|------|------|------|------|------|------|
| Suitable for Wiggens Combo Mantles (Six positions Flat Bottom) | | | | | | | | |
| A | 100 | 34 / 45 | 24 / 40 | 189100-11 | 189102-01 | 189101-01 | 189103-01 | 189105-01 |
| A | 100 | 34 / 45 | 24 / 40 | 189100-12 | 189102-01 | 189101-01 | 189103-02 | 189105-01 |
| A | 125 | 34 / 45 | 24 / 40 | 189100-01 | 189102-01 | 189101-01 | 189103-01 | 189105-02 |
| A | 125 | 34 / 45 | 24 / 40 | 189100-02 | 189102-01 | 189101-01 | 189103-02 | 189105-02 |
| B | 250 | 45 / 50 | 24 / 40 | 189100-03 | 189102-02 | 189101-02 | 189103-03 | 189105-03 |
| B | 250 | 45 / 50 | 24 / 40 | 189100-04 | 189102-02 | 189101-02 | 189103-04 | 189105-03 |
| D | 300 | 55 / 50 | 24 / 40 | 189100-05 | 189102-03 | 189101-04 | 189103-05 | 189105-04 |
| D | 300 | 55 / 50 | 24 / 40 | 189100-06 | 189102-03 | 189101-04 | 189103-06 | 189105-04 |
| Suitable for Wiggens Combo Mantles (Six positions Round Bottom) | | | | | | | | |
| A | 100 | 34 / 45 | 24 / 40 | 189100-21 | 189102-01 | 189101-01 | 189103-01 | 189104-01 |
| A | 100 | 34 / 45 | 24 / 40 | 189100-22 | 189102-01 | 189101-01 | 189103-02 | 189104-01 |
| A | 125 | 34 / 45 | 24 / 40 | 189100-23 | 189102-01 | 189101-01 | 189103-01 | 189104-02 |
| A | 125 | 34 / 45 | 24 / 40 | 189100-24 | 189102-01 | 189101-01 | 189103-02 | 189104-02 |
| B | 250 | 45 / 50 | 24 / 40 | 189100-25 | 189102-02 | 189101-02 | 189103-03 | 189104-03 |
| B | 250 | 45 / 50 | 24 / 40 | 189100-26 | 189102-02 | 189101-02 | 189103-04 | 189104-03 |
| D | 300 | 55 / 50 | 24 / 40 | 189100-27 | 189102-03 | 189101-04 | 189103-05 | 189104-04 |
| D | 300 | 55 / 50 | 24 / 40 | 189100-28 | 189102-03 | 189101-04 | 189103-06 | 189104-04 |
| Suitable for Wiggens Combo Mantles (Three positions Flat Bottom) | | | | | | | | |
| D | 500 | 55 / 50 | 24 / 40 | 189100-07 | 189102-03 | 189101-04 | 189103-05 | 189105-05 |
| D | 500 | 55 / 50 | 24 / 40 | 189100-08 | 189102-03 | 189101-04 | 189103-06 | 189105-05 |
| Suitable for Wiggens Combo Mantles (Three positions Round Bottom) | | | | | | | | |
| D | 500 | 55 / 50 | 24 / 40 | 189100-41 | 189102-03 | 189101-04 | 189103-05 | 189104-05 |
| D | 500 | 55 / 50 | 24 / 40 | 189100-42 | 189102-03 | 189101-04 | 189103-06 | 189104-05 |
| D | 1000 | 55 / 50 | 24 / 40 | 189100-43 | 189102-03 | 189101-04 | 189103-05 | 189104-06 |
| D | 1000 | 55 / 50 | 24 / 40 | 189100-44 | 189102-03 | 189101-04 | 189103-06 | 189104-06 |

# Soxhlet Extraction 6-position Heating Plate

The design concept of WH-106 is compactness, safety and efficiency. For compactness, the layout of hotplates has been changed from traditional 6 holes in one row to 3 each in 2 rows, so that we can save 50% operating space.

The distance between each hole is 55mm which is in accord with DIN 44548 and wide enough for users to handle the samples in back row conveniently. WH-106 contains six embedded heating plates with 85mm diameter, and its heating components are made in Germany, rugged and easy to maintain. Each plate with a heating indicator is controlled independently, and the temperature can reach 425℃ . For safety reason, each plate is surrounded by a rim for keeping electronics from spilling. The whole housing is made of stainless steel with paint coating.

### Application

> COD digestion
> Lipid extraction
> Kinds of heating

| Modle | WH-106 |
|-------|--------|
| Heating plate | 6×Ø85mm diameter cast-iron with embedded heating resistor |
| Safety | Each top plate is surrounded by a rim that protect electronics from spills. Spacing of 55mm between the heating plate is in accord with DIN 44548. |
| Max. Temperature | 425℃ |
| Control | Each heating plate is controlled independently |
| IP code | IP21 |
| Power supply | 6×450W |
| Order No. | 178106 |

Standard package includes: Multi-position heating mantle with stand

Parallel reaction for Soxhlet extraction

## Soxhlet Lipid Extraction Apparatus ( Suitable for WH-106 )

| Size | Flask volume (ml) | Extractor Top Joint | Extractor Bottom Joint | Package Order No. | Condenser Order No. | Extractor Order No. | Extraction Thimbles Order No. | Flask volume Order No. |
|------|------|------|------|------|------|------|------|------|
| A | 125 | 34 / 45 | 24 / 40 | 189100-01 | 189102-01 | 189101-01 | 189103-01 | 189105-02 |
| A | 125 | 34 / 45 | 24 / 40 | 189100-02 | 189102-01 | 189101-01 | 189103-02 | 189105-02 |
| B | 250 | 45 / 50 | 24 / 40 | 189100-03 | 189102-02 | 189101-02 | 189103-03 | 189105-03 |
| B | 250 | 45 / 50 | 24 / 40 | 189100-04 | 189102-02 | 189101-02 | 189103-04 | 189105-03 |
| B | 300 | 45 / 50 | 24 / 40 | 189100-05 | 189102-02 | 189101-02 | 189103-03 | 189105-04 |
| B | 300 | 45 / 50 | 24 / 40 | 189100-06 | 189102-02 | 189101-02 | 189103-04 | 189105-04 |
| D | 500 | 55 / 50 | 24 / 40 | 189100-07 | 189102-03 | 189101-04 | 189103-05 | 189105-05 |
| D | 500 | 55 / 50 | 24 / 40 | 189100-08 | 189102-03 | 189101-04 | 189103-06 | 189105-05 |

## Extraction Thimbles - Glass

With a Wiggens fritted disc sealed in, it can be used in any standard Soxhlet extraction apparatus. The sizes below correspond to the size specifications of extraction bodies and will fit those units.

| Size | A | A | B/C | B/C | D | D |
|------|------|------|------|------|------|------|
| ID x H (mm) | 25 x 85 | 25 x 85 | 35 x 90 | 35 x 90 | 45 x 130 | 45 x 130 |
| Sintered glass | 20-35µm | 100-200µm | 20-35µm | 100-200µm | 20-35µm | 100-200µm |
| Order No. | 189103-01 | 189103-02 | 189103-03 | 189103-04 | 189103-05 | 189103-06 |

Specifications for Wiggens Extractor Bodies

| Specification | | | | |
|------|------|------|------|------|
| Size | A | B | C | D |
| Use Thimble Size (mm) | 25 x 85 | 35 x 90 | 35 x 90 | 45 x 130 |
| Extractor Top Joint | 34 / 45 | 45 / 50 | 45 / 50 | 55 / 50 |
| Extractor Bottom Joint | 24 / 40 | 24 / 40 | 29 / 42 | 24 / 40 |
| Condenser Bottom Joint | 34 / 45 | 45 / 50 | 45 / 50 | 55 / 50 |
| Length of Siphon (mm) | 190 | 260 | 260 | 300 |

## Extractor Body

| Size | A | B | C | D |
|------|------|------|------|------|
| Extractor Top Joint | 34 / 45 | 45 / 50 | 45 / 50 | 55 / 50 |
| Extractor Bottom Joint | 24 / 40 | 24 / 40 | 29 / 42 | 24 / 40 |
| Order No. | 189101-01 | 189101-02 | 189101-03 | 189101-04 |

## Extraction Apparatus

Bulb type for use with regular extraction apparatus. Improved design permits greater condensing capacity.

| Size | A | B/C | D |
|------|------|------|------|
| Extractor Top Joint | 34/45 | 45/50 | 55/50 |
| Tubing Size (mm) | 190 | 260 | 300 |
| Height (mm) | 275 | 365 | 405 |
| Order No. | 189102-01 | 189102-02 | 189102-03 |
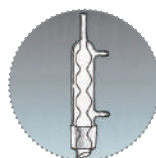
## Extraction Thimbles

CELLULOSE FIBER. Good retention. Seamless, high quality extraction thimbles, single thickness.
Readily permeable to the flow of ether and other organic solvents. Packed 25 per box.

| Size (Ø x H) | 27 x 80 | 27 x 60 | 30 x 80 | 33 x 94 | 40 x 123 |
|------|------|------|------|------|------|
| Order No. | 6811-08 | 6811-14 | 6811-20 | 6811-22 | 6811-24 |

## Flask

Round bottom with short neck and outer joint.

24/40 Joint

| Capacity（ml） | 100 | 125 | 250 | 300 | 500 | 1000 |
|------|------|------|------|------|------|------|
| Order No. | 189104-01 | 189104-02 | 189104-03 | 189104-04 | 189104-05 | 189104-06 |

29/42 Joint

| Capacity（ml） | 100 | 250 | 500 | 1000 |
|------|------|------|------|------|
| Order No. | 189104-11 | 189104-13 | 189104-15 | 189104-16 |

## Flask

Single Neck, Flat Bottom

24/40 Joint

| Capacity(ml) | 100 | 125 | 250 | 300 | 500 | 1000 |
|------|------|------|------|------|------|------|
| Order No. | 189105-01 | 189105-02 | 189105-03 | 189105-04 | 189105-05 | 189105-06 |

29/42 Joint

| Capacity（ml） | 250 | 300 | 500 | 1000 |
|------|------|------|------|------|
| Order No. | 189105-13 | 189105-14 | 189105-15 | 189105-16 |

# Temperature and stirring controller

## for measuring, control and monitoring

WIGGENS temperature controllers measure, control and monitor applications in laboratories such as heating mantle and chemical reactors.

(T) Temp.  (C) Control  (S) Safety  (S) Stirring

## Ordering Information

| Models / Specifications | | TCSS | PL524 Pre | PL524 Pro-Stir | PL524 Pro | PC524 |
|---|---|---|---|---|---|---|
| Name | | Programmable controller for temperature and stirring | Programmable controller for temperature | Temperature and stirring controller | Temperature controller | Safety temperature protector |
| Screen | 5" TFT touch screen | ● | ● | | | |
| | LED | | | ● | ● | ● |
| Function | Heating | ● | ● | ● | ● | |
| | Cooling | ● | ● | | | |
| | Programming | ● | ● | | | |
| | Stirring | ● | | ● | | |
| | Safety temperature | ● | ● | ● | ● | ● |
| Interface | RS485 | ● | ● | | | |
| | RS232 | ● | ● | ● | ● | |
| | Ethernet | ● | ● | ● | | |
| | USB-A | ● | ● | | | |
| | Alarm | ● | ● | ● | ● | |
| Options | Pt100 | ○ | ○ | ○ | ○ | ○ |
| | Thermocouple | ○ | ○ | ○ | ○ | ○ |
| | heating mantle | ○ | ○ | ○ | ○ | |
| | matching unit | ○ please reference Note 3 | | ○ please reference Note 3 | | |
| | Solenoid valve for cooling | ○ | | | | |

Temperature,Stirring Speed,Cooling Valve Controller

Programmable temp. Control and security protection

Temp. and Stir. Controller

Temp. Control and safety protection

Overheated safety protection

Note 1： ● Standard configuration ○ Options
Note 2： TCSS, PL524 Pre, PL524 Pro-Stir, PL524 Pro working with two temperature sensors； PC524 just need one temperature sensor
Note 3： TCSS-1 matching with heating-stirring mantle, PL524pro-Stir matching with heating-stirring mantle

## Application

The external system (e.g. heating mantle and magnetic stirrer) is connected via the socket at the back. Different sensors for working and safety temperatures control the application.

① TCSS-1
② Magnetic stirrer
③ Heating mantle
④ Working sensor
⑤ Safety sensor
⑥ stirring bar
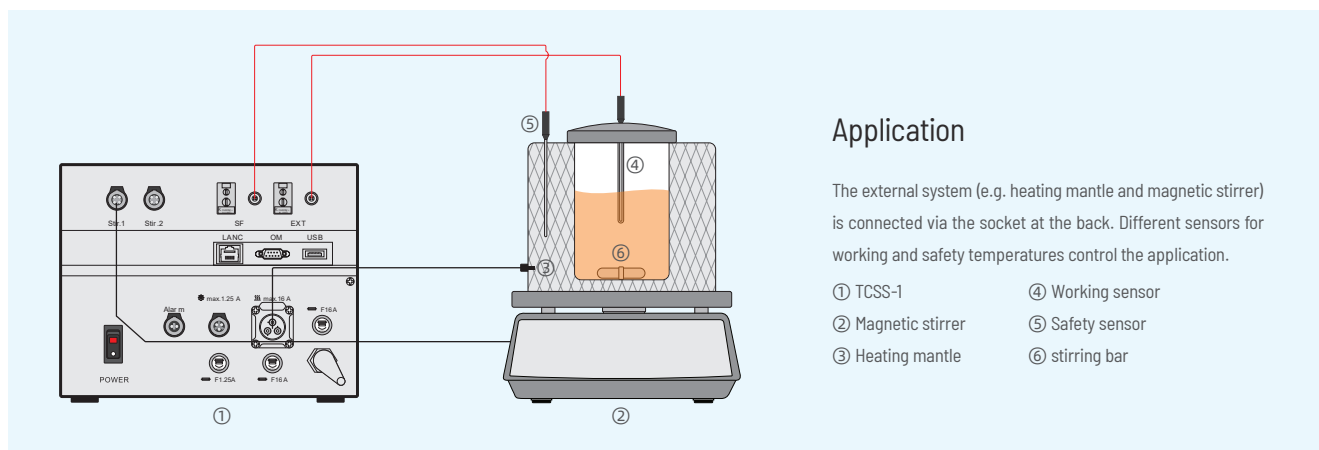
# Heating Mantle

## Aluminum Housed Mantle

> Rigid housing provides strength and durability while supporting the weight of the vessel
> Fabric interior to softly nest glass vessels and reduce the chance of thermal shock
> Adaptable to most vessels including larger sizes
> With stands 450℃ internal operating temperature (650℃ for Series STM), enough power for most applications
> Can be adapted to special applications with custom sizes, bottom holes, and special electrical devices
> Feet on smaller sizes designed to provide stability and promote cooler exterior temperatures

## Spherical Flask Mantle

> The Series TM spherical flask mantle covers only the flask's bottom half, letting you see its full contents. Larger sizes have multiple circuits for ease of temperature control when a flask is less than half full.
> Poncho Safety Shields can be used with sizes 500 ml (TM107) and larger.



WTM series
Spherical flask mantle with temp. control and security protection, the flask is not included



TM series
Spherical flask mantle only, the flask is not included

## Specifications

| Complete System Order No. | Order No. | Flask Capacity ml | Max. Flask Diameter mm | Watts W | Depth mm | Outside Dia. mm | Height mm | Weight kg |
|---|---|---|---|---|---|---|---|---|
| WTM95 | TM95 | 50 | 48 | 60 | 24 | 159 | 121 | 1.0 |
| WTM97 | TM97 | 100 | 60 | 80 | 30 | 159 | 121 | 1.0 |
| WTM99 | TM99 | 125 | 70 | 80 | 35 | 159 | 121 | 1.0 |
| WTM101 | TM101 | 200 | 76 | 100 | 38 | 159 | 121 | 1.0 |
| WTM103 | TM103 | 250 | 83 | 180 | 41 | 159 | 121 | 1.1 |
| WTM105 | TM105 | 300 | 86 | 180 | 43 | 159 | 121 | 1.1 |
| WTM107 | TM107 | 500 | 101 | 270 | 51 | 159 | 127 | 1.1 |
| WTM109 | TM109 | 1000 | 130 | 380 | 65 | 191 | 127 | 1.4 |
| WTM111 | TM111 | 2000 | 170 | 500 | 86 | 254 | 152 | 2.1 |
| WTM113 | TM113 | 3000 | 183 | 500 | 91 | 254 | 152 | 2.1 |
| WTM115 | TM115 | 5000 | 220 | 600 | 109 | 305 | 178 | 2.8 |
| WTM117 | TM117 | 12000 | 293 | 2@650 | 147 | 419 | 229 | 6.8 |
| WTM119 | TM119 | 22000 | 347 | 2@770 | 173 | 483 | 254 | 8.5 |
| WTM121 | TM121 | 50000 | 456 | 3@1000 | 228 | 610 | 330 | 18.6 |
| WTM122 | TM122 | 72000 | 522 | 3@2000 | 259 | 660 | 356 | 20.0 |

# Stir Mantle

> The Stir Mantle adds electromagnetic stirring capability (50-750 rpm) to the Series TM heating mantle for spherical flasks. Heating and stirring are independent, choosing either or both. Speed is easily adjusted by a single dial on the PL524pro-Stir.

> The PL524pro-Stir creates and synchronizes the magnetic field. When restarting (as for removal and reinsertion of the flask), Wiggens "Synchrostart" feature maintains linkage between the field and the bar. The PL524pro-Stir connects to the StirMantle by cord, so it may be placed outside corrosive hood atmospheres and is easily accessible.

> PL524pro-Stir connecting cords, and stir bar. Completely grounded and fused.

Heating & Stirring

## Specifications

| Complete System Order No. | Order No. | Flask Capacity ml | Depth mm | Watts W | Outside Dia. mm | Height mm | Weight kg |
|---|---|---|---|---|---|---|---|
| EMS103P | EMS103 | 250 | 42 | 180 | 159 | 121 | 2.0 |
| EMS105P | EMS105 | 300 | 43 | 180 | 159 | 121 | 2.0 |
| EMS107P | EMS107 | 500 | 51 | 270 | 159 | 133 | 2.0 |
| EMS109P | EMS109 | 1000 | 65 | 380 | 191 | 140 | 2.4 |
| EMS111P | EMS111 | 2000 | 85 | 500 | 254 | 165 | 2.5 |
| EMS113P | EMS113 | 3000 | 91 | 500 | 254 | 165 | 2.9 |

Complete system of stir mantle (EMS1XXP)

## Temperature sensor

| Order No. | Description | Suitable for |
|---|---|---|
| PT100-01 | Type I, External Pt100 sensor, -30~300℃ ;Length: 170 mm; Diameter: 4 mm; Material: Stainless steel; | |
| PT100-02 | Type II, External Pt100 sensor, -30~300℃ ; Length: 300 mm; Material: Stainless steel, Fig. ① | |
| 8981003W | WP206S, External Pt100 sensor, 200 x Ø6 mm, stainless steel, 1.5 m cable. | |
| 8981010W | WP306S, External Pt100 sensor, 300 x Ø6 mm, stainless steel, 1.5 m cable. | |
| PT100-03 | Type III, External Pt100 sensor, -30~250℃ ; Length: 170 mm; Material: Stainless steel, PTFE coated, Fig. ② | |
| PT100-04 | Type IV, External Pt100 sensor, -30~250℃ ;Length: 300 mm; Material: Stainless steel, PTFE coated | Wiggens hot plate stirrer (except WH200 and WH210), Hot plate, Heating block, Temperature controller |
| PT100-06 | Type VI, External Pt100 sensor, -30~300℃ ; Length: 250 mm; Diameter: 4 mm; Material: Glass; Fig. ③ | |
| PT100-07 | Type 07, External Pt100 sensor, 240 x Ø3.15 mm, stainless steel, 1.5 m cable. | |
| 8981017W | WP206P, External Pt100 sensor, 200 x Ø6 mm, stainless steel/PTFE coated, 3 m cable. | |
| 8981015W | WP306P, External Pt100 sensor, 300 x Ø6 mm, stainless steel/PTFE coated, 3 m cable. | |
| W8981017W | WP206P, External Pt100 sensor, 200 x Ø6 mm, stainless steel/PFA coated, 3 m cable. | |
| W8981015W | WP306P, External Pt100 sensor, 300 x Ø6 mm, stainless steel/PFA coated, 3 m cable. | |
| 600.170.1 | K type thermocouple, Length: 170 mm; Diameter: 4 mm; Material: Stainless steel; Admissible temperature: 0-500℃ | WH200 / WH210 |
| PR5600-009 | K type thermocouple, -50-1200℃ ; Length: 1m ④ The temperature tolerance of the protective cover shall not exceed 350 degrees Celsius | PL524, TCSS, PR series |

① ② ③ ④
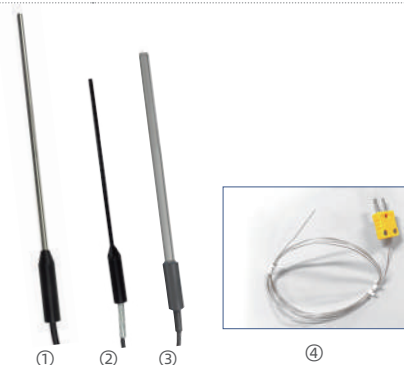
# Overhead stirrer

Attractive design for demanding stirrers & mixing

Our new complete range of laboratory overhead stirrers will meet your high demands every day!

High Torque / High Speed Overhead Stirrer Pro series
WOHS-200 Pro, WOHS-400 Pro, WOHS-20H Pro

Remotely Controllable High Torque / High Speed Stirrers, Suitable for reaction
DF series
WB3000-DF, WB1800-DF, WB6000-DF

Remotely Controllable High Torque / High Speed Stirrers
C & EC Series
WB3000-C, WB1800-C, WB3000-EC, WB1800-EC

Overhead Stirrer
2000 series
WB2000-M, WB2000-C

Overhead Stirrer
WOHS series
WOHS-10Pro, WOHS-15Pro

WB2000-C

WB2000-M

WOHS-10 Pro

# Overhead Stirrer

WOHS-10 Pro / WOHS-15 Pro

Overhead Stirrers of the WOHS range are perfect for stirring and mixing applications. The devices are designed to surpass the requirements of laboratories and institutions around the world with their modern technology and high quality.

### TFT Display
TFT display with vivid luminance is easy to read, even from a long distance.

### Precise speed control
Easy operation of all parameters using the central turning knob and touch key

### Working status indicator
Standby (blue) , Running (green) , Alarm (red)

### Brushless DC motor
for long life span, low maintenance and quiet running

### Keyless chuck
It allows you to quickly and easily remove the stirring elements without any tools.
Clamping range: 0.5-10mm

### RS232 / RS485
The stirrer comes equipped with RS 232 and RS485 interface to control and document all parameters.

### Timer
0~99hr99min
Automatic timing function, after start the stirring , the display will automatically start the function: countdown the running time

### Temperature measurement
Temperature measuring range: -10~350℃
Temperature measurement resolution: 0.1℃

### Direction of rotation
Clockwise or counterclockwise
(Only WOHS10/15 are available)

## Specifications

| Model | WOHS-10 Pro | WOHS-15 Pro |
|---|---|---|
| Order No. | W3041010 | W3041015 |
| Speed range [rpm] | 40~2000 | 40~2000 |
| Setting accuracy speed [rpm] | 1 | 1 |
| Deviation of speed measurement n > 300rpm | ±3 % | ±3 % |
| Speed Display | TFT display | TFT display |
| Clockwise or counterclockwise of stirring | Yes | Yes |
| Speed setting | Touch key and turning knob | Touch key and turning knob |
| Time setting range | 99h59min59sec | 99h59min59sec |
| Temperature measuring range | -10~350 | -10~350 |
| Stirring quantity max [L / $H_2O$] | 15 | 50 |
| Temperature measurement resolution | 0.1 | 0.1 |
| Working status indicator | Standby (blue) , Running (green) , Alarm (red) | Standby (blue) , Running (green) , Alarm (red) |
| Power [W] | 30 | 60 |
| Motor principle | Brushless DC motor | Brushless DC motor |
| IP code | IP42 | IP40 | IP42 | IP40 |
| Torque max. at stirring shaft [N-cm] | 15 | 29 |
| Stirring element fastening | Keyless chuck, easy to install and replace the shaft | Keyless chuck, easy to install and replace the shaft |
| Chuck range diameter [mm] | 0.5~10 | 0.5~10 |
| Hollow shaft, inner diameter [mm] | 10.2 | 10.2 |
| Fastening on stand | Extension arm | Extension arm |
| Housing material | Cast aluminum coating / thermoplastic polymer | Cast aluminum coating / thermoplastic polymer |
| Power supply | 100~240VAC,50/60Hz | 100~240VAC,50/60Hz |

## According to needs, it is convenient to choose different package:

### Standard Package P1 includes

Overhead Stirrer, WF12 Support stand.

### Standard Package P2 includes

Overhead Stirrer, WF12 Support stand, 9004 impeller

### Standard Package P3 includes

Overhead Stirrer, includes WF12 Support stand, 5.240.8.2 PTFE impeller

![WIGGENS - The Magic Motion]
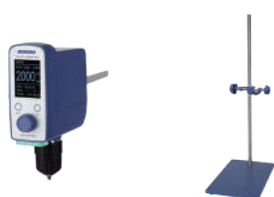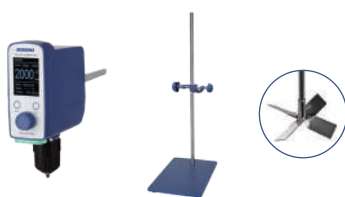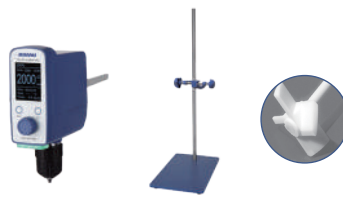
# Overhead Stirrer

### WB2000-M / WB2000-C

WIGGENS offers overhead stirrers for your stirring and mixing tasks in the lab for low to high viscosities. Safety, power and intelligence are again at the core of the development of this product range. The powerful motors achieve homogeneous results with exact speed even under changing loads or high viscosity and produce little noise. Many reliable solutions are available, according to different requirements in terms of viscosity and volume.
WIGGENS overhead stirrers process stirring quantities of up to 100 liters.

> Brushless DC motor, which is very suitable for long-term experimental applications
> Stable and accurate stirring process due to latest micro-processor technology
> Slow ramp-up and speed limits protect you from splashes
> Totally enclosed and compact casing
> The high torque ensures maximum efficiency and minimal processing time even for high-viscosity media
> Stable and quiet working process
> Internal overload protection
> Adjustable impeller shaft for different heights
> Soft start at low speed guarantees a smooth and safe stirring process
> Suitable for applications in various environments
> The standard version package entails the overhead stirrer, a stand, rod, and clamp, as well as a stainless steel impeller
> Availability of a wide range of different optional impellers

Best-seller!

## Features of the WB2000-C

> Employs all basic functions of the WB2000-M overhead stirrer
> The WB2000-C come with a reversible rotation function
> The WB2000-C employs button control and a bright LCD speed display
> Directly connectable to the computer via RS-232 cable for remote control
> Equipped with digital input/output ports and foot pedal port for various applications
> Suitable for stirring in reaction systems or stirring applications linked to other equipment

### Clear LED Display

Easy-to-read screen, display the speed value.

### Control Knob

Set the speed by rotating. Start / stop the stirrer function by pressing.

### Keyless Chuck

It allows you to quickly and easily remove the stirring elements without any tools.
Clamping range: 0.5-10mm

WB2000-M

WB2000-C

## Specifications

| Model | WB2000-M | WB2000-C |
|---|---|---|
| Order No. | 100300 | 100500 |
| Speed range [rpm] | 40~2000 | 40~2000 |
| Setting accuracy speed [rpm] | 1 | 1 |
| Deviation of speed measurement n > 300rpm | ±3 % | ±3 % |
| Speed Display | LED display | LCD display |
| Clockwise or counterclockwise of stirring | No | Yes |
| Speed setting | Turning knob | Push button |
| Stirring quantity max [L / $H_2O$] | 50 | 50 |
| Input power [W] | 70 | 70 |
| Output power [W] | 50 | 50 |
| Motor principle | Brushless DC motor | Brushless DC motor |
| Torque max. at stirring shaft [N-cm] | 66 | 70 |
| Stirring element fastening | Keyless chuck, easy to install and replace the shaft. | |
| Chuck range diameter [mm] | 0.5~10 | 0.5~10 |
| Hollow shaft, inner diameter [mm] | 10.2 | 10.2 |
| Fastening on stand | Extension arm | Extension arm |
| IP code | IP42 | IP40 | IP42 | IP40 |
| Extension arm diameter [mm] | 13 | 13 |
| Extension arm length [mm] | 124 | 124 |
| Housing material | Cast aluminum coated | |
| RS232 interface | No | Yes |
| Dimensions (W x H x D)mm | 105 x160 x185 | 105 x160 x185 |
| Weight [kg] | 3 | 3 |
| Power supply | 100~240VAC,50/60Hz | 100~240VAC,50/60Hz |

## According to needs, it is convenient to choose different package:

### Standard Package P1 includes
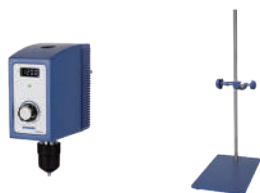
Overhead Stirrer, WF12 Support stand.

### Standard Package P2 includes
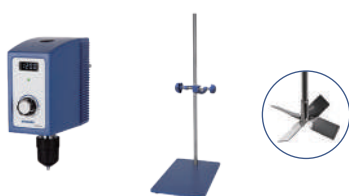
Overhead Stirrer, WF12 Support stand, 9004 impeller

### Standard Package P3 includes
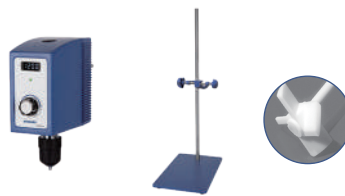
Overhead Stirrer, includes WF12 Support stand, 5.240.8.2 PTFE impeller

# High Torque / High Speed Overhead Stirrer
## Pro series

Designed for blending medium to high-viscosity liquids or solid-liquid mixtures. Primarily employed in chemical synthesis, pharmaceuticals, physicochemical analysis, petrochemicals, cosmetics, health products, food, biotechnology, and related areas.

> Ideal for stirring tasks involving large volumes and high-viscosity samples.
> Offers various mixing speeds or torque options.
> Utilizes microcomputer control technology for consistent speed.
> Features a maintenance-free brushless DC motor, designed for extended, high-load laboratory work.
> Provides two adjustable speed ranges, with low-speed torque exceeding five times the high-speed torque.
> Compatible with a broad selection of mixing impellers.

High Torque
High Speed

### TFT Display
TFT display with vivid luminance is easy to read, even from a long

### Precise speed control
Easy operation of all parameters using the central turning knob and touch key.
Accuracy ±1rpm

### Working status indicator
Standby (blue) , Running (green) , Alarm (red)

### Brushless DC motor
For long life span, low maintenance and quiet running.

### Keyless chuck
It allows you to quickly and easily remove the stirring elements without any tools.
Clamping range: 0.5-10mm

### RS232 / RS485
The stirrer comes equipped with RS 232 and RS485 interface to control and document all parameters.

### Timer
99h59min59sec
Automatic timing function, after start the stirring, the display will automatically start the function: countdown the running time.

### Temperature measurement
Temperature measuring range: -10~350℃
Temperature measurement resolution: 0.1℃

### High Torque / High Speed
Offering the best mixing results, even for challenging applications.

Control mode switch among Local, ANA.U, ANA.I, Foot, Remote Control

Actual speed

Menu

Adjustable knob

Set speed

Timer, set operation time

Temperature display

Stirrer converts output current to torque, reflecting the load changing of motor.

Torque mode switch

The Pro Series stirrer can accomplish the most demanding tasks while providing the highest safety and increased performance life!

Sealed housing guarantees longevity and maintenance-free 24-hour operation in an aggressive environment

## Specifications

| Model | WOHS-200 Pro | WOHS-400 Pro | WOHS-20 HPro |
|---|---|---|---|
| Order No. | W3041030 | W3041018 | W3041060 |
| Speed Range (rpm) | 30~600(I) | 20~360(I) | 60~1200(I) |
|  | 601~3000(II) | 361~1800(II) | 1201~6000(II) |
| Torque max. at stirring shaft [N-cm] | 339(I) | 565(I) | 170(I) |
|  | 68(II) | 113(II) | 34(II) |
| Maximum Stirring volume(L)H$_2$0 | 100 | 100 | 100 |
| Maximum stirring viscosity (cps) | 100000 | 150000 | 70000 |
| Maximum Torque [N-cm] | 339 | 565 | 170 |
| Setting accuracy speed [rpm] | 1 | 1 | 1 |
| Deviation of speed measurement n > 300rpm | ±3 % | ±3 % | ±3 % |
| Speed Display | TFT | TFT | TFT |
| Speed setting | Touch key and turning knob | | |
| Time setting range | 99h59min59sec | 99h59min59sec | 99h59min59sec |
| Temperature measuring range[°C ] | -10~350 | -10~350 | -10~350 |
| Temperature measurement resolution[°C ] | 0.1 | 0.1 | 0.1 |
| IP code | IP42 | IP40 | IP42 | IP40 | IP42 | IP40 |
| Working status indicator | Standby (blue) , Running (green) , Alarm (red) | | |
| Interface RS-232/485 and analog connection | Yes | Yes | Yes |
| Power [W] | 150 | 150 | 150 |
| Motor principle | Brushless DC motor | Brushless DC motor | Brushless DC motor |
| Stirring element fastening | Keyless chuck, easy to install and replace the shaft | Keyless chuck, easy to install and replace the shaft | Keyless chuck, easy to install and replace the shaft |
| Chuck range diameter [mm] | 0.5~10 | 0.5~10 | 0.5~10 |
| Hollow shaft, inner diameter [mm] | 10.2 | 10.2 | 10.2 |
| Power supply | 100~240VAC,50/60Hz | 100~240VAC,50/60Hz | 100~240VAC,50/60Hz |

## According to needs, it is convenient to choose different package:



Standard Package P1 includes

Overhead Stirrer, WF25-D Support stand.



Standard Package P2 includes

Overhead Stirrer, WF25-D Support stand, 9004 impeller



Standard Package P3 includes

Overhead Stirrer, WF25-D Support stand, 5.240.8.2 PTFE impeller

# Remotely Controllable High Torque / High Speed Stirrer

WB3000-DF / WB1800-DF / WB6000-DF

Ideally perform your professional stirring tasks requiring high functionality, safety, and longevity. Prestige touch TFT controller, especially for applications where the remote controller is needed

## Features

> Equipped with a maintenance-free BLDC motor to generate smooth, quiet, and yet powerful stirring.
> Powerful torque capable of handling high viscosity tasks.
> Maintenance of constant motor speed by control system even under conditions of changing viscosity.
> Best effort function intelligently manages its stirring speed to keep stirring even if the workload is out of its capacity.
> Prevention of accidental spills or splashes thanks to microprocessor controlled smooth start and stop functions.

A through-shaft design allows for adjusting the impeller position to make height adjustment more convenient

### Keyless chuck
It allows you to quickly and easily remove the stirring elements without any tools.
Clamping range: 0.5-10mm

## Specifications

| Model | WB3000-DF | WB1800-DF | WB6000-DF |
|---|---|---|---|
| Order No. | 100400F | 100600F | 100800F |
| Speed range [rpm] [1] | 30~600 (I)<br>601~3000 (II) | 20~360 (I)<br>361~1800 (II) | 60~1200 (I)<br>1201~6000 (II) |
| Setting accuracy speed [rpm] | 1 | 1 | 1 |
| Deviation of speed measurement n > 300rpm | ±3 % | ±3 % | ±3 % |
| Speed Display | TFT display | TFT display | TFT display |
| Clockwise or counterclockwise of stirring | No | No | No |
| Speed setting | Touch key and turning knob | Touch key and turning knob | Touch key and turning knob |
| Power [W] | 150 | 150 | 150 |
| Stirring quantity max [L / $H_2O$] | 100 | 100 | 100 |
| Motor principle | Brushless DC motor | Brushless DC motor | Brushless DC motor |
| Torque max. at stirring shaft [N-cm] [2] | 339(I) / 68(II) | 563(I) / 113(II) | 170(I) / 34(II) |
| Stirring element fastening | Keyless chuck, easy to install and replace the shaft. | Keyless chuck, easy to install and replace the shaft. | Keyless chuck, easy to install and replace the shaft. |
| Chuck range diameter [mm] | 0.5~10 | 0.5~10 | 0.5~10 |
| Hollow shaft, inner diameter [mm] | 10.2 | 10.2 | 10.2 |
| Fastening on stand | Extension arm | Extension arm | Extension arm |
| Extension arm diameter [mm] | 13 | 13 | 13 |
| Extension arm length [mm] | 124 | 124 | 124 |
| IP code | IP42 | IP40 | IP42 | IP40 | IP42 | IP40 |
| Housing material | Cast aluminum coating | Cast aluminum coating | Cast aluminum coating |
| Interface RS-232/485 and analog connection | Yes | Yes | Yes |
| Dimensions of motor (W x H x D) | 200 x 95 x 230 | 200 x 95 x 230 | 200 x 95 x 230 |
| Weight | 4.5 | 4.5 | 4.5 |
| Power supply | 100~240VAC,50/60Hz | 100~240VAC,50/60Hz | 100~240VAC,50/60Hz |

1) Two grades of stirring speed are for this series. The low-speed has more torque, and is suitable for chemical reaction system. And the high-speed is suitable for sample pretreatment. According to the set speed, it can be switched automatically between them.
2) The two speed ranges correspond to different maximum torque.
Standard package includes: Overhead Stirrer, remote controller

# Remotely Controllable High Torque / High Speed Stirrer

WB3000-C / WB1800-C / WB3000-EC / WB1800-EC

> Suitable for reaction systems and other high torque / high speed applications
> Brushless DC motor made in Germany, for high performance stirring processes
> Maintenance-free
> Quiet and reliable
> Digitally adjustable rotation speed and direction
> Remote controller can display actual speed and actual torque as well as the set speed
> Digital (RS-232/485) and analog communication available for remote PC or PLC control

## Features

> Powerful torque capable of handling high viscosity tasks.
> Maintenance of constant motor speed by control system even under conditions of changing viscosity.
> Best effort function intelligently manages its stirring speed to keep stirring even if the workload is out of its capacity.
> Prevention of accidental spills or splashes thanks to microprocessor-controlled smooth start and stop functions.

## Practical external controller.

> Intuitive and easy control with touch TFT.
> It enables convenient and safe external control without opening the sash of the fume hood or safety cabinet.
> Compact and slim head design for diverse flexibility in configuring other test equipment and accessories. (optional)

## Safety

> Sturdy aluminum main body efficiently absorbing and emitting the heat generated by the motor.
> Separated adapter from the main body minimizes the risks of electrical hazards to the users.

## Specifications

| Model | WB3000-C | WB1800-C | WB3000-EC | WB1800-EC |
|---|---|---|---|---|
| Order No. | 100401 | 100601 | 100402 | 100602 |
| Speed range [rpm] | 70~3000 | 20~800 | 70~3000 | 20~800 |
| Setting accuracy speed [rpm] | 1 | 1 | 1 | 1 |
| Deviation of speed measurement n > 300rpm | ±3 % | ±3 % | ±3 % | ±3 % |
| Speed Display | TFT display | TFT display | TFT display | TFT display |
| Clockwise or counterclockwise of stirring | Yes | Yes | Yes | Yes |
| Speed setting | Touch key and turning knob | Touch key and turning knob | Touch key and turning knob | Touch key and turning knob |
| Stirring quantity max [L / $H_2O$] | 100 | 100 | 100 | 100 |
| Power [W] | 150 | 150 | 250 | 250 |
| Motor principle | Brushless DC motor | Brushless DC motor | Brushless DC motor | Brushless DC motor |
| Torque max. at stirring shaft [N-cm] | 330 | 1320 | 410 | 1640 |
| Housing material | Powered coated SS housing | Powered coated SS housing | Powered coated SS housing | Powered coated SS housing |
| IP code | IP42 | IP42 | IP42 | IP42 |
| Interface RS-232/485 and analog connection | Yes | Yes | Yes | Yes |
| Dimensions of motor (W x H x D) [mm] | 95 x 215 x 150 | 95 x 215 x 150 | 95 x 215 x 150 | 95 x 215 x 150 |
| Weight (Stirrer / Controller) [kg] | 3.4 / 0.5 | 3.4 / 0.5 | 3.4 / 0.5 | 3.4 / 0.5 |
| Power supply | 100~240VAC,50/60Hz | 100~240VAC,50/60Hz | 100~240VAC,50/60Hz | 100~240VAC,50/60Hz |

Standard package includes: Overhead Stirrer, remote controller

# Accessories for Overhead Stirrer

## Magnetic stirrer guides

**Magnetic drives are designed for agitating a fully vacuumed flask.**
**Multi-functional and easy to replace impeller.**

> Use of rare-earth elements which is Neodymium (Nd), Samarium (Sm-Co) magnet.
> High-speed rpm, vibration free.
> Specifically designed with permanent magnets which has a dynamic torque rating.
> Small size and powerful rotating magnetic drive is useful both for laboratory and manufacturing applications.

### Specifications

| Model | MD-24 | MD-29 | MD-45 | MD-15 | MD-25 |
|---|---|---|---|---|---|
| Ground Joint | 24/40 | 29/42 | 34/45 | Thread #15 | Thread #25 |
| Body / Housing | SUS316L / CR-PLATE | | | | |
| Bushing / Seal | PTFE/Viton | | | | |
| Vacuum | $1.4 \times 10^{-4}$ mmHg | | | | |
| Pressure | 5 bar | | | | |
| Temp | Max. 70°C (without cooling), Max. 300°C (with cooling) | | | | |
| Shaft Size (Ø, mm) | 8 mm | | | | |
| Cooling in / out Size (Ø, mm) | 3.2 mm | | | | |
| Dimension (Ø×L, mm) | 50×200mm | | | | |
| Weight (kg) | 1.02 | 1.04 | 1.08 | 1.00 | 1.02 |
| Order No. | 511001 | 511002 | 511003 | 511004 | 511005 |

Application of Magnetic Drive

## Stirrer guides

### Universal stirrer seal
Material : PTFE (Polytetrafluoroethylene)

| Order No. | Joint Size | Shaft Size (Ø, mm) | Height (mm) |
|---|---|---|---|
| KA22-02 | 24/40 | 8 | 60 |
| KA22-03 | 29/42 | 8 | 60 |
| KA22-04 | 34/45 | 8 | 60 |

Best-seller!

### Universal stirrer guide For standard taper ground glass joints

Universal stirrer guides for use with standard taper ground glass joints can be used with PTFE Shaft Stirrers, glass and metal shaft stirrers. Unique features of the design are a permanently loaded Composite PTFE/PEEK Seal, a Glass Ball-Bearing for rigidity and smoothness of operation.

> Exceptional chemical resistance
> Anti-whip and reduced vibration
> Vaccum (6.6mbar) and pressure (0.2~0.35Bar) performance

> No shedding
> Maximum recommended speeds: continuous 500rpm, intermittent 800rpm

| Order No. | ShaftØ (mm) | Joint Size | Height (mm) excl.joint | GuideØ (mm) |
|---|---|---|---|---|
| 5.101.1.7 | 6 | 19/22 | 96 | 45 |
| 5.102.7 | 6 | 24/40 | 96 | 45 |
| 5.104.7 | 8 | 24/40 | 96 | 45 |
| 5.105.7 | 10 | 24/40 | 96 | 45 |
| 5.106.7 | 10 | 29/42 | 96 | 45 |
| 5.108.7 | 12 | 29/42 | 110 | 55 |

Best-seller!
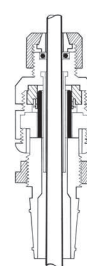
## High performance stirrer guide For standard taper ground glass joints

This product is designed to provide an effective guide for Glass and Metal Shaft stirrers over a range of temperatures without shedding particles from the seal, whilst maintaining a vacuum. The seal is manufactured from a specially formulated PTFE-PEEK composite and is permanently pressure loaded.

