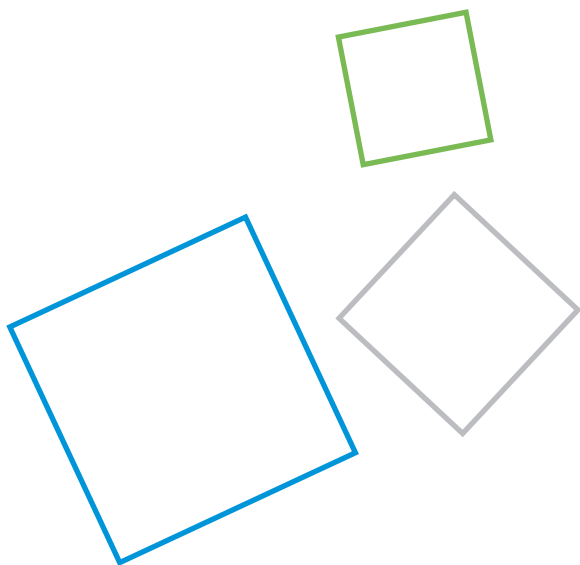