Features:
> High level of chemical resistance
> Anti-whip and reduced vibration
> Vaccum (6.6mbar) and pressure (0.2~0.35Bar)
  performance
> No shedding
> Self-releasing joint ring
> Maximum recommended speeds: continuous 500rpm,
  intermittent 800rpm

Note: PEEK has a very high level of chemical resistance with some susceptibility only to strong mineral acids

| Order No. | ShaftØ(mm) | Joint Size | Height (mm) excl.joint | GuideØ (mm) |
|---|---|---|---|---|
| 5.0.0619 | 6 | 19/22 | 60 | 42 |
| 5.0.0624 | 6 | 24/40 | 60 | 42 |
| 5.0.0819 | 8 | 19/38 | 60 | 42 |
| 5.0.0824 | 8 | 24/40 | 60 | 42 |
| 5.0.1024 | 10 | 24/40 | 60 | 42 |
| 5.0.1029 | 10 | 29/42 | 60 | 50 |
| 5.0.1034 | 10 | 34/45 | 60 | 50 |
| 5.0.1045 | 10 | 45/50 | 60 | 58 |
| 5.0.1229 | 12 | 29/42 | 70 | 50 |
| 5.0.1945 | 19 | 45/50 | 70 | 58 |
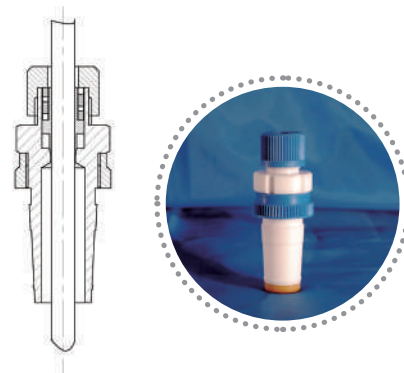
## High vacuum stirrer guide

The newest design of mechanical stirring seals with all parts that are in contact with liquid or vapor being made of PTFE, RULON, or PEEK material. It doesn't harm the stirring rod and is highly chemical resistant. It can be used with vacuum of up to 0.8mbar. The highest recommended stirring speed is 400 rpm.

| Order No. | ShaftØ (mm) | Joint Size | Replace O-Ring |
|---|---|---|---|
| 8050-02 | 10 | 24/40 | 7859-526 |
| 8050-04 | 10 | 29/42 | 7859-534 |
| 8050-14 | 10 | 29/32 | 7859-534 |
| 8050-10 | 10 | #15 Ace-Thred | 7859-530 |
| 8050-12 | 10 | #25 Ace-Thred | 7859-534 |
| 8050-06 | 19 | 45/50 | 7859-573 |
| 8050-16 | 25.4 | 45/50 | 7859-573 |
| 8050-08 | 28 | 45/50 | 7859-573 |
| 8050-18 | 30 | 45/50 | 7859-573 |

Motor shaft connector

Stirring Shaft connector

## Coupling

The universal swivel coupling is designed for connection to a metal chuck. The compression connection is secured via Allen screw, and attaches to various O.D. glass stirring shafts. When used with pass-through assemblies, the coupling allows for easy, flexible height adjustment.

| Motor shaft (OD) | Shaft size (OD) | Order No. |
|---|---|---|
| 6mm | 6mm | 8126-05 |
| 6mm | 10mm | 8126-10 |
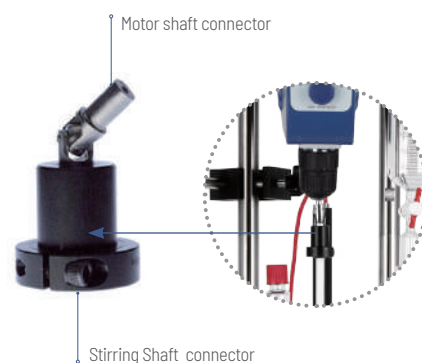
# PTFE Impeller

> Stainless steel core surrounded by PTFE mantle
> Chemical resistant
> Economically friendly
> Strong structure which doesn't break easily
> Can be used up to a max. temperature of 280℃
> The stainless steel core is revealed at the upper part and can be plugged into the stirrer
> The length of the revealed part is 50mm

## EX = Exposed Shaft.

Shafts of 650mm, 750mm & 1000mm in length are produced with a stainless steel core with an exposed end for more rigid clamping to the chuck drive
Shafts up to 12mm diameter have an exposed end of 50mm long and 6.5mm diameter.
Shafts of 16mm diameter have an exposed end of 50mm long and 8.5mm diameter.

## Screw Propeller, 4-Bladed (PTFE Coated)

Creates shearing force. Used for mixing media in an up-to-down axial flow, for mid and high-speed stirring, and for mid and low viscosity.

| Order No. | Shaft Ø(mm) | Length(mm) | Rotor Ø(mm) |
|---|---|---|---|
| 005.230.2 | 6 | 300 | 40 |
| 005.240.2 | 6 | 400 | 40 |
| 005.250.2 | 6 | 500 | 50 |
| 005.230.8.2 | 8 | 300 | 40 |
| 005.240.8.2 | 8 | 400 | 40 |
| 005.250.8.2 | 8 | 500 | 50 |
| 005.255.10.2 | 10 | 550 | 70 |
| 005.0265.10.2 | 10 | 650EX | 70 |
| 005.0275.10.2 | 10 | 750EX | 70 |
| 005.0265.12.2 | 12 | 650EX | 80 |
| 005.0275.12.2 | 12 | 750EX | 80 |
| 005.02100.12.2 | 12 | 1000EX | 80 |
| 005.0275.16.2 | 16 | 750EX | 80 |
| 005.0275.16.1.2 | 16 | 750EX | 100 |
| 005.02100.16.2 | 16 | 1000EX | 100 |
| 005.02100.16.1.2 | 16 | 1000EX | 120 |
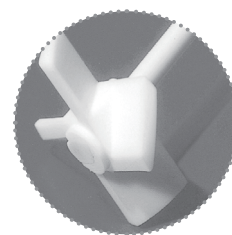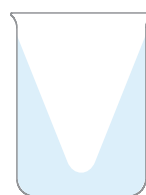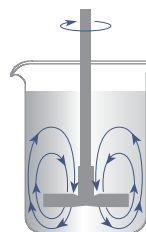
## Anchor Impeller (PTFE Coated)

Produces tangential flow and strong shearing force. Used for slow-speed stirring, for high viscosity mixtures.

| Order No. | Shaft Ø(mm) | Length(mm) | Rotor Ø(mm) |
|---|---|---|---|
| 005.330.2 | 6 | 300 | 80 |
| 005.340.2 | 6 | 400 | 80 |
| 005.350.2 | 6 | 500 | 80 |
| 005.330.8.2 | 8 | 300 | 80 |
| 005.340.8.2 | 8 | 400 | 80 |
| 005.350.8.2 | 8 | 500 | 80 |
| 005.355.10.2 | 10 | 550 | 100 |
| 005.0365.10.2 | 10 | 650EX | 140 |
| 005.0375.10.2 | 10 | 750EX | 140 |
| 005.0365.12.2 | 12 | 650EX | 140 |
| 005.0375.12.2 | 12 | 750EX | 140 |
| 005.03100.12.2 | 12 | 1000EX | 140 |
| 005.0375.16.2 | 16 | 750EX | 140 |
| 005.0375.16.1.2 | 16 | 750EX | 180 |
| 005.03100.16.2 | 16 | 1000EX | 140 |
| 005.03100.16.1.2 | 16 | 1000EX | 180 |
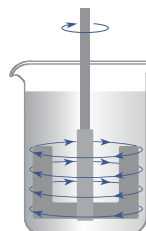
## Centrifugal Stirrer, 2-Bladed (PTFE Coated)

2-Blade Impeller which will open up depending on the stirring speed. Used for round vessels with narrow openings, for mixing media in an up-to-down axial flow, for mid and high-speed stirring

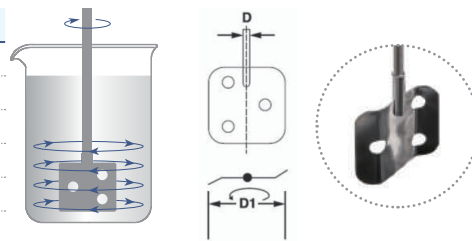| Order No. | Shaft Ø(mm) | Length(mm) | Rotor Ø(mm) |
|---|---|---|---|
| 005.430.2 | 6 | 300 | 40 |
| 005.440.2 | 6 | 400 | 40 |
| 005.450.2 | 6 | 500 | 50 |
| 005.430.8.2 | 8 | 300 | 40 |
| 005.440.8.2 | 8 | 400 | 40 |
| 005.450.8.2 | 8 | 500 | 50 |
| 005.455.10.2 | 10 | 550 | 70 |
| 005.0465.10.2 | 10 | 650EX | 70 |
| 005.0475.10.2 | 10 | 750EX | 70 |
| 005.0465.12.2 | 12 | 650EX | 80 |
| 005.0475.12.2 | 12 | 750EX | 80 |
| 005.04100.12.2 | 12 | 1000EX | 80 |
| 005.0475.16.2 | 16 | 750EX | 80 |
| 005.04100.16.2 | 16 | 1000EX | 80 |
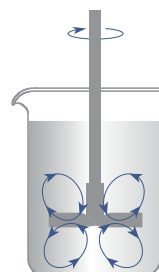
## Retreat Curve Impeller (PTFE Coated)

The blades are formed in a 30° angle. It creates tangential and axial flow as well as high shearing force. Used for mid- and slow-speed stirring, and for all levels of viscosity.

| Order No. | Shaft Ø(mm) | Length(mm) | RotorØ(mm) | Blade Ht(mm) |
|---|---|---|---|---|
| 005.80850.300 | 8 | 300 | 50 | 10 |
| 005.80875.300 | 8 | 300 | 75 | 15 |
| 005.80850.400 | 8 | 400 | 50 | 10 |
| 005.80875.400 | 8 | 400 | 75 | 15 |
| 005.81050.400 | 10 | 400 | 50 | 10 |
| 005.81075.400 | 10 | 400 | 75 | 15 |
| 005.81050.500 | 10 | 500 | 50 | 10 |
| 005.81075.500 | 10 | 500 | 75 | 15 |

## Impeller Shafts for Blades (PTFE Coated)

Shafts with a stainless steel core, PTFE coating, an exposed stainless steel end, as well as a hook for mounting blades

| Order No. | Shaft Ø (mm) | Length (mm) | Order No. | ShaftØ (mm) | Length (mm) |
|---|---|---|---|---|---|
| 005.530.1 | 6 | 300 | 005.0565.10.1 | 10 | 650EX |
| 005.540.1 | 6 | 400 | 005.0575.10.1 | 10 | 750EX |
| 005.550.1 | 6 | 500 | 005.05100.10.1 | 10 | 1000EX |
| 005.530.8.1 | 8 | 300 | 005.0565.12.1 | 12 | 650EX |
| 005.540.8.1 | 8 | 400 | 005.0575.12.1 | 12 | 750EX |
| 005.550.8.1 | 8 | 500 | 005.05100.12.1 | 12 | 1000EX |
| | | | 005.0575.16.1 | 16 | 750EX |
| | | | 005.05100.16.1 | 16 | 1000EX |

## Blades (PTFE Coated)

Impeller blades that fit to "Impeller Shaft, with Hook (PTFE Coated)". Completely inert and highly scratch-resistant. (Hole diameter: 6.5 mm)

| Order No. | W(mm) | H(mm) | Order No. | W(mm) | H(mm) |
|---|---|---|---|---|---|
| 002.052.1 | 52 | 14 | 002.1065.1 | 65 | 25 |
| 002.076.1 | 76 | 19 | 002.1075.1 | 75 | 25 |
| 002.090.1 | 90 | 28 | 002.1105.1 | 105 | 25 |
| | | | 002.1125.1 | 125 | 25 |
| | | | 002.1150.1 | 150 | 25 |
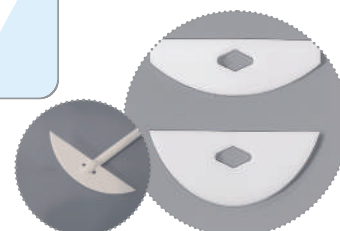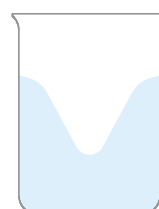
## Plain Impeller Shafts (PTFE Coated)

Plain shafts with a stainless steel core and PTFE coating, as well as an exposed stainless steel end.

| Order No. | Shaft Ø(mm) | End Ø(mm) | LengthØ(mm) |
|---|---|---|---|
| 005.100830EX | 8 | 5 | 300 |
| 005.100850EX | 8 | 5 | 500 |
| 005.101030EX | 10 | 6.35 | 300 |
| 005.101050EX | 10 | 6.35 | 500 |
| 005.101065EX | 10 | 6.35 | 650 |
| 005.101250EX | 12 | 6.35 | 500 |
| 005.101265EX | 12 | 6.35 | 650 |
| 005.101275EX | 12 | 6.35 | 750 |
| 005.1016750EX | 16 | 10 | 750 |
| 005.1016100EX | 16 | 10 | 1000 |

## 4 Blade Angled Type 45° Metric

Pitched impeller for use on PTFE coated shafts.

| Order No. | Shaft Ø(mm) | RotorØ(mm) |
|---|---|---|
| 005.606040 | 6 | 40 |
| 005.608040 | 8 | 40 |
| 005.610060 | 10 | 60 |
| 005.610090 | 10 | 90 |
| 005.612070 | 12 | 70 |
| 005.612090 | 12 | 90 |
| 005.616100 | 16 | 100 |
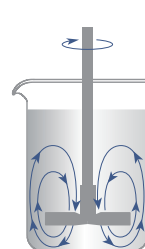
## Flat Impeller

Flat impeller for use on PTFE coated shafts.

| Order No. | Shaft Ø(mm) | RotorØ(mm) |
|---|---|---|
| 005.706070 | 6 | 70 |
| 005.708070 | 8 | 70 |
| 005.710070 | 10 | 70 |
| 005.710100 | 10 | 100 |
| 005.712100 | 12 | 100 |
| 005.712150 | 12 | 150 |
| 005.716100 | 16 | 100 |
| 005.716150 | 16 | 150 |
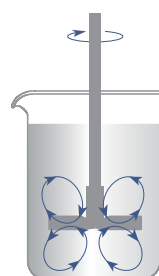
## Adjustable Turbine

Flat impeller for use on PTFE coated shafts.

| Order No. | Shaft Ø(mm) | RotorØ(mm) |
|---|---|---|
| 005.90850 | 8 | 50 |
| 005.90875 | 8 | 75 |
| 005.91075 | 10 | 75 |
| 005.9100100 | 10 | 100 |
| 005.91275 | 12 | 75 |
| 005.912100 | 12 | 100 |
| 005.016100 | 16 | 100 |
| 005.916150 | 16 | 150 |
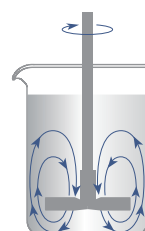
# Stainless Steel Impellers

## Pivoting Blade Impeller

For mixing media from coarse to liquid, for mid-speed stirring, and for mid to low viscosity mixtures.
Blade Height: 18 mm

| Order No. | Rotor Ø (mm) D1 | Shaft Ø (mm) D | Length(mm) |
|---|---|---|---|
| 9603 | 60 | 8 | 300 |
| 9604 | 60 | 8 | 400 |
| 9605 | 60 | 8 | 500 |
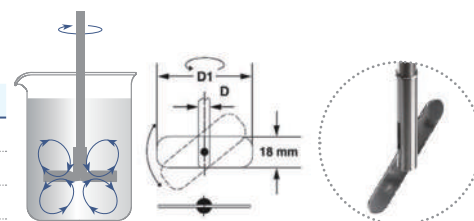
## Straight 2-Blade Impeller

For mixing media from coarse to liquid, for mid-speed stirring, and for mid to low viscosity mixtures.
Blade Height: 12 mm

| Order No. | Rotor Ø (mm) D1 | Shaft Ø (mm) D | Length(mm) |
|---|---|---|---|
| 9703 | 50 | 8 | 300 |
| 9704 | 50 | 8 | 400 |
| 9705 | 50 | 8 | 500 |
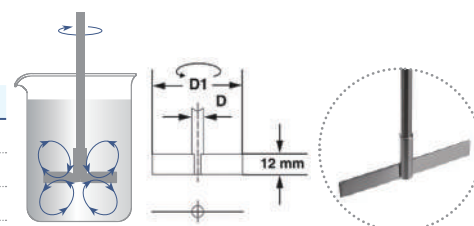
## Straight 4-Blade Impeller

For mixing media from coarse to liquid, for mid-speed stirring, and for mid to low viscosity mixtures.
Blade Height: 12 mm

| Order No. | Rotor Ø (mm) D1 | Shaft Ø (mm) D | Length(mm) |
|---|---|---|---|
| 9053 | 50 | 8 | 300 |
| 9054 | 50 | 8 | 400 |
| 9055 | 50 | 8 | 500 |
| 9056 | 100 | 10 | 300 |
| 9057 | 100 | 10 | 400 |
| 9058 | 100 | 10 | 500 |
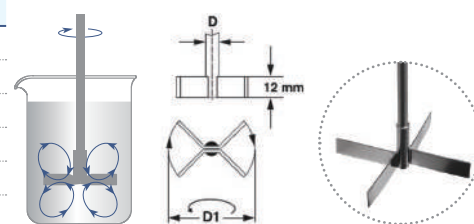
## Centrifugal Impeller

2-Blade Impeller which will open up depending on the stirring speed. Used for round vessels with narrow openings, for mixing media in an up-to-down axial flow, for mid- and high-speed stirring.
Blade Height: 10 mm

| Order No. | Rotor Ø (mm) D1 | Shaft Ø (mm) D | Length(mm) |
|---|---|---|---|
| 9209 | 90/15 | 8 | 300 |
| 9210 | 90/15 | 8 | 400 |
| 9211 | 90/15 | 8 | 500 |
| 9212 | 90/15 | 10 | 300 |
| 9213 | 90/15 | 10 | 400 |
| 9214 | 90/15 | 10 | 500 |
| 9215 | 90/15 | 10 | 650 |
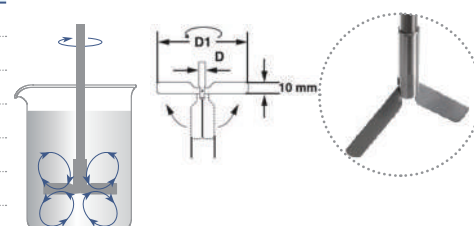
## 3-Hole Blade Impeller

For mixing media from coarse to liquid, for mid-speed stirring, and for mid to low viscosity mixtures.

| Order No. | Rotor Ø (mm) D1 | Shaft Ø (mm) D | Length(mm) |
|---|---|---|---|
| 9403 | 50 | 8 | 300 |
| 9404 | 50 | 8 | 400 |
| 9405 | 50 | 8 | 500 |
| 9406 | 100 | 10 | 300 |
| 9407 | 100 | 10 | 400 |
| 9408 | 100 | 10 | 500 |

## 6-Hole Blade Impeller

For mixing media from coarse to liquid, for mid-speed stirring, and for mid to low viscosity mixtures.

| Order No. | Rotor Ø (mm) D1 | Shaft Ø (mm) D | Length(mm) |
|---|---|---|---|
| 9503 | 50 | 8 | 300 |
| 9504 | 50 | 8 | 400 |
| 9505 | 50 | 8 | 500 |
| 9506 | 100 | 10 | 300 |
| 9507 | 100 | 10 | 400 |
| 9508 | 100 | 10 | 500 |
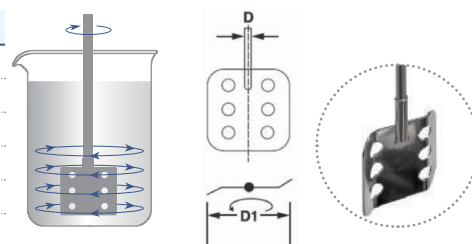
## Pitched Leaf Impeller and Pitched Blade Impeller

Employs small shearing force. Used for mixing media in an up-to-down axial flow, for mid- and high-speed stirring, for mid to low viscosity mixtures.
Blade Height： 12 mm

| Order No. | Rotor Ø (mm) D1 | Shaft Ø (mm) D | Length(mm) |
|---|---|---|---|
| 9003 | 50 | 8 | 300 |
| 9004 | 50 | 8 | 400 |
| 9005 | 50 | 8 | 500 |
| 9009 | 100 | 8 | 300 |
| 9010 | 100 | 8 | 400 |
| 9011 | 100 | 8 | 500 |
| 9012 | 70 | 8 | 500 |
| 9013 | 100 | 10 | 650 |
| 9014 | 100 | 10 | 800 |
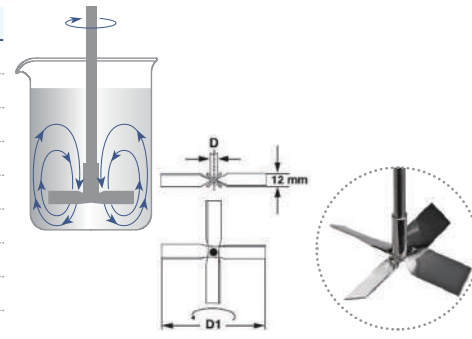
## Propeller Stirrers, 3 Fix Blades

> rpm-range middle
> Mixing of media with low and middle viscosity
> Ideal for homogenising and suspensioning
> Axial flow
Blade Height： 12 mm

| Order No. | Rotor Ø (mm) D1 | Shaft Ø (mm) D | Length(mm) |
|---|---|---|---|
| 9103 | 50 | 8 | 300 |
| 9104 | 50 | 8 | 400 |
| 9105 | 50 | 8 | 500 |
| 9109 | 70 | 8 | 300 |
| 9110 | 70 | 8 | 400 |
| 9111 | 70 | 8 | 500 |
| 9112 | 100 | 10 | 300 |
| 9113 | 100 | 10 | 400 |
| 9114 | 100 | 10 | 500 |
| 9115 | 70 | 10 | 650 |
| 9116 | 100 | 10 | 800 |
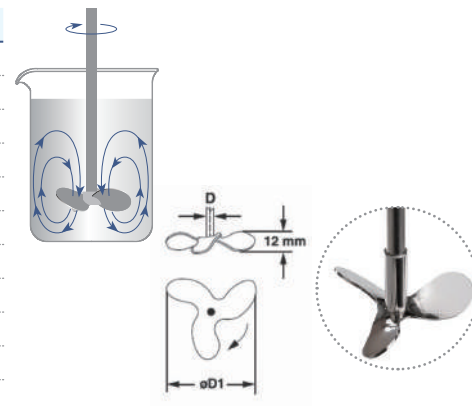
## Anchor Impeller

Produces tangential flow and strong shearing force. Used for slow-speed stirring, for high viscosity mixtures.

| Order No. | Rotor Ø (mm) D1 | Shaft Ø (mm) d | Length(mm) A |
|-----------|-----------------|----------------|--------------|
| 9610 | 70 | 8 | 500 |
| 9611 | 90 | 10 | 650 |
| 9612 | 140 | 10 | 800 |
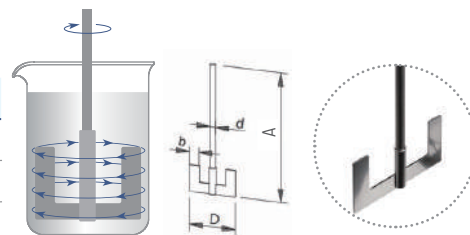
## Turbine Impeller

Creates shearing force. Used for mixing media in an up-to-down axial flow, for mid and high-speed stirring, for mid to low viscosity mixtures.

| Order No. | Rotor Ø (mm) D1 | Shaft Ø (mm) d | Length(mm) A |
|-----------|-----------------|----------------|--------------|
| 9025 | 45 | 7 | 400 |
| 9026 | 65 | 7 | 400 |
| 9025A | 45 | 8 | 400 |
| 9026A | 65 | 8 | 400 |
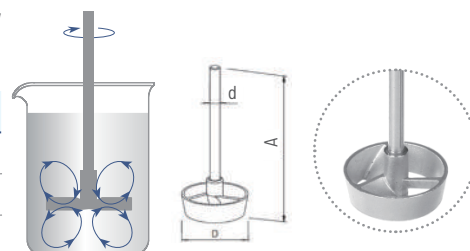
## Radial Flow Impeller

Creates a strong flow and shearing force. Used for mixing media in an up-to-down axial flow, for mid-speed stirring, for mid viscosity under 500mpas. Especially useful for aerating.

| Order No. | Rotor Ø (mm) D1 | Shaft Ø (mm) D | Length(mm) A |
|-----------|-----------------|----------------|--------------|
| 9030 | 50 | 8 | 400 |
| 9031 | 50 | 10 | 400 |
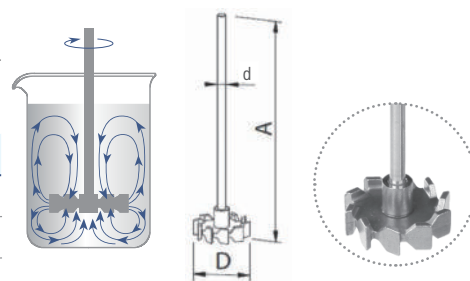
## Multi-Purpose Impeller

Can generally be used in low to high viscosity mixtures. Even with slow stirring speed, it will produce a very good radial stirring outcome.

| Order No. | Rotor Ø (mm) D | Shaft Ø (mm) d | Length(mm) A | rpm |
|-----------|----------------|----------------|--------------|---------|
| 9020 | 80 | 10 | 500 | 200-700 |
| 9021 | 120 | 10 | 500 | 120-500 |
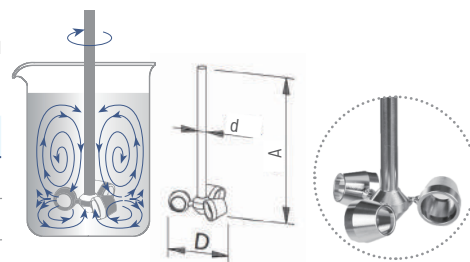
# Lifting platform

## Laboratory Lifting platform

> Material : S/T stainless(#204), A/L Aluminium
> Available to support experiment tools such as stirrers, water baths, flasks etc. in height control
> Smoothly works with a little force
> Max Height : 270mm

| Description (W x L) cm | Height range (mm) | Order No. |
|---|---|---|
| S/T (15 * 15) | 60~270 | KA11-91 |
| S/T (20 * 20) | 60~270 | KA11-93 |
| S/T (25 * 25) | 60~270 | KA11-94 |
| S/T (30 * 30) | 60~270 | KA11-95 |
| S/T (15 * 15) | 60~270 | KA11-91N |
| S/T (20 * 20) | 60~270 | KA11-93N |
| A/L (15 * 15) | 60~270 | KA11-91B |
| A/L (20 * 20) | 60~270 | KA11-92 |

## Foot switch

| Order No. | Description | Suitable for |
|---|---|---|
| W1672041 | Overhead stirrer is controlled by the foot switch in "FOOT Mode" | WOHS series |

## External temperature sensor Suitable for WOHS series

| Order No. | Model | Description |
|---|---|---|
| PT100-01 | Type I | External Pt100 sensor, 170 x Ø4 mm, stainless steel, 1.5 m cable. |
| PT100-02 | Type II | External Pt100 sensor, 300 x Ø4 mm, stainless steel, 1.5 m cable. |
| 8981003W | WP206S | External Pt100 sensor, 200 x Ø6 mm, stainless steel, 1.5 m cable. |
| 8981010W | WP306S | External Pt100 sensor, 300 x Ø6 mm, stainless steel, 1.5 m cable. |
| PT100-03 | Type III | External Pt100 sensor, 170 x Ø4 mm, stainless steel, 1.5 m cable. |
| PT100-04 | Type IV | External Pt100 sensor, 300 x Ø4 mm, stainless steel, 1.5 m cable. |
| PT100-06 | Type VI | External Pt100 sensor, 250 x Ø4 mm, stainless steel, 1.5 m cable. |
| 8981017W | WP206P | External Pt100 sensor, 200 x Ø6 mm, stainless steel/PTFE coated, 3 m cable. |
| 8981015W | WP306P | External Pt100 sensor, 300 x Ø6 mm, stainless steel/PTFE coated, 3 m cable. |
| 8981114W | WP406P | External Pt100 sensor, 400 x Ø6 mm, stainless steel/PTFE coated, 3 m cable. |
| 8981116W | WP506P | External Pt100 sensor, 500 x Ø6 mm, stainless steel/PTFE coated, 3 m cable. |
| 8981013W | WP606P | External Pt100 sensor, 600 x Ø6 mm, stainless steel/PTFE coated, 3 m cable. |
| 8981016W | WP906P | External Pt100 sensor, 900 x Ø6 mm, stainless steel/PTFE coated, 3 m cable. |
| 8981014W | WP1206P | External Pt100 sensor, 1200 x Ø6 mm, stainless steel/PTFE coated, 3 m cable. |
| W8981017W | WP206P | External Pt100 sensor, 200 x Ø6 mm, stainless steel/PFA coated, 3 m cable. |
| W8981015W | WP306P | External Pt100 sensor, 300 x Ø6 mm, stainless steel/PFA coated, 3 m cable. |
| W8981114W | WP406P | External Pt100 sensor, 400 x Ø6 mm, stainless steel/PFA coated, 3 m cable. |
| W8981116W | WP506P | External Pt100 sensor, 500 x Ø6 mm, stainless steel/PFA coated, 3 m cable. |
| W8981013W | WP606P | External Pt100 sensor, 600 x Ø6 mm, stainless steel/PFA coated, 3 m cable. |
| W8981016W | WP906P | External Pt100 sensor, 900 x Ø6 mm, stainless steel/PFA coated, 3 m cable. |
| W8981014W | WP1206P | External Pt100 sensor, 1200 x Ø6 mm, stainless steel/PFA coated, 3 m cable. |

# Clamps

## For installing the PT100 sensor for WOHS series

| Description | Order No. |
|---|---|
| WH2S01 set contains Clamping (WH2), Sensor holder(WH220027), Extension rod(WH220095) | WH2S01 |
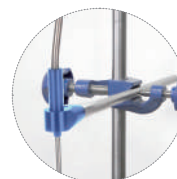
## Three-Prong Clamp

| | Overall length（mm） | Maximum grip size(mm) | Order No. |
|---|---|---|---|
| Large Clamp | 270 | 80 | KA00-52 |
| Medium Clamp | 245 | 60 | KA00-53 |
| Small Clamp | 210 | 30 | KA00-54 |
| Large Clamp | 615（Rod：500） | 80 | KA00-52A |
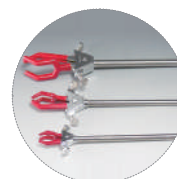
## Two-Prong Clamp

Two-Prong Clamp, or dual adjustment clamp has a maximum grip size of 73mm. Two-prong design is ideal for beakers, flasks, and test tubes. Jaws adjust independently. Overall length is 255mm. Clamp extends 127mm.

| | Overall length（mm） | Maximum grip size(mm) | Order No. |
|---|---|---|---|
| Medium Clamp | 255 | 60 | KA00-50 |
| Medium Clamp | 605（Rod：500） | 60 | KA00-50A |
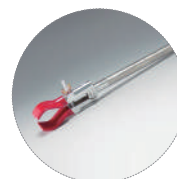
## Utility Clamp Flat

Grips rods up to 3/4 in. diameter (19mm). The holding angle of the jaws is adjustable. It can be locked with a wingnut. Wingnut also allows length adjustment. Two-prong flat jaws are for test tubes. Three-prong are for irregular shapes. Vinyl and fiber glass sleeves are included. Replacement sleeves are available: Contact your Fisher Customer Service Representative.

| | Overall length（mm） | Maximum grip size(mm) | Order No. |
|---|---|---|---|
| Medium Clamp | 170 | 60 | KA00-57 |

## Utility Clamp, 3 Prong

Grips rods up to 3/4 in. diameter (19mm). The holding angle of the jaws is adjustable. It can be locked with a wingnut. Wingnut also allows length adjustment. Two-prong flat jaws are for test tubes. Three-prong ones are for irregular shapes. Vinyl and fiber glass sleeves are included.

| | Overall length（mm） | Maximum grip size(mm) | Order No. |
|---|---|---|---|
| Medium Clamp | 170 | 60 | KA00-58 |

## Clamp Swivel Holder

Material : Brass (Chromium plating)
Adjustable angle holder, different from other holders fixed at 90 degrees

| Description (Max Grip) | Order No. |
|---|---|
| Ø13mm | KA00-71B |
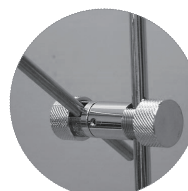
## Extension-Type Ring

Material : Stainless Steel (Chromium plating)
Separatory Funnel Size : 250ml-70mm / 500ml-90mm / 1,000ml-100mm

| Description（ID x OD） | Order No. |
| --- | --- |
| Ø50 x Ø60mm | KA00-67F |
| Ø70 x Ø80mm | KA00-67A |
| Ø90 x Ø100mm | KA00-67B |
| Ø110 x Ø120mm | KA00-67C |
| Ø130 x Ø140mm | KA00-67D |
| Ø150 x Ø160mm | KA00-67E |

Have other specifications to order for you
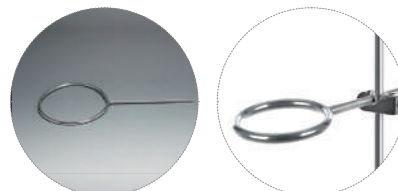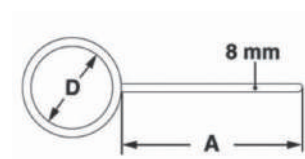
## Jumbo Clamp Holder

Heavy-Duty Clamp Holder, or Jumbo clamp holder has a maximum grip size of 22mm. The heavy duty version of the regular holder is for use wherever clamping at 90° angle is required.

| Content | Order No. |
| --- | --- |
| 22mm | KA00-70A |

## Chain Clamp

Material : Stainless Steel / Vinyl Coating

| Overall length(mm) | Maximum grip size(mm) | Order No. |
| --- | --- | --- |
| 180 | 165mm | KA00-56 |
| 180 | 280mm | KA00-56A |

## Frame Holder

Lab frame hook connectors allow one-handed assembly of two components with one adjustment screw.
Material : Die Casting (Chromium plating)
Pipe Diameter : Ø12.7mm

| Pipe Diameter | Order No. |
| --- | --- |
| 12.7mm | KA00-69 |
| 12.7mm | KA00-70C |

## Clamp Holder  All-Position

All-position holder connects at any angle in any plane. It consists of two holders connected by double plate-joint which sets holders $90^0$ from each other. Each holder can be rotated $360^0$. It grips rods up to 19mm in diameter.

| | Order No. |
| --- | --- |
| All-Position | 11090-17 |

## Clamp Universal Swivel, "Power Hold"

Universal swivel clamp allows positioning of stirrer at any compound angle for best stirring action.
① One knob — Lets you lower or raise the stirrer
② One knob — Locks stirrer the on the support rod, tilts right/left
③ One knob — Controls swivel setting, forward/backward
It fits support stands with diameters from 3/8 inch to 5/8 inch (9.5mm to 16 mm). It holds stirrer mounting rods with diameters from 3/8 inch to 5/8 inch. It is fabricated of precision-machined aluminum.

| | Order No. |
| --- | --- |
| Universal Swivel, "Power Hold" | 11084-11 |
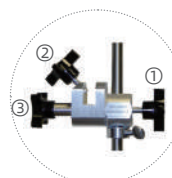
## Flexible Arm fixture

Suitable for use when space is limited, or when multiple adjustments are required to position the fixture, especially for use in fume hood, which can be easily installed on any laboratory support stand, there are two types of connection design for flexible arm fixture.

| Description (Max Grip×Length) | Order No. |
|---|---|
| 60 x 360mm, 2P | KA00-50B |
| 60 x 360mm, 3P | KA00-50C |

KA00-50B          KA00-50C

## Ultraflex clampling system

Talboys UltraFlex clamping system features a 30cm or 40cm flex arm and is ideal for working within hoods. The system mounts to any lab frame or support stand with a 19mm or less diameter. An optional base plate or bench clamp gives increased versatility. Complete units, codes -10 and -12, include the flex arm, a two-prong head, a three-prong head, a spring head and lab frame connector.

| Package Order No. | type | A(mm) | D(mm) | Max Grip (mm) | Material quality | Order No. |
|---|---|---|---|---|---|---|
| 11058-10 | II | 300 | 120 | Three-Prong Clamp 580 Two-Prong Clamp 650 | Stainless steel | 11058-22 |
| 11058-12 | II | 400 | 120 | Three-Prong Clamp 580 Two-Prong Clamp 650 | Stainless steel | 11058-22 |

Support stand need to be ordered from Wiggens

## Extension Rod

Extend the rod to the expected the height of the stand

| Order No. | Diameter（mm） | Height（mm） |
|---|---|---|
| WE-11 | 16 | 200 |
| WE-12 | 16 | 400 |
| WE-13 | 16 | 550 |

## Clamp Holder

For Single Rod Stand

| Model | WH1 |
|---|---|
| Clamping range - stand | 6~16mm |
| Clamping range - extension arm | 6~16mm |
| Material | Cast aluminium |
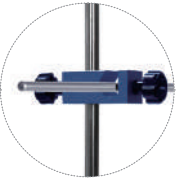
## Clamp Holder

For Single Rod Stand

| Model | WH2 |
|---|---|
| Clamping range - stand | 6~30mm |
| Clamping range - extension arm | 6~16mm |
| Material | Cast aluminium |

Stand
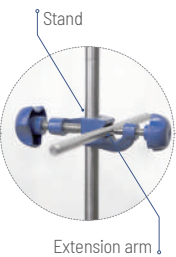
Extension arm

## Clamp Holder

For double rod stand

| Model | WH4 | WH6 | WH6-1 |
|---|---|---|---|
| Clamping range - stand | 16mm | 16mm | 16mm |
| Clamping range - extension arm | 10~13mm | 10~13mm | 13~16mm |
| Material | Cast aluminium | Cast aluminium | Cast aluminium |

Extension arm
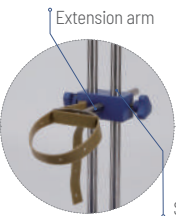
Stand

# Support stand

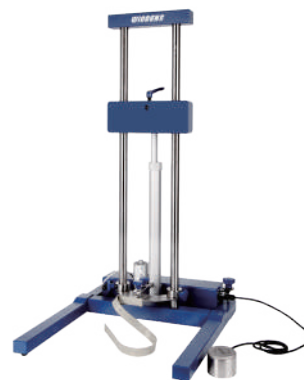## Plate stand with Ø16mm single-rod

Particularly stable position with plate base to prevent tilting of the position backward, single-rod provide stability. Used for supporting overhead stirrer and accessories.

| Model | Base | Shaft | Container area (W x D mm) | Dimensions (W x D x Hmm) |
|-------|------|-------|--------------------------|--------------------------|
| WF11 | Cast Iron coated powder | Stainless steel, OD16mm | 315 x 200 | 315 x 200 x 550 |
| WF12 | Cast Iron coated powder | Stainless steel, OD16mm | 315 x 200 | 315 x 200 x 750 |
| WF13 | Cast Iron coated powder | Stainless steel, OD16mm | 315 x 200 | 315 x 200 x 950 |

WF12

## WH-stand with Ø16mm single-rod

Particularly stable position with H-shaped base to prevent tilting of the position backward, single-rod provide stability. Used for supporting overhead stirrer and accessories.

| Model | Base | Shaft | Container area (W x D mm) | Dimensions (W x D x Hmm) |
|-------|------|-------|--------------------------|--------------------------|
| WH11-S | Aluminum | Stainless steel | 252 x 208 | 340 x 300 x 550 |
| WH12-S | Aluminum | Stainless steel | 252 x 208 | 340 x 300 x 750 |
| WH13-S | Aluminum | Stainless steel | 252 x 208 | 340 x 300 x 950 |

WH12-S

## Plate stand with Ø16mm double-rod

Particularly stable position with H-shaped base to prevent tilting of the position backward, double-rod provide optimum stability, standard with security position ring and fixing clamp for containers. Used for supporting high torque / high speed overhead stirrer and accessories, or for high speed homogenizer.

| Model | Base | Shaft | Container area (W x D mm) | Dimensions (W x D x Hmm) |
|-------|------|-------|--------------------------|--------------------------|
| WF11-D | Cast Iron coated powder | Stainless steel | 315 x 200 | 315 x 200 x 550 |
| WF12-D | Cast Iron coated powder | Stainless steel | 315 x 200 | 315 x 200 x 750 |
| WF13-D | Cast Iron coated powder | Stainless steel | 315 x 200 | 315 x 200 x 950 |
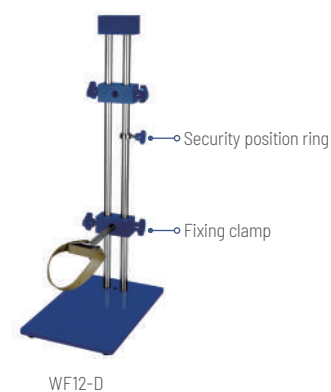
Security position ring

Fixing clamp

WF12-D

## H-stand with Ø16mm single-rod

Particularly stable position with H-shaped base to prevent tilting of the position backward, double-rod provide optimum stability. Used for supporting high torque / high speed overhead stirrer and accessories, or for large volume of containers.

| Model | Base | Shaft | Container area (W x D mm) | Dimensions (W x D x Hmm) |
|-------|------|-------|--------------------------|--------------------------|
| WH23-DS * | Stainless steel | Stainless steel | 635 x 600 | 635 x 600 x 1010 |
| WH24-DS ** | Stainless steel | Stainless steel | 635 x 600 | 635 x 600 x 1010 |

* For WB series nd WOHS 10/15 overhead stirrer.
** For WOHS High Torque / High Speed Overhead Stirrer.

## H-stand with Ø20mm double-rod

Particularly stable position with H-shaped base to prevent tilting of the position backward, double-rod provide optimum stability, Used for supporting high torque / high speed overhead stirrer and accessories

| Model | Base | Shaft | Container area (W x D mm) | Dimensions (W x D x Hmm) |
|---|---|---|---|---|
| WH21-D* | Aluminum | Stainless steel | 226 x 220 | 340 x 300 x 550 |
| WH22-D* | Aluminum | Stainless steel | 226 x 220 | 340 x 300 x 750 |
| WH23-D* | Aluminum | Stainless steel | 226 x 220 | 340 x 300 x 950 |
| WH24-D** | Aluminum | Stainless steel | 226 x 220 | 340 x 300 x 550 |
| WH25-D** | Aluminum | Stainless steel | 226 x 220 | 340 x 300 x 750 |
| WH26-D** | Aluminum | Stainless steel | 226 x 220 | 340 x 300 x 950 |

* With clamp holder WH6, suitable for WB series nd WOHS 10/15 overhead stirrer.
** With clamp holder WH6-1, suitable for WOHS High Torque / High Speed Overhead Stirrer.



WH22-D

## Electric H-stand with Ø16mm double-rod

Particularly stable position with H-shaped base to prevent tilting of the position backward, double-rod provide optimum stability, integrated electric putter and controller. Used for supporting high torque / high speed overhead stirrer and accessories, even can be used as a stand for bench-top reaction system.

| Model | Base | Shaft | Stroke (mm) | Container area (W x D mm) | Dimensions (W x D x Hmm) |
|---|---|---|---|---|---|
| WH30* | Aluminum | Stainless steel | 250 | 370 x 320 | 450 x 500 x 890 |
| WH31** | Aluminum | Stainless steel | 250 | 370 x 320 | 450 x 500 x 890 |

* For WB series nd WOHS 10/15 overhead stirrer.
** For WOHS High Torque / High Speed Overhead Stirrer.



## WH-stand

With Ø32mm single-rod
Height range: 602 - 1082 mm
Leg distance: 370 mm
Stability adjustment

| Model | Base | Shaft | Container area (W x D mm) | Dimensions (W x D x Hmm) |
|---|---|---|---|---|
| WH33-S | Aluminum | Stainless steel | 320 x 370 | 450×500/602~1082 |
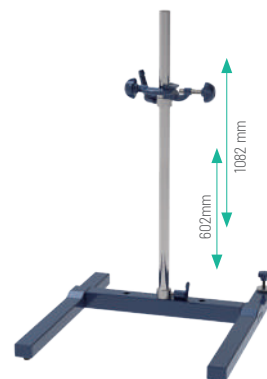


## WH mobile floor stand with Ø32mm single-rod.

Mobile floor stand with strong Foma wheels, specially designed for the application with big vessels

| Model | Base | Shaft | Container area (W x D mm) | Dimensions (W x D x Hmm) |
|---|---|---|---|---|
| WH43-S | Stainless steel | Stainless steel | 614×385 | 786×692/1319 |

# Homogenizer
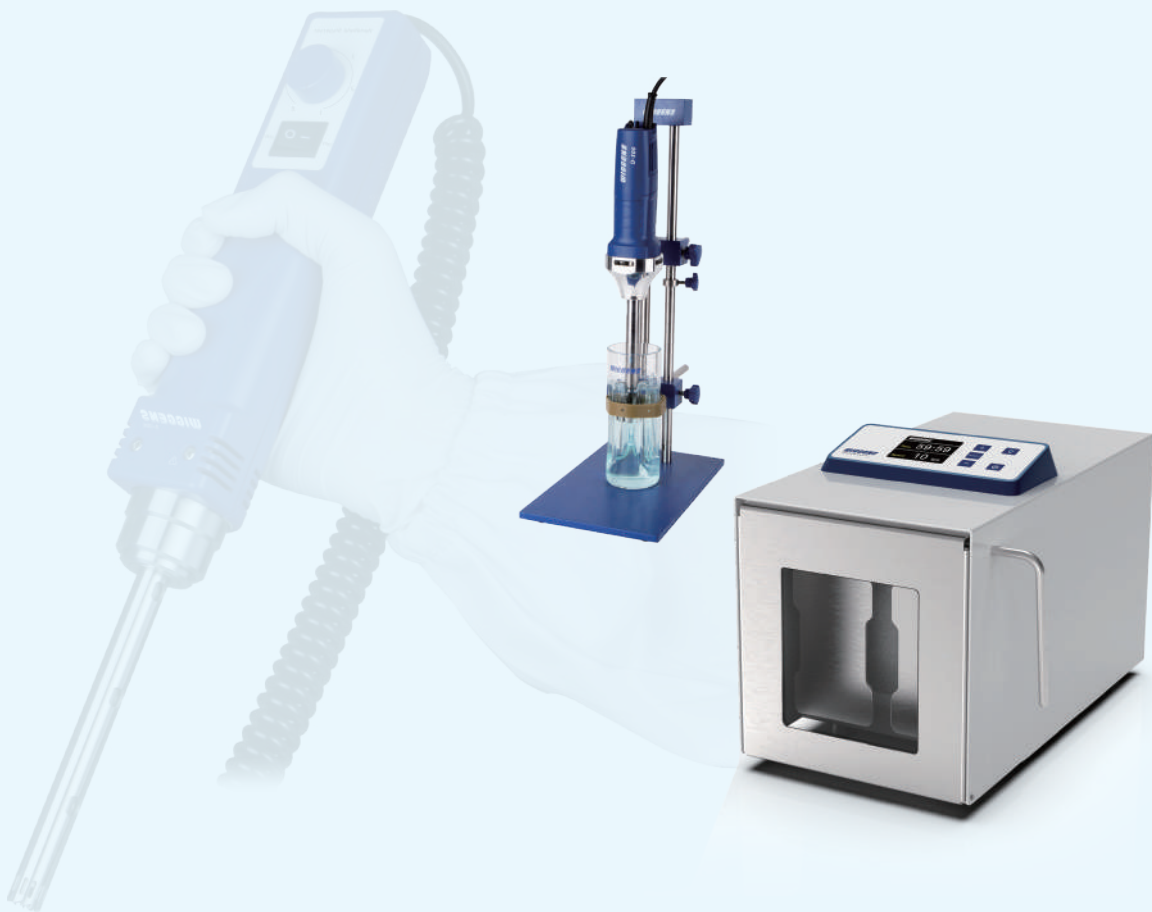
# Handheld Homogenizer
## D-130C

### When speed & high quality meet creating power to disperse

Handheld Design – Compact and lightweight for one-handed operation. During use, the dispersing head is immersed into the sample. The motor drives the rotor to rotate at high speed, homogenizing or dispersing the sample in the gap between the stator and rotor. This process typically completes in a very short time
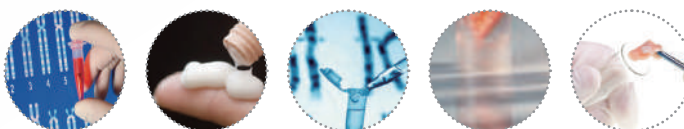
### Features
> Brushless DC motor
> Suitable for mixing, emulsifying, dispersing and shearing
> Handheld design, compact and lightweight for one-handed operation
> Sterilizable stainless steel dispersing head
> High-performance motor ensures speed stability (0-25,000 rpm)
> Quick-release coupling for easy assembly/disassembly of dispersing head
> Dual-switch power control for safety and preventing misuse
> Includes 2m spiral extension cable between main unit and handheld homogenizer for convenient operation

### Application
> General homogenization applications (dispersion and emulsification)
> Homogenising of tumour tissue sample, for research of diverse tissue diseases
> Fast dissolving of pills, sugar-coated tablets for quality control purposes
> Sample preparation for subsequent extraction of pharmaceutical agents (API)
> Cell disruption, RNA / DNA isolation from tissue
> Dispersion of small quantities from plants, animals or human tissue
> Solving of solid materials

The standard package includes: homogenizer + dispersing Shaft (Subject to the dispersing heads included in the set)

### Specifications

| Model | D-130C |
|---|---|
| Order No. | W3050130 |
| Speed range with zero-load[rpm] | 0~25000 |
| Sample volume $H_2O$ [mL] | 0.2~50($H_2O$)/3~250($H_2O$) |
| Power [W] | 100 |
| The wet part for dispersing shaft | 316L stainless steel and PTFE |
| IP code | IP30 |
| Base dimension W×D×H[mm] | 160×185×162 |
| Handheld main unit dimension W×D×H[mm] | 44×58×226 |
| Weight [kg] Host | 0.59 |
| Weight [kg] Power base | 1.5 |

### Shaft for D-130C

| Model | Volume Range(mL) | Linear Speed(m/s) | Rotor Diameter(mm) | Stator Diameter(mm) | Min/Max Immersion Depth (mm) | Dispersed Particle Size(Micro) |
|---|---|---|---|---|---|---|
| Shaft 5E | 0.2-50 | 4.7 | 3 | 5.5 | 25/75 | Suspensions 10-50 Emulsions 1-10 |
| Shaft 12E | 3-250 | 14.1 | 9 | 12 | 40/110 | Suspensions 10-50 Emulsions 1-10 |

# High speed homogenizer
## D-500 / D-500 Pro / D-600

Used for homogenizing, emulsifying or suspending. There is a broad spectrum of dispersing tools to choose from.

## Features

> Continuosly adjustable speeds for better results
> Light-weighted and small-dimensioned for better handling
> Triple safety of the drive (overload protection. Smooth start – against jerky work, safety switch)
> High quality dispersing tools as standard for better resistance to corrosion (SS 316 L steel)
> Quick-change system of the dispersing tools for a short changing time between preparations
> Viscosities up to 10,000 cps
> High quality lab dispersing unit, at a competitive price!
> D-500pro can maintain constant motor speed by feedback control even under changing loads

D-600

D-600 Pro

## Specifications

| Model | D-500 | D-500 Pro | D-600 | D-600 Pro |
|---|---|---|---|---|
| Speed setting | Knob | Knob | Knob | Knob |
| Speed display | Scale | LED | LED | LCD |
| Process Range H20(ml) | 10~40,000ml | 10~40,000ml | 10~40,000ml | 10~40,000ml |
| Speed with Zero-Load (rpm) | 10,000~30,000 rpm | 500~30,000 rpm | 500~30,000 rpm | 500~30,000 rpm |
| Applicable aggregates | Ø4~Ø23 mm | Ø4~Ø23 mm | Ø4~Ø23 mm | Ø4~Ø23 mm |
| Sound pressure level (dB) | 72 dB (30,000 rpm) | 66 dB (2500 rpm); 72 dB (30,000 rpm) | 66 dB (2500 rpm); 72 dB (30,000 rpm) | 66 dB (2500 rpm); 72 dB (30,000 rpm) |
| Motor | AC | AC | AC | AC |
| Input / Output Power (W) | 500 W | 500 W | 600 W | 600 W |
| Supply voltage (V) | 220V/50~60Hz | 220V/50Hz | 220V/50Hz | 220V/50Hz |
| Relative humidity (max.) | 80% RH | 80% RH | 80% RH | 80% RH |
| Operating temperature | 0~40℃ | 0~40℃ | 0~40℃ | 0~40℃ |
| Communicate interface | | | | RS232/485 |
| IP Code | IP30 | IP30 | IP30 | IP30 |
| Dimensions (W x L x H in mm) | Drive:70×70×255 mm | Drive:76×157×236 mm | Drive:95×163×236 mm | Drive:95×163×236 mm |

Recommend purchasing package. The standard set includes: homogenizer, dispersing shaft, stand.

## Shaft Selection Guide for High Speed Homogenizer

Shaft

S        S20C    SR20        Standard rotor 20mm

Stator 20mm coarse
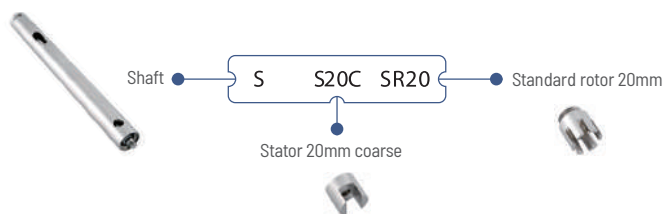
### Shaft 5
Includes: Shaft, PTFE bearing, 5 mm stator, 4 mm rotor

### SS20CSR20
Includes: Shaft, PTFE bearing, 20 mm stator, standard rotor SR20

### SS20FER20
Includes: Shaft, PTFE bearing, 20 mm stator, emulsification rotor ER20

### SS30CSR30
Includes: Shaft, PTFE bearing, 30 mm stator, standard rotor SR30

### SS30FER30
Includes: Shaft, PTFE bearing, 30 mm stator, emulsification rotor ER30

### SS40CMR30
Includes: Shaft, PTFE bearing, 40 mm stator, mixing rotor MR30

# Composition diagram



**Motor Unit**

5mm Shaft | Shaft

## Stators

| 20 Coarse S20C | 20 Fine S20F | 30 Coarse S30C | 30 Fine S30F | | 40 Coarse S40C |

## Rotors

Standard Rotor SR20 | Cutter Rotor CR20 | Mixing Rotor MR20 | Standard Rotor SR30 | Cutter Rotor CR30 | Mixing Rotor MR30 | Mixing Rotor MR20 | Mixing Rotor MR30

Emulsifying Rotor ER20 | Standard Rotor SR20 | Cutter Rotor CR20 | Mixing Rotor MR20 | Emulsifying Rotor ER30 | Standard Rotor SR30 | Cutter Rotor CR30 | Mixing Rotor MR30

## Shaft / Order Table

| Rotor Name | Function Description | Process Volume | Linear Velocity | Rotor Diameter | Stator Diameter | Min. / Max. | Ultimate Fineness (in microns) | | Disinfection Method | Application* |
|---|---|---|---|---|---|---|---|---|---|---|
| Order No. | | ml | m/s | mm | mm | Immersion Depth | suspension | emulsion | | |
| SS20CSR20(C) | Solid-Liquid Mixing Material | 10-5000 | 23.5 | 15 | 20 | 40/170 | 10-50 | 1-10 | | P,CI,PC,SD |
| SS20CCR20(C) | Fiber Material | 10-5000 | 23.5 | 15 | 20 | 40/170 | 10-50 | 1-10 | | SP,M,F,PT,TI |
| SS20CMR20(C) | Solid-Liquid Mixing Material | 10-5000 | 23.5 | 15 | 20 | 40/170 | 10-50 | 1-10 | | CI,PI |
| SS20FER20(C) | Latices | 10-5000 | 23.5 | 15 | 20 | 40/170 | 10-50 | 1-10 | | SP,PI,PT,P |
| SS20FCR20(C) | Fiber Material | 10-5000 | 23.5 | 15 | 20 | 40/170 | 10-50 | 1-10 | | SP,BT,M,F,PT,TI |
| SS20FMR20(C) | Solid-Liquid Mixing Material | 10-5000 | 23.5 | 15 | 20 | 40/170 | 10-50 | 1-10 | | CI,C,PI,F,PT,PC |
| SS30CMR20(C) | Stirring Paddle Function | 250-20000 | 36.1 | 15 | 30 | 40/170 | High-speed mixer | | | CI,F,SP |
| SS30CSR30(C) | Solid-Liquid Mixing Material | 100-8000 | 36.1 | 23 | 30 | 40/170 | 5-25 | 1-5 | | SP,M,F,PT,P |
| SS30CCR30(C) | Fiber Material | 100-8000 | 36.1 | 23 | 30 | 40/170 | 5-25 | 1-5 | | SP,M,F,PT,P |
| SS30CMR30(C) | Solid-Liquid Mixing | 100-8000 | 36.1 | 23 | 30 | 40/170 | 5-25 | 1-5 | all methods | CI,PI |
| SS30FSR30(C) | Solid-Liquid Mixing Material | 100-8000 | 36.1 | 23 | 30 | 40/170 | 5-25 | 1-5 | | SP,PI,PT,P |
| SS30FER30(C) | Latices | 100-8000 | 36.1 | 23 | 30 | 40/170 | 5-25 | 1-5 | | SP,PI,PT,P |
| SS30FCR30(C) | Fiber Material | 100-8000 | 36.1 | 23 | 30 | 40/170 | 5-25 | 1-5 | | SP,PI,PT,P |
| SS30FMR30(C) | Solid-Liquid Mixing Material | 100-8000 | 36.1 | 23 | 30 | 40/170 | 5-25 | 1-5 | | CI,C,P,F,DT,TI |
| SS40CMR30(C) | Stirring Paddle | 1000-40000 | 36.1 | 23 | 40 | 40/170 | High-speed mixer | | | CI,F,SP |
| Shaft 5(C) | Solid-Liquid Mixing Material | 0.2-50 | 6.3 | 4 | 5 | 40/60 | 10~50 | 1~10 | | BT,M |
| Shaft 10 (C) | Solid-Liquid Mixing Material | 1-250 | 6.3 | 9 | 10 | 10/60 | 10-50 | 1-10 | | BT,M |
| Shaft 14(C) | Solid-Liquid Mixing Material | 100-1000ml | 6.3 | 13 | 14 | 10/60 | 10-50 | 1-10 | | BT,M |

Note: BT = Biology; F = Food Industry; P = Pharmaceutical Industry; C = Cosmetic Industry; M = Medical Analysis; PC = Petrochemical Industry;
PT = Paper Production Industry; SP = Wastewater Analysis; CI = Ceramic Industry; CH = Chemical Industry; PI = Paint Industry; TI = Tabacco Industry
(C)C for D-600Pro

![WIGGENS The Magic Motion]

# Batch Lab & Pilot Plant Homogenizer
## D1500 / 1800

Batch homogenizer for lab and pilot plant cover working volumes from about 0.1 ml up to about 50 liters.
D1500/1800 with communication interface, can be controlled by PC or SCADA.
The batch homogenizers are classified into lab handheld, small, medium and large benchtop units and pilot plant versions.

D1500/1800 homogenizers to convince with the following features:
> Quick coupling for the dispersing shafts
>  Powerful and safe drive systems
> TFT display screen, intelligent control
> Long working life

Multiple dispersed shafts are exchangeable. The optimum for each specific homogenizing application can be chosen.

The efficiency of WIGGENS dispersing shafts is unrivalled. Thanks to optimized shear forces and bounce effects the processed medium will be treated at finest level in shortest time.
Dispersing shafts can be disassembled, cleaned easily and can be sterilized / autoclaved according to all current methods.

D-1500          D-1800

## Specifications

| Model | D-1500 | D-1800 |
|---|---|---|
| Order No. | 3050104 | 3050105 |
| Display screen | TFT | TFT |
| Motor | AC | AC |
| Speed with Zero-Load (rpm) | 500~30000rpm | 500~26500rpm |
| For volumes Range | 100~40,000ml | 100~40,000ml |
| Applicable shafts | Ø5~Ø36mm | Ø5~Ø65mm |
| Power (W) | 1500W | 1800W |
| Operating temperature | 0~40℃ | 0~40℃ |
| Relative humidity (max.) | 80% RH | 80% RH |
| IP Code | IP20 | IP20 |
| Interface | RS 232/485 | RS 232/485 |
| Supply voltage (V) | 220V/50~60Hz | 220V/50~60Hz |
| Dimensions (Excluding dispersing shaft) (W x H x D) | 95×163×236 mm | 95×163×236 mm |

## Composite Structure of rotor and stator

| Picture | Shaft series | Description |
|---|---|---|
| | WG Shaft series | **Purpose:**<br>The general shafts with two rows of teeth.<br>**Applications:**<br>–For general laboratory applications, and it is reliable and efficient.<br>–All standard dispersing, emulsifying and suspending tasks<br>– Dispersing of plant, human or animal tissues, resins in a variety of buffers and volumes<br>– Sample preparation for the extraction and dissolution of organic materials<br>–Mixing, dissolving solids |
| | WK Shaft series | **Purpose:**<br>– Rotor with knives for pre-cruting lager samples than the rotors diameter.<br>**Applications:**<br>– Outside blades pre-crush samples. Subsequently, they can be dispersed inside.<br>– Dispersing of samples with larger diameters made simple<br>– Standard dispersing, emulsifying and suspending tasks |
| | WB Shaft series | **Purpose:**<br>The rotor has a tilted internal angle design for breaking up of hard samples.<br>**Applications:**<br> – For open and dispersing of pills, capsules and hard large grains, corns breaking<br>– Hard and brittle material<br>– Standard dispersing, emulsifying and suspending tasks |
| | WV Shaft series | **Purpose:**<br>– Special design to prevent clogging of the teeth.<br><br>**Applications**<br>–Dispersing for fibrous / stringy materials, solid samples<br>– Standard dispersing, emulsifying and suspending tasks |
| | WM Shaft series | **Purpose:**<br>–High-turbulence mixing with low shear forces and energy inputs<br>–Time saving with improved results compared to stirrers and dissolvers of up to 90%.<br>**Applications**<br>–Fast dissolving and suspending of solid particles into liquid<br>–Mixing at higher viscosities<br>–Mixing of shear sensitive samples |
| | WP Shaft series | **Purpose:**<br>–Dissolver shaft<br>– High-speed dissolver<br>**Applications**<br>–Efficient mixing<br>–Fast mixing, dissolving<br>– Processing of highly viscous products |
| | WF Shaft series | **Purpose:**<br>Multiple rows of teeth for more shear.<br>**Applications**<br>– Fine emulsions and suspensions<br>– Mixes and reduces highly intensive solids into fluids<br> – Extractions<br>– Gasses solutions<br>– Separates fibre and cellular material into very small particles |

## Two types of shaft

| Picture | Shaft type | Description |
|---|---|---|
| | C Shaft | C (Easy Clean) Design<br>This is all you need for popular applications in the preparation of samples, formulation development and small scale production. |
| | G Shaft | G (GAS TIGHT ) Design<br>GAS TIGHT - Integrated mechanical seals FOR PRESSURE / VACUUM （O-3bar）. For under pressure or vacuum; Preventing air from being added to emulsions;  Corrosive acid mixtures. |

## Shaft information

**WD02FG-250WG30C2/1**

- 1: Subdivision numbers for similar shaft.
- 2: Number of teeth rows of rotor and stator
- C: Types of shaft. C (Easy Clean) Design; G (GAS TIGHT ) Design
- 30: Diameter of the stator in mm
- WG: Composite Structure of rotor and stator
- 250: Length of shaft / stator tube in mm
- FG: Adapt to disperser models
- 02: Quick-coupling shaft
- WD: WIGGENS dispersal shaft

| Order No. | Description | ø / length (mm) | Volume range (ml) | max. Tip speed m/s |
|---|---|---|---|---|
| WD02FG-250WG30C2/1 | WG Shaft | 30/250 | 100-4000 | 30 |
| WD02FG-250WG36C2/1 | WG Shaft | 36/250 | 200-4500 | 34 |
| WD02FG-250WG40C2/1 | WG Shaft | 40/250 | 200-5000 | 36 |
| WD02FG-250WG45C2/1 | WG Shaft | 45/250 | 200-8000 | 40 |
| WD02FG-250WG50C2/1 | WG Shaft | 50/250 | 300-10000 | 44 |
| WD02FG -250WG60C2/1 | WG Shaft | 60/250 | 300-30000 | 50 |
| WD02FG-250WV30C2/1 | WV Shaft | 30/250 | 100-4000 | 30 |
| WD02FG-250WV36C2/1 | WV Shaft | 36/250 | 200-4500 | 34 |
| WD02FG-250WK30C2/1 | WK shaft | 30/250 | 100-4000 | 30 |
| WD02FG-250WK36C2/1 | WK shaft | 36/250 | 200-4500 | 34 |
| WD02FG-250WK30C2/2 | WK shaft (With WV stator) | 30/250 | 100-4000 | 30 |
| WD02FG-250WK36C2/2 | WK shaft (With WV stator) | 36/250 | 200-4500 | 34 |
| WD02FG-250WB30C2/1 | WB shaft | 30/250 | 100-4000 | 30 |
| WD02FG-250WF30C4/1 | WF shaft | 30/250 | 100-4000 | 30 |
| WD02FG-250WFG36C4/1 | WF shaft | 36/250 | 200-4500 | 34 |
| WD02FG-250WM36C2/1 | WM shaft | 36/250 | 500-10000 | 34 |
| WD02FG-250WP30C2/1 | WP shaft | 30/250 | 500 – 10000 | 30 |
| Shafts with  gas tight | | | | |
| WD02FG-273WG30G2/1 | WG shaft | 30/273 | 100-4000 | 30 |
| WD02FG-273WG36G2/1 | WG shaft | 36/273 | 200-4500 | 34 |
| WD02FG-273WF30G4/1 | WF shaft | 30/273 | 100-4000 | 30 |
| WD02FG-273WK30G2/1 | WF shaft | 30/273 | 100-4000 | 30 |

# Dispersing Vessel

> Deep baffles improve aeration and mixing, which is crucial for good homogenization. The Wiggens dispersing vessels help to get better experiment result.
> The flasks or beakers in traditional homogenization or mixing experiment without baffles can easily create a vortex. Since the process will increase the surface between the liquid and air so that there is extra air introducing to the sample. The efficiency of the mixing or homogenization decreases to some extent. Prolonging dispersing time and changing dispersing shaft have to be considered to get optimal result.
> WIGGENS vessels designed with deep baffles make the mixing procedure easier. The baffles decrease the vortex when the high dispersing speed happens. At higher dispersing speeds, the baffles interrupt the flow in the radial direction and increases counteracting forces. The turbulent liquid flow will get high performance.

| Model | Dim. (mm) Ø / H | Working Vol. | Shape | Material | Features | Order No. |
|---|---|---|---|---|---|---|
| DV500 | 80 / 200 | 500 ml | Cloverleaf shaped | Borosilicate glass | Top open without cover | W3050100 |

# Stand

> Strong base for optimal weight distribution
> Base made of cast iron and shafts made of stainless steel
> Different heights available
> Designed for D-500/600 series homogenizers
> High quality clamp and fixing set included in the package of stand.

| Order No. | Description | Suitable for |
|---|---|---|
| WF11-D | Extendable flat bracket (double rod design) | D-500, D-500Pro, D-600 |
| 11045011 | Vessel holder (without boss head clamp) for WF11-D | WF11-D, WH11-D |
| 11045030 | Safety ring for stand WF | WF11-D, WH11-D |
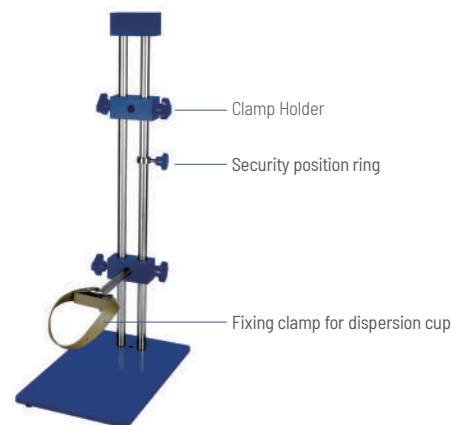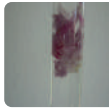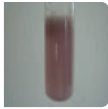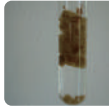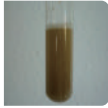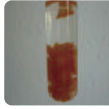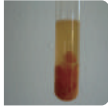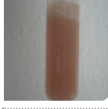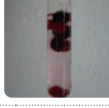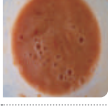
Clamp Holder

Security position ring

Fixing clamp for dispersion cup

# Dispersing tests D-130C

| No. | Material | Amount | Pregrinded | Liquid | Vessel | Speed | Duration | Result | Shaft | Test okay? Yes/no | Sample before Dispersing | Sample after Dispersing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Rose flower | 0.2g | no | 5ml water | 10ml Conical Tube | level 4 | 4 min | homogeneous suspension | DS-130/7 | yes | | |
| 2 | Rose flower | 0.2g | no | 5ml water | 10ml Conical Tube | level 6 | 3 min | homogeneous suspension | DS-130/7 | yes | | |
| 3 | Rose flower | 0.1g | no | 5ml water | 10ml Conical Tube | level 4 | 1 min | homogeneous suspension | DS-130/10 | yes | | |
| 4 | Rose flower | 0.1g | no | 5ml water | 10ml Conical Tube | level 4 | 1 min | homogeneous suspension | DS-130/10 | yes | | |
| 5 | Rose stamens | 0.05g | no | 1.5ml water | 2ml Conical Tube | level 4 | 1 min | homogeneous suspension | DS-130/5 | yes | | |
| 6 | Rose stamens | 0.1g | no | 2ml water | 10ml Conical Tube | level 4 | 2 min | homogeneous suspension | DS-130/10 | yes | | |
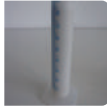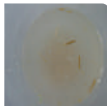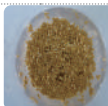
# Dispersing tests D-130C

| No. | Material | Amount | Pregrinded | Liquid | Vessel | Speed | Duration | Result | Remarks | Recommended or not | Sample before Dispersing | Sample after Dispersing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Rape oil | 20 drops | no | 10 ml water | test tube 16 mm | max. | 1 min | stable emulsion | | yes | | |
| 2 | Chicken liver | 1 g | 5 mm pieces | 10 ml water | test tube 16 mm | max. | 30 s | homogeneous suspension | sample completely homogenized | yes | | |
| 3 | Rice | 1g | no | 10 ml water | test tube 16 mm | max. | 1 min | homogeneous suspension | only very small pieces of rice left | yes | | |
| 4 | Basil leaf | 1 piece | 5 mm pieces | 10 ml water | test tube 16 mm | max. | 1 min | homogeneous suspension | only small pieces of leaves left | yes | | |
| 5 | Spelt flakes | 2 g | no | 15 ml water | test tube 16 mm | max. | 1 min | homogeneous pulp | | yes | | |
| 6 | Cooked ham | 2 g | 5 mm pieces | 50 ml water | 150 ml beaker | max. | 30 s | homogeneous suspension | only very small pieces of leaves left | yes | | |
| 7 | Confetti | about 20 pieces | no | 10 ml water | test tube 16 mm | max. | 1 min | homogeneous cellulose suspension | | yes | | |
| 8 | Wood | 1 toothpick | 5 mm pieces | 10 ml water | test tube 16 mm | max. | 1 min | The pick was not grinded | slight abrasion of the wood pieces | no | | |
| 9 | Tobacco | 0,5 cigarettes | no | 10 ml water | test tube 16 mm | max. | 30 s | homogeneous Pulp | a few fibres stick in the gaps of the stator | yes | | |
| 10 | Cloves | 5 pieces | no | 10 ml water | test tube 16 mm | max. | 1 min | no grinding effect | no cloves was grinded | no | | |
| 11 | Mustard seeds | 1 g | no | 10 ml water | test tube 16 mm | max. | 1 min | homogeneous suspension | all seeds were grinded | yes | | |
| 12 | Herbal tea | 0,5 g | no | 10 ml water | test tube 16 mm | max. | 1 min | homogeneous suspension | the herbal tea was completely Grinded | yes | | |
| 13 | Sunflower seeds | 2 g | no | 15 ml water | test tube 16 mm | max. | 1,5 min | homogeneous suspension | all seeds were grinded | yes | | |
| 14 | Dragee | 1 piece | no | 10 ml water | test tube 16 mm | max. | 1 min | homogeneous suspension | the dragee was completely grinded | yes | | |
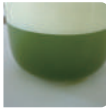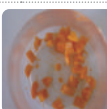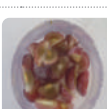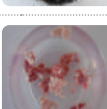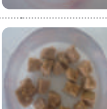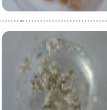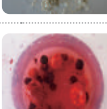
## Dispersing tests D-130C

| No. | Material | Amount | Pregrinded | Liquid | Vessel | Speed | Duration | Result | Remarks | Recommended or not | Sample before Dispersing | Sample after Dispersing |
|-----|----------|--------|-----------|--------|--------|-------|----------|--------|---------|-------------------|-------------------------|------------------------|
| 15 | Chicken meat | 2 g | 5 mm pieces | 10 ml water | test tube 16 mm | max. | 20 s | homogeneous suspension | part of tendons wrapped around the rotor | yes |  |  |
| 16 | Ivy | 2 leaves | 5 mm pieces | 10 ml water | test tube 16 mm | max. | 2 min | inhomogeneous suspension | 20 % of the leaves were not grinded | no |  |  |
| 17 | Rose blossom | 2 leaves | 5 mm pieces | 10 ml water | test tube 16 mm | max. | 1 min | homogeneous suspension | some fibres stick in the gaps of the stator | yes |  |  |
| 18 | Whole grain Bread | 2 g | 5 mm pieces | 15 ml water | test tube 16 mm | max. | 30 s | homogeneous suspension | | yes |  |  |
| 19 | Carrot | 2 g | 5 mm pieces | 10 ml water | test tube 16 mm | max. | 2 min | no grinding effect | carrots are too hard | no |  |  |
| 20 | Harzer cheese | 2 g | 5 mm pieces | 10 ml water | test tube 16 mm | max. | 10 s | homogeneous sample | | yes |  |  |
| 21 | Rapes with Kernels | 5 pieces | 5 mm pieces | 10 ml water | test tube 16 mm | max. | 1 min | homogeneous suspension | only very small pieces of rapes left | yes |  |  |
| 22 | Coffee beans | 1 piece | quartered | 10 ml water | test tube 16 mm | max. | 1 min | homogeneous suspension | only very small pieces of coffee left | yes |  |  |
| 23 | Soil sample | 1 g | no | 10 ml water | test tube 16 mm | max. | 30 s | homogeneous suspension | only very small pieces of stones left | yes |  |  |
| 24 | Pork meat (fat and sinewy) | 1 g | 5 mm pieces | 10 ml water | test tube 16 mm | max. | 1 min | homogeneous suspension | part of tendons wrapped around the rotor | yes |  |  |
| 25 | Pet food | 1 g | 5 mm pieces | 10 ml water | test tube 16 mm | max. | 30 s | homogeneous suspension | part of tendons wrapped around the rotor | yes |  |  |
| 26 | Styrofoam | 0,5 cm³ | 5 mm pieces | 10 ml water | test tube 16 mm | max. | 1 min | no grinding effect | | no |  |  |
| 27 | Berries mix | 2 g | no | 10 ml water | test tube 16 mm | max. | 30 s | homogeneous suspension | all berries are grinded | yes |  |  |
| 28 | Tomatoes | 15 g | 10 mm pieces | without | 50 ml beaker | max. | 2 min | homogeneous tomato pulp | parts of the bowl are not grinded | yes |  |  |

## Dispersing tests D-500 / D-500Pro / D-600

| No. | Material | Amount | Pregrinded | Liquid | Vessel | Speed | Duration | Result | Remarks | Recommended or not | Sample before Dispersing | Sample after Dispersing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Rape oil | 5 ml | no | 80 ml water | 100ml measuring cylinder | max. | 1 min | stable emulsion | | yes | | |
| 2 | Liver | 20 g | 10 mm pieces | 200 ml water | 500 ml beaker | max. | 30 s | homogeneous suspension | sample completely homogenized | yes | | |
| 3 | Rice | 20 g | no | 80 ml water | 100ml measuring cylinder | max. | 1 min | homogeneous suspension | only small pieces of rice left | yes | | |
| 4 | Basil leaf | 10 pieces | 10 mm pieces | 200 ml water | 500 ml beaker | max. | 1 min | homogeneous suspension | only small pieces of leaves left | yes | | |
| 5 | Spelt flakes | 25 g | no | 80 ml water | 100ml measuring cylinder | max. | 1 min | homogeneous Pulp | | yes | | |
| 6 | Cooked ham | 20 g | 1 cm pieces | 200 ml water | 500 ml beaker | max. | 30 s | homogeneous suspension | only very small pieces of fibres left | yes | | |
| 7 | Confetti | about 200 pieces | no | 70 ml water | 100ml measuring cylinder | max. | 1 min | homogeneous cellulose suspension | a very small part stick between the rotor and the stator | yes | | |
| 8 | Wood | 5 toothpicks | 1 cm pieces | 200 ml water | 500 ml beaker | max. | 1 min | about 60 % of the picks were grinded | some psrts of the Picks are not grinded and stick | yes | | |
| 9 | Tobacco | 1 cigarette | no | 150 ml water | 250 ml beaker | max. | 1 min | bad homogenizing Most of the tobacco floats ungrinded on the surface | a few fibres stick in the gaps between the rotor and the stator | no | | |
| 10 | Cloves | 30 pieces | no | 200 ml water | 500 ml beaker | max. | 1 min | homogeneous suspension | all cloves were grinded | yes | | |
| 11 | Mustard seeds | 10 g | no | 150 ml water | 500 ml beaker | max. | 1 min | homogeneous suspension | all seeds were grinded | yes | | |
| 12 | Herbal tea | 2 g | no | 500 ml water | 2 l beaker | max. | 1 min | homogeneous suspension | the herbal tea was completely Grinded | yes | | |
| 13 | Sunflower seeds | 20 g | no | 150 ml water | 500 ml beaker | max. | 1 min | homogeneous suspension | all seeds were grinded | yes | | |
| 14 | Dragees | 5 pieces | no | 60 ml water | 100ml measuring cylinder | max. | 1 min | homogeneous suspension | the dragee was completely grinded | yes | | |

# Dispersing tests D-500 / D-500Pro / D-600

| No. | Material | Amount | Pregrinded | Liquid | Vessel | Speed | Duration | Result | Remarks | Recommended or not | Sample before Dispersing | Sample after Dispersing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | Chicken meat | 10 g | 10 mm pieces | 200 ml water | 500 ml beaker | max. | 20 s | homogeneous suspension | part of tendons wrapped around the rotor | yes | | |
| 16 | Ivy | 10 leaves | 10 mm pieces | 200 ml water | 500 ml beaker | max. | 2 min | homogeneous suspension | only very small pieces of leaves left | yes | | |
| 17 | Rose blossom | 10 leaves | 10 mm pieces | 200 ml water | 500 ml beaker | max. | 2 min | homogeneous suspension | only very small pieces of leaves left | yes | | |
| 18 | Whole grain Bread | 20 g | 10 mm pieces | 200 ml water | 500 ml beaker | max. | 2 min | homogeneous suspension | the vessel must be moved | yes | | |
| 19 | Carrot | 10 g | 10 mm pieces | 200 ml water | 500 ml beaker | max. | 2 min | homogeneous suspension | the vessel must be moved | yes | | |
| 20 | Harzer cheese | 20 g | 10 mm pieces | 200 ml water | 500 ml beaker | max. | 20 s | homogeneous suspension | the vessel must be moved | yes | | |
| 21 | Rapes with Kernels | 5 pieces | 10 mm pieces | 200 ml water | 500 ml beaker | max. | 1 min | homogeneous suspension | only very small pieces of rapes left | yes | | |
| 22 | Coffee beans | 10 pieces | no | 60 ml water | 100ml measuring cylinder | max. | 1 min | homogeneous suspension | only very small pieces of coffee left | yes | | |
| 23 | Soil sample | 20 g | no | 200 ml water | 500 ml beaker | max. | 1 min | homogeneous suspension | only very small pieces of stones left | yes | | |
| 24 | Pork meat (fat and sinewy) | 10 g | 10 mm pieces | 200 ml water | 500 ml beaker | max. | 1 min | homogeneous suspension | part of tendons wrapped around the rotor | yes | | |
| 25 | Pet food | 20 g | 10 mm pieces | 200 ml water | 500 ml beaker | max. | 30 s | homogeneous suspension | part of tendons wrapped around the rotor | yes | | |
| 26 | Styrofoam | 2 cm$^3$ | 10 mm pieces | 200 ml water | 500 ml beaker | max. | 1 min | no grinding effect | | no | | |
| 27 | Berries mix | 20 g | no | 200 ml water | 500 ml beaker | max. | 30 s | homogeneous suspension | all berries were grinded | yes | | |
| 28 | Tomatoes | 50 g | 10 mm pieces | without | 250 ml beaker | max. | 2 min | homogeneous tomato pulp | the vessel must be moved | yes | | |

Flapping Homogenizer

# From sample preparation......to microbiological analysis

WIGGENS provides a complete solution

**Homogenizing the sample**

3 The sample is homogenized with the Flapping Homogenizer. There is no contact between the sample and the machine to avoid cross-contamination.

**Diluting the sample**

2 Add the right amount of diluent into the sterile bag

**Collecting the sample**

1 Place the sample in sterile filter bag. The bag stands upright.

**Pipetting the filtered sample**

5 Preparation of diluted inoculation fluid (gradient) with precision pipetting device from Socorex.

**Organizing the samples**

4 It is easy to absorb and transfer because the filter bag integrates the filtering effect

**Flat plate crossed inoculation**

Please choose automatic sterilization device from WIGGENS for automatic sterilization of inoculation rings

**Plating**

7 Diluting coating method
Please choose Petri dish automatic turntable from WIGGENS

**Preparing your media**

6 Preparation and subpackage of medium with peristaltic pump from WIGGENS

**Counting the colonies**

8 It is very fast for counting when using the colony counter from WIGGENS

# Flapping Homogenizer (Stomacher)

> Flapping Homogenizer is also called Sterile Homogenizer, and can be used to abstract bacteria from solid samples. Put the original samples and the diluents into the sterile bag, then put the bag into the homogenizer. Through the flapping of the paddles, the material in the bag can rapidly reach a homogenized state by the pressure, shaking and vibration.

> To guarantee the uniformity of the effective extraction of the microorganism inside and on the surface of the solid sample, make sure to include all the material in the sterile bag. The homogenized sample then can be used for the following analysis, and the sterile bag avoids the cross contamination.

> Using disposable sterile homogeneous bags to guarantee the sample safety and non-contamination, leakless process omits cleaning of the instrument. The advantage of the flapping homogenization is convenient, quick, mild, accurate and good repeatability. Samples will not be contaminated, damaged, heated, and no sterilization as well as no container is needed, thus no container cleaning process either.

## Application:

> Food microbiological analysis

> Homogenization of animal tissues, biological samples, and cosmetics

> Homogenization of meats, fish, vegetables, and fruits

> Medicines, clinics, molecules, detection of toxins and bacteria

Tight closure

Visible window door for observation of the process

Low noise blending

Robust and compact stainless steel

Adjustable blending power

Both paddles always stop at the same parallel position HG400 Pro

## Features

> Samples in sterilize bag are homogenized by paddles without the risk of cross-contamination.

> Optimal bacterial extraction without destruction.

> Leading microprocessor technology for flap control

> Adjustable flapping speed

> Working time can be set on continuous or pre-set time

> Maintenance-free brushless DC motor

> Stainless steel housing with plastic coating for HG40VW or full stainless for HG400Pro

> Employ digital setting and display of the working time

> Digital and analog interface for remote control

## HG400 Pro

> Paralleled paddles stop ease the procession.

> Tight closure secure bag seal.

> Quick paddles remove and installation allow you to clean the chamber

> Illumination unit observation of observing the whole process clearly.

### HG400 Pro

> Useful volume :50-400ml

> Variable speed :1-10strokes/s

> Variable blending time : 1s - 59min 59S

> Paralleled paddles stop

> Safety drip tray

> Adjustable blending power

Sterile bag for sampling and samples homogenization.

Easy transportation of the sample

## Specifications

| Mode | HG400VW | HG400 Pro |
|------|---------|-----------|
| Door | SS-Door with Observation Window | SS-Door with Observation Window |
| Blending volume (ml ) | 50-400 | 50-400 |
| Speed (rpm ) | 10~300 | 60~360 |
| Variable blending time | 1 min to 24h | 1 second to 59min 59 s |
| IP code | IP30 | IP30 |
| Exterior dimension (W x D x H, mm ) | 250 x 460 x 260 | 300 x 420 x 310 |
| Interior dimension (W x D x H, mm ) | 190 x 100 x 220 | 190 x 100 x 220 |
| Sound pressure level [dB] | ≤ 50 | ≤ 50 |
| Weight [kg] | 16 | 16 |
| Power | 100-240V /50-60Hz | 100-240V /50-60Hz |

# Accessories for flapping homogenizer

## Dilution pipette Acura® manual 810

Air displacement pipette with two pre-calibrated steps allows subsequent pipetting of 1 and 0.1 ml of the same liquid. Metal nozzle fits long straw tips to aspirate from narrow or deep reservoirs (i.e. Stomacher®bags). Ideal alternative to the graduated glass pipettes when performing serial 1:10 dilutions in bacteriology.

### Features

> Two pre-calibrated fixed volumes – no setting required
> Smooth activation, excellent ergonomics
> Interchangeable PE nozzle protection filter
> JustipTM system for height adjustment of the tip ejector
> Independent calibration for each volume
> Easy maintenance, cleaning and disinfection
> Fully autoclavable 121°C / 250 $^0$F



**Simple operation**

1. Depress plunger button in full, then release slowly to aspirate 1.1 ml
2. Depress plunger button to first stop, thus dispensing 1 ml in Petri dish
3. Depress plunger button to second stop, thus dispensing residual 0.1 ml in next Petri dish

### Ordering information

| Order No. | Packaging | Description |
|-----------|-----------|-------------|
| 810.1100 | 1 / pk | 1 ml / 0.1 ml ① |
| 313.1119.40 | 40 x 25 / pk | Straw tips, polypropylene, sterilized (L: 190 mm, Ø:4 mm) ② |
| 322.810 | 100 / pk | Nozzle protection filter, PE material ③ |

### Order information

| Order No. | Name | Capacity | Content |
|-----------|------|----------|---------|
| 2125C25 | Standard bag | 400 ml | 25 per bag ① |
| 2150C25 | Standard bag | 400 ml | 50 per bag ① |
| 4125C15 | Full-page filter bag | 400 ml | 25 per bag ② |
| 6125C15 | Lateral filter bag | 400 ml | 25 per bag ③ |
| SMCLIP | Clip for sterilization bags | | ④ |
| 9125R15 | Rack for  sterilization bags | | Position: 10 ⑤ |

# Laboratory mixer

## WMA550 / WMA800

WMB series are ideal for intense mixing, grinding, dispersing, homogenizing, emulsifying, mincing operations, for routine analyses and easy to work with. Grinding results are achieved up to 1 μm particle size or 0.25 mm defined ultimate fineness. Simple handling, high user safety and efficiency are just the advantages offered by these mixers.

### Working Volumes

There are four different attachments for the WMA550 with the volumes 125 ml, 250 ml, 500 ml and 1000 ml. Larger volumes up to 2 liters can be processed using the WMA800 with the associated stainless steel mixing cups. The robust design allows for high stability and a long service life.

### Features

> Smooth rotational speed adjustment with integrated on- and off switch, speed ranging up to 17 000 rpm and a 800 W max output.
> operating mixing attachment and protection cover without tools
> various sample volumes with different mixing attachments
> Operation only possible when security cover and lid in place
> Variety of sample container designs for different sample volumes.
> Dampening quick coupling for reduce work vibration
> Very quiet motor with integrated load, heat and blockage protection
> Results are crucia, production of very fine particle sizes in both liquid and dry mediums: precise analyses require homogeneous samples

![WIGGENS - The Magic Motion]

## Specification

| Model | WMA550 | WMA800 |
|---|---|---|
| Display | Graduation | Graduation |
| Speed range | 1000-15000rpm | 1000 ~17'000 rpm |
| Useable volume max. | 1000ml | 4000ml |
| Sound level | ca. 72 dB(A) at 17,000 rpm | ca. 72 dB(A) at 17,000 rpm |
| Protection Class according to DIN | IP 20 | IP 20 |
| Supply voltage | 230V / 50Hz or 100-120V / 60 Hz | |
| Drive power | 550W | 800W |
| Drive dimensions (H/Ø) | 245 mm / Ø 190 mm | 245 mm / Ø 190 mm |
| Operating temperature | 0 – 40℃ | |
| Maximum relative humidity | Maximum relative humidity 80 % | |
| Order no. （Without mixing attachments） | W3053110 | W3053111 |

### Borosilicate glass mixing attachments and protection covers (for WMA550)

#### Mixing attachments

After sample preparation the mixing attachments from heat resistant borosilicate glass MBA 125 to MBA 1000 can be used for further laboratory tasks without the need to transfer contents. The vessels are simply screwed to the blade head with a glass thread and spacer ring.

#### Protection cover

The protection covers are for the various MBA mixing attachments. For safety reasons, it is not possible to start the WMA550 mixer without a protection cover. The 5 mm thick Plexiglas cover also protects the operator in case of glass breakage when stones or similar solid materials are accidentally mixed.

### Mixing attachments of stainless steel (for WMA800)

#### Mixing attachments

MBA 2000 (For WMA800), made of stainless steel, allow processing of larger amounts. Due to safety reasons, it is not possible to start the machine when the lid is open or open the machine when it is running. Additional sample material can be added during operation only via the integrated opening in the lid.

The blade head can be easily unscrewed for cleaning purposes.

### High-performance stainless steel cutting blade assembly

#### The cutting blade assembly

The six polished premium steel rotor blades have been optimized for intense and quick processing for all types of samples. All parts that touch the product are made from stainless steel and can be easily detached and cleaned. Integrated stainless steel ball bearings ensure ease of movement and a perfectly true run. Power transmission occurs via a rubber cushioned plug coupling.

#### Gaskets

The standard gaskets are made from NBR material. Upon request, gaskets from EPDM, or viton are also available.

## Order information and accessories

### Laboratory mixer

| Order no. | Product | Description |
| --- | --- | --- |
| W3053110 | WMA550 | Without mixing attachments |
| W3053111 | WMA800 | Without mixing attachments |



### Mixing attachments  (for WMA550)

Mixing attachments MTG125 to MTG1000 consist of Stainless steel / borosilicate glass container, gasket and blade head.

| Order no. | Product | Description |
| --- | --- | --- |
| W3053601SS | MTS125 | Working volumes: 125 ml, Stainless steel container body |
| W3053602SS | MTS250 | Working volumes: 250 ml, Stainless steel container body |
| W3053603SS | MTS500 | Working volumes: 500 ml, Stainless steel container body |
| W3053601 | MTG125 | Working volumes: 125 ml, borosilicate glass container body |
| W3053602 | MTG250 | Working volumes: 250 ml, borosilicate glass container body |
| W3053603 | MTG500 | Working volumes: 500 ml, borosilicate glass container body |
| W3053604 | MTG1000 | Working volumes: 1000 ml, borosilicate glass container body |



MTS125  MTS250  MTS500

MTG125  MTG250  MTG500  MTG1000

### Protective covers (for WMA550)

Plexiglass protection glass is absolutely required when using MTG mixing attachment.

| Order no. | Product | Description |
| --- | --- | --- |
| W3053606 | MTH125 | Height: 86 mm |
| W3053607 | MTH250 | Height: 128 mm |
| W3053608 | MTH500 | Height:149mm |
| W3053609 | MTH1000 | Height:228mm |



MTH125  MTH250  MTH500  MTH1000

### Mixing attachments  (for WMA800)

Mixing attachments MTS2000 to MTS4000 consist of Stainless steel container, gasket, blade head. as well as lid with opening for material addition.

| Order no. | Product | Description |
| --- | --- | --- |
| W3053605 | MTS2000 | Working volumes: 2000 ml, Stainless steel container body |
| W3053606 | MTS4000 | Working volumes: 4000 ml, Stainless steel container body |



MTS2000  MTS4000

# Laboratory Mill

Laboratory mill WMF10 for crushing dry sample preparation.

In some analysis or quality control experiments require finely ground samples. WIGGENS Laboratory mill is easy to change grinding attachments and sieves extend the range of any samples that can be processed. Excellent crushing performance is guaranteed by a combination of variable rotational speeds ranging from 50 rpm to 6 000 rpm.

## Laboratory crushing Expert

This laboratory mill is characterized by a very robust design using solid milled parts and hardened components. The mill can perform a wide range of crushing tasks involving coarse and fine crushing. The mill has been designed for high wear and tear found with such processes as grinding of stones which can have a hardness of up to 6 on the Mohs scale.

## Features

> Dust protected main safety switch

> Funnel with hinged lid prevent dust splashing

> If necessary, samples can be refilling during operation

> The sample chamber is equipped with a safety lock, and the mill can only be started by
   closing the door of the grind chamber

> Grinding attachment variants can be easily changed.

> Motor stop when opening grind chamber

> Simple cleaning process

## APPLICATION RANGES

– Grinding of solids for general sample preparation

– Grinding samples for dry analysis or analysis in liquids

– Sample preparation in content analysis and preparation for QC

## Technical information

| Model | WMF10 |
| --- | --- |
| Operating principle | Cutting / Impact |
| Speed range | 50 to 6000 rpm |
| Feed hardness | 6 Mohs (MF 10.2) |
| Funnel volume | 300 ml |
| Product discharge | For collection tubes with norm grinding NS29 |
| Sieves mesh size (mm) | 0.2 to 6 mm |
| Grinding attachments (convertible) | Hammer grinding attachment<br>Blade grinding attachment |
| Motor | Wear-free three-phase motor; Gearless direct drive; Security system auto-off |
| Drive power | 1000W |
| Results are crucial | Attainable particle sizes: < 40μm (depending on product) |
| Sound level (without load) | 70 dB(A) for 6000 rpm |
| Supply voltage | 100 – 230 V ± 10 %, 50Hz / 60Hz |
| Maximum relative humidity | 80 % in storage; 80 % during operation |
| Operating temperature | 0 – 40 ℃ |
| Protection class according to DIN | IP 20 |
| Measurements (L x W x H) | 325 x 251 x 480 mm |
| Weight | 12 kg |

Standard package includes: mill, Intercepting tubes (3508004), Rack for tubes (3508003), disassemble tools, brush. Grinding and sieve attachments need to be need to be ordered separately.

## Grinding attachments.

Blade grinding or hammer grinding? You have the choice.

If there are questions regarding the use of our mill for your application after speaking with a specialist, our application lab will be happy to run your sample and send the results for your inspection.



## NOTE ABOUT GRINDING ATTACHMENTS

Wet samples or samples with high fat content gum up the sieve and chamber, producing a useless grinding result. For these types of samples Wiggens provides the WHF40 homogenizers. They cover a broad range of samples.

## BLADE GRINDING ATTACHMENT

Technology Consists of a rotor with three hardened cutting knives and stator with 3 cutting bars. During the cutting process, the sample is spun around the grinding chamber and cut until the desired particle size has been achieved. The ground sample passe s through the sieve into the collection container. Particles that are larger than the sieves diameter remain in the mill and can be removed by opening the grinding chamber.

Ideal for processing of dry, stringy, fibrous and fat-free materials such as:
Wood, bark, roots, leaves, straw, corks, dried fruit, dried fat- free meat, fish fins, fish bones, feathers, leather, leather skin, wool, cotton, linen, paper, coals, turf, grass, dried resins, synthetic materials, fiber glass, plastic pellets, various textiles, felt, etc.



| Before | After | Before | After |

## HAMMER GRINDING ATTACHMENT Technology

Consists of a rotor with three hardened strike hammers and a grooved stator. During the grinding process, the sample is spun around the grinding chamber and struck until the desired particle size has been achieved. The ground sample passes through the sieve into the collection container. Particles that are larger than the sieve diameter remain in the mill and can be easily removed by opening the grinding chamber.

Ideal for processing of dried, brittle and fat-free materials such as:
Dried grains, oats, malt, pectin, raw and roasted coffee beans, dry beans, fish skeletons, nut shells, bones, pebbles, rock, amber, ceramics, etc.



| Before | After | Before | After |

## Accessories

### Grinding attachments

| Order No. | Product | Description |
|---|---|---|
| W3050411 | Hammer grinding attachment | Ideal for processing of dried, brittle and fat-free materials, such as: Dried grains, oats, malt, pectin, raw and roasted coffee beans, dry beans, fish skeletons, nut shells, bones, pebbles, rock, amber, ceramics, etc. Consists of 3-armed rotor and grooved stator / tool included. |
| W3050421 | Blade grinding attachment | Ideal for processing of dry, stringy, fibrous and fat-free materials such as: Wood, bark, roots, leaves, straw, corks, dried fruit, dried fat- free meat, fish fins, fish bones, feathers, leather, leather skin, wool, cotton, linen, paper, coals, turf, grass, dried resins, synthetic materials, fiber glass, plastic pellets, various textiles, felt, etc. Consists of 3-armed rotor with cutting knives and stator with 3 cutting bars / tool included. |

W3050411

W3050421

### Grinding attachments

| Order No. | Product | Description |
|---|---|---|
| W3050402 | Sieve 0.2 | Hole diameter 0.2 mm |
| W3050405 | Sieve 0.5 | Hole diameter 0.5 mm |
| W3050408 | Sieve 0.8 | Hole diameter 0.8 mm |
| W3050409 | Sieve 1.0 | Hole diameter 1.0 mm |
| W3050415 | Sieve 1.5 | Hole diameter 1.5 mm |
| W3050419 | Sieve 2.0 | Hole diameter 2.0 mm |
| W3050430 | Sieve 3.0 | Hole diameter 3.0 mm |
| W3050440 | Sieve 4.0 | Hole diameter 4.0 mm |
| W3050450 | Sieve 5.0 | Hole diameter 5.0 mm |
| W3050460 | Sieve 6.0 | Hole diameter 6.0 mm |

Depending on the sample, even finer results can be achieved by grinding with two or more sieves with progressively smaller
hole sizes. Each mill includes a 2.0 mm sieve attachment.
Hole diameter: Depending on the product, 1 / 5 of sieve diameter is the approximately attainable particle size.
Example: Sieve 0.2 mm / 5 = 0.04 mm (40μm)

### Stodger

| Order No. | Product | Description |
|---|---|---|
| W3050401 | Stodger | For active insertion of fibrous materials, which do not reach the grinding chamber due to their weight. |

### Other accessories

| Order No. | Product | Description |
|---|---|---|
| W3050404 | Intercepting tubes | 12 intercepting tubes for WHF40 |
| W3050406 | Rack for tubes | Rack with a drawer for 12 intercepting tubes |

# Shaker

# Orbital Shaker

> Two different shaking functions: reciprocal and orbital
> Adjustable shaking speed and range
> Timer function for maximum flexibility
> Corrosion-resistant power-coated stainless steel housing
> Easy to clean and maintain
> Large mounting surface and big load capacity of up to 12 kg
> Suitable for various vessels, like round flasks, Erlenmeyer flasks, culture flasks, or culture bottles
> Widely used for bacterial cultures, fermentation, hybridization, biochemical reactions, enzyme or tissue research
> Shaking motion can be set in up to 6 different ways
> Wide range of accessories are available.

The distinctive and economical models offer the most felicitous shaking motion
Two types of shaking motions (orbital or reciprocal). Three varieties of orbital or reciprocal shaking throw available. The compact and interchangeable platform design accommodates various types and sizes of vessels and suitable for use in chambers.

| Model | WS-50D | WS-50DR |
|---|---|---|
| Motion Type | Orbital | Reciprocal |
| Speed Range (rpm) | 10 to 300 | 10 to 250 |
| Accuracy (rpm) | ±2 (100 rpm) | ±2 (100 rpm) |
| Timer | 1min to 99 hrs 59 min | 1min to 99 hrs 59 min |
| Shaking Throw | 8 / 14 / 20 Available - Standard 20 | 8 / 14 / 20 Available - Standard 20 |
| Maximum Load (kg) | 7 | 7 |
| IP code | IP21 | IP21 |
| Power (W) | 80 | 80 |
| Platform (W×D) (mm) | 320x260 | 320x260 |
| Overall (WxDxH) (mm) | 355x375x140 | 355x375x140 |
| Weight(kg) | 20 | 20 |
| Order No. | 3A126C | 3A226C |

Standard package includes only shaker, tray need to be ordered separately.

## Multi-function Shaking System

Intensive multi-function shaking system surpasses all the previous levels of shaker units. Mix and match clockwise, counterclockwise, start, and stop motions.
(Making 6 possible combinations - refer to each model spec.)

# Dual-Action Shakers

Benchtop platform shakers with advanced dual-shaking features, for flasks up to maximum 6L.
Performances: Orbital or reciprocal action and variable-speed control provide gentle to vigorous agitation. It offers user-friendly operating and safety features for reliable shaking of lab glassware.

Multi-function Shaking System

## Specifications

| Model | WS-100D | WS-150D | WS-200D |
|---|---|---|---|
| Display and Control | TFT Digital Display / On-Touch Control | TFT Digital Display / On-Touch Control | TFT Digital Display / On-Touch Control |
| Motion Type | Orbital or reciprocal motion selectable | Orbital or reciprocal motion selectable | Orbital or reciprocal motion selectable |
| Accuracy(rpm) | ±1 (100rpm) | ±1 (100rpm) | ±1 (100rpm) |
| Speed Range (rpm) | 10~300 | 10~300 | 10~300 |
| Shaking Throw (mm) | 20, 30, 40  Available - Standard 30 | 20, 30, 40  Available - Standard 30 | 30, 40, 50, 60, 70  Available - Standard 30 |
| Timer | 1min to 99 hrs 59 min | | |
| Maximum Load (kg) | 7 | 15 | 30 |
| IP code | IP21 | IP21 | IP21 |
| Power (W) | 100 | 110 | 130 |
| Platform (W×D) (mm) | 350×350 | 450×450 | 755×481 |
| Overall (W×D×H) (mm) | 410×490×150 | 510×595×150 | 820×610×166 |
| Weight (Kg) | 24 | 29 | 50 |
| Order No. | 200200C | 200300C | 200400C |

Standard package includes only shaker, tray need to be ordered separately.

# Accessories for Shaker
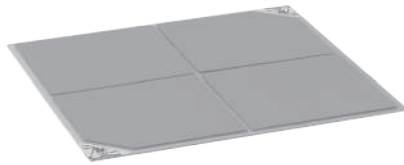
### Sticky Tray
The Wiggens Sticky Plate can be loaded with any kind of vessels with a smooth base. Even at a speed of up to 220 rpm the vessel sticks to the plate. Other vessels, like microtitre plates can be shaken on the Wiggens Sticky Plate as well.

| Suitable for | WS-50D/50DR | WS-100D | WS-150D | WS-200D |
|---|---|---|---|---|
| Order No. | 3A901 | 31901 | 31902 | 31903 |
| Dimensions(W x D in mm) | 320x260 | 350x350 | 450x450 | 755x481 |
| Sticky (singal piece) (need 4 pieces for replacement on the tray) | 3A901 -1 | 31901 -1 | 31902 -1 | 31903-1 |
| Tray (Without sticky pieces) | 3A901 -2 | 31901 -2 | 31902 -2 | 31903-2 |

### Multi-Purpose Spring Tray
The multi-purpose tray is made of stainless steel and can be used for a diverse range of unusual specifications.

| Suitable for | WS-50D/50DR | WS-100D | WS-150D | WS-200D |
|---|---|---|---|---|
| Order No. | 3A521 | 31521 | 31522 | 31523-W |
| Dimensions(W x D x H mm) | 320*260*120 | 350*350*120 | 450*450*120 | 754*478*97 |
| Max. Load of Flasks | | | | |
| 50ml | 12 | 16 | 25 | 40 |
| 100ml | 6 | 9 | 16 | 28 |
| 250ml | 3 | 4 | 9 | 15 |
| 300ml | 3 | 4 | 9 | 15 |
| 500ml | 3 | 4 | 5 | 10 |
| 1L | 2 | 2 | 4 | 8 |
| 2L | - | 1 | 2 | 4 |
| 2.8L | - | 1 | 2 | 4 |

### Adjustable Bar Tray

Bar OD 23mm

| Suitable for | WS-50D/50DR | WS-100D | WS-150D | WS-200D |
|---|---|---|---|---|
| Order No. | 3A511 | 31511 | 31512 | 31513 |
| Dimensions(W x D x H mm) | 320x260x97 | 350x350x97 | 450x450x97 | 754x478x97 |
| Number of bar | 3 | 3 | 3 | 6 |
| Order No. of bar | 3A511-05 | 31511-05 | 31512-05 | 31513-05 |
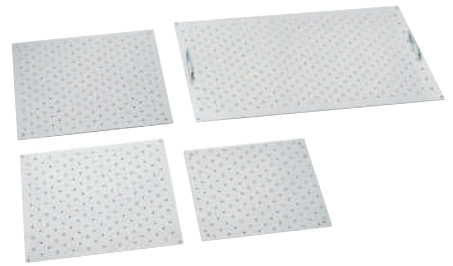
### Universal Tray
The Universal Trays have a drilled grid for individual loadings of text tube holders with clamps, molds for microtitre plates, and deep-well plates.

| Suitable for | WS-50D/50DR | WS-100D | WS-150D | WS-200D |
|---|---|---|---|---|
| Order No. | 3A501 | 31501 | 31502 | 31503 |
| Dimensions(W x D in mm) | 320x260 | 350x350 | 450x450 | 755x481 |
| Max. Load of Flask Clamps | | | | |
| 50ml | 20 | 32 | 49 | 96 |
| 100ml | 9 | 25 | 36 | 65 |
| 250ml | 9 | 13 | 25 | 40 |
| 300ml | 6 | 13 | 25 | 40 |
| 500ml | 4 | 9 | 13 | 24 |
| 1L | 2 | 4 | 8 | 12 |
| 2L | 1 | 2 | 5 | 11 |
| 4L | - | 2 | 2 | 4 |
| Max. Load of Separatory Funnel Clamps | | | | |
| 250ml | 4 | 4 | 6 | 11 |
| 500ml | 3 | 3 | 4 | 9 |
| 1L | 2 | 2 | 3 | 5 |
| 2L | - | 1 | 2 | 4 |

### Erlenmeyer flask clamp

| Size of flask | Order No. |
|---|---|
| 25ml | 23549 |
| 50ml | 23550 |
| 100ml | 23551 |
| 250ml | 23552 |
| 300ml | 23556 |
| 500ml | 23553 |
| 1000ml | 23554 |
| 2000ml | 23555 |
| 3000ml | 23560 |
| 4000ml | 23558 |
| 5000ml | 23561 |
| 6000ml | 23559 |

## Separatory Funnel Clamp

| Funnel Volumes | 250ml | 500ml | 1L | 2L |
|---|---|---|---|---|
| Order No. | 23562 | 23563 | 23564 | 23565 |
| Dimensions(W x D in mm) | 152x60 | 165x70 | 230x80 | 255x90 |

## Multi-Pore Holder

The Wiggens multi-pore holders can be installed on the Wiggens sticky plates or the Wiggens universal trays. All holders can be installed on small pores and deeper holes In total, four different multi-pore holders are available:
1. Multi-Layer Holder
2. Single-Layer Single-Position Holder
3. Single-Layer Three-Position Holder
4. Single-Layer Four-Position Holder

23651      23652 / 23653      23654
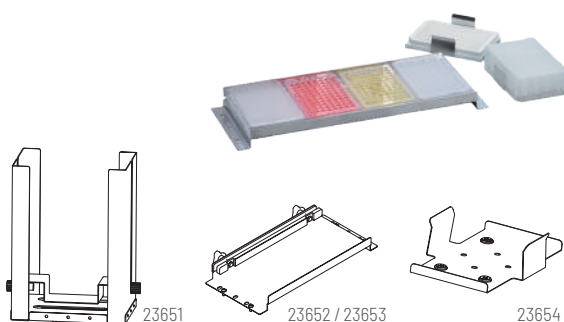
| Max. No. of Mountable Holders | Multi-Layer | Four-Position | Three-Position | Single-Position |
|---|---|---|---|---|
| Order No. | 23651 | 23652 | 23653 | 23654 |
| Dimensions(W x D x H mm) | 131x91x181 | 380x161x48 | 300x161x48 | 129x89x31 |
| Max. mountable holders | | | | |
| WS-50D/50DR | 4 | - | 1 | 6 |
| WS-100D | 6 | - | 2 | 8 |
| WS-150D | 10 | 2 | 3 | 15 |
| WS-200D | 16 | 3 | 5 | 25 |

## Rubber Mat

Designed for low-speed applications, non-skid rubber mats allow quick addition or removal of flasks, plates or tubes.

| Suitable for | WS-50D/50DR | WS-100D | WS-150D | WS-200D |
|---|---|---|---|---|
| Order No. | 3A531 | 31531 | 31532 | 31533 |
| Dimensions(W x D x H mm) | 350x290x23 | 352x352x23 | 450x450x23 | 775x478x90 |

## Plastic clamps for Erlenmeyer flask

| Order No. | Description | Order No. | Description |
|---|---|---|---|
| 31285 | 100ml | 31287 | 500ml |
| 31286 | 250ml | | |

## Stainless steel clamps for Fernbach flask

| Order No. | Description | Order No. | Description |
|---|---|---|---|
| 31283 | 1.8L | 31284 | 2.8L |

## Test tube rack for long type

| Order No. | Description | Order No. | Description |
|---|---|---|---|
| 31342 | 144 x Ø8mm | 31356 | 39 x Ø18mm |
| 31343 | 100 x Ø10mm | 31358 | 36 x Ø20mm |
| 31347 | 72 x Ø12mm | 31359 | 33 x Ø22mm |
| 31352 | 64 x Ø14mm | 31360 | 20 x Ø25mm |
| 31354 | 36 x Ø16mm | 31361 | 16 x Ø30mm |

## Test tube rack for short type

| Order No. | Description |
|---|---|
| 31348 | 72 x Ø12mm |
| 31353 | 64 x Ø14mm |
| 31357 | 39 x Ø18mm（Suitable for Greiner Bio-one tube） |

## Rack for plastic test tube

| Order No. | Description |
|---|---|
| 31355 | 36x Ø16mm（15ml） |
| 31362 | 16x Ø30mm（50ml） |

## 187mm test tube rack for short type

| Order No. | Description | Order No. | Description |
|---|---|---|---|
| 31344 | 44 x Ø12mm | 31349 | 21 x Ø20mm |
| 31346 | 24 x Ø18mm | | |

# Shaker for $CO_2$ Incubator

This is Compact Shaker with benefits such as small foot print and easy to move. The non-belt magnetic drive provides low noise, low vibration. Despite compact size, shaking is powerful and the workplace is large to load various vessels.



Celshak®

## Features

### Gentle magnetic drive
The non-belt magnetic drive design affows for high performance of water resistance. This most gentle drive unit has exceptionally smooth start-up and braking behavior, and is specifically good for cell cultures.

### Made of stainless steel
The entire housing of shaker is made of stainless steel (SUS304), meeting the demand of GMP's cleaning requirements. It is easy for the removal of any unwanted liquids and can be cleaned with chemicals.

### No gas leaks
The thin Wire Cable connection between the shaker and the control box can pass through the sealing part of the inner glass door although no access port is in your incubator.

### Placing remote controller with Magnet
Depending on the material type of the incubator or the situation of the lab, placing remote controller is available with integrated magnets.

## Specification

| Model | SRC | CRC | MRC |
|---|---|---|---|
| Motion | Orbital | | |
| Control | Microprocessor Digital | | |
| Motor | Plate BLDC motor | | |
| Drive System | Direct Magnetic Drive | | |
| Display | LED display | | |
| Speed Range (rpm) | 30 ~ 300 | 30 ~ 300 | 30 ~ 300 |
| Accuracy (rpm) | ±1 | ±1 | ±1 |
| Shaking Throw (mm) | 25 / 50 | 25 / 50 | 25 / 50 |
| Time Range | Continuous or up to 99 hours 59min | | |
| Time Increment | 1min | | |
| Shaker size(W x L x H mm) | 344 x 324 x 90 | 496 x 415 x 120 | 487 x 519 x 132 |
| Weight (25/50mm) Kg | 7.5 / 11.5 | 20 / 20 | 25 / 25 |
| Platform Size(W x L mm) | 300 x 330 | 440x370 | 455 x 455 |
| IP code | IP21 | IP21 | IP21 |
| Control box Size(W x L x H mm) | 155 x 95 x 25 / 0.5 | | |
| Power | 100-240V 50/60HZ | | |
| Load Capacity | 100ml x 16<br>250ml x 9<br>500ml x 5<br>1000ml x 4<br>2000ml x 1 | 100ml x 23<br>250ml x 10<br>500ml x 6<br>1000ml x 5<br>2000ml x 2 | 100ml x 36<br>250ml x 23<br>500ml x 16<br>1000ml x 9<br>2000ml x 4 |
| Order No. (25mm) | W6100100 | W6100200 | W6100300 |
| Order No. (50mm) | W6100150 | W6100250 | W6100350 |

Standard package includes only shaker, tray need to be ordered separately.

## Accessories

| Order No. | Name |
|---|---|
| **Suitable for SRC** | |
| W6100101 | Sticky Plate |
| W6100102 | Universal Tray |
| W6100103 | Multi-Purpose Tray |
| W6100104 | Microplate Rack |
| **Suitable for CRC** | |
| W6100201 | Sticky Plate |
| W6100202 | Universal Tray |
| W6100203 | Multi-Purpose Tray |
| W6100204 | Microplate Rack |
| **Suitable for MRC** | |
| W6100301 | Sticky Plate |
| W6100302 | Universal Tray |
| W6100303 | Multi-Purpose Tray |
| W6100304 | Microplate Rack |



Sticky Plate



Universal Tray



Multi-Purpose Tray



Microplate Rack

Microplate Rack

# Rocking Shaker

## Simple Adjustments for Rocking Speed

WIGGENS Rocking Shaker is innovatively designed for use in a wide range of lab applications. WS-350R provides controlled seesaw-like motion, while the Shakers offer a smooth, low-foaming, 3D wave motion. Each unit includes a dimpled mat and universal harness

It can be used in the incubator because the unit is designed for ambient temperature between 2 ℃ to 50℃

## Advantages

> Working speeds range from 5rpm to 100rpm
> Bright TFT with display resolution 1rpm, easy to operate with the knob and control keys
> Tilt Angle ranges from 7° to 13°
> Smooth Starting function to protect sample spilling out
> Users can set the timer from 1 min to 99 hour 59 min, with the count-down timer.
> BLDC motor provides low noise and strong durability
> During overload situation, it shows overload sign, make alarm and stop the running

## Application

Mixing blood samples, DNA extractions, blotting techniques, staining and destaining gels, hybridizations
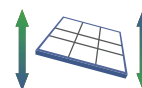
## Specifications

| Model | | WS-350R |
|---|---|---|
| Shaking System | Speed range(rpm) | 5~ 100 |
| | Speed control type | Feedback Control |
| | Tilt Angle | Easy adjustable from 7° to 13° |
| | Timer | 1min to 99 hrs 59 min, Count-down time |
| Safety device | | Over current protection |
| Max. Load including attachment (kg) | | 5 |
| Motor type | | BLDC motor |
| Control panel | | TFT, Delete touch keys and the control knob |
| Dimension | Overall Dimension (W×D×H, mm) | 276 x 343 x 150 |
| | Tray dimension (W x D, mm) | 276x 276 |
| | Net Weight (kg) | 6.9 |
| Materials | | PP, PET, Powder coated steel (Housing) |
| IP code | | IP21 |
| Electrical requirement | | 100 ~ 240VAC, 50/60 Hz |
| Order No. | | W5011001 |

Standard package includes: shaker and tray ( Order No.W5011102)

## Accessories

| Order No. | Part | Description |
|---|---|---|
| W5011101 | Removable tray | Included tray, black rubber mate and universal harness (6ea) |
| W5011102 | Removable tray (Standard) | Included tray, white rubber mat and universal harness (6ea) |
| W5011201 | Tray | Tray only |
| W5011202 | Rubber mat | Rubber mat |
| W5011203 | Dimpled mat | Dimpled mat |
| W5011204 | Universal harness, 6ea | Universal harness, 6ea |

W5011101          W5011102

# Waving Shaker

## Simple Adjustments for Tilt Angle and Speed

WIGGENS Waving Shaker is innovatively designed for use in a wide range of lab applications. WS-350W provides controlled orbital motion, while the Shakers offer a smooth, low-foaming, 3D wave motion. Each unit includes a dimpled mat and universal harness
It can be used in the incubator because the unit is designed for ambient temperature between 2 ℃ and 50℃

## Advantages

> Working speeds range from 8rpm to 100rpm
> Bright TFT with display resolution 1rpm, easy to operate with the knob and control keys
> Tilt Angle ranges from 0° to 13°
> Smooth starting function to protect sample from spilling out
> Users can set the timer from 1 min to 99 hour 59 min, with the count-down timer.
> BLDC motor provides low noise and strong durability
> During overload situation, it shows overload sign, make alarm and stop the running

## Application

Mixing blood samples, DNA extractions, blotting techniques, staining and destaining gels, hybridizations

## Specifications

| Model | | WS-350W |
|---|---|---|
| Shaking System | Speed range(rpm) | 8~ 100 |
| | Speed control type | Feedback Control |
| | Tilt Angle | Easy adjustable from 0° to 13° |
| | Timer | 1min to 99 hrs 59 min, Count-down time |
| Safety device | | Over current protection |
| Max. Load including attachment (kg) | | 5 |
| Motor type | | BLDC motor |
| Control panel | | TFT, Delete touch keys and the control knob |
| Dimension | Overall Dimension (W×D×H, mm) | 276 x 343 x 150 |
| | Tray dimension (W x D, mm) | 276x 276 |
| | Net Weight (kg) | 7.3 |
| Materials | | PP, PET, Powder coated steel  (Housing) |
| IP code | | IP21 |
| Electrical requirement | | 100 ~ 240VAC, 50/60 Hz |
| Order No. | | W5011002 |

Standard package includes: shaker and tray ( Order No.W5011102)

## Accessories

| Order No. | Part | Description |
|---|---|---|
| W5011101 | Removable tray | Included tray, black rubber mate and universal harness (6ea) |
| W5011102 | Removable tray (Standard) | Included tray, white rubber mat and universal harness (6ea) |
| W5011201 | Tray | Tray only |
| W5011202 | Rubber mat | Rubber mat |
| W5011203 | Dimpled mat | Dimpled mat |
| W5011204 | Universal harness, 6ea | Universal harness, 6ea |

W5011101

W5011102

# Microplate Shaker

## Suitable for Microplate, Micro-tube and Conical tube

The microplate shaker is driven by brushless DC motor. It is mainly used in the mixed oscillation of enzyme label plate (96-well / 384-well plate) , cell culture plate (24-well plate, 48-well plate, 96-well plate) , micro tube and conical tube. It can be used in immunoassays, staining and other experiments. It has compact design and ensures, simple and convenient operation, safety, stability and no noise.

## Advantages

> Working speeds range from 150rpm to 1200rpm
> Bright TFT with display resolution 1rpm, easy to operate with the knob and control keys
> Rotational motion with shaker throw of 3mm
> Smooth starting function to protect the sample from spilling out
> Users can set the timer from 1 min to 99 hour 59 min, with the count-down timer.
> Possible to use 1.5ml Micro-tube, 15ml, 50ml conical tube.
> BLDC motor provides low noise and strong durability
> During overload situation, it shows overload sign, make alarm and stop the running

## Specifications

| Model | | WS-350P |
|---|---|---|
| Shaking System | Speed range(rpm) | 150~1,200 (No-load running)* |
| | Speed control type | Feedback Control |
| | Orbital diameter（mm) | 3 |
| | Timer | 1min to 99 hrs 59 min, Count-down time |
| Safety device | | Over current protection |
| Max. Load including attachment (kg) | | 4 |
| Motor type | | BLDC motor |
| Control panel | | TFT, Delete touch keys and the control knob |
| Dimension | Overall Dimension (W×D×H, mm) | 249 x 329 x 127 |
| | Tray dimension (W x D, mm) | 267x 183 |
| | Net Weight (kg) | 10.3 |
| Materials | | PP, PET, Powder coated steel (Housing) |
| IP code | | IP21 |
| Electrical requirement | | 100 ~ 240VAC, 50/60 Hz |
| Order No. | | W5011003 |

* Maximum speed at full load is 600 rpm
Standard package includes: shaker and tray for 4 SBS micro-plates

1.5ml Tube rack

## Accessories

| Order No. | Part | Description |
|---|---|---|
| W5011301 | Tube rack | 1.5ml Tube rack |
| W5011302 | Tube rack | 15ml Tube rack |
| W5011303 | Tube rack | 50ml Tube rack |

15ml Tube rack

50ml Tube rack

# Rotator

## for rotates tubes and flasks from 1.5 ml to 300 ml

Variable speed adjusts mixing action from a gentle slosh to rapid agitation, Driven by a continuously working motor, it can withstand demanding schedules and long hours of operation. It can be used for Immunoprecipitation reaction, prevention of clotting, latex diagnosis, tissue culture specimens, blood cell suspensions, sediment washing, disintegrating tablets, extraction, slow-dissolving samples, and homogenizing blood solids in plasma, and a rotating airtight container for a dialysis bag.

> Compact design and flexible combination
> Suitable for different glass containers from 1.5 ml to 300 ml
> Variable speed motor drives to make the process faster, safer, and more thorough
> Stepper motor for durability and smooth operation
> Interchangeable tray for most rotating processes
> Replaceable tray design to allow for customizing to meet special applications
> Motors and controls designed for use in fume hoods and incubators



## Specifications

| Model | WT-350R |
| --- | --- |
| Order No. | W5013350 |
| Speed range [rpm] | 2~70 |
| Adjustable tilt angle [° ] | 0~90, the tray can be adjusted from horizontal to vertical rotation |
| Display | VFD comfort display |
| Max. load [kg] | 4 |
| Timer | 1 minute to 99 hours and 59 minutes |
| Dimensions W x D x H [mm] | 250x360x480 |
| Weight [kg] | 7.5 |
| Power supply | 100~240V, 50/60Hz |

Please note that the trays and clamps needs to be ordered separately



Easy to adjust the rotation angle



Easy to stack and replace the tray

## Accessories

### Stack adapter

with this adapter, two tube trays can be stacked together



| Order No. | Description |
| --- | --- |
| W5013006 | Stack adapter, with this adapter, two tube trays can be stacked together |

## Tube tray and stack adapter

This aluminum tray is equipped with spring clamp to hold test tubes for such operations as blood agitations, isotopic competitive protein binding assays, and similar procedures. A clutch permits stopping the head to insert and remove tubes without turning off the motor. The spring clamp permit the tubes to be inserted radially from the side of the clip rather than the top. The clamps are adjustable



| Order No. | Description | Max. load |
| --- | --- | --- |
| W5013001 | Base tube tray with tube clamps for 1.5ml / Φ10mm tube | 60 |
| W5013002 | Base tube tray with tube clamps for 5ml / Φ12mm tube | 18 |
| W5013003 | Base tube tray with tube clamps for 15ml / Φ16.5mm tube | 18 |
| W5013004 | Base tube tray with tube clamps for 50ml / Φ29mm tube | 12 |
| W5013005 | Stack adapter, with this adapter, two tube trays can be stacked together | / |

Customized tube tray is also possible

## Base tray and spring clamps for Erlenmeyer flasks

Suitable for rotates several erlenmeyer flasks at the same time, simple but durable design, there are already many threaded holes in the tray, we can fix the different spring clamp on it according to the size of the container. Please note that the spring clamp need to be ordered separately



| Order No. | Description | Max. load |
| --- | --- | --- |
| W5013010 | Base tray for assembling spring clamps on a mix and match basis | / |
| W5013011 | Spring clamp for 50 ml flasks, stainless steel | 13 |
| W5013012 | Spring clamp for 100 ml flasks, stainless steel | 8 |
| W5013013 | Spring clamp for 300 ml flasks, stainless steel | 6 |
| W5013014 | Spring clamp for 50 ml flasks, plastic | 13 |
| W5013015 | Spring clamp for 100 ml flasks, plastic | 8 |
| W5013016 | Spring clamp for 300 ml flasks, plastic | 6 |

# Heating Shaker

Useful for a variety of molecular biology applications.

Interval mix function in program mode can be properly set according to users' test condition.

## Features

> Microprocessor PID control ensuring consistent shaking motion and precision accuracy.
> Speed range from 150 to max. of 1500 rpm (depending on the choice of interchangeable blocks)
> Maximum 9 temperature range-specific calibration.
> Memory function of programmed protocols allowing relevant parameters (such as temp., rpm, time) of each protocol step to be stored.
  - Up to 10 protocols allowed for memory storage.
  - Up to 10 steps allowed for each protocol.
  - Interval Mix function (continuous switching between shaking and phasing)
> Two types of timer modes:
  - Timer 1 starts only after reaching the set temp.
  - Timer 2 starts right after the timer setting.

> 96-Well Tube Block Set with Covers
> 0.5ml / 1.5ml / 50ml Tube Block Set with Covers

## Specifications

| Mode | | WS-350B | |
|------|--|---------|--|
| Order No. | | W5012350 | |
| Control | | Feedback control PID | |
| Display | | VFD (0.1°C resolution) | |
| Temperature | Range (°C) | Amb.+5-100°C | |
| | Stability at 80°C (±°C) | 0.3 | |
| | Variation at 80°C (±°C) | 0.7 | |
| | Heating power (W) | 360 | |
| Safety | OverTemp. | Heating plate | |
| | | PCB | |
| | Over Current | Current limit protection | |
| Shaking System Dimension (WxDxH) | Motion Type | Orbital | |
| | Speed range (rpm) | 96-well tube block | 150 -1500 |
| | | 0.5ml tube block | 150- 1000 |
| | | 1.5 ml tube block | 150-1000 |
| | | 50 ml tube block | 150-800 |
| | Orbit Size (mm) | 2 | |
| IP code | | IP21 | |
| Overall(WxDxH) (mm) | | 276 x 334 x 170 | |
| Weight (kg) | | 8.3 | |
| Electrical requirements | | 230V, 50/60 Hz, 1.7A | |

Standard package includes only heating shaker, block need to be ordered separately.

## Constructional

> Bright VFD display with responsive touch buttons.
> Its powder coated stainless steel body is highly chemical-resistant and easy-to-clean.
> Optimal heat transfer is achieved by the tight coupling design of the main body and the corrosion-resistant anodized aluminum blocks.
> Low-profile design with rubber feet for minimal vibration and noise.
> Blocks can be easily interchanged by the included block lifter.

W5012454     W5012451

W5012452     W5012453

## Accessories

| Order No. | Description | Max. Mountable Tube |
|-----------|-------------|---------------------|
| W5012451 | 0.5 ml Tube Block Set with Cover | 0.5ml x 48 holes (microtube) |
| W5012452 | 1.5 ml Tube Block Set with Cover | 1.5ml x 24 holes (microtube) |
| W5012453 | 50 ml Tube Block Set with Cover | 50ml x 6 holes (centrifuge tube) |
| W5012454 | 96-well Tube Block Set with Cover | 0.2ml x 96 holes (microtube) |

# Vortex Shaker -Vortex3000 Elite

Low profile design and highly touch sensitive sensor reduce wrist stress when pushing and holding experiment tools resulting in less fatigue and unpleasant feeling.

## Features

> Elaborate design for safe and reliable vortex shaking
> Variable speed is from 100 to 3000 rpm
> Very suitable for work in fume hoods and on sterile workbenches
> Excellent vortex mixing of test tubes and cap vials
> Shaking operation can be switched between continuous and on-touch operation
> Two modes of time: 1s~99min59s and 1min~99hr59min
> Countdown in timer mode allows to calculate the experiment time.
> LED light shows set mixing speed.
> Rubber feet guarantee stability of the shaker
> Power cut-off function in case of electrical overload or excess current.
> Chemically resistant PP (polypropylene) housing.
> A wide range of accessories available (the rubber platform comes standard).

## Specifications

| Mode | Vortex3000 Elite |
| --- | --- |
| Order No. | W3060215 |
| Motion | Orbital |
| Shaking throw (mm / inch, Ø) | 4/1.6 |
| Operation mode | Touch/Continuous |
| Timer | Yes |
| Interface | RS232, USB (B) |
| Display | Dual LED |
| Operation panel | Glass |
| Control mode | Knob/Button |
| Speed range (rpm) | 100-3000 |
| Speed increment (rpm) | 10 |
| Speed resolution (rpm) | 1 |
| Time increment (min/s) | 1 |
| Time (min/s) | 1 |
| Time range | 1s-99min:59s or 1min-99hr:59min |
| Max. Load (kg) - incl. attachment | 0.5 |
| IP code | IP21 |
| Power （V） | DC24V, 0.75A |
| Dimension (WxDxH/mm): | 147x173x92 |
| Output （W） | 15 |
| Net weight | 2.8kg |

Standard package includes: vortex shaker and Platform (VO058)

Tube holder with tray

① ②  Platform

④ ⑤ ⑥   ⑦ ⑧ ⑨

③ ⑩  Microplate tray

Accessories application

![WIGGENS The Magic Motion]

# Vortex Shaker

Low profile design and touch sensitive sensor reduce wrist stress when pushing and holding experiment tools resulting in less fatigue and unpleasant feeling.
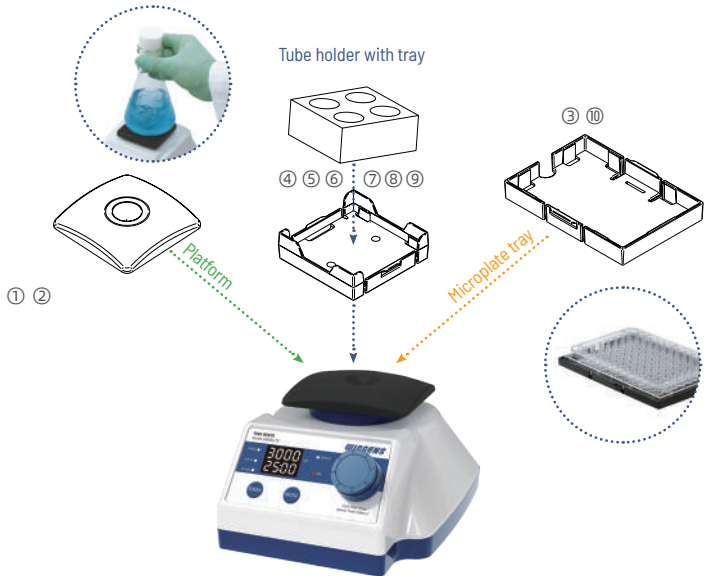
## Features

> Elaborate design for safe and reliable vortex shaking
> Speed can be set between 0 and 3000 rpm (Scale)
> Suitable for work under fume hoods, and on sterile workbenches
> Excellent vortex mixing of test tubes and capped vials
> Shaking operation can be switched between continuous and on-touch operation
> LED light shows the actual shaking operation method
> Rubber feet guarantee stability of the shaker
> Power cut-off function in case of electrical overload or excess current.
> Chemically resistant PP (polypropylene) molded exterior.
> A wide range of accessories available.(the rubber platform comes standard)

## Specifications

| Model | | Vortex3000 |
|---|---|---|
| Technical Data | Motion | Orbital |
| | Speed Range (rpm) | 0 - 3,000 (Turning knob scale display) |
| | Control | Scale |
| | Shaking Throw (mm / inch, Ø) | 4 / 0.16 |
| | Operating Mode | Touch, Continuous |
| | Motor Rating Input / Output (W) | 12 / 6 |
| | Motor | BLDC motor |
| | Max. Load (kg / lbs) - incl. attachment | 0.5 / 1.1 |
| General Data | Material Body | Polypropylene |
| | Material Platform | Silicone rubber |
| | Dimension (mm / inch, W×D×H)* | 148×159×77 / 5.8×7.4×3 |
| | Net Weight (kg / lbs) | 2.6 / 5.7 |
| | Safety Device | Current limit protection |
| | IP code | IP 21 |
| Order No. | | 360115 |

Standard package includes: vortex shaker and Platform (V0058)

## Accessories for Vortex 3000 Series

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩
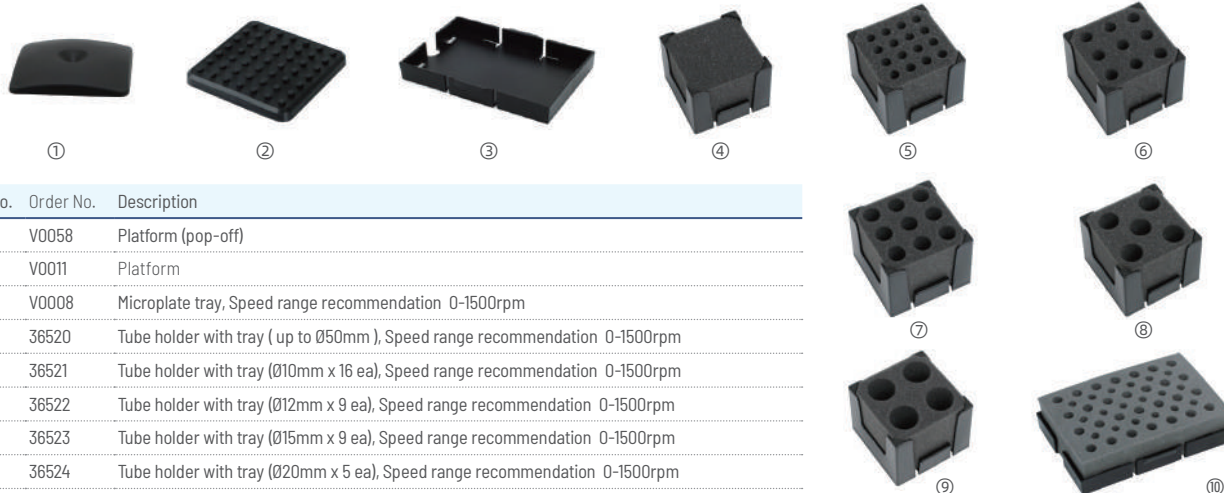
| No. | Order No. | Description |
|---|---|---|
| 1 | V0058 | Platform (pop-off) |
| 2 | V0011 | Platform |
| 3 | V0008 | Microplate tray, Speed range recommendation  0-1500rpm |
| 4 | 36520 | Tube holder with tray ( up to Ø50mm ), Speed range recommendation  0-1500rpm |
| 5 | 36521 | Tube holder with tray (Ø10mm x 16 ea), Speed range recommendation  0-1500rpm |
| 6 | 36522 | Tube holder with tray (Ø12mm x 9 ea), Speed range recommendation  0-1500rpm |
| 7 | 36523 | Tube holder with tray (Ø15mm x 9 ea), Speed range recommendation  0-1500rpm |
| 8 | 36524 | Tube holder with tray (Ø20mm x 5 ea), Speed range recommendation  0-1500rpm |
| 9 | 36525 | Tube holder with tray (Ø25mm x 4 ea), Speed range recommendation  0-1500rpm |
| 10 | 36526 | Tube holder with tray (Ø8mm x 18 ea & Ø10mm x 28 ea), Speed range recommendation  0-1500rpm |

# TM Series Vortex Shaker

> Very accurate shaking speed due to the micro-chip speed controller
> Stable and reliable performance
> High shaking speed of up to 2500 rpm
> Shaking operation can be switched between continuous and on-touch operation
> Suitable for shaking test tubes or other small volume vials
> Large range of platforms and other accessories
> Aluminum housing
> Suitable for deep well titer plates
> Can be used as a stirrer and flask shaker when choosing the right accessories.



TM-1F

TM-1



① ② ③ ④ ⑤ ⑥
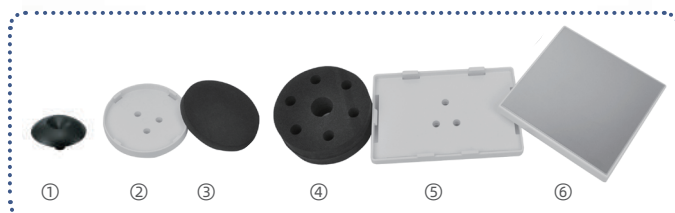
## TM-1F / 2F Accessories

TM-1F/2F  6 in 1 Package



**Platform (standard) ①**

**One-hand insert ③**
Order No.: 3601-06
**Universal Tray ②**
Order No.: 3601-01

**Test Tube Platform (6 Holes) ④**
Order No.: 3601-04
**Universal Tray ②**
Order No.: 3601-01

**Elisa Plate Tray ⑤**
Order No.: 3601-03

**Magnetic Stirring Plate ⑥**
Stirring Speed 0~1500rpm
Order No.: 3601-02

= **TM-1F / 2F**

## Specifications

| Model | TM-1 | TM-1F | TM-2 | TM-2F |
|---|---|---|---|---|
| Shaking Speed(rpm) | 0-2500 | 0-2500 | 0-2500 | 0-2500 |
| Max. Volume (L) in Stirring Mode | 2 | 2 | 2 | 2 |
| Housing Material | Plastic-Aluminum | Plastic-Aluminum | Plastic-Aluminum | Plastic-Aluminum |
| Shaking Throw (mm) | 4.5 | 4.5 | 4.5 | 4.5 |
| Speed Control/Display | Turning Knob Scale Display | Turning Knob Scale Display | Turning Knob LED Display | Turning Knob LED Display |
| Operation Mode | Continuous / On-Touch | Continuous / On-Touch | Continuous / On-Touch | Continuous / On-Touch |
| Accessories | Shaker Tray | Accessory Pack | Shaker Tray | Accessory Pack |
| IP code | IP21 | IP21 | IP21 | IP21 |
| Power (W) | 17.3 | 17.3 | 17.3 | 17.3 |
| Dimension (mm) | 115X230X60 | 115X230X60 | 115X230X60 | 115X230X60 |
| Order No. | 360110 | 36011F | 360120 | 36012F |

Standard package includes: vortex shaker and Platform (3601-00)

# WIGGENS
## The Magic Motion

## Accessories for TM Series
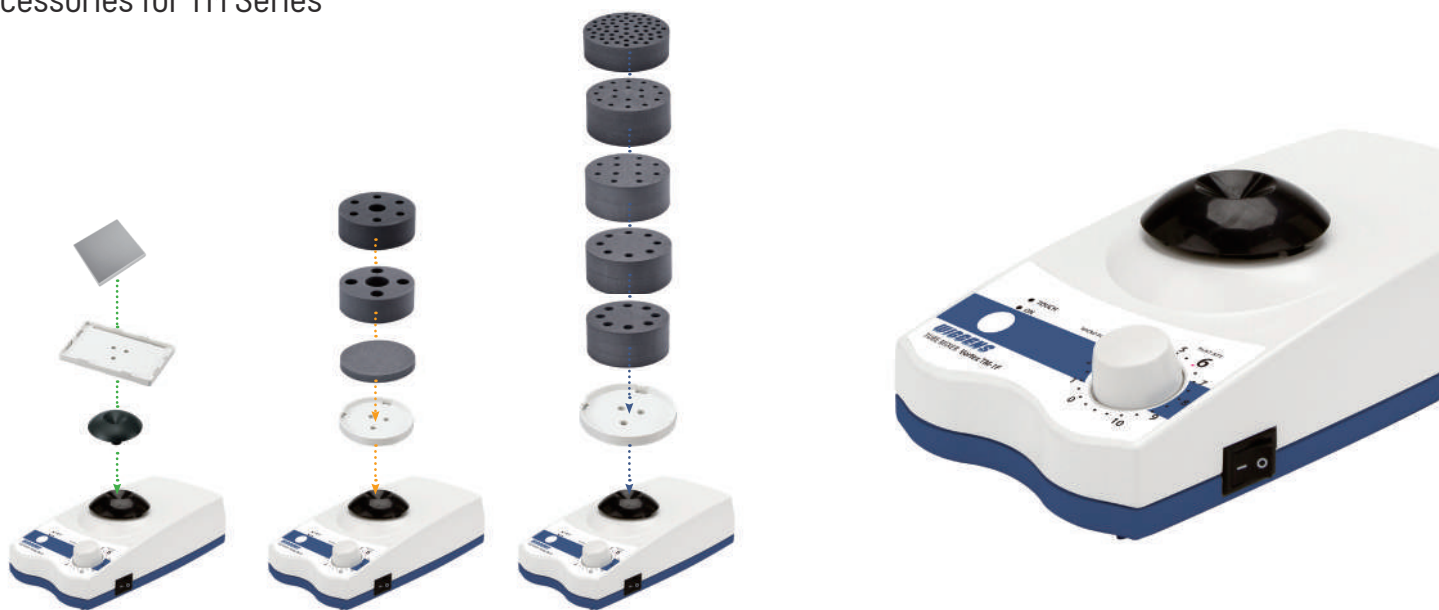
### Universal Tray
Can be used with different foam plastic platforms for simultaneous shaking of several test tubes
Order No.：3601-01

### Magnetic Stirring Plate
Can be directly installed on the shaker and used for stirring of smaller samples
Stirring speed：0-1500rpm
Order No.：3601-02

### Elisa Plate Tray
Can be used with an ELISA Plate
Speed range recommendation：0-1500rpm
Order No.：3601-03

### Test Tube Platform (6 Holes)
Can be used in combination with the universal tray for shaking operation of 6 test tubes with 12 mm diameter
Speed range recommendation：0-2000rpm
Order No.：3601-04

### Test Tube Platform (4 Holes)
Can be used in combination with the universal tray for shaking operation of 4 test tubes with 16 mm diameter
Speed range recommendation：0-2000rpm
Order No.：3601-05

### One-hand insert
80mm
Speed range recommendation：0-800rpm
Order No.：3601-06

### Universal Base Plate
Base plate for foam plastic platforms with 120 mm diameter
Speed range recommendation：0-1500rpm
Order No.：3602-01

### Test Tube Platform (54 Holes)
Can be used in combination with the universal base plate for shaking operation of 54 Eppendorf tubes
Speed range recommendation：0-1500rpm
Order No.：3602-02

### Test Tube Platform (18 Holes)
Can be used in combination with the universal base plate for shaking operation of 18 test tubes with 10 mm diameter
Speed range recommendation：0-1500rpm
Order No.：3602-03

### Test Tube Platform (12 Holes)
Can be used in combination with the universal base plate for shaking operation of 12 test tubes with 12 mm diameter
Speed range recommendation：0-1500rpm
Order No.：3602-04

### Test Tube Platform (8 Holes)
Can be used in combination with the universal base plate for shaking operation of 8 test tubes with 16 mm diameter
Speed range recommendation：0-1500rpm
Order No.：3602-05

### Test Tube Platform (8 Holes)
Can be used in combination with the universal base plate for shaking operation of 8 test tubes with 20 mm diameter
Speed range recommendation：0-1500rpm
Order No.：3602-06

### Flask Holder
Can be used in combination with the universal base plate for shaking operation of Erlenmeyer or round flasks with a volume between 100 and 250 ml
Order No.：3602-07

# Digital Pulse Mixer

## Performing high or low speed pulse vortexing/mixing for most applications

WIGGENS Digital Pulse Mixer is capable of performing high or low speed pulse vortexing/mixing for most applications. This unit is able to accommodate a wide variety of glassware, racks, well plates or reactor blocks for accurate, repeatable results.The microprocessor-based control technology allows for display of speed, multi-function timer, and pulse profiling.

W Wiggens  D Digital  P Pulse  M Mixer

### Advantages

> Working speed range from 100rpm to 1500rpm
> Bright TFT with display resolution 1rpm, easy to operate
> Built-in digital timer (seconds: 1-60, minutes 1-60, hours 1-24)
> Preset run times of 30, 60, 90 and 120 seconds
> User selectable pulse profile (Pulses-per-minute: 1-100), Ppm-duty-cycle: 1-99 %
> Timer and Pulse mode may be combined for timed-pulse mode
> Fail Safe Mode to prevent speed fluctuations
> BLDC motor provides low noise and strong durability
> User-friendly operating panel (4 buttons)
> Smooth Starting function to protect the sample from spilling out
> RS232 interface, optional software for real time data acquisition

Adjustable cover plate

### Application

Solution phase synthesis, solid phase chemistry, bacteria cultivation

### Specifications

| Model | DPM-24 |
|---|---|
| Order No. | W5021001 |
| Working speed range(rpm) | 100 ~1500 |
| Speed control type | Feedback Control |
| Control panel | TFT, Push button |
| Motor type | BLDC motor |
| Quick timing mode | 30s, 60s, 90s, 120s are available |
| Pulse mode | Pulses adjustment range(min): 1-100<br>Duty Cycle adjustment range(%): 1-100 |
| Timer and Pulse mode | Timer: 00:00:00 to 24:60:60<br>Pulses adjustment range(min): 1-100<br>Duty Cycle adjustment range(%): 1-100 |
| IP code | IP21 |
| Electrical requirement | 110 or 240VAC, 50/60 Hz |

Standard package includes: Mixer and adjustable cover plate.

### Sample Preparation

Our Digital Pulse Mixers are ideal for preparation work in volumetric flasks*.
Simply changing the chemical resistant bottom foam pad allows you to quickly switch flask sizes while using one standard hold down top.

| Order No. | Description |
|---|---|
| W5021101 | Hold down top with holes |
| W5021102 | 15mm pad for 25ml vol. flask, 49 Position |
| W5021103 | 15mm pad for 50ml vol. flask, 14 Position |
| W5021104 | 15mm pad for 100ml vol. flask, 14 Position |
| W5021105 | 15mm pad for 250ml vol. flask, 8 Position |
| W5021106 | 15mm pad for 500ml vol. flask, 6 Position |

*To select the shaking attachment for a volumetric flask, top plate and pad both are necessary
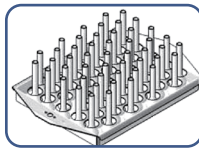
25ml Vol. Flasks
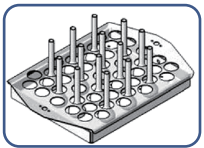
50ml Vol. Flasks
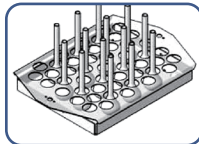
100ml Vol. Flasks
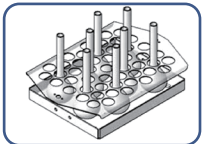
250ml Vol. Flasks
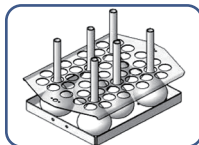
500ml Vol. Flasks

Digital Pulse Mixer Shown with 100ml Volumetric Flasks & Hold Down Top

# Separatory Funnel Shaker
## WS-1 series

Intensive vertical reciprocal quick solvent extraction shaking unit.

The separatory funnel shaker is able to shake six samples under identical conditions for any series or comparative protocols in chemistry, biotech, and medical labs.

**WS-1**
Angle is not adjustable

**WS-1PLUS**
0~20⁰ Angle adjustable
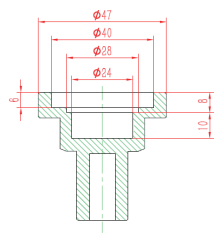


Standard adapter, customized if required

## Accessories Included
500ml Separatory Funnel Holder (Order No.: 32500)
1L Separatory Funnel Holder (Order No.: 32501)
2L Separatory Funnel Holder (Order No.: 32502)

## Features
> Intensive vertical shaking
> Shaking of 6 samples under identical conditions possible
> Mostly used in chemical, biotech, and medical laboratories
> The speed can be set between 50 and 300 rpm
> The timer can either be set on continuous or between 0 and 60 min
> Flasks of up to 40 mm width can be used
> Bright TFT display for convenient speed monitoring
> Wide speed range and high precision of the speed control
> Feedback loop to a digital controller
> At the end of a shaking session the device stops automatically with an audible alarm
> Easily adjustable flask holder (max. 5 flasks per side)
> It comes with six funnel holders as standard capable of accommodating up to 1000ml
> WS-1 PLUS entails a flask holder to adjust the shaking angle

## * Funnel Capacities (per each side)

| Capacity | Round type funnel | Slim type funnel |
|---|---|---|
| under 500ml | 3-5 | 5 |
| 500ml | 3 | 3 |
| 1L | — | 3 |
| 2L | — | 2 |

## Specifications

| Model | WS-1 | WS-1 PLUS |
|---|---|---|
| Motion Type | Vertical reciprocal | |
| Speed Range (rpm) | 50 ~ 300 | |
| Accuracy(± rpm) | ±1 | |
| Vertical Stroke Length (mm) | 40 | |
| Timer | 60 min or continuous operation | |
| Overall (W×D×H) (mm) | 445×730×505 | |
| Max. Load per each Side (kg) | 3 | |
| Power (W) | 90 | |
| Fixture | 6 | |
| IP code | IP21 | |
| Weight (Kg) | 77 | 90 |
| Shaking Angle | Fixed | Angle adjustable 0-16⁰ |
| Order No. | 32012KA | 32012KB |

Standard package includes: Shaker and six funnel holders capable of accommodating up to 1000ml

## Funnel Separatory, Glass or PTFE stopper



| Order No. | Capacity（ml） | Joint | Plug Bore（mm） | Stopper |
|---|---|---|---|---|
| 189111-05 | 50 | 14/20 | 2 | PTFE stopper |
| 189111-06 | 50 | 19/22 | 2 | PTFE stopper |
| 189111-07 | 100 | 14/20 | 2 | PTFE stopper |
| 189111-08 | 100 | 19/22 | 2 | PTFE stopper |
| 189111-09 | 125 | 14/20 | 2 | PTFE stopper |
| 189111-10 | 125 | 19/22 | 2 | PTFE stopper |
| 189111-11 | 125 | 24/40 | 2 | PTFE stopper |
| 189111-12 | 250 | 14/20 | 4 | PTFE stopper |
| 189111-13 | 250 | 19/22 | 4 | PTFE stopper |
| 189111-14 | 250 | 24/40 | 4 | PTFE stopper |

| Order No. | Capacity（ml） | Joint | Plug Bore（mm） | Stopper |
|---|---|---|---|---|
| 189111-19 | 50 | 14/20 | 2 | Glass stopper |
| 189111-20 | 50 | 19/22 | 2 | Glass stopper |
| 189111-21 | 100 | 14/20 | 2 | Glass stopper |
| 189111-22 | 125 | 14/20 | 2 | Glass stopper |
| 189111-23 | 100 | 19/22 | 2 | Glass stopper |
| 189111-24 | 125 | 19/22 | 2 | Glass stopper |
| 189111-25 | 125 | 24/40 | 2 | Glass stopper |
| 189111-26 | 250 | 14/20 | 4 | Glass stopper |
| 189111-27 | 250 | 19/22 | 4 | Glass stopper |
| 189111-28 | 250 | 24/40 | 4 | Glass stopper |

### Optional accessories

| Order No. | Description |
|---|---|
| 189111-29 | 2mm PTFE locking stopper |
| 189111-30 | 4mm PTFE locking stopper |
| 189111-31 | 14/20 Glass stopper |
| 189111-32 | 19/22 Glass stopper |
| 189111-33 | 14/20 PTFE locking stopper |
| 189111-34 | 19/22 PTFE locking stopper |
| 189111-35 | 24/40 PTFE locking stopper |

## Funnel Separatory, PTFE locking stopper



| Order No. | Capacity（ml） | Stopper Size (mm) | Plug Bore（mm） | Stopper |
|---|---|---|---|---|
| 189112-02 | 60 | 16 | 2 | PTFE |
| 189112-03 | 125 | 22 | 2 | PTFE |
| 189112-04 | 250 | 22 | 4 | PTFE |
| 189112-05 | 500 | 27 | 4 | PTFE |
| 189112-06 | 1000 | 27 | 4 | PTFE |

### Optional accessories

| Order No. | Description |
|---|---|
| 189112-07 | 2mm Glass locking stopper |
| 189112-08 | 4mm Glass locking stopper |

## Funnel Separatory, Glass or PTFE stopper



| Order No. | Capacity（ml） | Joint | Plug Bore（mm） | Stopper |
|---|---|---|---|---|
| 189113-06 | 50 | 14/20 | 2 | Glass stopper |
| 189113-07 | 50 | 19/22 | 2 | Glass stopper |
| 189113-08 | 60 | N0.16 | 2 | Glass stopper |
| 189113-09 | 100 | 14/20 | 2 | Glass stopper |
| 189113-10 | 100 | 19/22 | 2 | Glass stopper |
| 189113-11 | 125 | 14/20 | 2 | Glass stopper |
| 189113-12 | 125 | 19/22 | 2 | Glass stopper |
| 189113-13 | 125 | 24/40 | 2 | Glass stopper |
| 189113-14 | 125 | N0.22 | 2 | Glass stopper |
| 189113-15 | 250 | 19/22 | 4 | Glass stopper |
| 189113-16 | 250 | 24/40 | 4 | Glass stopper |
| 189113-17 | 250 | 29/42 | 4 | Glass stopper |
| 189113-18 | 250 | N0.22 | 4 | Glass stopper |
| 189113-19 | 500 | 24/40 | 4 | Glass stopper |
| 189113-20 | 500 | 29/42 | 4 | Glass stopper |
| 189113-22 | 500 | N0.27 | 4 | Glass stopper |
| 189113-23 | 1000 | 24/40 | 4 | Glass stopper |
| 189113-24 | 1000 | N0.27 | 4 | Glass stopper |

| Order No. | Capacity（ml） | Joint | Plug Bore（mm） | Stopper |
|---|---|---|---|---|
| 189113-31 | 50 | 14/20 | 2 | PTFE stopper |
| 189113-32 | 50 | 19/22 | 2 | PTFE stopper |
| 189113-33 | 60 | N0.16 | 2 | PTFE stopper |
| 189113-34 | 100 | 14/20 | 2 | PTFE stopper |
| 189113-35 | 100 | 19/22 | 2 | PTFE stopper |
| 189113-36 | 125 | 14/20 | 2 | PTFE stopper |
| 189113-37 | 125 | 19/22 | 2 | PTFE stopper |
| 189113-38 | 125 | 24/40 | 2 | PTFE stopper |
| 189113-39 | 125 | N0.22 | 2 | PTFE stopper |
| 189113-40 | 250 | 19/22 | 4 | PTFE stopper |
| 189113-41 | 250 | 24/40 | 4 | PTFE stopper |
| 189113-42 | 250 | 29/42 | 4 | PTFE stopper |
| 189113-43 | 250 | N0.22 | 4 | PTFE stopper |
| 189113-44 | 500 | 24/40 | 4 | PTFE stopper |
| 189113-45 | 500 | 29/42 | 4 | PTFE stopper |
| 189113-46 | 500 | N0.27 | 4 | PTFE stopper |
| 189113-47 | 1000 | 24/40 | 4 | PTFE stopper |
| 189113-48 | 1000 | N0.27 | 4 | PTFE stopper |

### Optional accessories

| Order No. | Description |
|---|---|
| 189113-49 | 2mm PTFE locking stopper |
| 189113-50 | 4mm PTFE locking stopper |

## Pressure Release Valves

These pressure release valves reduce the hazards of pressure build-up. They simply slip over the drain of a WIGGENS funnel and tighten down with a twist of the wrist. The valve can be easily removed when it is time to drain the funnel. Each valve is made of Teflon resin and is factory preset to release at 1 psi of pressure.

The valve can be adjusted to release at pressures up to 5 psi by turning the pressure release slug on the top of the valve with a screwdriver.



| Order No. | Description |
|---|---|
| PRV6 | For WIGGENS funnels SEP0060–SEP1000 or spout OD 7.5–9.5 mm |
| PRV10 | For WIGGENS SEP2000 or spout OD 12.5–13.0 mm |

# WIGGENS
## THE MAGIC MOTION

# Incubator

Accurate temperature control technology
Compressor cooling system
Peltier cooling system
Internal circulation to ensure temperature uniformity

**Incubator**
RT +5~60 ℃ / 40 - 100 - 150 - 260 - 650 - 850 - 1200 L

**Low temperature incubator**
+4~60 ℃ / 150 - 250 - 400 L

**Peltier-cooled incubator**
+4~6 0 ℃ / 15 - 50 L
+15~60 ℃ / 100 - 150 L

**$CO_2$ incubator**
RT +5~60 ℃ / 40 - 120 - 180 - 260 - 650 - 850 - 1200 L

**Peltier-cooled $CO_2$ incubator**
20~60 ℃ / 40 - 120 - 180 - 260 - 650 - 850 L

**Portable mini $CO_2$ incubator**
+15~45 ℃ / 15 L

**$CO_2$ incubator with copper chamber**
RT +5~60 ℃ / 180 L

**Tri-gas incubator** [$N_2$ / $O_2$ / $CO_2$]
RT +5~60 ℃ / 40 - 180 - 850 L

**Constant temperature and humidity chamber**

**Plant Growth Chamber**

# Constant Temperature Incubator

Versatile air-jacketed incubators.
Specially designed for uniform temperature distribution and minimal sample contamination caused by external air intrusion.

## Features

> Applicable in life science, pharmacy, medical science, chemistry, biology, and related fields for storage of samples which need constant temperature and incubation
> Digital temperature display and control
> PID controller for temperature stability and safety protection
> Very good heating characteristics
> Ecologically friendly
> Easy to clean
> Timer function
> Can be opened anytime when necessary
> When the temperature exceeds set levels and reaches the set safety value, an alarm activates, and the incubation process stops
> The material of the observation window is tempered glass, which has good safety and sealing characteristics
> The magnetic door and high-quality gasket can absorb external shocks and comprise excellent sealing characteristics
> Easy-to-clean stainless steel shelves with good air permeability and adjustable height
> Upon opening the incubator, the fan and heating device stop operation
> Alarm starts for sample protection when the door is open for more than 60 seconds



## Specifications

| Model | WH-05 | WH-10 | WH-15 | WH-25 |
|---|---|---|---|---|
| Order No. | W6031050 | W6031100 | W6031150 | W6031250 |
| Volume [L] | 50 | 100 | 150 | 260 |
| Temperature Range [℃] | RT + 5~65 | RT + 5~65 | RT + 5~65 | RT + 5~65 |
| Temperature uniformity of working area [℃] | <±0.2 at 37℃ and 25℃ RT | <±0.2 at 37℃ and 25℃ RT | <±0.2 at 37℃ and 25℃ RT | <±0.2 at 37℃ and 25℃ RT |
| Temperature Stability [℃] | ±0.1 at 37℃ | ±0.1 at 37℃ | ±0.1 at 37℃ | ±0.1 at 37℃ |
| Temperature Controller | Digital Display with PID automatic regulation, Button Control | | | |
| Timer | 1 min ~ 99 hr 59 min | 1 min ~ 99 hr 59 min | 1 min ~ 99 hr 59 min | 1 min ~ 99 hr 59 min |
| Safety | Independent safety temperature protection, Open door alarm function | | | |
| Heating Capacity [W] | 340 | 340 | 340 | 610 |
| Shelves [included / max.] | 2/3 | 2/4 | 2/8 | 3/8 |
| Inner Dimensions [WxDxH in mm] | 345 x 368 x 375 | 480 x 480 x 495 | 500 x 480 x 620 | 530 x 590 x 900 |
| Outer Dimensions [WxDxH in mm] | 440 x 480 x 610 | 560 x 560 x 760 | 560 x 580 x 880 | 630 x 680 x 1125 |
| IP code | IP20 | IP20 | IP20 | IP20 |
| Weight [kg] | 35 | 50 | 65 | 115 |
| Power supply | AC 220~240 V, 50/60 Hz | AC 220~240 V, 50/60 Hz | AC 220~240 V, 50/60 Hz | AC 220~240 V, 50/60 Hz |
| Number of internal power outlets | - | - | - | - |

Standard package includes: incubator, shelves

## Alarm System

Temperature Alarm, Independent safety temperature protection

## Easy to Clean

Rounded Conner allows easy cleaning. The entire chamber is made of stainless steel (SUS304)

## Perforated Shelves

Perforated Shelves are good for natural air flows and are made of stainless steel which is resistant to rust and contamination.

### Materials

| | |
|---|---|
| Housing | Powder coated stainless steel |
| Interior | Stainless steel |
| Shelves | Stainless steel |
| Inner transparent door | High temperature resistant glass, Thickness: 5 mm |

### Only for WH-1200

| | |
|---|---|
| Temp. Recovery* | 14 minutes at 37°C after door open for 5 minutes |
| Temperature Safety | 5 Side direct heating with forced air flow by 4 circulation fans |
| Door | Front door (left open) with viewing glass window |

| Model | WH-400 | WH-650 | WH-850 | WH-850X* | WH-1200* |
|---|---|---|---|---|---|
| Order No. | W6031400 | W6031650 | W6031850 | W6031851 | W6031122 |
| Volume [L] | 400 | 650 | 850 | 850 | 1200 |
| Temperature Range [°C] | RT + 5~65 | RT + 5~65 | RT + 5~65 | RT + 5~65 | RT+7~+60°C at 25°C RT |
| Temperature uniformity of working area [°C] at 37°C and 25°C RT | <±0.5 | <±0.5 | <±0.5 | <±0.5 | ±0.5~±0.7 |
| Temperature Stability [°C] | ±0.1 at 37 °C | ±0.1 at 37 °C | ±0.1 at 37 °C | ±0.1 at 37 °C | ±0.1 at 37 °C |
| Temperature Controller | Digital Display with PID automatic regulation, Button Control | | | | |
| Timer | 1 min ~ 99 hr 59 min | 1 min ~ 99 hr 59 min | 1 min ~ 99 hr 59 min | 1 min ~ 99 hr 59 min | 1 min ~ 99 hr 59 min |
| Safety | Independent safety temperature protection, Open door alarm function | | | | |
| Heating Capacity [W] | 700 | 1100 | 1400 | 1400 | 1600 |
| Shelves [included / max.] | 3/12 | 3/15 | 3/15 | 0/15 | 0/35 |
| Inner Dimensions [WxDxH in mm] | 600 x 630 x 1100 | 700 x 650 x 1430 | 700 x 800 x 1530 | 868 x 720 x 1530 | 868 x 720 x 1927 |
| Outer Dimensions [WxDxH in mm] | 750 x 730 x 1430 | 820 x 780 x 1740 | 820 x 930 x 1840 | 990 x 855 x 2030 | 990 x 855 x 2123 |
| IP code | IP20 | IP20 | IP20 | IP20 | IP20 |
| Weight [kg] | 160 | 230 | 260 | 299 | 323 |
| Power supply | AC 220~240 V, 50/60 Hz | AC 220~240 V, 50/60 Hz | AC 220~240 V, 50/60 Hz | AC 220~240 V, 50/60 Hz | AC 220~240 V, 50/60 Hz |
| Number of internal power outlets | - | - | - | - | 3 |

Standard package includes: incubator, shelves

* WH-850X / 1200 Standard package includes: incubator only, shelves need to be ordered separately

# Low Temperature Incubator

Superb low temperature incubator by noiseless compressor cooling system

## Features

> Applicable in life science, pharmacy, medical science, chemistry, biology, and related fields for storage of samples which need a constant temperature and for incubation.
> Heating function start and duration can be pre-set
> Temperature control programs: Temperature programs can be divided into 9 sections and for every section temperature and duration can be set individually
> 3 pre-set often used temperatures can be recalled anytime when necessary
> Temperature measure unit can be set as either °C or $^0$F
> When the temperature exceeds set levels and reaches the set safety value, an alarm activates, power is cut off, and the incubation process stops
> With tempered glass window, the examination of samples is easy and convenient, avoiding unnecessary disruptions of the incubation process
> The stainless steel shelves have a good air permeability, are easy to clean and can be adjusted in height
> In case of an unexpected power breakdown the incubator offers two working options:  automatic re-operation and automatic stop
> When opening the incubator, the fan and heating device stop operation. After one minute without closing the door an alarm starts
> Incubators use heat transfer method for circulation. In a separated room outside the work space it uses heat exchange, In the working space it uses natural convection and forced circulation
> The circulation method will not induce air pollution and can guarantee exact temperature distribution

## Options and Accessories

| Order No. | Name | Description |
|---|---|---|
| W6052501 | Stainless steel shelves | Perforated to improve uniformity, Suitable for WH-11C / 21C |
| W6052502 | Stainless steel shelves | Perforated to improve uniformity, Suitable for WH-40C |
| W6011816 | Holes for auxiliary monitoring | Diameter of 30mm, on the left side of the incubator |
| W6051502 | Socket inside the chamber | Optional, factory installation |
| W6051503 | LED light | At the top of the chamber* |

*The temperature must not exceed 40°C when LED lamp is present



## Specifications

| Model | WH-11C | WH-21C | WH-40C |
|---|---|---|---|
| Order No. | W6055150 | W6055250 | W6055400 |
| Temperature Control Method | Forced circulation method (fans integrated outside of the work space) | | |
| Volume [L] | 150 | 250 | 400 |
| Temperature Range [°C ] | +4 ~ 60 | +4 ~ 60 | +4 ~ 60 |
| Temperature Stability [°C ] | ±0.1 | ±0.1 | ±0.1 |
| Temperature uniformity of working area [°C ] | ±1.5 (37°C ) | ±1.5 (37°C ) | ±1.5 (37°C ) |
| Temperature Controller | Digital Display with PID automatic regulation, push button | | |
| Timer | 1 min ~ 99 hr 59 min | 1 min ~ 99 hr 59 min | 1 min ~ 99 hr 59 min |
| Heating Capacity [W] | 450 | 450 | 450 |
| Max. Cooling Capacity [W] | 350 | 350 | 400 |
| Shelves [included / max.] | 2/5 | 3/7 | 3/7 |
| Inner Dimensions [W×D×H in mm] | 550 x 500 x 610 | 550 x 500 x 1000 | 630 x 600 x 1100 |
| Outer Dimensions [W×D×H in mm] | 660 x 605 x 1020 | 660 x 605 x 1415 | 750 x 730 x 1550 |
| IP code | IP20 | IP20 | IP20 |
| Weight[kg] | 95 | 120 | 160 |
| Power supply | AC 220 ~ 240V, 50/60 Hz | AC 220 ~ 240V, 50/60 Hz | AC 220 ~ 240V, 50/60 Hz |

Standard package includes: incubator, shelves

# Peltier-cooled Incubator

This series of incubators combines heating and peltier cooling systems, a perfect development from environmentally friendly and energy efficient heating and cooling technologies that facilitate excellent control accuracy and minimal fluctuations.

## Features

> Applicable in life science, pharmacy, medical science, chemistry, biology, and related fields for storage of samples which need a constant temperature and for incubation.
> Heating function start and duration can be pre-set
> There are four temperature programs available for editing, and each program can be edited in 5 steps
> Four temperature can be preset for quick changeover
> Temperature measure unit can be set as either °C or $^0$F
> When the temperature exceeds set levels and reaches the set safety value, an alarm activates, power is cut off, and the incubation process stops
> With tempered glass window, the examination of samples is easy and convenient, avoiding unnecessary disruptions of the incubation process
> The stainless steel shelves have a good air permeability, are easy to clean and can be adjusted in height
> When temperature deviation occurs, the BIAS function sets in, which makes operation convenient
> In the case of an unexpected power breakdown the incubator offers two working options:  automatic re-operation and automatic stop
> When opening the incubator, the fan and heating device stop operation. After one minute without closing the door an alarm sets in
> Incubators use heat transfer method for circulation. In a separated room outside the work space it uses heat exchange, In the working space it uses natural convection and forced circulation
> The circulation method will not induce air pollution and can guarantee exact temperature distribution

## Specifications

| Model | WH-01 | WH-02 | WH-10P | WH-15P |
|---|---|---|---|---|
| Order No. | W6053015 | W6053050 | W6053100 | W6053150 |
| Temperature Control Method | Forced circulation | | | |
| Volume [L] | 15 | 50 | 100 | 150 |
| Temperature Range [°C ] | +4 ~ 60 (at 20°C RT) | +4 ~ 60 (at 20°C RT) | +10 ~ 60 (at 20°C RT) | +10 ~ 60 (at 20°C RT) |
| Temperature Stability [°C ] | ±0.1 | ±0.1 | ±0.1 | ±0.1 |
| Temperature Controller | Touch Control;  Digital Display with PID automatic regulation | | | |
| Timer | 1 min ~ 999hr 59 min / continuous | | | |
| Heating Capacity [W] | 150 | 300 | 450 | 450 |
| Max. Cooling Capacity [W] | 350 | 350 | 350 | 350 |
| Shelves [included / max.] | 2/4 | 2/6 | 2/8 | 2/10 |
| Inner Dimensions [W×D×H in mm] | 315 x 200 x 240 | 335 x 370 x 380 | 480 x 478.5 x 500 | 480 x 500 x 625 |
| Outer Dimensions [W×D×H in mm] | 400 x 409.5 x 445 | 440 x 550 x 618 | 620 x 668.5 x 806 | 620 x 690 x 930 |
| IP code | IP20 | IP20 | IP20 | IP20 |
| Weight[kg] | 24 | 35 | 65 | 80 |
| Power supply | AC 220 ~ 240V, 50/60 Hz | AC 220 ~ 240V, 50/60 Hz | AC 220 ~ 240V, 50/60 Hz | AC 220 ~ 240V, 50/60 Hz |

Standard package includes: incubator, shelves.

# Incubator Accessories

| Order No. | Item | Description | Suitable for |
|---|---|---|---|
| **Incubator shelf for holding cultures in the chamber** | | | |
| W6030501 | Perforated Shelf kit | | WH-05 |
| W6031001 | Perforated Shelf kit | | WH-10 |
| W6031501 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 15kg | WH-15 |
| W6032501 | Perforated Shelf kit | | WH-25 |
| W60530151 | Perforated Shelf kit | | WH-01 |
| W60530501 | Perforated Shelf kit | | WH-02 |
| W60531001 | Perforated Shelf kit | | WH-10P |
| W60531501 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 15kg | WH-15P |
| W6034001 | Perforated Shelf kit | | WH 400 |
| W6036501 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 15kg | WH-650 |
| W6038501 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 50kg | **WH-850** |
| W6031221 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 25kg | WH-1200 |
| W6031222 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 50kg | WH-1200 |
| W6052501 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution | WH-11C/21C |
| W6052502 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution | WH-40C |
| **Roller base：Placed at the bottom of the incubator for support and easy movement** | | | |
| W6010402 | Roller base | To move incubator easily | WH-05 |
| W6031002 | Roller base | To move incubator easily | WH-10 |
| W6031502 | Roller base | To move incubator easily | WH-15 |
| **Stacking kit: to stack and fix the incubator** | | | |
| W6031003 | Stacking kit | To stack and fix the incubator | WH-10 |
| W6031503 | Stacking kit | To stack and fix the incubator | WH-15 |
| W6011806 | UV lamp | A 4W UV lamp is placed at the top of the chamber, next to the circulating fan. UV rays do not radiate the sample and can be sterilized during culture. | All series incubator (Except dry heat sterilization incubators) |
| W6011816 | Holes for auxiliary monitoring | Diameter of 30mm (40mm customizable), for sampling, experimental verification and penetration of additional equipment power or signal cables in the incubator | All series incubator |
| W6011809 | Monitoring system | PC software, using Internet network connection, can monitor the working status of the incubator in real time remotely | All series incubator |
| W6011809-1 | Connecting wire | With anti-shedding interface for PC to the incubator, unit/m | All series incubator |
| W6051502 | Power socket in chamber | Three-jack socket, 220V, for power supply inside the chamber, not exceed 1000W | All series incubator |
| W6051503 | LED lamp | Installed on the top of the chamber, with an independent lighting switch | All series incubator (Except dry heat sterilization incubators) |

Roller base

Stacking kit

# Humidity chamber

The humidity chamber replicates complex environments, including low temperature, high temperature, high humidity, and low humidity conditions, making it suitable for performance testing of products in materials, electronics, plastics, food, clothing, automotive, metals, chemicals, building materials, and other industries.

## Features

> With PID temperature control, and single-stage refrigeration unit

> Large, high-resolution TFT touch display with multilingual user interface

> Integrated timer

> Parts being in contact with the medium made of stainless steel

> RS232/485 interface for remove control

> The real-time data can be recorded in real time after connected USB disk.

> With heavy duty Foma wheels, level adjustable, easy for transportation.

## Safety

> Protection against overheating

> Early warning system for high/low temperature limits

> With autostart function. Then the humidity chamber will restart automatically after a power interruption

> The circulating fan and heater are stopped after the outerdoor is opened

## Specifications

| Model | WHT-150 | WHT-260 |
|---|---|---|
| Order No. | W6045150 | W6045260 |
| Volume [L] | 150 | 260 |
| Temperature Range [°C ] | +4 ~ +60 | +4 ~ +60 |
| Resolution of temperature [°C ] | 0.1 | 0.1 |
| Temperature uniformity of working area [°C ] | <±0.5 | <±0.5 |
| Cooling mode | With compressor | With compressor |
| Humidity range [RH% ], | 10 ~ 85 (from 25°C to 55°C ) | 10 ~ 85 (from 25°C to 55°C ) |
| Resolution of humidity [RH% ] | 1 | 1 |
| Humidity accuracy [RH% ] | <±3 | <±3 |
| Humidity control | Automatic (auto refill, vapor and condensation) | |
| Heating Capacity [W] | 1350 | 1350 |
| Max. Cooling Capacity [W] | 300 | 550 |
| Shelves [included / max.] | 2/5 | 2/9 |
| Max. load of each shelf | 30Kg | 30Kg |
| Timer | 1 min ~ 999hr 59 min / continuous | |
| Interfaces | RS232/485 | RS232/485 |
| Operating temperature [°C ] | 10 ~ 35 | 10 ~ 35 |
| Inner Dimensions [W×D×H in mm] | 560 x 500 x 535 | 640 x 500 x 800 |
| Outer Dimensions [W×D×H in mm] | 740 x 752 x 1220 | 820 x 752 x 1485 |
| Weight [kg] | 145 | 175 |
| Power supply | 220V / 50 or 60Hz | 220V / 50 or 60Hz |

The WHT series can be custom-designed to meet specific volume requirement.
Standard package includes:Humidity chamber, shelves.

## Accessories

| Order No. | Part | Description | Suitable for |
|---|---|---|---|
| W 6041151 | Perforated Shelf | Max. load up to 30kg | WHT-150 |
| W 6041261 | Perforated Shelf | Max. load up to 30kg | WHT-260 |
| W 6041152 | Reinforced perforated shelf | Max. load up to 60kg | WHT-150 |
| W 6041262 | Reinforced perforated shelf | Max. load up to 60kg | WHT-260 |
| W 6041153 | Illumination equipment | Cold white light, 0~100% adjustable, 10000 Lux, -20...+45°C | WHT series |
| W 6041154 | Inner power socket | 230V/2.6A output, IP68 | WHT series |
| W6041158 | Water storage tanks | Included the 2L storage tanks, with fiter lid and water tube | WHT series |
| W6041158 | Water tube | Connect humidity controller and water storage tanks | WHT series |
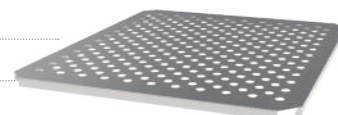
# CO$_2$ Incubator

The incubator is ideal for the experiments of the cultivation of animal cells, sperm/ovum, anaerobic cells, all sorts of microbe cells, hatching/germinating and special tissues.

## Features

Fast Heat-Up, Fast-Recovery, Stable Control

### 6 Sides Direct Heating System

Electric heating wire is covered on all sides of the chamber which makes stable uniformity and provides fast heat-up & temperature recovery.
3 parts of heating section are controlled and calibrated individually by 3 temperature sensors.

### Dry Wall and Air Jacket

Warm air from heating wire is preserved in space between the chamber and the insulation layer. It helps temperature recover faster and minimize heat loss. Dry wall with insulation requires no regular maintenance.

### DUAL BEAM IR CO$_2$ Sensor

Fast & precise detection for CO$_2$ gas regardless of temperature and humidity.

### Natural Humidification Using Water Tray

The heater on bottom side warms the water in tray and it makes humidification. The circulation fan delivers the moisture formed from the water in the entire chamber.



## Specifications

| | |
|---|---|
| Temp. Range: | RT +5~60°C |
| Temp. Resolution: | 0.1°C |
| Dry Heat: | Up to 125°C |
| Temp. Control: | Digital PID |
| CO$_2$ Range: | 0% ~ 20% |
| CO$_2$ Accuracy: | ±0.1% (5% / 37°C ) |
| CO$_2$ Resolution: | 0.1% |
| CO$_2$ Sensor: | IR CO$_2$ Sensor |
| Display: | LED Display |
| IP code: | IP20 |
| Operating panel: | Individual 2-Channel Touch Button |
| Jacket type: | Air Jacket Type (6 sides heat) |
| Chamber material: | Stainless Steel (304) |

| Model | | WCI-40 | WCI-120 |
|---|---|---|---|
| Order No. | Standard | W6011040 | W6011120 |
| | Sterilization | W6012040 | W6012120 |
| Chamber volume [L] | | 40 | 120 |
| Temperature Stability [°C ] | | ±0.1 （37°C) | ±0.1 （37°C) |
| Temp. Uniformity [°C ] | | ±0.3 (37°C / RT20°C ) | ±0.3 (37°C / RT20°C ) |
| Heating Capacity [W] | | 320 | 320 |
| CO2  Inlet pressure range [bar] | | 0.3~0.5 | 0.3~0.5 |
| Number of shelves [included / max.] | | 2/4 | 3/8 |
| Chamber dimension [WxDxH] mm | | 320x350x375 | 480x470x520 |
| Overall dimension [WxDxH] mm | | 420x460x570 | 580x560x765 |
| Weight [kg] | | 38 | 72 |

Standard package includes: incubator, shelves, water tray.

## Alarm System

Buzzer to alarm low or high deviation of $CO_2$, Temperature.

## Gentle Air and Moisture Convection

Natural Air and Moisture Convection, Air and Moisture in chamber are distributed gentlely by 6-side heating and air circulation fan.

## Easy to clean

Rounded corner allows easy cleaning. The entire chamber is made of stainless steel (SUS304)

## Over Heating Limit

Heating is automatically cut by safety device when temperature control fails or there is excessive heating over set point.

## Perforated Shelves

Perforated shelves are good for natural air flows and are made of stainless steel which is resistant to rust and contamination.

## No Condensation

Heating by front door heater & frame heater prevents condensation in the chamber and on the glass door.

## Microprocessor PID Control

Intelligence Control for $CO_2$ density, Temperature, Alarm, Automatic Decontamination (Optional).

## HEPA filtration of the chamber

## Options

Customize your incubator with these options

### Access port
30mm Access Port is available at left side. (Upon ordering and additional charge)

### UV sterilization
4W UV is placed on the chamber ceiling and beside the circulation fan. The UV light cannot reach sample and sterilization is operated during culturing.

### HOT AIR DECON 125℃
Maximum 125℃ dry hot air sterilization
No need to remove IR $CO_2$ sensor

### Monitoring System
Connection port has been designed to observe the status of equipments in real time even in the far distance.

### SPLIT INNER DOOR
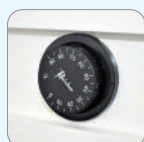Reduce gas consumption and heat loss, enabling faster recovery—ideal for various samples
5 Split Door for WCI-40
6 Split Door for WCI-180

| Model | | WCI-180 | WCI-260 | WCI-650 | WCI-850 | WCI-850X* | WCI-1200* |
|---|---|---|---|---|---|---|---|
| Order No. | Standard | W6011180 | W6011260 | W6011650 | W6011850 | W6011851X | W6011122 |
| | Sterilization | W6012180 | W6012260 | W6012650 | W6012850 | - | - |
| Chamber volume [L] | | 180 | 260 | 650 | 850 | 850 | 1200 |
| Temperature Stability [℃] | | ±0.1 (37℃) | ±0.1 (37℃) | ±0.1 (37℃) | ±0.1 (37℃) | ±0.1 (37℃) | ±0.5 (37℃) |
| Temp. Uniformity [℃] | | ±0.3 (37℃ / RT20℃) | ±0.4 (37℃ / RT20℃) | ±0.5 (37℃ / RT20℃) | ±0.5 (37℃ / RT20℃) | ±0.5 | ±0.5 (37℃ / RT20℃) |
| Heating Capacity [W] | | 320 | 610 | 1100 | 1400 | 1400 | 1600 |
| CO2 Inlet pressure range [bar] | | 0.3~0.5 | 0.6~0.7 | 0.7~1.0 | 0.7~1.0 | 0.7~1.0 | 0.7~1.0 |
| Number of shelves [included / max.] | | 3/8 | 3/8 | 3/15 | 3/15 | 0/15 | 0/15 |
| Chamber dimension [WxDxH] mm | | 528x473x710 | 590x530x900 | 700x650x1430 | 700x800x1530 | 840x700x1590 | 868x720x1927 |
| Overall dimension [WxDxH] mm | | 560x620x945 | 630x680x1125 | 820x780x1740 | 820x930x1840 | 993x887x1911 | 990x855x2123 |
| Weight [kg] | | 80 | 115 | 230 | 260 | 299 | 323 |

Standard package includes: incubator, shelves, water tray.

* WCI-850X / 1200 Standard package includes: incubator only, shelves need to be ordered separately

# Peltier-cooled $CO_2$ Incubator

This $CO_2$ incubator series integrates heating and Peltier cooling systems, representing an advancement in environmentally friendly and energy-efficient temperature management technologies. These innovations ensure exceptional control accuracy with minimal fluctuations

## Specifications

| | |
|---|---|
| Temp. Range: | +20~60 ℃ |
| Temp. Resolution: | 0.1 ℃ |
| Dry Heat: | Up to 125 ℃ |
| Temp. Control: | Digital PID |
| $CO_2$ Range: | 0% ~ 20% |
| $CO_2$ Accuracy: | ±0.1% (5% / 37 ℃ ) |
| $CO_2$ Resolution: | 0.1% |
| $CO_2$ Sensor: | IR $CO_2$ Sensor |
| Display: | LED Display |
| IP code: | IP20 |
| Operating panel: | Individual 2-Channel Touch Button |
| Jacket type: | Dry Wall Type (6 sides heat) |
| Chamber material: | Stainless Steel (304) |

| Model | | WCI-40P | WCI-120P | WCI-180P |
|---|---|---|---|---|
| Order No. | Standard | W6013040 | W6013120 | W6013180 |
| | Sterilization | W6014040 | W6014120 | W6014180 |
| Chamber volume [L] | | 40 | 120 | 180 |
| Temperature Stability [℃ ] | | ±0.1 （37℃） | ±0.1 (37℃) | ±0.1 (37℃) |
| Temp. Uniformity [℃ ] | | ±0.3 (37℃ / RT20℃ ) | ±0.3 (37℃ / RT20℃ ) | ±0.3 (37℃ / RT20℃ ) |
| Heating Capacity [W] | | 320 | 320 | 320 |
| CO2 Inlet pressure range [bar] | | 0.3~0.5 | 0.3~0.5 | 0.3~0.5 |
| Number of shelves [included / max.] | | 2/4 | 3/8 | 3/8 |
| Chamber dimension [WxDxH] mm | | 320x350x375 | 480x470x520 | 528x473x710 |
| Overall dimension [WxDxH] mm | | 420x520x570 | 580x560x765 | 560x680x945 |
| Weight（kg） | | 46 | 82 | 88 |

| Model | WCI-260P | WCI-650P | WCI-850P |
|---|---|---|---|
| Order No.   Standard | W6013260 | W6013650 | W6013850 |
| Chamber volume [L] | 260 | 650 | 850 |
| Temperature Stability [℃ ] | ±0.1 (37℃) | ±0.1 (37℃) | ±0.1 (37℃) |
| Temp. Uniformity | ±0.4 (37℃ / RT20℃ ) | ±0.5 (37℃ / RT20℃ ) | ±0.5 (37℃ / RT20℃ ) |
| Heating Capacity [W] | 610 | 1100 | 1400 |
| CO2 Inlet pressure range [bar] | 0.6~0.7 | 0.7~1.0 | 0.7~1.0 |
| Number of shelves [included / max.] | 3/8 | 3/15 | 3/15 |
| Chamber dimension [WxDxH] mm | 590x530x900 | 700x650x1430 | 700x800x1530 |
| Overall dimension [WxDxH] mm | 630x760x1125 | 820x860x1740 | 820x930x1840 |
| Weight [kg] | 125 | 260 | 296 |

Standard package includes: incubator, shelves, water tray.
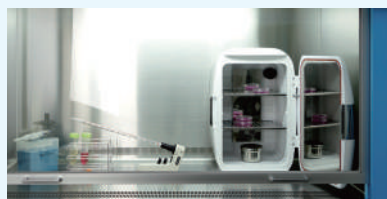
# Portable Mini CO$_2$ Incubator

Compact & Economical Mini CO$_2$ Incubator

## Features

> Portable Use with carrying handles (Car Plug available)
> Economical Price & Compact Design for Personal Use
> Suitable size to use in work station or Clean bench
> Digital control for Temperature & CO$_2$
> Forced Air Circulation by Fan
> Excellent Temperature Uniformity
> Quick recovery & Precise CO$_2$ control by IR Sensor
> Cooling with very low noise
> Two Stainless Steel Shelves (Standard)
> Natural Humidification by Water tray
> Cooling & Heating by peltier
> Stainless steel Water Tray
> Power Plug & Car Jack

Car Jack

## Accessories & Options

| Order No. | Name | Model |
|---|---|---|
| 189231 | Shelf ( Stainless steel ) | 203M-SHELFSUS　( 220x162mm-WxD) |
| 189232 | Measuring opening　( Ø12mm ) | 203M-Hole |

| Product Name | | WCI-15R |
|---|---|---|
| Chamber Volume [L] | | 15.2 |
| Temperature | Range [℃ ] | 15~ 45  (at Ambient 25℃ ) |
| | Accuracy [℃ ] | ±0.25 |
| | Control | Digital |
| CO$_2$ | Range | 0 ~ 20% |
| | Sensor | Dual Beam IR Sensor |
| | Accuracy | ±0.1% (5%) |
| | Gas Pressure | 0.7Bar (Max.1Bar) |
| Humidity | | Up to 80% |
| Display | | LED Display |
| Cooling & Heating | | By Peltier (thermoelectric elements) |
| Shelf | | 2, Stainless steel (standard) / Max (3ea) |
| In & Outside Material | | ABS |
| IP code | | IP20 |
| Inside ( W x D x H mm ) | | 224x 200 x 340 |
| Outside ( W x D x H mm ) | | 292x 333x 433 |
| Weight [kg] | | 6.8 |
| Power / Frequency | | 220V , 50/60Hz |
| Power Consumption | | DC-COLD: 46W,  HOT: 48W |
| | | AC-COLD: 63W,  HOT: 63W |
| Order No. | | 189221 |

Standard package includes: incubator, 12V car power adapter, 220V power adapter, 2 Shelves, Water tray.

# Copper Chamber CO$_2$ Incubator

copper plate inner chanler with better contamination effect, including all the features of the standard stainless steel version!

COPPER
CHAMBER

## Specifications

| | |
|---|---|
| Temp. Range: | RT +5~60℃ |
| Temp. Resolution: | 0.1℃ |
| Dry Heat: | Up to 125℃ |
| Temp. Control: | Digital PID |
| CO$_2$ Range: | 0% ~ 20% |
| CO$_2$ Accuracy: | ±0.1% (5% / 37℃ ) |
| CO$_2$ Resolution: | 0.1% |
| CO$_2$ Sensor: | IR CO$_2$ Sensor |
| Display: | LED Display |
| IP code: | IP20 |
| Operating panel: | Individual 2-Channel Touch Button |
| Jacket type: | Dry Wall Type (6 sides heat) |
| Chamber material: | Stainless Steel (304) |

| Model | | WCI-40Cu | WCI-180Cu |
|---|---|---|---|
| Order No. | Standard | W6028040 | W6028180 |
| | Sterilization | W6028041 | W6028181 |
| Chamber volume [L] | | 40 | 180 |
| Temperature Stability [℃ ] | | ±0.1 (37℃) | ±0.1 (37℃) |
| Temp. Uniformity[℃ ] | | ±0.3 (37℃ / RT20℃ ) | ±0.3(37℃ / RT20℃ ) |
| Heating Capacity [W] | | 320 | 320 |
| CO2  Inlet pressure range [bar] | | 0.3~0.5 | 0.3~0.5 |
| IP code | | IP20 | IP20 |
| Number of shelves [included / max.] | | 2/4 | 3/8 |
| Chamber dimension [WxDxH]mm | | 320x350x375 | 528x473x710 |
| Overall dimension [WxDxH]mm | | 420x460x570 | 560x620x945 |
| Weight [kg] | | 38 | 80 |

Standard package includes: incubator, shelves, water tray.

![WIGGENS - The Magic Motion]

# Tri-Gas Incubator (CO$_2$ / O$_2$ / N$_2$)

The Tri-Gas incubator is ideal for the experiments of the cultivation of animal cells, sperm/ovum, anaerobic cells, all sorts of microbe cells, hatching/germinating and special tissues.

## Options

Customize your incubator with these options

**Access port**
25mm Access Port is available at left side. (Upon ordering and additional charge)

**UV sterilization**
4W UV is placed on the chamber ceiling and beside the circulation fan. The UV light cannot reach the sample and sterilization is operated during culturing.

**Peltier cooling system**
With Peltier cooling system in WCI-40T & WCI-180T, It can work below room temperature.

**Copper chamber**
WIGGENS customize chamber with copper plate chamber for enhanced contamination protection.

**O$_2$ Control**
Multi Gas Supply (N$_2$ & O$_2$) is available for all CO$_2$ incubators.

**Hot air sterilization**
Maximum 125℃ Dry Hot Air in WCI-40T, WCI-180T
No need to remove IR CO$_2$ sensor

**Monitoring System**
Connection port has been designed to observe the status of equipments in real time even in the far distance.

**Lower gas consumption. Lower heat loss.**
Faster recovery easy classification for various samples.
5 Split Door for WCI-40T
6 Split Door for WCI-180T

## Features

Fast heat-up, fast-recovery, reliable control

### 6 Sides Direct Heating System

The electric heating wire is covered on all sides of the chamber which makes good uniformity and provides fast heat-up & temperature recovery.
3 parts of heating section are controlled and calibrated individually by 3 individual temperature sensors.

### Dry Wall and Air Jacket

Warm air from heating wire is preserved in space between the chamber and the insulation layer. It helps temperature recover faster and minimize heat loss. Drywall withinsulation requires no regular maintenance.

### DUAL BEAM IR CO$_2$ Sensor

Fast & precise detection for CO$_2$ gas regardless of temperature and humidity.

### Natural Humidification using Water Tray

The heater on bottom warms the water in tray and it makes humidification. The circulation fan delivers the moisture formed from the water to the entire chamber.

### No Condensation

Heating by front door heater & frame heater prevents condensation in the chamber and on the glass door.
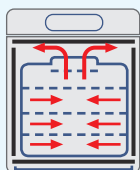
### Microprocessor PID Control

Intelligence Control for CO$_2$ density, Temperature, Alarm, Automatic Decontamination (Optional).
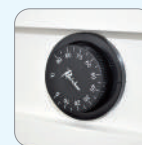
### HEPA filtration

## Gentle Air and Moisture Convection

Gentle air and moisture convection air and moisture in the chamber are distributed naturally by 6 side heating and the air circulation fan.

## Over Heating Limit

Heating is automatically cut by safety device when temperature control failed or there is excessive heating over set point.
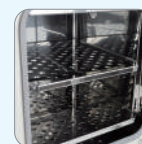
## Easy to clean

Rounded corner allows easy cleaning. The entire chamber is made of stainless steel (SUS304)

## Perforated Shelves

Perforated shelves are good for natural air flows and are made of stainless steel which are resistant against rust and contamination.

## Alarm System

Buzzer to alarm low or high deviation of $CO_2$, Temperature.

## Specifications

| Model | | WCI-40T | WCI-120T | WCI-180T | WCI-260T | WCI-850T |
|---|---|---|---|---|---|---|
| Volume [L] | | 40 | 120 | 180 | 260 | 850 |
| Temperature | Range [℃] | Ambient+5~60 | Ambient+5~60 | Ambient+5~60 | Ambient+5~60 | Ambient+5~60 |
| | Accuracy [℃] | ±0.1 (37℃) | ±0.1 (37℃) | ±0.1 (37℃) | ±0.1 (37℃) | ±0.1 (37℃) |
| | Resolution [℃] | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| | Control | Digital PID | Digital PID | Digital PID | Digital PID | Digital PID |
| $CO_2$ | Range | 0% ~ 20% | 0% ~ 20% | 0% ~ 20% | 0% ~ 20% | 0% ~ 20% |
| | Accuracy | ±0.1% (5% / 37℃) | ±0.1% (5% / 37℃) | ±0.1% (5% / 37℃) | ±0.1% (5% / 37℃) | ±0.1% (5% / 37℃) |
| | Resolution | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% |
| | Sensor | IR $CO_2$ Sensor | IR $CO_2$ Sensor | IR $CO_2$ Sensor | IR $CO_2$ Sensor | IR $CO_2$ Sensor |
| | Control | Microprocessor | Microprocessor | Microprocessor | Microprocessor | Microprocessor |
| | Inlet pressure range [bar] | 0.5~0.6 | 0.6~0.7 | 0.6~0.7 | 0.6~0.7 | 0.9~1.0 |
| $O_2$ | Range | 0.6~85% | 0.6~85% | 0.6~85% | 0.6~85% | 0.6~85% |
| | Sensor | Zirconium dioxide sensor | Zirconium dioxide sensor | Zirconium dioxide sensor | Zirconium dioxide sensor | Zirconium dioxide sensor |
| Display | | LED Display | LED Display | LED Display | LED Display | LED Display |
| Operating panel | | Individual 2-Channel Touch Button | | | | |
| Jacket type | | Dry Wall Type (six-side gradient heating design) | | | | |
| Chamber material | | Stainless Steel (304) | | | | |
| IP code | | IP20 | | | | |
| Number of shelves [included / max.] | | 2/4 | 3/8 | 3/8 | 3/8 | 3/15 |
| Chamber dimension [mm] | | 320x350x375 | 480x470x520 | 528x473x710 | 530x590x900 | 700x800x1530 |
| Overall dimension [mm] | | 420x460x570 | 580x560x765 | 560x620x945 | 630x680x1125 | 820x930x1840 |
| Weight [kg] | | 35 | 65 | 78 | 115 | 266 |
| Order No. for standard version | | W6021040 | W6021120 | W6021180 | W6021260 | W6021850 |
| Order No. for dry heat sterilization version | | W6022040 | W6022120 | W6022180 | W6022260 | W6022850 |

Standard package includes: incubator, shelves, water tray.
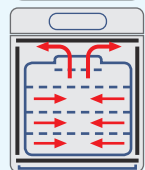
# WIGGENS
### THE MAGIC MOTION

# CO$_2$ Incubator for cell factory

Realize your large scale cell culture needs with the great platform, WCI-850C.

### Alarm System

Buzzer to alarm low or high deviation of CO$_2$, Temperature.

### Gentle Air and Moisture Convection

Natural Air and Moisture Convection, Air and Moisture in chamber are distributed gentlely by 6-side heating and air circulation fan.

### Easy to clean

Rounded corner allows easy cleaning. The entire chamber is made of stainless steel (SUS304)

### Over Heating Limit

Heating is automatically cut by safety device when temperature control fails or there is excessive heating over set point.

### Perforated Shelves

Perforated shelves are good for natural air flows and are made of stainless steel which is resistant to rust and contamination.

### No Condensation

Heating by front door heater & frame heater prevents condensation in the chamber and on the glass door.

### Microprocessor PID Control

Intelligence Control for CO$_2$ density, Temperature, Alarm, Automatic Decontamination (Optional).

> Five separate glass doors design, with independent compartments inside the incubator
> Each compartment can load 10 layers cell factories up to 6.
> Low gas consumption, low heat loss.
> Quick temperature recovery.

## Specifications

| | |
|---|---|
| Temp. Range: | RT +5~60℃ |
| Temp. Resolution: | 0.1℃ |
| Dry Heat: | Up to 120℃ |
| Temp. Control: | Digital PID |
| CO$_2$ Range: | 0% ~ 20% |
| CO$_2$ Accuracy: | ±0.1% (5% / 37℃ ) |
| CO$_2$ Resolution: | 0.1% |
| CO$_2$ Sensor: | IR CO$_2$ Sensor |
| Display: | LED Display |
| IP code: | IP20 |
| Operating panel: | Individual 2-Channel Touch Button |
| Jacket type: | Air Jacket Type (6 sides heat) |
| Chamber material: | Stainless Steel (304) |

| Model | | WCI-850C |
|---|---|---|
| Order No. | Standard | W6011851 |
| | Sterilization | W6012851 |
| Chamber volume [L] | | 850 |
| Temperature Stability [℃ ] | | ±0.1 (37℃ ) |
| Temp. Uniformity [℃ ] | | ±0.5 (37℃ / RT.20℃ ) |
| Heating Capacity [W] | | 1400 |
| CO2  Inlet pressure range [bar] | | 0.7~1.0 |
| Number of shelves | | 5 |
| Chamber dimension [WxDxH] mm | | 700x800x1530 |
| Overall dimension [WxDxH] mm | | 820x930x1840 |
| Weight [kg] | | 260 |

# CO$_2$ Incubator Accessories

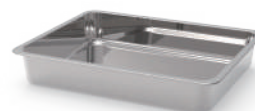| Order No. | Item | Description | Suitable for |
|---|---|---|---|
| **Incubator shelf for holding cultures in the chamber** | | | |
| 189231 | Stainless steel shelf | | WCI15R |
| W6010401 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 15kg | WCI-40 series |
| W6011201 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 15kg | WCI-120 series |
| W6011801 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 15kg | WCI-180 series |
| W6011801-U | Reinforced perforated shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 50kg | WCI-180 series |
| W6011801-Cu | Perforated Shelf kit | Perforated shelf to improve uniformity, Copper material can effectively resist corrosion and pollution, load 15kg | WCI-180 Cu |
| W6011801-Cu-U | Reinforced perforated shelf kit | Perforated shelf to improve uniformity, Copper material can effectively resist corrosion and pollution, load 50kg | WCI-180 Cu |
| W6012601 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 15kg | WCI-260 |
| W6012601-U | Reinforced perforated shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 50kg | WCI-260 |
| W6016501 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 15kg | WCI-650 |
| W6016501-U | Reinforced perforated shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 50kg | WCI-650 |
| W6018501 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 15kg | WCI-850 |
| W6018501-U | Reinforced perforated shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 50kg | WCI-850 |
| W6011851X1 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 15kg | WCI-850X |
| W6011851X1-U | Reinforced perforated shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 50kg | WCI-850X |
| W6031221 | Perforated Shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 25kg | WCI-1200 / WH-1200 |
| W6031222 | Reinforced perforated shelf kit | Perforated shelf to improve uniformity, Stainless steel material can effectively resist corrosion and pollution, load 50kg | WCI-1200 / WH-1200 |
| **Roller base: Placed at the bottom of the incubator for support and easy movement** | | | |
| W6010402 | Roller base | To move incubator easily | WCI-40 series |
| W6010602 | Roller base | To move incubator easily | WCI-120 series |
| W6011802 | Roller base | To move incubator easily | WCI-180 series |
| **Stacking kit: to stack and fix the incubator** | | | |
| W6011803 | Stacking kit | To stack and fix the incubator | WCI-180 |
| W6012603 | Stacking kit | To stack and fix the incubator | WCI-260 |
| W6012603Z | Stacking kit | To stack and fix the incubator | WCI-260Z |
| **HEPA: Filter of gas circulation** | | | |
| W6011804 | HEPA | Set at the gas supply inlet to ensure the cleanliness of the gas in the incubator | WCI-40 / 120 / 180 |
| W60112604 | HEPA | | WCI-260 |
| W6018504 | HEPA | | WCI-650 / 850 |
| **Water tray: Used for humidification during culture to reduce medium evaporation** | | | |
| W6010405 | Water tray | Moisture is generated by heating the Water tray at the bottom, which is filled throughout the chamber by a circulating fan | WCI-40 / 120 |
| W6011805 | Water tray | Moisture is generated by heating the Water tray at the bottom, which is filled throughout the chamber by a circulating fan | WCI-180 / 180T / 180R/S |
| W6012605 | Water tray | Moisture is generated by heating the Water tray at the bottom, which is filled throughout the chamber by a circulating fan | WCI-260 |
| W6016505 | Water tray | Moisture is generated by heating the Water tray at the bottom, which is filled throughout the chamber by a circulating fan | WCI-650 / 850 |
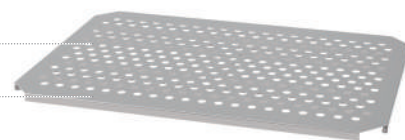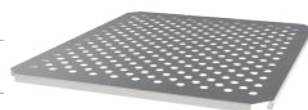
Roller base

Stacking kit

HEPA

Water tray

**WIGGENS**
The Magic Motion

| Order No. | Item | Description | Suitable for |
|-----------|------|-------------|--------------|
| **UV lamp** | | | |
| W6011806 | UV lamp | A 4W UV lamp is placed at the top of the chamber, next to the circulating fan. UV rays do not radiate the sample and can be sterilized during culture. | All series incubator (The operating temperature should not exceed 60℃ ) |
| **Software** | | | |
| W6011809 | Monitoring system | PC software, using Internet network connection, can monitor the working status of the incubator in real time remotely | All series incubator |
| W6011809-01 | Connecting wire | With anti-shedding interface for PC to the incubator, unit/m | All series incubator |
| **Airway** | | | |
| W6011810 | Gas regulator | For pressure regulation from the air supply to the chamber | All series incubator |
| W6011816 | Holes for auxiliary monitoring | Diameter of 30mm (40mm customizable), for sampling, experimental verification and penetration of additional equipment power or signal cables in the incubator | All series incubator |
| 189232 | Measuring hole | Used for measure sensor access on the side of the incubator | WCI-15R |
| WCI180065 | Tubing | Outer diameter 6mm, inner diameter 4mm for CO2 tubing. Unit/meter | All series incubator |
| ZFC100-06 | Filter | For incubator inlet air filtration, CO2 filter | All series incubator |


UV lamp


Gas regulator


Holes for auxiliary monitoring

### Divided door: to Reduce chamber's environmental changes when the door is opened

| Order No. | Item | Description | Suitable for |
|-----------|------|-------------|--------------|
| W6011812 | Divided door | 5-divided door glass door for easy individual experimental operations | WCI-40/40T |
| W6011813 | Divided door | 3-divided door glass door for easy individual experimental operations | WCI-180/180T |
| W6011814 | Divided door | 6-divided door glass door for easy individual experimental operations | WCI-180/180T |
| W6012606 | Divided door | 3-divided door glass door for easy individual experimental operations | WCI-260 |
| W6012607 | Divided door | 6-divided door glass door for easy individual experimental operations | WCI-260 |
| W6016506 | Divided door | 3-divided door glass door for easy individual experimental operations | WCI-650 |
| W6016507 | Divided door | 5-divided door glass door for easy individual experimental operations | WCI-650 |
| W6018506 | Divided door | 3-divided door glass door for easy individual experimental operations | WCI-850 |
| W6018507 | Divided door | 5-divided door glass door for easy individual experimental operations | WCI-850 |



### Printer/power supply / LED lamp

| Order No. | Item | Description | Suitable for |
|-----------|------|-------------|--------------|
| W6011815 | stylus printer | To print incubator data | All series incubator |
| W6051502 | Power socket in chamber | Three-jack socket, 220V, for power supply inside the chamber, not exceed 1000W | All series incubator |
| W6051503* | LED lamp | Installed on the top of the chamber, with an independent lighting switch | All series incubator |

*The temperature must not exceed 40℃ when LED lamp is present

# Shaker Incubator
# Shaker CO$_2$ Incubator
# Roller Rack CO$_2$ Incubator

# Shaker Incubator

Combining a benchtop incubator/refrigerator with a dual-action (orbital and reciprocal) shaker, WS series shaking incubators offer versatility for a variety of biological and biotech applications.

## Shaking Features

> Dual shaking modes: orbital or reciprocal.
> Speed range: 30 to 300 rpm.
> Programmable shaking motion.
  - Timer range: 10 sec to 999 hr 59 min 59 sec.
  - Forward & Backward, Pause: 10 sec to 59 min 59 sec.
> Selectable shaker throw: 20, 30, 40mm.

## Operating Features

> Temperature control:
  +5℃ above ambient to 60℃ . (for WS-300 and WS-600)
  +15℃ to 60℃ . (for WS-300R and WS-600R)
> Microprocessor PID control.
> Simple calibration and auto-tuning functions.
> Digital timer with delayed ON/OFF function: 1 min to 99 hr 59 min.
> High temperature limit setting and open door alarm.
> Convenient preset function for 3 most commonly used temperature settings.
> Up to 9 temperature steps and maximum 200 cycles of repetition and programmable for each profile.
> Intuitive control panel with bright LED display (0.1℃ resolution) and push button keypad.
> RS-232 interface.

## Optional Accessories

> Universal / Dedicated Platforms, Rubber Mats, Universal Attachments
> Flask Clamps, Funnel Clamps
> Test Tube Racks, Spring Wire Racks
> Microplate Holders (three styles)

## Constructional Features

> Maintenance-free and durable BLDC motor.
> High-velocity fan ensuring uniform temperature distribution and rapid thermal recovery.
> Convenient sample monitoring thanks to the transparent acryl lid and the fluorescent lamp.
> Gas spring lid supports providing soft closing, smooth motion, and stopping.
> Environment-friendly CFC-free refrigerant.

## Specifications

| Product Name | | WS-300 | WS-300R | WS-600 | WS-600R |
|---|---|---|---|---|---|
| Volume (L) | | 53 | 53 | 83 | 83 |
| Temperature | Range(℃ ) | Ambient +5 ~ 60 | 15~60 | Ambient +5 ~ 60 | 15 ~ 60 |
| | Accuracy(℃ ) | ±0.1 (37℃ ) | ±0.1 (37℃ ) | ±0.1 (37℃ ) | ±0.1 (37℃ ) |
| | Stability(℃ ) | ±1.0 (37℃ ) | ±1.0 (37℃ ) | ±1.0 (37℃ ) | ±1.0 (37℃ ) |
| | Controller | Push button keypad.; Digital Display with PID automatic regulation | | | |
| | Heater | Heating Plate, 800W | | | |
| | Timer | Start / Stop / Duration setting; 10sec ~999hr 59min 59sec | | | |
| Shaker | Controller | PID automatic regulation | | | |
| | Power Unit | Brushless motor | | | |
| | Methods | Orbital(clockwise, counterclockwise, pause):Standard, Reciprocating : Option | | | |
| | Shaking Throw (mm) | 20, 30 (standard), 40 | 20, 30 (standard), 40 | 20, 30 (standard), 40 | 20, 30 (standard), 40 |
| | Speed (rpm) | 30 ~ 300 | 30 ~ 300 | 30 ~ 300 | 30 ~ 300 |
| | Stability (rpm) | ± 1 (at 150rpm) | ± 1 (at 150rpm) | ± 1 (at 150rpm) | ± 1 (at 150rpm) |
| Dimensions | Platform (W × D in mm) | 350 × 350 | 350 × 350 | 450 × 450 | 450 × 450 |
| | Inside (W × D × H in mm) | 410 × 410 × 320 | 410 × 410 × 320 | 510 × 510 × 320 | 510 × 510 × 320 |
| | Outside (W × D × H in mm) | 440 × 740 × 625 | 440 × 740 × 625 | 540 × 850 × 625 | 540 × 850 × 625 |
| IP code | | IP30 | IP30 | IP30 | IP30 |
| Net Weight (kg) | | 74 | 85 | 91 | 102 |
| Max. Load (kg) | | 10 | 10 | 15 | 15 |
| Order No. | | W6091050 | W6095050 | W6091080 | W6095080 |

Standard package includes only shaker, tray need to be ordered separately.

# Accessories for Shaker Incubator





## Sticky Plate

The Wiggens Sticky Plate can be loaded with any kind of vessels with a smooth base. Even at a speed of up to 220 rpm the vessel sticks to the plate.

| Suitable for | WS-300/300R | WS-600/600R |
|---|---|---|
| Order No. | 31901 | 31902 |
| Dimensions (W x D in mm) | 350x350 | 450x450 |
| Sticky (singal piece) (need 4 pieces for replacement on the tray) | 31901 -1 | 31902 -1 |
| Tray (Without sticky pieces) | 31901 -2 | 31902 -2 |

Sticky plate includes: tray and 4 pieces of stickies



## Multi-Purpose Tray

The multi-purpose tray is made of stainless steel and can be used for a diverse range of unusual specifications.

| Suitable for | WS-300/300R | WS-600/600R |
|---|---|---|
| Order No. | 31521 | 31522 |
| Dimensions (W × D in mm) | 350x350 | 450x450 |
| Max. Load of Flasks | | |
| 50ml | 16 | 25 |
| 100ml | 9 | 16 |
| 250ml | 4 | 9 |
| 300ml | 4 | 9 |
| 500ml | 4 | 5 |
| 1L | 2 | 4 |
| 2L | 1 | 2 |
| 2.8L | 1 | 2 |

Multi-Purpose Tray includes: tray and springs



Bar OD 23mm

## Adjustable bar tray

| Suitable for | WS-300/300R | WS-600/600R |
|---|---|---|
| Order No. | 31514 | 31515 |
| Dimensions (W x D in mm) | 300x300 | 400x400 |
| Number of bar | 3 | 3 |
| Order No. of bar | 31514-05 | 31515-05 |

Adjustable Tray includes: tray and 3 pieces of bars
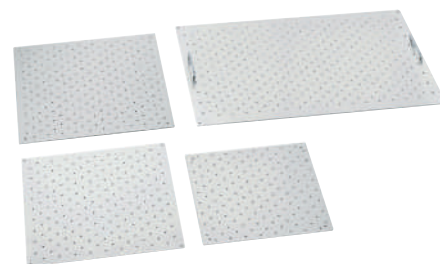
## Universal Tray

The Universal Trays employ a drilled grid for individual loadings of test tube holders, microtitre plates, and deep well plates.

| Suitable for | WS-300/300R | WS-600/600R |
|---|---|---|
| Order No. | 31501 | 31502 |
| Dimensions (W × D in mm) | 350x350 | 450x450 |
| Max. Load of Flask Clamps | | |
| 50ml | 28 | 45 |
| 100ml | 24 | 36 |
| 250ml | 13 | 18 |
| 300ml | 13 | 18 |
| 500ml | 10 | 13 |
| 1L | 5 | 7 |
| 2L | 4 | 5 |
| 2.8L | 1 | 2 |
| 4L | – | – |
| Max. Load of Separatory Funnel Clamps | | |
| 250ml | 4 | 6 |
| 500ml | 2 | 3 |
| 1L | – | 2 |
| 2L | – | – |

Standard package includes only tray, clamps need to be ordered separately.

## Multi-Pore Holders

The Wiggens multi-pore holders can be installed on the Wiggens sticky plates or the Wiggens universal trays. All holders can be installed on small pores and deeper holes. In total, four different multi-pore holders are available:
1. Multi-Layer Holder
2. Single-Layer Single-Position Holder
3. Single-Layer Three-Position Holder
4. Single-Layer Four-Position Holder



23651          23652 / 23653          23654
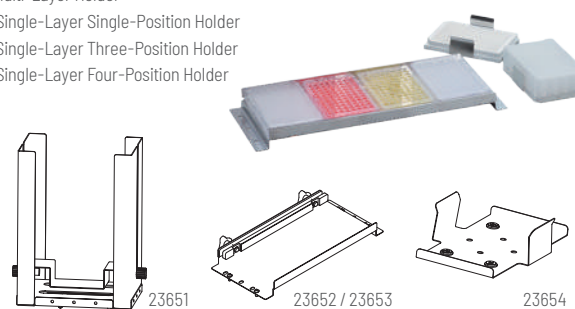
| Max. No. of Mountable Holders | Multi-Layer | Four-Position | Three-Position | Single-Position |
|---|---|---|---|---|
| Order No. | 23651 | 23652 | 23653 | 23654 |
| Max. mountable holders | | | | |
| WS-300/300R | 6 | — | 2 | 8 |
| WS-600/600R | 10 | 2 | 3 | 15 |

## Rubber mat

Designed for low-speed applications, non-skid rubber mats allow quick addition or removal of flasks, plates or tubes.

| Suitable for | WS-300/300R | WS-600/600R |
|---|---|---|
| Order No. | 31531 | 31532 |
| Dimensions(W x D x H mm) | 352x352x23 | 450x450x23 |



## Separatory funnel clamp

| Funnel Volumes | 250ml | 500ml | 1L | 2L |
|---|---|---|---|---|
| Order No. | 23562 | 23563 | 23564 | 23565 |
| | 152x60 | 165x70 | 230x80 | 255x90 |



## Erlenmeyer flask clamp

| Size of flask | Order No. |
|---|---|
| 25ml | 23549 |
| 50ml | 23550 |
| 100ml | 23551 |
| 250ml | 23552 |
| 300ml | 23556 |
| 500ml | 23553 |
| 1000ml | 23554 |
| 2000ml | 23555 |
| 2800ml Fernbach | 23557 |
| 3000ml | 23560 |
| 4000ml | 23558 |
| 5000ml | 23561 |
| 6000ml | 23559 |

## Plastic clamps for erlenmeyer flask

| Order No. | Description | Order No. | Description |
|---|---|---|---|
| 31285 | 100ml | 31287 | 500ml |
| 31286 | 250ml | | |

## Stainless steel clamps for fernbach flask

| Order No. | Description | Order No. | Description |
|---|---|---|---|
| 31283 | 1.8L | 31284 | 2.8L |



## Test tube rack for long type

| Order No. | Description | Order No. | Description |
|---|---|---|---|
| 31342 | 144 x Ø8mm | 31356 | 39 x Ø18mm |
| 31343 | 100 x Ø10mm | 31358 | 36 x Ø20mm |
| 31347 | 72 x Ø12mm | 31359 | 33 x Ø22mm |
| 31352 | 64 x Ø14mm | 31360 | 20 x Ø25mm |
| 31354 | 36 x Ø16mm | 31361 | 16 x Ø30mm |

## Test tube rack for short type

| Order No. | Description |
|---|---|
| 31348 | 72 x Ø12mm |
| 31353 | 64 x Ø14mm |
| 31357 | 39 x Ø18mm（Suitable for Greiner Bio-one tube） |

## Rack for plastic test tube

| Order No. | Description |
|---|---|
| 31355 | 36x Ø16mm（15ml） |
| 31362 | 16x Ø30mm（50ml） |

## 187mm test tube rack for short type

| Order No. | Description | Order No. | Description |
|---|---|---|---|
| 31344 | 44 x Ø12mm | 31349 | 21 x Ø20mm |
| 31346 | 24 x Ø18mm | | |

# Shaker Incubator

Laboratory space is both scarce and expensive, WSI series successfully combines flexibility, user friendly operation and operational safety with the optimum utilization of space. Thanks to its modular construction and downwards-opening door, can either be a single unit for use on or under the laboratory bench,or operate as part of a stacked system.

## Features

> Easy to completed the stacking process

> With electromagnetic drive technology, shaking stable and low noise

> Integrated shaking unit, the volume of flask up to 2L

> Opening direction of the out door can be switched option

> Built-in circulation fan to ensure the uniformity of temperature field

> Stainless steel chamber, easy to clean

> Alarm for temperature deviation, speed deviation or open the door.

> Independent safety temperature control to prevent overheating

> A variety of accessories are optional

> The built-in shaker is SRC, please refer to SRC for optional accessories

## Specifications

| Model | | WSI-50 | WSI-50R |
|---|---|---|---|
| Temperature | Range（25℃）℃ | RT+7~60 | RT-10~60 |
| | Accuracy [℃ ] | ±0.1 | ±0.1 |
| | Uniformity [℃ ] | ±0.5 | ±0.5 |
| Shaking (Optional) | Speed [rpm] | 20-300 | 20-300 |
| | Accuracy | ± 1%FS | ± 1%FS |
| | Amplitude [mm] | 25 | 25 |
| Chamber Volume | | 71L | 71L |
| Platform (w x d ) mm | | 300 x 330 | 300 x 330 |
| Capacity | | 100ml x 16 | 100ml x 16 |
| | | 250ml x 9 | 250ml x 9 |
| | | 500ml x 5 | 500ml x 5 |
| | | 1000ml x 4 | 1000ml x 4 |
| | | 2000ml x 1 | 2000ml x 1 |
| Dimensions (w x d x h) mm | 1 deck | 400 x 600 x 618 | 400 x 600 x 618 |
| | 2 decks | 400 x 600 x 1236 | 400 x 600 x 1236 |
| IP code | | IP30 | IP30 |
| Two layers weight [kg] | | 110 | 140 |

Standard package includes: incubator, SRC shaker, tray need to be ordered separately.

# Roller Rack CO$_2$ Incubator

WIGGENS CO$_2$ incubator with a roller apparatus or shaker inside the chamber, for adherent cells culture in the incubator. All operations and controls are on the external control panel. In addition to all the functions of the CO$_2$ incubator WCI-180, the roller rack CO$_2$ incubator has the following features:

> 180-litre CO$_2$ incubator with roller apparatus installed inside
> Low noise by using a low vibration DC brushless motor
> CO$_2$ concentration, humidity and temperature have good uniformity in the chamber
> The roller apparatus can be easily removed
> The external controller can control the internal rollers individually, and the speed displays on the TFT screen
> The temperature and CO$_2$ value are displayed and controlled on the LED screen

External controller

Four Dia.100-120mm roller bottles can be installed with speed controller on the outside
Controller outside can monitor and control speed without opening the door.

## Specifications

| Model | | WCI-180R |
|---|---|---|
| Display of the incubator | | LED |
| Capacity [L] | | 180 |
| Temperature | Range [℃ ] | RT+5-60 |
| | Display Precision [℃ ] | ±0.1 （37℃) |
| | Resolution [℃ ] | 0.1 |
| Speed control | Speed [rpm] | 2~30 |
| | Accuracy [rpm] | ±1 |
| | Resolution [rpm] | 0.1 |
| | Control | PID microprocessor |
| Humidity | | ≥70%  (at 37℃) |
| CO$_2$ | accuracy | ±0.1% (5% / 37℃ ) |
| | Resolution | 0.1% |
| | Sensor | Dual infrared CO$_2$ sensor |
| | Control | PID microprocessor |
| Timer (Roller) | | Continuous or up to 99h 59min |
| Jacket style | | Air（six-side heating） |
| Interior material | | 304 stainless steel |
| Shelf | | One for roller apparatus, and above space for static culture |
| Order No. | | W6026180 |

Standard package includes: incubator, water tray, shelf, roller.

More information about remote roller Celrol Mini, please refer to the page 189
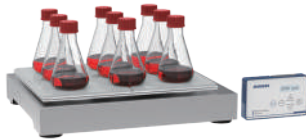
# Shaker CO₂ Incubator

In addition to all the functions of the WCI-180, the shaker CO₂ incubator has the following features:

> 180-litre $CO_2$ incubator with shaker installed inside
> Low noise by using a low vibration DC brushless motor
> $CO_2$ concentration, humidity and temperature have good uniformity in the chamber
> The shaker can be removed
> A variety of plate types (Erlenmeyer flasks: 100ml, 250ml, 500ml, 1000ml, test tube clamps, 96-well plates)
> The external controller can control the internal rollers individually
> The speed, temperature and $CO_2$ value are displayed and controlled on the LED screen

Flasks with volume of 100~1000ml can be put on the shaker inside. Brushless DC motor makes it low vibration, dust-free, low noise and very suitable for cell culture

Controller outside can monitor and control speed without opening the door.

More information, please refer to shaker SRC
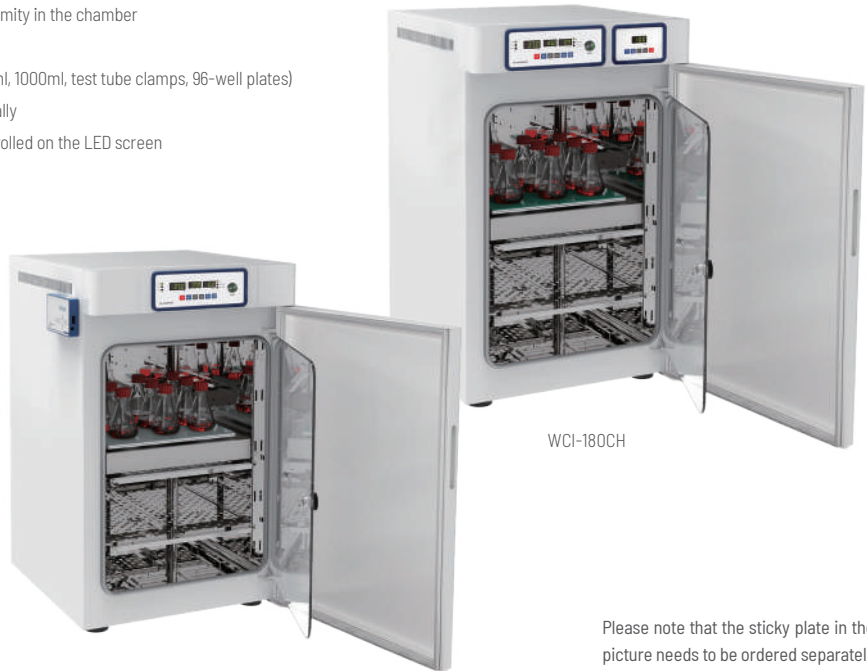
WCI-180CH

Please note that the sticky plate in the picture needs to be ordered separately

## Specifications

| Model | | WCI-180S | WCI-180CH |
|---|---|---|---|
| Application | | Incubator and shaker can be separate for Independent use | Integrated version |
| Display | | LED | LED |
| Capacity [L] | | 180 | 180 |
| Platform Size (W x L mm) | | 300x330 | 300x330 |
| Temperature | Range [℃ ] | RT+5-60 | RT+5-60 |
| | Display Precision [℃ ] | ±0.1 (37℃) | ±0.1 (37℃) |
| | Resolution [℃ ] | 0.1 | 0.1 |
| Speed control | Speed [rpm] | 30-300 | 30-300 |
| | Accuracy [rpm] | ±1 | ±1 |
| | Resolution [rpm] | 1 | 1 |
| | Control | PID microprocessor | PID microprocessor |
| Humidity | | ≥70%（at 37℃) | ≥70%（at 37℃) |
| $CO_2$ | Accuracy | ±0.1%（5% / 37℃ ) | ±0.1%（5% / 37℃ ) |
| | Resolution | 0.1% | 0.1% |
| | Sensor | Dual infrared $CO_2$ sensor | Dual infrared $CO_2$ sensor |
| | Control | Microprocessor | Microprocessor |
| Jacket style | | Air（six-side heating） | Air（six-side heating） |
| Interior material | | 304 stainless steel | 304 stainless steel |
| Shelf | | One for shaker | One for shaker |
| Order No. | | W6027180 | W6027181 |

Standard package includes: incubator, water tray, shelf, shaker. The tray for shaker need to be ordered separately

# WIGGENS
## The Magic Motion

# Shaker CO$_2$ Incubator

The WIGGENS shaker CO2 incubator is ideal for use in the fields of biosimilar production, proteomics, crystallography, genomics, cell biology and new drug development. A large capacity CO$_2$ incubator with separable long life shakers provides the optimum solution for cell suspension culture.

The internal chamber is subdivided into 3 compartments each holding a separable orbital shaker which can hold Erlenmeyer, cylindrical flasks or deep well blocks. The dual beam Infrared sensor provides precise CO$_2$ control while the six side heating system ensures excellent temperature control and recovery and also humidity. An outstanding air circulation system ensures temperature uniformity within all compartments.

The unique patented orbital shakers are constructed with stainless steel to minimize contamination and cleaning. Well sealed plate type magnetic drive motor allows these shakers to be used in highly humid environment and operate without noise, vibration or particulate generation. These powerful shakers can be used for many years with reliability guaranteed.

## Features

### Cell suspension culture

The shaker CO$_2$ incubator is designed for the suspension culture of eukaryotic cells such as CHO, HEK, Hela etc. but can also be used as a static incubator if required.

### Infrared sensor

Industry standard dual beam infrared sensor is used to maintain control of CO$_2$ density

### Pullout shaker platform

The platform of each shakers can be pulled out for loading flasks on each shakers efficiently.

### Sticky mat & various holders

The orbital shakers can be used with sticky mats or dedicated flask holder trays or universal flask/tube holder plates.

### Individual shaker control

Each orbital shaker can be individually controlled by an external control panel.

### Excellent temperature control

All 6 sides are directly heated and combined with PID control to ensure that temperatures are reached quickly and uniformity is maintained. Further the system combines forced air and natural convection to maintain the best temperature uniformity at all times.

### High and natural humidification

A deep and wide humidity tray allows high and natural humidity to be generated.

### Split inner glass doors

The internal chamber is separated into three compartments, each with its own shelf, shaker and glass door. This design prevents excessive loss of heat and CO$_2$ when removing flasks etc.

### Humidity display (option)

LED display of actual humidity in the chambers informs the user of time to supplement the water in the humidity tray

### Auto restart function

Each shaker has an autostart function so that if the glass inner door to each compartment is opened the shaker in that compartment stops and starts again when the door is closed. Auto start is also enabled if there is a power cut.

### UV lamp

A UV lamp sited next to the circulation fan works to sterilize the air in the incubator even during cell culturing. The UV lamp can be turned on or off by a switch.

### Stain resistant interior

The inner chamber and all orbital shakers are constructed with stainless steel SUS304 which is designed for use in GMP facility and is resistant to rust formation under high humidity conditions

### Anti-bacterial filter

A HEPA filter, located in post circulation fan, traps microbes and helps to maintain a sterile environment.

### Removable shelves

Larger growth vessels like 5 or 10 liter flasks can be accommodated by completely removing the shelves

## Specifications

| Model | | WCI-650CH | WCI-850CH |
|---|---|---|---|
| Display | | LED | LED |
| Chamber volume [L] | | 650L | 850L |
| Temp. | Range [°C ] | Ambient +5-60 | Ambient +5-60 |
| | Accuracy [°C ] | ±1 （at 37℃) | ±1 （at 37℃) |
| Shaker | Shaking motion | Orbital | Orbital |
| | Speed range [rpm] | 30-300 | 30-300 |
| | Speed accuracy [rpm] | ±1 | ±1 |
| | Speed increment [rpm] | 1 | 1 |
| | Orbit diameter [mm] | 25 | 25 |
| Humidity | | ≥70% （at 37℃) | ≥70% （at 37℃) |
| CO2 | Range | 0-20% | 0-20% |
| | Accuracy | ±0.3% （at 5% at 37℃) | ±0.3% （at 5% at 37℃) |
| | Sensor | IR CO2 sensor | IR CO2 sensor |
| | Inlet pressure [bar] | 0.7-1 | 0.7-1 |
| Time | Time range | Continuous or up to 99h59min | Continuous or up to 99h59min |
| | Time accuracy | ±1% | ±1% |
| | Time increment [min] | 1 | 1 |
| Jacket type | | Air jacket type (6-side heating) | Air jacket type (6-side heating) |
| Filter | | Anti-Bacterial HEPA filter | Anti-Bacterial HEPA filter |
| Sterilization | | U.V 4Wx1ea | U.V 4Wx1ea |
| Shelves | | 3ea | 3ea |
| Dimension（WxDxH）[mm] | Chamber dimensions | 700x650x1430mm | 700x800x1530mm |
| | Platform size | 520x520mm | 520x520mm |
| | Each compartment dimension | Compartment 1 (Bottom): 700x650x430 Compartment 2, 3 (Middle,Top): 700x650x380 | 700x800x410 |
| | Overall dimensions | 820x780x1740 | 820x920x1840 |
| IP code | | IP20 | IP20 |
| Weight [kg] | | 323 | 393 |
| Power | | 220V, 50/60Hz | |
| Order No. | | W6027650 | W6027850 |

Standard package includes: incubator, water tray, 3 shakers, 3 sticky plates.
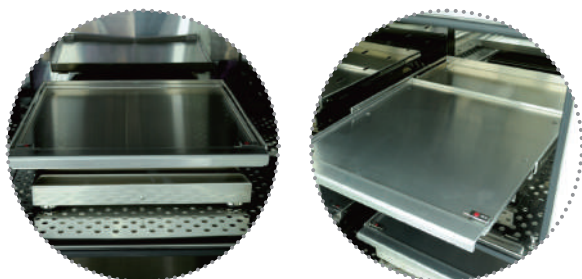


### Maximum allowance for flask capacity

| WCI-650CH | WCI-850CH |
|---|---|
| 100ml x 156 | 100ml x 156 |
| 250ml x 90 | 250ml x 90 |
| 500ml x 60 | 500ml x 60 |
| 1000ml x 48 | 1000ml x 48 |
| 2000ml x 9 | 2000ml x 27 |

*Optimum performance for maximum allowance can be obtained at 150rpm.

## Universal Tray

The Universal Trays employ a drilled grid for individual loadings of test tube holders, microtitre plates, and deep well plates.
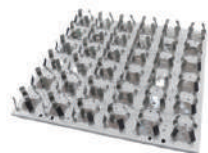


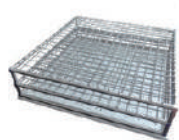| Suitable for | WCI-650CH / WCI-850CH |
|---|---|
| Order No. | W6100402 |
| Dimensions (W x D in mm) | 520 x 520 |

## Sticky Plate

The Wiggens Sticky Plate can be loaded with any kind of vessels with a smooth base. Even at a speed of up to 300 rpm the vessel sticks to the plate. Other vessels, like microtitre plates can be shaken on the Wiggens Sticky Plate as well. but, only up to a speed of 220 rpm.
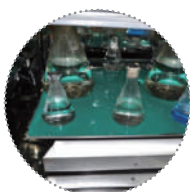


| Suitable for | WCI-650CH / WCI-850CH |
|---|---|
| Order No. | W6100401 |
| Dimensions (W x D in mm) | 520 x 520 |

## Erlenmeyer Flask Clamp



| Size of flask | Order No. |
|---|---|
| 25ml | 23549 |
| 50ml | 23550 |
| 100ml | 23551 |
| 250ml | 23552 |
| 300ml | 23556 |
| 500ml | 23553 |
| 1000ml | 23554 |
| 2000ml | 23555 |
| 2800ml Fernbach | 23557 |
| 3000ml | 23560 |
| 4000ml | 23558 |
| 5000ml | 23561 |
| 6000ml | 23559 |

## Multi-Purpose Tray

The multi-purpose tray is made of stainless steel springs and can be used for a diverse range of unusual specifications.



| Suitable for | WCI-650CH / WCI-850CH |
|---|---|
| Order No. | W6100403 |
| Dimensions (W x D in mm) | 520 x 520 |

# Biomix for $CO_2$ Incubators

WCI-180R

WCI-180S

## $CO_2$ Incubator with Roller installed inside

> With Wiggens roller rack, our customer will get better cell growth effect.
> Suitable for serum flask, medium flask and culture tube
> Suitable for cell culture or staining process
> Speed range from 0.2~8.1 rpm

## $CO_2$ Incubator with Shaker installed inside

> With Wiggens shaker, our customer will get better cell growth effect.
> $O_2$ transfer rate is increased
> The problem of media gradients was eliminated by mixing media
> To avoid cell deposition and accumulation in suspension culture

$CO_2$ Incubator

## $CO_2$ Incubator with Biological culture

Biological culture that uses a semi-permeable membrane separation technique between cell compartment and medium compartment, which breaks through the constraints of conventional cell culture on cell growth by air, nutrients, and metabolic inhibitors. It largely mimics the environment in which cells grow in organisms. The aim of high density cell culture and high concentration product expression was realized.

> A disposable cell culture device that can be used at any time
> Reduce the use of consumables
> High cell density and product concentration
> Can be stacked to save space
> Save the time, no more external equipment is needed

## $CO_2$ Incubator with Magnetic stirrer installed inside

> With special magnetic stirrer and vessel , our customer will get better cell growth effect.
> With IP 68 class, magnetic stirrer has a long service life
> Remote speed control system
> Low heat dissipation design, can not affect the temperature and $CO_2$ control of incubator

# Cell Culture Roller Rack

The WIGGENS cell culture roller rack, available in the Celrol Mini and Celrol Mid models, offers high flexibility in its operation, both inside an incubator and on a work table. A remote control box can be conveniently attached to the incubator's surface, and the flat cable does not require special installation measures like an access poRT The Celrol Mini can accommodate up to four 2000ml bottles, while the Celrol Mid can handle six 2000ml bottles at a time. With a speed range from 0.2rpm to 8.1 rpm, these racks are designed to optimize the performance of adherent cell cultures.

## Features
> Steel reinforced polyurethane timing belts
> Brushless DC Motor
> Powder coated aluminum for durability and cleanliness
> Non-slip rubber material for the best performance of rolling
> Designed for no idle roller by drive-belt

## Specifications

| Model | Celrol Mini | Celrol Mid |
|---|---|---|
| rpm Range [rpm] | 0.2~8.1 | 0.2~8.1 |
| Accuracy [rpm] | 1 | 1 |
| Increment [rpm] | 0.1 | 0.1 |
| Control | Microprocessor digital PID | Microprocessor digital PID |
| Time Range | Continuous or up to 999h 59min | Continuous or up to 999h 59min |
| Accuracy | ±1% | ±1% |
| Display | LED Display | LED Display |
| Motor type | Brushless DC motor | Brushless DC motor |
| Bottle diameter [mm] | 110 to 120 4ea | 110 to 120 6ea |
| Roller deck dimension [WxDxH][mm] | 362×299×212 | 362×299×412 |
| Overall dimension [WxDxH][mm] | 375×370×345 | 375×370×545 |
| Bottle Positions | 4 | 6 |
| Decks | 2 | 3 |
| Power | 220V, 50/60Hz | 220V, 50/60Hz |
| Weight [kg] | 12.5 | 13.5 |
| Order No. | W6110100 | W6110200 |

*110V product available upon request

Can contain four Dia.100–120mm roller bottles.

### Outside control
Controller can adjust speed without opening the door.

# Cell Culture Roller Rack

## Celrol Pro

> Smooth ramping digitally controlled rotation accurate to 0.01 rpm
> Maintenance-free precision brushless motor
> Bright TFT display for easy operation
> Can be directly connected to the printer

### Specifications

| Model | Celrol Pro |
|---|---|
| Display | TFT |
| Capacity | 5~55 Positions |
| Bottle Speed (110mm Bottle) [rpm] | 0.08~2.5 |
| Diameter of roller bottles [mm] | 108~121 |
| Length of roller bottles [mm] | Max. 550 |
| Accuracy [rpm] | 0.01 |
| Drive | Belt Driven |
| Motor Type | Brushless DC |
| Rotation Direction | Clockwise and Counter-Clockwise |
| Options | Temperature Alarm and Battery Backup |
| Remote Communication | RS232 |
| Humidity | 80% up to 37℃ |
| Operating Temperature [℃ ] | 10 to 40 |
| Electrical | 220 V, 50/60 Hz |

Standard package includes: Roller, Belt break alarm

## Celrol Elite

> Robust touch screen interface that is easy to view from a distance
> Readily recognizable icons for intuitive navigation
> Digitally controlled maintenance-free motor accurate to 0.01 rpm
> RS-422 Modbus RTU, RS-485 Modbus RTU, Modbus TCP and TCP/IP
> Can be directly connected to the printer

### Specifications

| Model | Celrol Elite / GMP |
|---|---|
| Display | SIMATIC HMI Touch Screen |
| Capacity | 8~88 Positions<br>5~55 Positions |
| Bottle Speed (110mm Bottle) [rpm] | 0.08~2.5 |
| Diameter of roller bottles [mm] | 108~121 |
| Length of roller bottles [mm] | Max. 550 |
| Accuracy [rpm] | 0.01 |
| Drive | Belt Driven |
| Motor Type | Brushless DC |
| Rotation Direction | Clockwise and Counter-Clockwise |
| Options | Temperature  Alarm and Battery Backup |
| Remote Communication | RS-422 Modbus RTU, RS-485 Modbus RTU, Modbus TCP and TCP/IP |
| Humidity | 80% up to 37℃ |
| Operating Temperature [℃ ] | 10 to 40 |
| Electrical | 220 V, 50/60 Hz |

Standard package includes: Roller, Belt break alarm

## Ordering Information

| Order No. | Position | Deck distance | Decks | Width | Depth | Height | Bottle Positions | Rack material |
|---|---|---|---|---|---|---|---|---|
| **Celrol Pro** | | cm | | cm | cm | cm | | |
| WPBWRA501 | 5 | 18 | 1 | 79 | 63 | 35 | 5 | AL |
| WPBWRA503 | 5 | 18 | 3 | 79 | 63 | 71 | 15 | AL |
| WPBWRA505 | 5 | 18 | 5 | 79 | 63 | 107 | 25 | AL |
| WPBWRA508 | 5 | 18 | 8 | 79 | 63 | 161 | 40 | AL |
| WPBWRA509 | 5 | 18 | 9 | 79 | 63 | 179 | 55 | AL |
| WPBNRS501 | 5 | 15 | 1 | 79 | 63 | 35 | 5 | SS304 |
| WPBNRS503 | 5 | 15 | 3 | 79 | 63 | 65 | 15 | SS304 |
| WPBNRS505 | 5 | 15 | 5 | 79 | 63 | 95 | 25 | SS304 |
| WPBNRS508 | 5 | 15 | 8 | 79 | 63 | 140 | 40 | SS304 |
| WPBNRS509 | 5 | 15 | 9 | 79 | 63 | 155 | 45 | SS304 |
| WPBNRS510 | 5 | 15 | 10 | 79 | 63 | 170 | 50 | SS304 |
| WPBNRS511 | 5 | 15 | 11 | 79 | 63 | 185 | 55 | SS304 |
| **Celrol Elite** | | | | | | | | |
| WEBNRS501 | 5 | 15 | 1 | 79 | 63 | 35 | 5 | SS304 |
| WEBNRS503 | 5 | 15 | 3 | 79 | 63 | 65 | 15 | SS304 |
| WEBNRS505 | 5 | 15 | 5 | 79 | 63 | 95 | 25 | SS304 |
| WEBNRS508 | 5 | 15 | 8 | 79 | 63 | 140 | 40 | SS304 |
| WEBNRS509 | 5 | 15 | 9 | 79 | 63 | 155 | 45 | SS304 |
| WEBNRS510 | 5 | 15 | 10 | 79 | 63 | 170 | 50 | SS304 |
| WEBNRS511 | 5 | 15 | 11 | 79 | 63 | 185 | 55 | SS304 |
| WEBNRS809 | 8 | 15 | 9 | 120 | 63 | 155 | 72 | SS304 |
| WEBNRS810 | 8 | 15 | 10 | 120 | 63 | 170 | 80 | SS304 |
| WEBNRS811 | 8 | 15 | 11 | 120 | 63 | 185 | 88 | SS304 |

# Forced Convection Oven
# Vacuum Oven
# Muffle Furnace

# Forced Convection Oven

Ideal for high-temperature storage with a user-friendly design, WF-G Models cater to all sterilization and drying tasks. They are perfect for drying applications that require a gentle airflow.

## Features

> Microprocess PID control / Calibration.

> Over temperature limit protection / Door opening alarm.

> Conveniently preset 3 most commonly used temperature settings.

> Rounded inner chamber corners for easy cleaning and better air-flowing.

> Stainless steel interior.

> Two circular adjustable top slide vents help to control inner air vapor circulation (inside diameter 35mm)
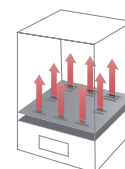
### Simplifies operation
LED display, easy to operate

### Venting valve
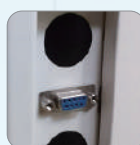Regulate the air exchange between chamber and outside

### High temperature protection
Alarm when the temperature exceeds the set point

### Wide temperature range
Up to 250 ℃ , even 300 ℃ version is possible

### Uniform distribution
Accurate temperature control and forced convection

### RS232 interface
Remote control by PC software

## Specifications

| Model | WF-02G | WF-12G | WF-22G |
|---|---|---|---|
| Chamber Volume (L) | 50 | 100 | 150 |
| Temperature — Range (℃) | RT+10~250 | RT+10~250 | RT+10~250 |
| Temperature — Stability at 100℃ (℃) | 0.5 | 0.6 | 0.8 |
| Dimension (W×D×H) — Interior (mm) | 400×420×420 | 480×460×500 | 500×480×625 |
| Dimension (W×D×H) — Exterior (mm) | 540×620×780 | 600×690×810 | 660×750×920 |
| Number of shelves [included / max.] | 2/8 | 2/12 | 2/14 |
| IP code | IP20 | IP20 | IP20 |
| Weight (kg) | 55 | 62 | 72.5 |
| Power supply | 230V, 50/60 Hz | 230V, 50/60 Hz | 230V, 50/60 Hz |
| Order No. — Without glass window | W6061050 | W6061100 | W6061150 |
| Order No. — With glass window | W6061051 | W6061101 | W6061151 |

| Model | WF-05G | WF-10G | WF-15G | WF-25G | WF-40G | WF-72G |
|---|---|---|---|---|---|---|
| Chamber Volume (L) | 50 | 100 | 150 | 250 | 400 | 720 |
| Temperature — Range (℃) | RT+10~300 | RT+10~300 | RT+10~300 | RT+10~300 | RT+10~300 | RT+10~300 |
| Temperature — Stability at 100℃ (℃) | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Dimension (W×D×H) — Interior (mm) | 388×334×407 | 474×396×505 | 474×396×606 | 630×520×760 | 1080×574×840 | 1078×571×1200 |
| Dimension (W×D×H) — Exterior (mm) | 602×573×732 | 652×689×831 | 694×652×930 | 810×788×1031 | 1240×792×1123 | 1240×834×1470 |
| Number of shelves [included / max.] | 2/4 | 2/12 | 2/14 | 2/14 | 3/10 | 3/10 |
| IP code | IP20 | IP20 | IP20 | IP20 | IP20 | IP20 |
| Weight (kg) | 55 | 62 | 72.5 | 78.5 | 100.5 | 110.5 |
| Heating power (kW) | 1.2 | 1.3 | 1.5 | 2.6 | 3.4 | 5.1 |
| Power supply | 230V, 50/60 Hz | 230V, 50/60 Hz | 230V, 50/60 Hz | 380V | 380V | 380V |
| Order No. — Without glass window | W6062050 | W6062100 | W6062150 | W6062250 | W6062400 | W6062720 |
| Order No. — With glass window | W6062051 | W6062101 | W6062151 | W6062251 | - | - |

Standard package includes: oven, shelves.

# Accessories & Options

### Perforated Shelves
Stainless steel shelves are easily removable without using tools for easy cleaning.

| Order No. | Description W x L （mm） | Model |
|---|---|---|
| W6060501 | 365×315 | WF-02G / 05G |
| W6061001 | 450×380 | WF-10G / 12G |
| W6061501 | 465×400 | WF-15G / 22G |
| W6062501 | 558×440 | WF-25G |
| W6064001 | 988×490 | WF-40G |
| W6067201 | 1068×565 | WF-72G |

### Glass viewing window
Threefold tempered glass viewing window allows for easy monitoring of samples.

# WIGGENS
THE MAGIC MOTION

# Vacuum Oven

Optimally constructed for separating solvents from solutions or other sample with high boiling points. With vacuum, the boiling point of the solvent can be reduced, protecting the sample and make the separation process easier. The vacuum oven is widely used in the fields of biochemistry, chemical industry, pharmacy, medical and health, agricultural research, environmental protection, etc. , for powder drying, baking and various types of glass containers for disinfection and sterilization. It is especially suitable for fast and efficient drying of heat-sensitive, easily decomposed, easily oxidized materials and articles with complex components.

## Features

### Display

> Large LED temperature display for actual value and setpoint(resolution on 0.1℃ )
> The vacuum gauge displays the vacuum in the oven in real time

### Operation

> Wiggens traditional operation panel, clear and simple
> Three common temperature points can be used to start the test quickly
> Ball valve used for open and close the vacuum in oven
> Need valve used for venting
> All connections as well vacuum and venting are located at the rear

### Temperature control

> Wide temperature range that can be controlled up to 250℃
> Improved temperature distribution. (±3.7℃ at 100℃ )
> Integrated programmer for the execution of time and temperature dependant profiles,
   1 temperature profile with 9 steps max. The selected steps can set up up to 200 loops

### Structural and Safety

> Toughened glass doors allow easy access to the interior of the oven.
> Safety door cover to protect users and laboratories when toughened glass breaks
> Overcurrent and over temperature protection
> Different materials of O-ring are optional
> RS232 interface

> The chamber is made of stainless steel which smooth and even finishing
> There are 3 shelves inside the chamber
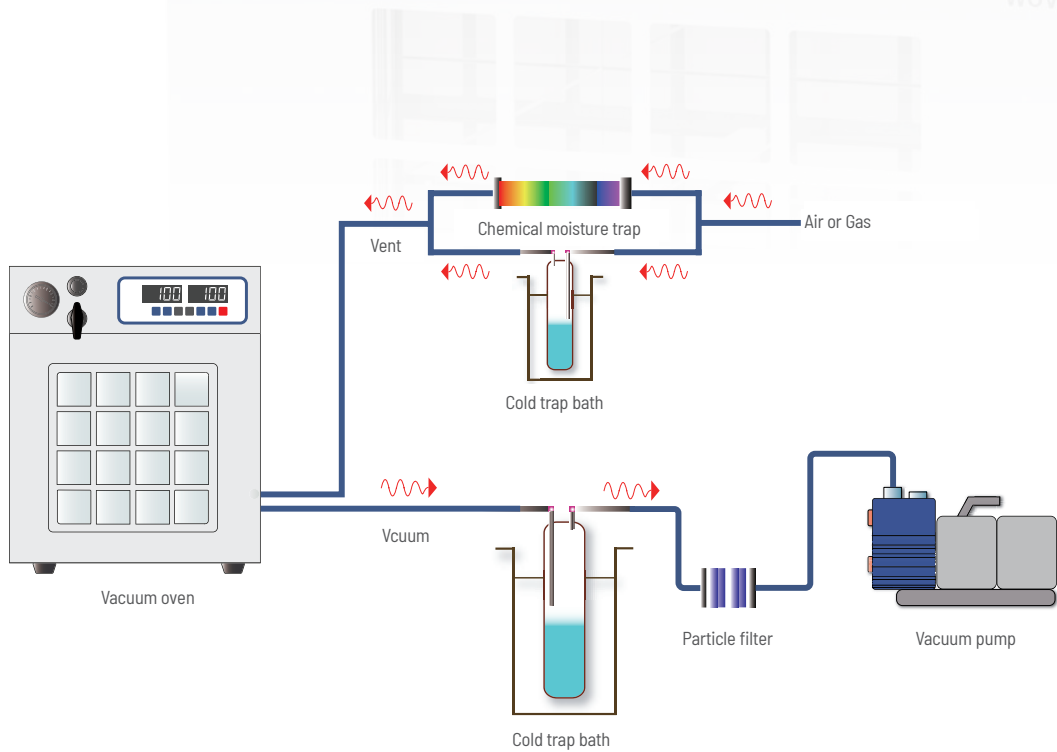> Power supply: 220-240 V, 50/60 Hz

## Specifications

| Model | WOV-30 | WOV-65 | WOV-120 |
|---|---|---|---|
| Order No. | W6071030 | W6071065 | W6071120 |
| Volume (L) | 30 | 65 | 120 |
| Temperature range (℃) | RT+5~250 | RT+5~250 | RT+5~250 |
| Temperature resolution (℃) | 0.1 (at100℃ ) | 0.1 (at100℃ ) | 0.1 (at100℃ ) |
| Temperature variation (℃) | ±3.7 (at100℃ ) | ±3.7 (at100℃ ) | ±3.7 (at100℃ ) |
| Heating power (W) | 2100 | 2100 | 2550 |
| Vacuum range | 0~1 atm | 0~1 atm | 0~1 atm |
| Timer | 1min~99hr59min | 1min~99hr59min | 1min~99hr59min |
| Number of shelves | 3 | 3 | 3 |
| IP code | IP20 | IP20 | IP20 |
| Vacuum connector (mm) | Ø10 | Ø10 | Ø10 |
| Venting connector (mm) | Ø10 | Ø10 | Ø10 |
| Inner size (mm) | 323×323×323 | 400×410×400 | 500×500×500 |
| Dimension (mm) | 560×506×630 | 640×583×707 | 740×722×807 |
| Weight (kg) | 63 | 103 | 147 |

Standard package includes: oven, shelves

## Related Products for Vacuum Ovens

Organization chart for use of Vacuum oven with Pump and Cold trap bath



Chemical moisture trap

Air or Gas

Vent

Cold trap bath

Vacuum oven

Vcuum

Cold trap bath

Particle filter

Vacuum pump

# Accessories

## Gasket

Installed between chamber and door, silicone gasket and fluorine rubber gasket are avalible.

| Order No. | Part | Suitable for |
|-----------|------|--------------|
| W6071032 | Gasket, silicone | WOV-30 |
| W6071062 | Gasket, silicone | WOV-65 |
| W6071122 | Gasket, silicone | WOV-120 |
| W6071033 | Gasket, fluorine rubber | WOV-30 |
| W6071063 | Gasket, fluorine rubber | WOV-65 |

## Vacuum pump and cold trap

| Order No. | Part | Suitable for |
|-----------|------|--------------|
| 169520 | Vacuum pump C520 | WOV series |
| 900104 | Vacuum pump R-16SN | WOV series |
| W8603040 | Cold trap | WOV series |

# Muffle Furnace

## Standard version RT+15℃ ~1100℃

## Hight temperature version RT+15℃ ~1500℃
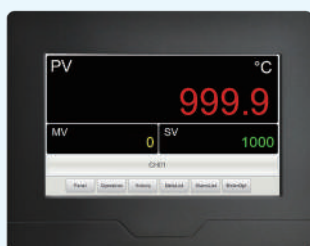
### Operation and Display

> Intelligent navigation operation, can be directly access into the settings

> The main interface shows setting temperature, actual temperature, output power, historical data, alarm records and other information, convenient to enter the destination menu directly.

### Program

> Integrated temperature program, 10×30 steps

> Display the temperature curve in real-time

### Data storage and connection

> Data storage, transfer, and invocation

> Experiment data and alarm information can be transfer by USB stick

> Communication interface included RS232, RS485, RJ45, can be remote controlled by PC and SCADA

### Safety

> Overheat protection (Electronic and mechanical protection), Overload and leakage protection, Self-diagnosis

> With password protection to prevent the process of setting parameters are changed

> Standard with passive exhaust port, ensure gas pressure safety

> With high quality thermocouple, ensure accurate temperature control and long service time

## Specification

| Model | | WMF-02 | WMF-05 | WMF-12 | WMF-02H | WMF-05H | WMF-12H |
|---|---|---|---|---|---|---|---|
| Chamber volume (L) | | 2 | 4.5 | 12 | 3 | 4.5 | 12 |
| | Temperature range (℃) | RT+15~1100 | RT+15~1100 | RT+15~1100 | RT+15~1600 | RT+15~1600 | RT+15~1600 |
| | Temperature stability (℃) | ±1 | ±1 | ±1 | ±1.5 | ±1.5 | ±1.5 |
| Heating | Heating | Heat on three sides | | | | | |
| | Temperature control | PID | | | | | |
| | Heating capacity (KW) | 1.5 | 2.5 | 4 | 3 | 4.5 | 7 |
| Program | | Integrated temperature program, 10×30 steps | | | | | |
| Safety device | | Overheat, Overload and leakage protection, Self-diagnosis, with password protection | | | | | |
| Temperature curve | | Display the temperature curve in real-time | | | | | |
| Communication interface | | RS232, RS485, RJ45, USB-A for data export | | | | | |
| Power supply | | Aviation connector of the power supply, AC220, 50/60Hz | | | | | |
| IP code | | IP20 | | | | | |
| Dimensions(W×D×H mm) | | 445×460×570 | 475×460×640 | 525×560×690 | 640×530×980 | 650×580×990 | 700×680×1040 |
| Chamber dimensions(W×D×H mm) | | 120×200×80 | 150×200×150 | 200×300×200 | 140×150×140 | 150×200×150 | 200×300×200 |
| Weight (KG) | | 62 | 74 | 102 | 62 | 74 | 102 |
| Order No. | | W6121002 | W6121005 | W6121012 | W6122002 | W6122005 | W6122012 |

*Recommended material tray for high-temperature heating

Standard package includes: oven only, material tray need to be ordered separately

## Accessories & Options

| Order No. | Name | Description | |
|---|---|---|---|
| W6121P0030 | Material tray | Used to place materials | Suitable for WMF-02 |
| W6121P0031 | Material tray | Used to place materials | Suitable for WMF-02H |
| W6121P0032 | Material tray | Used to place materials | Suitable for WMF-05/05H |
| W6121P0033 | Material tray | Used to place materials | Suitable for WMF-12/12H |

# Ultrasonic Cleaner
# Ultrasonic Shaker

# Ultrasonic Cleaner

## Ultrasonic Cleaning Technology

The cavitation phenomenon consists of formation and growth of millions of microscopic bubbles under a low-pressure stage, produced into the ultrasonic bath due to a high power transducer 37kHz. These bubbles break in all directions and attack every surface in contact with water, erasing dirt, impurities and pollutants when in contact with materials or pieces in the bath. This phenomenon allows cleaning all kinds of materials and products without the need of disassembling, due to all the surfaces being in contact with the liquid. The heating will accelerate this clearing process.

## Eco Series

> Wide range of available capacities from 3L up to 22L
> Inner and outer parts made of stainless steel
> Features a digital timer with up to 99 min

## Pro Series

> Entails all advantages of the Eco series
> LCD touch screen for simple and intuitive operation
> Features a digital timer with up to 199 min
> Heating ability between 20℃ and 80℃
> Stainless steel 304 tank and powder coated stainless steel, meet the requirements of antiseptic and hygienic lab environment
> Automatically save last parameters and recall when the unit is turned back on
> Non-slip feet and flexible surface contact for lower ultrasonic vibration
> Safety handles make the unit portable
> Maintain ultrasonic efficiency at different temperatures
> Frequency overload and thermal protection
> Ultrasonic baths with rapid degassing and power settings from 40 to 100 % .

## Application

> Laboratories: laboratory material, precision instruments, pipettes, sieves, etc.
> Medicine: instrumentation in general, surgical material, etc.
> Odontology: dental prosthesis, instrumentation, etc.
> Optics: instrumentation, opticals, frames, etc.
> Industry: printed circuits, electronic components, etc.
> Jewellery: watches, jewels, etc.
> Automation: Injector clearing.
> Degasification or liquid dissolution
> Compact substances disgregation

## Specifications

| Order No. | Model | Capacity L | Internal Size (WxDxH) mm | Overall Size (WxDxH) mm | Ultrasonic Power W | Heater Power W | Temp. ℃ | Frequency Khz | Timer min | Drainage outlet |
|---|---|---|---|---|---|---|---|---|---|---|
| Eco Series | | | | | | | | | | |
| W3080303 | UE03 | 3 | 240×140×100 | 270×160×240 | 90 | — | — | 40 | 1~99min | Without |
| W3080306 | UE06 | 6 | 300×150×150 | 330×180×290 | 160 | — | — | 40 | 1~99min | With |
| W3080310 | UE10 | 10 | 300×240×150 | 360×270×310 | 250 | — | — | 40 | 1~99min | With |
| W3080315 | UE15 | 15 | 330×300×150 | 390×330×310 | 350 | — | — | 40 | 1~99min | With |
| W3080322 | UE22 | 22 | 500×300×150 | 570×330×330 | 500 | — | — | 40 | 1~99min | With |
| Pro Series | | | | | | | | | | |
| W3080403 | UA03 | 3 | 240×137×103 | 301×163×342 | Max 100 (Adjustable 40-100%) | 88 | 20~80 | 37 | 1~199min | Without |
| W3080406 | UA06 | 6 | 300×153×150 | 362×180×305 | Max 150 (Adjustable 40-100%) | 170 | 20~80 | 37 | 1~199min | With |
| W3080410 | UA10 | 10 | 300×240×150 | 383×267×305 | Max 200 (Adjustable 40-100%) | 270 | 20~80 | 37 | 1~199min | With |
| W3080415 | UA15 | 15 | 330×300×150 | 390×330×310 | Max 350 (Adjustable 40-100%) | 420 | 20~80 | 37 | 1~199min | With |
| W3080422 | UA22 | 22 | 500×300×150 | 584×327×327 | Max 400 (Adjustable 40-100%) | 550 | 20~80 | 37 | 1~199min | With |

Eco Series Standard package includes: Ultrasonic Cleaner, tray.
Pro Series Standard package includes: Ultrasonic Cleaner, tray, lid.

# Accessories for Ultrasonic Cleaner

Some accessories are very suitable for the Ultrasonic Cleaner, protecting the tank body, and some small parts need special containers to ensure to be placed at the bottom of the tank.

## Lid for reducing the noise

| Order No. | Name | Suitable for Volume |
|-----------|------|---------------------|
| U10003 | SS Lid | 3L |
| U10006 | SS Lid | 6L |
| U10010 | SS Lid | 10L |
| U10015 | SS Lid | 15L |
| U10022 | SS Lid | 22L |

## Tray

| Order No. | Name | Suitable for Volume |
|-----------|------|---------------------|
| U10203 | Tray | 3L |
| U10206 | Tray | 6L |
| U10210 | Tray | 10L |
| U10215 | Tray | 15L |
| U10222 | Tray | 22L |

## SS Insert basket

| Order No. | Name | Suitable for Volume |
|-----------|------|---------------------|
| U10103 | Insert basket | 3L |
| U10106 | Insert basket | 6L |
| U10110 | Insert basket | 10L |
| U10115 | Insert basket | 15L |
| U10122 | Insert basket | 22L |

## Positioning lid

| Order No. | Name | Suitable for Volume |
|-----------|------|---------------------|
| U10403 | Lid | 3L |
| U10406 | Lid | 6L |
| U10410 | Lid | 10L |
| U10415 | Lid | 15L |
| U10422 | Lid | 22L |

## Application Tip

Insert capacity of test tube racks for each bath
3L bath: 1pc
6L bath: 1pc
10L bath: 2pcs
15L bath: 3pcs
20L bath: 4pcs

## Test tube holder / Drain pipe

| Order No. | Description |
|-----------|-------------|
| U10503 | Test tube rack, for 24 test tubes, 16/17 mm dia. for 3L bath |
| U10504 | Test tube rack, for 50 test tubes, 16/17 mm dia. for 6~22L bath |
| U10505 | Test tube rack, for 90 test tubes, 12/13 mm dia. for 6~22L bath |
| U10506 | Test tube rack, for 90 microliter tubes. 11/12 mm dia. for 6~22L bath |
| U10507 | Test tube rack, for 21 test tubes, 30 mm dia. for 6~22L bath |
| U10606 | Drain pipe,suitable for 3~22L Ultrasonic Cleaner |

## Stabilizing rings for Erlenmeyer

> PVC covered steel
> suitable for Erlenmeyers, flasks, etc.
> Application: The weight of the ring prevents flasks from floating when placed in a thermal bath.

| Order No. | Model | Colour | Size（OD）x（ID） | Weight |
|-----------|-------|--------|-------------------|--------|
| 5660 | Type S | Red | Ø 70×Ø 27 mm | 0.3 kg |
| 5661 | Type M | Yellow | Ø 105×Ø 52 mm | 0.5 kg |
| 5662 | Type L | Blue | Ø 140×Ø 76 mm | 1.2 kg |

# Ultrasonic Shaker

Ultrasonic bath with shaking device for sample preparation

Wiggens ultrasonic shaker combines the function of ultrasonic cleaner and shaking water bath. Both procedures can be carried out simultaneously or separately. This means that a sample can be pre-homogenized at a specified shaking frequency, and then final homogenization can be achieved in a very short time using ultrasound.

> Reciprocal shaker, standard 20 mm , 30mm and 40mm are optional
> Multi-Purpose Spring tray is easy to remove
> With drainage outlet
> With bath lid to reduce noise and prevent liquid losses due to evaporation
> Speed range [rpm] 20~200 rpm

### Application

Biochemical research, material testing, enzyme and tissue studies, homogenization, routine laboratory tasks, corrosion tests, fermentation, incubation, blood plasma thawing, temperature tests of food and beverages

### Max. Load of flasks

> 6 X 250ml
> 6 X 300ml
> 2 X 500ml
> 2 X 1L
> 1 X 2L

## Specifications

| Order No. | Model | Temp. | Frequency | Working Power | Heater Power | Timer | Drainage outlet | Capacity | Shaking stroke |
|-----------|-------|-------|-----------|---------------|--------------|-------|-----------------|----------|----------------|
| | | °C | Khz | W | W | min | | L | mm |
| W3080122 | WUS22 | 20-80 | 37 | Max.400 (40-100% adjustable) | 550 | 1~199min | With | 20 | 20 (30 / 40) |

Standard package includes: Ultrasonic shaker, Multi-Purpose Spring tray, lid.
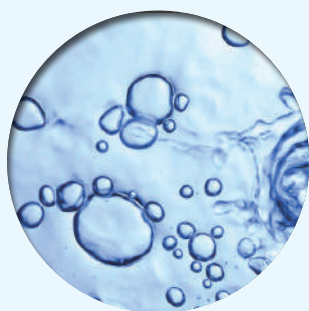
# Liquid Handling Equipment

# Peristaltic Pump

## Advancing the Science of Liquid Handling

### Advanced Control Features

> Icon Driven User Interface allows for easy setup and operation
> Large Backlit LCD Display is easy to view from a distance
> Durable Front Overlay is resistant to chemicals
> Polarized and Angled Screen allows for glare free viewing
> "Trouble-Free" Calibration Screen allows for accurate and quick calibration
> Ultra High Precision Stepper Motor ensures repeatability and accuracy

### User-Friendly Design Features

> Low Profile Design reduces space required on the bench or in a hood
> Pump Settings can be saved and recalled saving time in multi-use settings. Nine quick retrieval setups are available
> Multi-Language Help Screens: English, Chinese, Deutsch, Francaise, Japanese, Korean, and Spanish

### Vdose® ELITE Additional Features

> Multiple stacking pump heads allow for higher volumes and multiple fill applications with one pump
> Microcassette head is ideal for precision micro-dispensing of liquids in well plates, microtubes, or microcentrifuge tubes
> Works with 2, 3, 6 and 8mm tubing
> Pump allows for different ramping profiles to avoid splashing or foaming
> Accommodates a variety of dispensing and process applications

## Suggested Application

### Research, Development, and Quality Control
Transfer and distribution of fluids into smaller containers, serial dilutions, sample preparation, and media dispensing.

### Pharmaceutical and Biotechnology
Dispensing microbiological media, pill coating, dilutions, transferring live cells, additions and harvests to and from bioreactors, packaging and filling.

### Food and Beverage
Common uses include dispensing flavorings, colorings, vitamins, and other additives in processing applications, and simple dispensing of end products on production lines or into shelf packages.

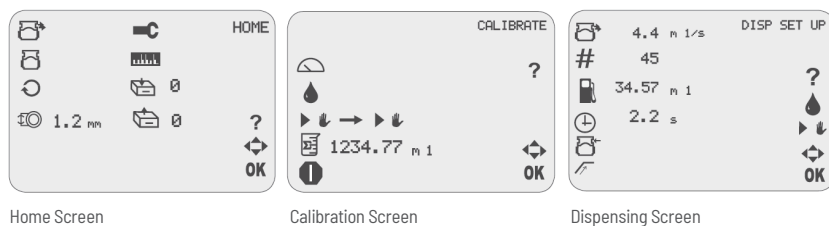### Waste Water and Sample Collection
Industrial and QC applications, environmental compliance hazardous/toxic materials evaluation and site sampling for liquids, sludge, earth/soil, water, etc. Ideal for sampling from barrels and drums.

### International
The Icon Driven display and multi-language help screen work well in laboratories abroad.

| Functionality | Vdose® PRO | Vdose® ELITE |
|---|---|---|
| Modes | Dispense Mode | Dispense Mode and Flow Mode |
| Motor | Dual Speed 75 and 150 rpm | Variable Speed 0.5 to 400 rpm |
| Direction | Unidirectional; Clockwise | Bidirectional; Clockwise and Counterclockwise |
| Ramp | Not Offered | User Ramp Control for Dispense and Flow Modes 5 Profiles |
| Drawback | Not Offered | For Filling into a Closed Container |
| Pump Heads | Single | Single, Dual, Microcassette |
| Order No. | W1100100 | W1100200 |

Peristaltic pump standard package includes
Peristaltic pump, 2.3mm wall thickness single pump head; Silicone tube,ID 3mm, with built-in delivery nozzle and glass sinker, length 1.5m ( Order NO. 374311 ); Silicone tube, iD 6mm, , with built-in delivery nozzle and glass sinker, length 1.5m ( Order NO. 374313).

## Technical Specification

| Model Pump | Power supply V | Capacity W | Operating Speed rpm | Tubing Sizes Available (mm ID) | Dispense Ranges for Tubing ml | Flow Rate Ranges for Tubing ml/min | Accuracy Midrange | Delay Time / Sec | Weight kg | Dim. with Pump Head (HxWxD) | Optional Pump Head Support |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vdose® ELITE | 100-240 | 37 | 0.5-400 | 2 | 0.01-9999.99 | 20.4-174 | ≤±1% | 0.5-99.9 | 5.4 | 18×21×34cm | > Stack up to 2 Pump Heads > Stacking Pump Head for 2.3mm Wall Tubing > Pump Head for 1.6mm Wall Tubing > Stacking Pump Head for 1.6mm Wall Tubing > 5-Channel Pump Head for Small-Bore Tubing |
|  |  |  |  | 3 | 0.01-9999.99 | 60-330 | ≤±1% |  |  |  |  |
|  |  |  |  | 6 | 0.01-9999.99 | 270-1080 | ≤±2.5% |  |  |  |  |
|  |  |  |  | 8 | 0.01-9999.99 | 200-1746 | ≤±2.5% |  |  |  |  |
| Vdose® PRO | 100-240 | 37 | 75&150 | 2 | 0.01-9999.99 | 30&60 | ≤±1% | 0.5-99.9 | 5.4 | 18×21×34cm | Pump Head for 1.6mm Wall Tubing Pump Head for 2.3mm Wall Tubing |
|  |  |  |  | 3 | 0.01-9999.99 | 60&120 | ≤±2% |  |  |  |  |
|  |  |  |  | 6 | 0.01-9999.99 | 210&426 | ≤±2% |  |  |  |  |
|  |  |  |  | 8 | 0.01-9999.99 | 540&1080 | ≤±2.5% |  |  |  |  |

![WIGGENS - The Magic Motion]

**Home Screen**

**Calibration Screen**

**Dispensing Screen**

## Optional Pump Heads

| Order No. | Description | Qty/Case |
|---|---|---|
| W1100101 | Single Pump Head for 2.3mm Wall Tubing | 1 |
| W1100102 | Optional Pump Head for 1.6mm Wall Tubing | 1 |

Single Pump

## Peristaltic Pumps
## Accessories

| Order No. | Description | Qty/Case |
|---|---|---|
| Tubing Accessories | | |
| 374322 | Hose Barb/Luer Adapter (fits 2 and 3mm) | 1 |
| W1100104 | Footswitch | 1 |
| 374324 | 2 and 3mm Polypropylene Nozzle | 6 |
| 374326 | 6mm Polypropylene Nozzle | 6 |
| 374328 | 8mm Polypropylene Nozzle | 6 |
| 374320 | Small Glass Sinker (fits 2 and 3mm ID tubing) | 6 |
| 374321 | Large Glass Sinker (fits 6 and 8mm ID tubing) | 6 |
| Tubing Support Stand | | |
| W1100105 | Tubing Support Stand | 1 |
| Silicone Tubing Assembly, 2.3 mm wall thickness | | |
| 374310 | 2mm ID, 5 ft Section (1.5m) | 1 |
| 374311 | 3mm ID, 5 ft Section (1.5m) | 1 |
| 374313 | 6mm ID, 5 ft Section (1.5m) | 1 |
| 374314 | 8mm ID, 5 ft Section (1.5m) | 1 |
| Silicone Tubing, 2.3mm wall thickness | | |
| 374304 | 2mm ID, 25 ft Section (7.62m) | 1 |
| 374305 | 3mm ID, 25 ft Section (7.62m) | 1 |
| 374306 | 6mm ID, 25 ft Section (7.62m) | 1 |
| 374308 | 8mm ID, 25 ft Section (7.62m) | 1 |
| Microtest Manifolds | | |
| 851380 | 4 Position, Straight, 24 Well | 1 |
| 851381 | 8 Position, Straight, 96 Well | 1 |
| 851382 | 4 Position, Angular, 24 Well | 1 |
| 851383 | 8 Position, Angular, 96 Well | 1 |
| 851388 | 12 Position, Straight, 96 Well | 1 |
| 851389 | 12 Position, Angular, 96 Well | 1 |
| Dispensing Cannulas w/Luer Lock | | |
| 851411 | 18 Gauge x 2 in | 1 |
| 851412 | 14 Gauge x 4 in | 1 |

### Hose Barb/Luer Adapter
The luer adapter allows connection to equipment and components with a female luer connector.

### Tubing Support Stand
Optional tubing support stand conveniently holds the tubing in place for filling operations.

### Footswitch
Utilize the convenience of a handsfree pump by installing the optional footswitch.

### Silicone Tubing
Assembly consists of 1.5m (5-foot) section of silicone tubing with a wall thickness of 2.3mm, a borosilicate glass sinker, and a polypropylene delivery nozzle. Bulk tubing is also available.

### Polypropylene Nozzle & Glass Sinker
> The nozzle connects to the pump tubing for dispensing of liquids.
> The glass sinker is used to secure tubing when drawing from a container.
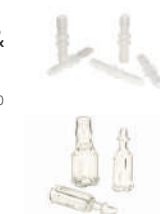
### Microtest Manifolds & Dispensing Cannulas
Ideal for use with 24 and 96 well microplates. This unique dispensing system enables you to perform sample inoculations and cell feedings faster and more efficiently under sterile conditions.

# Portable Suction Unit (Aspirator)

## Adopts oil-free vacuum pump

No lubricant required, maintenance-free, low noise and durable.

## Double overflow protection

A built-in float switch plus 0.2 μm PTFE hydrophobic disc filter between the suction bottle and the pump prevent the medium and bacteria from flowing into the pump.

## Autoclavable

Only waste bottles, disc filters and pipeline between them are autoclavable. Suction pipeline, and suction head cannot be autoclave.
> The whole unit is made of of ABS plastic and aluminum alloy.
> Various precision elements are developed, and assembled through long time test.
> Piston pump inside offers low noise, and it is wear-resistant, polution-free, maintenance-free.

### High-Temperature Sterilization
Waste bottle and disc filter can are autoclavable

### Employment of an Oil-Free Vacuum Pump
The oil-free vacuum pump is maintenance-free, features a very low noise level

## Double Protection Against Liquid Overflow
> Waste bottle, floating ball
> 0.2 μm PTFE disc filter
> Protection against liquid overflow
> Keeps liquid from entering the pump.

### Vacuum Regulator
Deliver the correct vacuum for various applications

### Stable and Durable Casing
The casing is made of ABS material, which is light and easy to clean

### Wire Storage Box
The system provides a storage for the foot switch wire, which makes it easy and convenient to use

### Foot Switch Interface

## Application
> Biochemical cultivation
> Separation of culture fluids
> Waste liquid suction in cell cultivation
> All kinds of waste liquid suction in laboratory environments

BioVac 225

BioVac 235

BioVac 240

| Single-branch suction head | Handheld controller | 8-branch "tip" plastic suction head | Single-branch stainless steel suction head |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
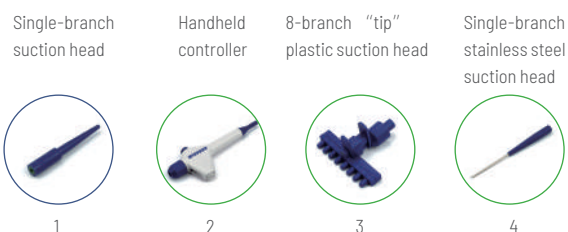
## Specifications

| Order No. | Model series | Power | Ultimate Vacuum | Max. Flow Rate | Foot Switch | Dimensions | Suction bottle | Weight | Accessories included |
|---|---|---|---|---|---|---|---|---|---|
| | | W | mbar | l/min | | cm | | kg | |
| W1080225 | BioVac 225 | 60 | 100 | 25 | - | 37 × 15 × 25 | 1000ml X 1 | 4.3 | 4 |
| W1080226 | BioVac 225 PLUS | 60 | 100 | 25 | - | 37 × 15 × 25 | 1000ml X 1 | 4.3 | 1.2.3.4 |
| W1080235 | BioVac 235 | 60 | 100 | 35 | - | 27 × 30 × 28 | 1500ml X 2 | 6.9 | 4 |
| W1080236 | BioVac 235 PLUS | 60 | 100 | 35 | - | 27 × 30 × 28 | 1500ml X 2 | 6.9 | 1.2.3.4 |
| W1080240 | BioVac 240 | 80 | 80 | 40 | yes | 54 × 26 × 35 | 3000ml X 1 | 12 | 4 |
| W1080241 | BioVac 240 PLUS | 80 | 80 | 40 | yes | 54 × 26 × 35 | 3000ml X 1 | 12 | 1.2.3.4 |

# Accessories

## Bio-Suction Kit

Successful removal of supernatants from lab containers by means of a vacuum aspiration system depends on applying the correct level of vacuum and on using an aspirator tip that matches the size and form of the container from which liquid is aspirated. The vacuum aspiration tool is produced by Wiggens to specifically match the diversity of laboratory containers. Different adapters fit on the hand operator so that your vacuum source is converted into a flexible system for aspirating liquids from tubes, dishes, bottles, T-flasks, 24-well and 96-well plates.

## Quick-lock design

Ergonomic handle and friendly designed lock switch can keep continuous suction without pressing button all the time.

## Single-handed tip ejection

The innovative tip ejection design enables tip ejection by a single hand easily.

## Quick fitting change

Quick connection coupling between fitting and handle can make any fittings replaced quickly.

## Vapor sterilization can be applied

The complete kit except the rack are made of POM and stainless steel material available for autoclave.



① ② ③ ④ ⑤ ⑥ ⑦
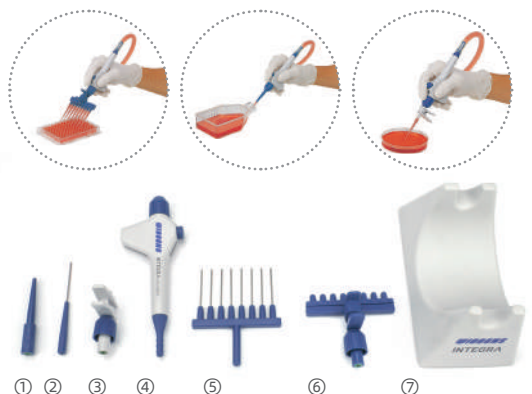
## Specifications

| No. | Order No. | Name | Quantity |
|---|---|---|---|
| 1 | 167200-42 | Single-branch suction head | 1 |
| 2-1 | 167200-44 | Single-branch stainless steel suction head, needle length 5cm | 1 |
| 2-2 | 167200-44L | Suction Head  Single-branch stainless steel suction head, needle length 11cm (Option) | 1 |
| 3 | 167200-45 | Single-branch "tip" plastic suction head | 1 |
| 4 | 167200-46 | Handheld controller | 1 |
| 5 | 167200-47 | 8-branch stainless steel suction head | 1 |
| 6 | 167200-48 | 8-branch "tip" plastic suction head | 1 |
| 7 | 167200-49 | ABS Depositing rack | 1 |

| Name | Bio-Suction Kit |
|---|---|
| Order No. | 167200-37 |
| Operation Form | Vacuum Suction |
| Outlet Diameter(mm) | 5 mm |

## Disc Filter



| Name | Small Disc Filter | Big Disc Filter |
|---|---|---|
| Order No. | 167200-35 | 167200-36 |
| Filter Diameter / Pore Size | 37 mm / 0.2 μm | 50 mm / 0.2 μm |
| Outer Diameter | 45 mm | 63 mm |
| Material | PTFE | PTFE |
| Outer Material | PP | PP |
| Number of Filters per Package | 1 | 1 |
| Suitable for | BioVac225 / BioVac235 | BioVac240 |

## Silicon Tube



| Order No. | Outer Diameter mm | Inner Diameter mm | Thickness mm | Length m |
|---|---|---|---|---|
| 168021-01 | 14 | 8 | 3 | 1 |
| 168022-01 | 16 | 10 | 3 | 1 |



167200-50            167200-51

| Order No. | Name | Description |
|---|---|---|
| 167200-50 | Manual suction tube | The outer diameter of the connector is 8mm, The outer diameter of the PP tube is 5mm |
| 167200-51 | High pressure silicone tube | For the tube, the outer diameter is 10mm, and the inner diameter is 6mm,with hose joints at both ends |



167200-52

| Order No. | Name | Description |
|---|---|---|
| 167200-52 | Plastic stoppers | Suitable for the tube of which the outer diameter is 10mm or 12mm |



Spill-Proof Buoy

## PP/PC Waste Bottle

| Material | | | | |
|---|---|---|---|---|
| Order No. | 167200-31 | 167201-35 | 167201-36 | 167200-34 |
| Bottle | PC | PC | PC | PC |
| Bottle Cover | PC | PC | PC | PC |
| Spill-Proof Buoy | PP | PP | PP | PP |
| Description | | | | |
| Capacity (ml) | 1000 | 1500 | 1500 | 3000 |
| Outlet (mm) | 8 | 8 | 8 | 8 |
| Spill-Proof Buoy | With | Without | With | With |
| Autoclavable | Yes | Yes | Yes | Yes |
| Suitable for | BioVac225 | BioVac235 | BioVac235 | BioVac240 / 350 / 650 |

If you need other bottles of different volumes, please choose 167200-39 below
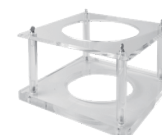


## Stand for Suction Bottle

| Order No. | Description | |
|---|---|---|
| 167200-39-1 | Stand for suction bottles, designed for stabilizing the bottle in filtration work | 1000ml |
| 167200-39-2 | | 1500ml |
| 167200-39-3 | | 3000ml |



## Foot switch

| Order No. | Description |
|---|---|
| 167200-40 | Foot switch, Suitable for BioVac240 |
| 167200-54 | Foot switch, Suitable for BioVac225 / BioVac235 |

# Vdose Syringe Pump

The standard syringe pump includes injection element and controller, and the injection element can be single-channel or dual-channel. Vdose serial syringe pump can carry out accurate liquid transmission automatically. The system is also programmable with a PC to realize more complicated liquid dosing operations.

> Bright TFT display can show the dosing parameters clearly on one screen
> 9 types of syringes can be selected, from 50μl~25ml, it is easy to change the syringes
> Dosing speed: from 1.25ul/min to 375ml/min
> All parts contacted with the liquid are glass or PTFE, which guarantees the chemical resistance
> The three port valve can switch automatically to complete the repeating withdrawing and dosing
> The valve ports can be configured for convenient liquid recovery without taking part the tubing
> RS-232/485 digital communication ports available for remote PC or PLC control



Vdose4200

## Specifications

| Model | | Vdose4200 | Vdose4400 |
|---|---|---|---|
| Number of dosing channel | | Single Position | Dual Position |
| Flow Rate | | 1.25 μl/min~375 ml/min | 1.25 μl/min~375 ml/min |
| Precision | | ≤ 5 ‰ | ≤ 5 ‰ |
| Weight (kg) | | 5.5 | 9.1 |
| Outer Dimensions (H x W x D mm) | | 305 x 89 x 330 | 305 x 178 x 330 |
| Syringe | Size | 50μl~25 ml | 50μl~25ml |
| | Material | Glass and PTFE wetted | Glass and PTFE wetted |
| | Dispense Resolution | 1/6000 of the syringe size in use | 1/6000 of the syringe size in use |
| | Feature | Easily interchangeable | Easily interchangeable |
| Valve | Material | PTFE | PTFE |
| Interface Port | | RS232 / 485 | RS232 / 485 |
| Power supply | | 110~240V,50/60Hz | 110~240V,50/60Hz |
| Order No. | | V900705 | V900704 |

Vdose 4200 and Vdose 4400 are more suitable for corrosive solvents



Vdose4400

## Order Information

| Order No. | Description |
|---|---|
| V900705 | Single Position Syringe pump, with dosing unit and controller (need to specify the valve ports and glass syringe volume) |
| V900704 | Dual Position Syringe pump, with dosing unit and controller (need to specify the valve ports and glass syringe volume) |
| **Accessories** | |
| V900700-5 | 50μL glass syringe with Teflon plunger |
| V900700-6 | 100μL glass syringe with Teflon plunger |
| V900700-7 | 250μL glass syringe with Teflon plunger |
| V900700-8 | 500μL glass syringe with Teflon plunger |
| V900700-9 | 1ml glass syringe with Teflon plunger |
| V900700-10 | 2.5ml glass syringe with Teflon plunger |
| V900700-11 | 5ml glass syringe with Teflon plunger |
| V900700-12 | 10ml glass syringe with Teflon plunger |
| V900700-13 | 25ml glass syringe with Teflon plunger |
| **PTFE Tubing and Fittings** | |
| V900700-19 | Tubing Length: 6m; Outer Diameter: 1/8″ ; Includes: 12 nuts and 6 ferrules |
| V900700-20 | Tubing Length: 30m; Outer Diameter: 1/8″ ; Includes: 24 nuts and 6 ferrules |
| V900700-21 | Tubing Length: 6m; Outer Diameter: 1/16″ ; Includes: 12 nuts and 6 ferrules |
| V900700-22 | Tubing Length: 30m; Outer Diameter: 1/16″ ; Includes: 24 nuts and 6 ferrules |



Glass syringe with PTFE plunger



Tube

# Other Products

# Refrigerator for Chemicals

## for storing and cooling of chemicals and hazardous substances

Wiggens refrigerators for chemicals are designed for storing and cooling hazardous substances. The spark free interior prevents damage caused by spilled or evaporating chemicals.

## Features

> With spark free interior

> Storing and cooling of hazardous substances

> Self-protecting control circuit

> Digital temperature display (LED)

> Overload protection for cooling compressor

> Working and safety sensors are protected against short circuits and disconnection

> With door lock to prevent unauthorized personnel from opening the refrigerator

> It can be equipped with thermometer or digital thermometer to solve the needs of accurate temperature measurement and long-term monitoring of samples in the refrigerator

## Specifications

| Order No. | Model | Working Temperature Range °C | Temperature selection / display | Temperature stability °C | Temperature resolution °C | Volumetric Capacity liters | Number of shelves | Inner dimensions W×L×H cm | Outer dimensions W×L×H cm |
|---|---|---|---|---|---|---|---|---|---|
| W6131050 | KRC50 | -2~+12℃ | Digital / LED | ±1 | 0.1 | 50 | 2 | 42×29/44 | 55×64/63 |
| W6131180 | KRC180 | -2~+12℃ | Digital / LED | ±1 | 0.1 | 180 | 3 | 52×40/70 | 60×64/86 |
| W6131260 | KRC260 | -2~+12℃ | Digital / LED | ±1 | 0.1 | 260 | 4 | 55×49/100 | 72×60/118 |
| W6131360 | KRC360 | -2~+12℃ | Digital / LED | ±1 | 0.1 | 360 | 5 | 55×49/135 | 72×60/153 |
| W6131540 | KRC540 | -2~+12℃ | Digital / LED | ±1 | 0.1 | 540 | 5 | 70×60/135 | 92×71/153 |

Standard package includes: Refrigerator, shelves, remote controller
Test conditions, room temperature 20-25 ℃

# Lab Burner

## Features

> Automatic ignition due to piezo effect
> Max. Temperature: 1300℃
> Adjustable flame
> Refillable butane tank

## Application

> Sterilizing
> Welding
> Heating
> Cooking

Dragon 200

Dragon 100
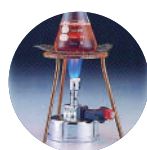
Dragon 220

## Specifications

| Model | Dragon 100 | Dragon 200 | Dragon 220 |
|---|---|---|---|
| Max. temperature (℃ ) | 1300 | 1300 | 1300 |
| Fuel tanker capacity (g) | 45 | 45 | 45 |
| Working time (min) | 60 | 60 | 60 |
| Dim. H x W x D (mm) | 161x137x79 | 92x115x79 | 94x115x78 |
| weight (g) | 380 | 407 | 425 |
| Safety switch | yes | — | — |
| Order No. | 177100-00 | 177200-00 | 177220-00 |

# Colony Counter

> Adjustable dish-holder suitable for Petri-dishes of various sizes with diameters ranging from 90 mm to 150 mm or for special 60 mm dishes
> Pressure sensor allows the use of any marking pen, without the contamination of the sample
> Suitable for total bacteria and total coliform counting

### Marker pen
It's used to mark the colony of culture dish
Marking pen 5 sets Order No.: 175200-48
Single marker Order No.: 175200-35

## Specifications

| Model | Galaxy 230 |
|---|---|
| Display | 4-Digit Bright Red 0.6'' LED Display |
| Magnification | 2 ~ 3 Times |
| Petri Dish Diameter | 60 mm, 90 - 150 mm Adjustable |
| Zero Reset | Yes |
| Illumination | Ring-Shaped Lamp |
| Pressure Sensitivity | Adjustable |
| Dimensions (W x L x H in mm) | 313 x 360 x 346 |
| Net Weight (kg) | 5.2 |

Standard package includes: Colony Counter, marker pen

## Ordering Information

| Order No. | Product Description |
|---|---|
| 175200 | Galaxy 230 Colony Counter |

# Sensor-controlled turntable for Petri dishes

> The touch-free IR-Sensor technology guarantees extremely simple operation with movements of the hand. Alternatively the new Sensorturn / Sensorturn pro can be operated with a foot pedal.
> An extraordinarily low working height allows effortless work. The highest degree of sterility is ensured by the device's stainless steel construction.
> The Sensorturn / Sensorturn pro is a high-performance, UV resistant and flame- sterilizable device.

> For both options different operating modes are available:
   - Flexible Start-Stop functions or the second timer control with variable rotational periods from 1 - 25 seconds. For longer applications the time can be extended to
   125 seconds.
   - A continuously variable rotational speed control of 14 - 110 rpm (Sensorturn) or 14 - 210 rpm (Sensorturn pro) ensures uniform and individual plating of the Petri
   dishes up to a diameter of 100 mm (optional: up to 150 mm).

## Others

Foot pedal/stainless steel ①
Order No. 6.000.402

Pedal mini/ plastic ②
Order No. 6.000.403

Benchtop switch / stainless steel ③
Order No. 6.000.405
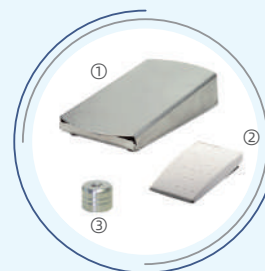
Tray, right or left side, stainless steel ①
Order No. 8.000.340
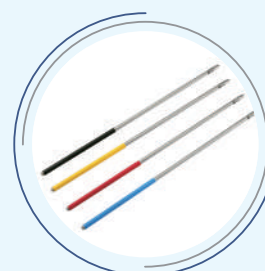
triangle spatula / glass ②
Order No. 6.000.370

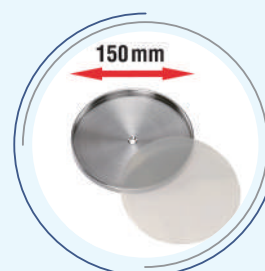triangle spatula / stainless steel
Order No. 6.000.369

Inoculation loop holder
stainless steel, with sleeve nut, for inoculation loops wire Ø 0.6 - 1 mm

length 245 mm
Order No. 6.000.360

length 215 mm
Order No. 6.000.365

## Specifications

> Stainless steel construction
> Variable rotational speed control:
> Sensorturn: 14 - 110 rpm; Sensorturn pro: 14 - 210 rpm
> Short time operation 1 - 125 seconds
> Turntable with silicone covering & centring ring (autoclavable)
> Switch on and off with movements of the hand or foot pedal*
> UV-resistant and flame-sterilizable
> Minimum space requirement
> Includes IR-Sensor and connector for foot pedal
> 5 operating modes:
> IR-Sensor: Time / Constant
> Foot pedal: Standard / Start-Stop / Time
> Turntable with transparent silicone covering & centring ring
> Screwdriver for IR-Sensor detection range
> Power connection

Turntable
extra wide for Petri dishes up to 150 mm
with transparent silicone covering
Order No. 7.000.150

## Specifications

| Model | Sensorturn | Sensorturn Pro |
|---|---|---|
| Rotary speed range | 14 - 110 rpm | 14 - 210 rpm |
| Petri dish size | up to Ø 100 mm (Ø 150 mm optional) | |
| Rotational direction | clockwise | |
| Detection range IR-Sensor | 5 - 50 mm, adjustable | |
| Connector for foot pedal | yes | |
| Timer range Time operation | 1 - 25 sec or 5 - 125 sec, adjustable | |
| Constant operation | unlimited | |
| Operating voltage / input | 9 V - 15 V DC / 1.5 VA | |
| Measurements (w x h x d) | 160 x 74 x 109 mm | |
| Weight | 980 g | |
| Order No. | 7.001.000 | 7.002.000 |

# WI-control software

WI-control is a software to control devices, automate processes, and to document your measurements and results. The software does not only integrate WIGGENS laboratory devices but also supports devices from other manufacturers. It can network up to 128 devices simultaneously via one PC, thus making the automation of your laboratory experiments and processes much more easy and efficient.

### Save time and efficiency

On the PC, you can automate laboratory processes, store your own recipes and data, process flows or perform calculations during the experiments. All online devices can be woeked by cascade. When a cascading relationship is established, all machines will automatically work when the conditions are met.

### Increase safety

Security conditions can be set, and if a security condition is triggered, alarm or shutdown can be processed according to the settings .In remote operation, you control demanding reactions from a safe distance. Countless possibilities to automate recipes and processes ensure increased process reliability, higher user safety and greater reproducibility of all processes.

### Real time data recording and secure storage

Measurement data that are generated during a process can be output in XLS and PDF file formats for documentation and further analysis. All the operation and setting change will be recorded. Beneficial for repeating the experimental process.

### System requirements

The WI-control software can be installed on any PC that meets the following system requirements:

| System requirement | Minimum | Recommended |
|---|---|---|
| Operating system | Windows®7 or later 32-bit | Windows®7 or later, 64-bit |
| Memory | 2 GB | 4 GB |
| Processor | 2.5 GHz dual-core processor | 2.5 GHz 4-core processor |
| Interfaces | 1×USB or 1×RS232 | depending on the number of units controlled |
| Display | 6,500 colors | 16 million colors |
| Screen resolution | 1.400 × 1.050 pixels | 1.680 × 1.050 pixels |
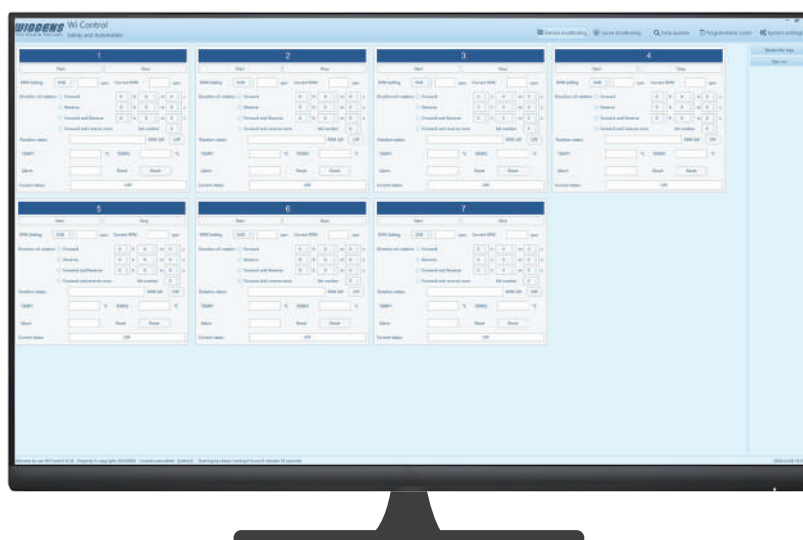
# GAS GENERATORS

H₂, N₂, O₂,Compressor, Purified air and Zero air

> Hydrogen generator (PEM technology)
> Hydrogen and Zero air generator (Two-in-one)
> Nitrogen generator (PSA technology or Hollow fiber membrane)
> Nitrogen and Zero air generator (Two-in-one)
> Compressor and purified air system
> Zero air generator / Ultra zero air generator

## $H_2$ GENERATOR

Purity : 99.9996% or 99.99996%
Flow rate : 100ml/min ~ 20L/min
General version, Flat version, Tower version and 19" Rack version

## $N_2$ GENERATOR

Flow rate : 200ml/min - 2000L/min
Purity : 95 - 99.9999%

## $O_2$ GENERATOR

Flow rate : 6L/min, 10L/min
Density : 95%

## ZERO AIR GENERATOR

Flow rate : 1.5~30L/min
HC & CO Content : < 0.05ppm
$CO_2$ Content : < 1ppm
$NO_x$ $SO_x$ Content : < 0.1ppm

## COMPRESSED AIR SYSTEM / PURIFIED AIR SYSTEM

Flow rate : 20 ~ 900L/min
Pressure : 5 - 10 bar

Product brochure
online at
www.wiggens.com

ChemTron
A brand of Wiggens

# CHEMTRON ANALYTICS

**ChemTron**
A brand of Wiggens

## Rotational viscometer

Achieve professional and accurate viscosity measurements, customized to your specific requirements.

## Falling ball viscometer

The Viscoball precisely measures the viscosity of transparent Newtonian liquids and gases using a specialized ball.

## Automatic viscosity measurement system
### (Capillary viscometer)

Semi-automatic or automatic viscosity measurement system.

## Density meter

Portable density/specific gravity/concentration meter.

## pH / Cond. / DO meter

Precise - reliable - selective in lab and field
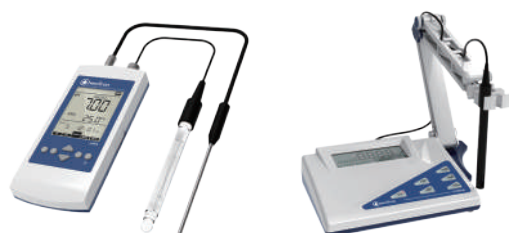
## Refractometer

Scale handheld refractometer  |  Digital refractometer

## Titrators, Auto sampler, software and electrodes

Chemtron titrator, with its broad performance range, stands as the perfect device for potentiometric titration, offering possibilities for expansion and automation. Its high-resolution, precise pH/mV, and "dead-stop" measurement interface enable swift, reliable, and accurate determinations of a multitude of parameters.
Chemtron titrators are typically known for their precision, ease of use, and capability to handle a wide range of titration applications.

> Burettes and Titrators
> Burettes and Titrators with interchangeable unit
> Karl Fischer Titration
> Sample changers and accessories
> Titration software
> Electrodes for Titration
> Related reagent
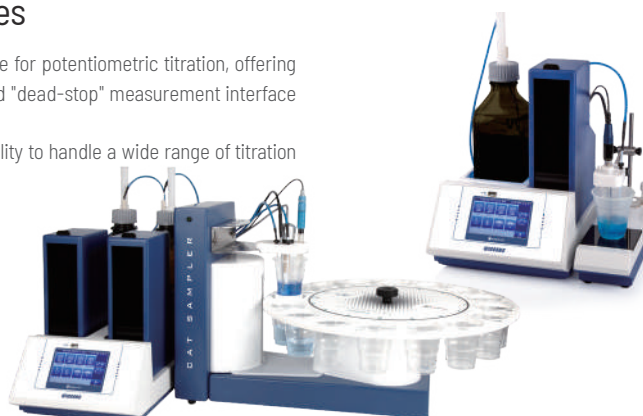
# CHEMTRON REACTION & PURIFICATION SYSTEM

## Featuring Reactors from Lab to Production Scale

Energy | Petrochemical | Life Sciences | Cosmetics | Pharmaceutical | Environmental

### Glass Reactor and Peripherical Units

The essential tool for research, scale-up, or production across a wide range of scientific disciplines. Designed for maximum diversity and ease of use, we have developed a simple base system building platform which allows any reactor system to be customized.

> Bench-top glass reactor (250ml~5L)
> Pilot plant glass reactor (10~100L)
> Glass spherical reactor (up to 200L)
> Glass industrial production equipment
> Glass filter reactor (150ml~150L)
> Glass pressure reactor (up to 6L)
> Homogenization reactor
> Ultrasonic, photochemical and hydrogenation reactor
> Parallel reaction station
> Stirrer & Pump
> Dosing unit
> pH measurement and control
> Auto reaction software

### Stainless Steel Reactor and Peripherical Units

The requirements of our customers for the reaction vessels are as varied as the respective processes which are carried out in them. In recent decades, we have developed a modular system with standardised connection components, in order to economically implement individual solutions. This greatly simplifies the design and construction of our custom-made products.

> High pressure reactor, up to 200bar
> Low pressure reactor , up to 25bar
> Stainless steel reactor for atmospheric pressure or vacuum
> Nutch filter reactor
> Temperature control system
> Stirre unit: mechanical or magnetic coupling
> Dosing unit
> Ball valve, needle valve, solenoid valve, pneumatic valve
> Auto reaction software

# BioSolution

BioSolution offers a robust control interface, enabling seamless management of device parameters. It allows for easy adjustment of equipment functional parameters, real-time data recording, and curve display, providing users with an intuitive view and accurate trend analysis. The software supports concurrent recording and monitoring of up to 16 devices.

Additionally, BioSolution includes features such as audit trail and data management, with a three role management system. Each user can operate the system using their individual account for enhanced security and accountability.
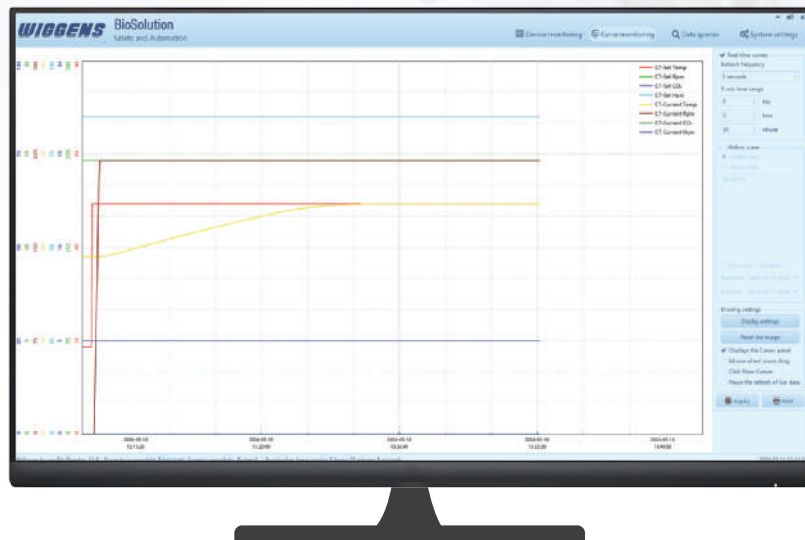


## Access control and security

Access to BioSolution is secured through a unique combination of user ID and password for each user. The system ensures that each user ID is unique and prevents the creation of accounts with duplicate IDs.

### 1. Automatic User Log-Off Activation

This feature enables automatic log-off of any user after a configurable period of inactivity. When activated, users will be logged off from the software after a defined period, preventing unauthorized access by anyone other than the legitimate account owner.

| User name | Password | User type | Logoff time(m) | Validity(day) | Locking state | Add time |
|---|---|---|---|---|---|---|
| 1 | •••••••• | user | 1 | 30 | | 2024-10-29 13:28:33 |
| admin | ••••• | admin | | | | |
| manager | ••••••• | manager | 0 | | | |
| user | •••• | user | 0 | | | |

## 2. Account Lock After Failed Login Attempts

After three consecutive login failures due to incorrect passwords, the software will fully lock to prevent unauthorized access.



## 3. Password Expiration Policy

Users are required to change their passwords periodically, with a configurable validity period ranging from 30 to 999 days.



## 4. High-Security Password Settings

The following requirements can be activated for password security:

> Use of all ASCII characters, including letters, numbers, spaces, and special characters
> Minimum length of 8 characters
> At least one non-alphanumeric character or numeric character
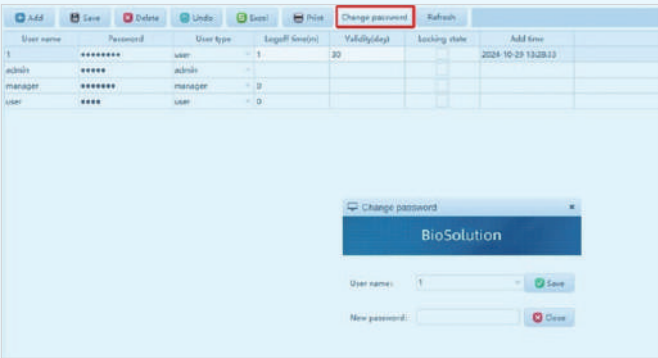


## User Management

Each user must be assigned one of three roles, each with a distinct set of rights for accessing functionalities. These roles enable a clear separation between operational and administrative/security permissions (refer to the table below for details).



| Role | Right |
|---|---|
| Admin | > Device monitoring: view and delete system logs, start and stop programs<br>> Curve monitoring<br>> Data queries: manually backing up data<br>> User management: create, configure, delete and manage users<br>> Software Configuration<br>> Device management: create, configure, delete and manage devices<br>> Data acquisition settings |
| Manager | > Device monitoring: view system logs, start and stop programs<br>> Curve monitoring<br>> Data queries: manually backing up data<br>> Manage own account<br>> Software Configuration |
| User | > Device monitoring: view system logs, start and stop programs<br>> Curve monitoring<br>> Data queries: manually backing up data<br>> Manage own account |

## Audit Trail

The audit trail is permanently active and always accessible within the software, with no option to disable it. All user management activities and actions are logged with a date and time stamp. Time synchronization is automatically handled with the Windows server and cannot be altered by users within the software.

The audit trail includes entries in the following categories:

" TIME": The date and time of the logged action.
"USER": The user ID of the logged user responsible for this action.
"USER TYPE": The role of the user
"DETAILS" :   A detailed description of the action executed by the user
"DEVICE": The device involved in the action.

The categories ""DEVICE" can be empty according to the related user action.The audit trail report (after export) includes a table or PDF with the usernames, roles of registered users current as of the date of the repoRT
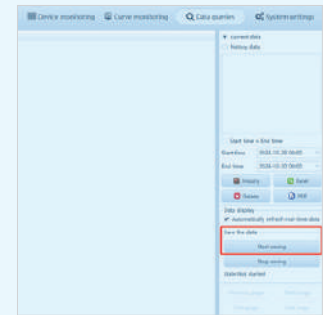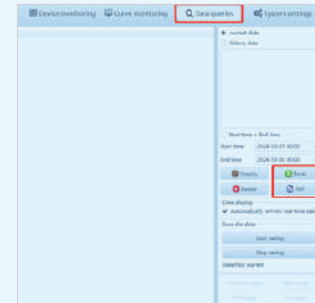


## Archive / Backup

We can manually click to save data for backup before running, or click on data export for backup after running.



| | Admin | Manager | User |
|---|:---:|:---:|:---:|
| **Monitoring** | | | |
| Remote device status monitoring: connection status, functional parameters, alarm status. | √ | √ | √ |
| Curve monitoring: parameter curve display (Rreal-time / History curve), query and print. | √ | √ | √ |
| **Control** | | | |
| Device start and stop | √ | √ | √ |
| Parameter remote control | √ | √ | √ |
| Parameter modification | √ | √ | √ |
| **Reporting** | | | |
| Data display and query | √ | √ | √ |
| Current / History data switching | √ | √ | √ |
| Data recording and saving, exporting (Excel or PDF) | √ | √ | √ |
| Data clear and delete | √ | | |
| **System** | | | |
| Basic settings (Automatic login, Remenber password, Chinese and English language selection) | √ | √ | |
| Port management | √ | | |
| Device management (Add and Delete devices) | √ | | |
| Acquisition settings (Add, Delete data acquisition, Data acquisition interval) | √ | √ | |
| User management (Add and delete users, Permission allocation, Account unlocking, Password modification, Password validity period) | √ | | |
| **Logs** | | | |
| View and export system logs, including time, users, events, etc | √ | √ | √ |
| **General** | | | |
| Up to 16 supported devices | √ | √ | √ |

## Ultrasonic Cleaner Dual frequency

| Order No. | Model | Capacity L | Internal Size (WxDxH) mm | Overall Size (WxDxH) mm | Working Power W | Heater Power W | Temp. ℃ | Frequency Khz | Timer min | Drainage outlet |
|---|---|---|---|---|---|---|---|---|---|---|
| W3080503 | UE03D | 3 | 240×140×100 | 270×160×240 | 100 | / | / | 35/53 | 1~199 | Without |
| W3080506 | UE06D | 6 | 300×150×150 | 330×180×310 | 180 | / | / | 35/53 | 1~199 | Without |
| W3080510 | UE10D | 10 | 300×240×150 | 360×270×310 | 250 | / | / | 35/53 | 1~199 | With |
| W3080515 | UE15D | 15 | 330×300×150 | 390×330×310 | 350 | / | / | 35/53 | 1~199 | With |
| W3080522 | UE22D | 22 | 500×300×150 | 570×330×330 | 500 | / | / | 35/53 | 1~199 | With |

## Ultrasonic Cleaner Dual frequency, Heatable

| Order No. | Model | Capacity L | Internal Size (WxDxH) mm | Overall Size (WxDxH) mm | Working Power W | Heater Power W | Temp. ℃ | Frequency Khz | Timer min | Drainage outlet |
|---|---|---|---|---|---|---|---|---|---|---|
| W3080603 | UA03D | 3 | 240×140×100 | 270×160×240 | 100 | 75 | 20~60 | 35/53 | 1~199 | Without |
| W3080606 | UA06D | 6 | 300×150×150 | 330×180×310 | 180 | 150 | 20~60 | 35/53 | 1~199 | Without |
| W3080610 | UA10D | 10 | 300×240×150 | 360×270×310 | 250 | 270 | 20~60 | 35/53 | 1~199 | With |
| W3080615 | UA15D | 15 | 330×300×150 | 390×330×310 | 350 | 390 | 20~60 | 35/53 | 1~199 | With |
| W3080622 | UA22D | 22 | 500×300×150 | 570×330×330 | 500 | 520 | 20~60 | 35/53 | 1~199 | With |

## Ultrasonic Cleaner Large bath, Above-average bath depth

| Order No. | Model | Capacity L | Internal Size (WxDxH) mm | Overall Size (WxDxH) mm | Working Power W | Heater Power W | Temp. ℃ | Frequency Khz | Timer min | Drainage outlet |
|---|---|---|---|---|---|---|---|---|---|---|
| W3080726 | UE26 | 26 | 380×280×250 | 440×450×520 | 500 | / | / | 25 | 1~199 | With |
| W3080754 | UE54 | 54 | 420×370×350 | 480×540×630 | 750 | / | / | 25 | 1~199 | With |
| W3080790 | UE90 | 90 | 540×410×410 | 610×600×770 | 1000 | / | / | 25 | 1~199 | With |
| W3080791 | UE123* | 123 | 830×530×280 | 900×700×820 | 1500 | / | / | 25 | 1~199 | With |

*Power supply: 380V/50Hz

## Ultrasonic Cleaner Large bath, Above-average bath depth, Heatable

| Order No. | Model | Capacity L | Internal Size (WxDxH) mm | Overall Size (WxDxH) mm | Working Power W | Heater Power W | Temp. ℃ | Frequency Khz | Timer min | Drainage outlet |
|---|---|---|---|---|---|---|---|---|---|---|
| W3080726 | UA26 | 26 | 380×280×250 | 440×450×520 | 500 | 450W | 20~60 | 25 | 1~199 | With |
| W3080754 | UA54 | 54 | 420×370×350 | 480×540×630 | 750 | 780W | 20~60 | 25 | 1~199 | With |
| W3080790 | UA90 | 90 | 540×410×410 | 610×600×770 | 1000 | 1300W | 20~60 | 25 | 1~199 | With |
| W3080791 | UA123* | 123 | 830×530×280 | 900×700×820 | 1500 | 1900W | 20~60 | 25 | 1~199 | With |

*Power supply: 380V/50Hz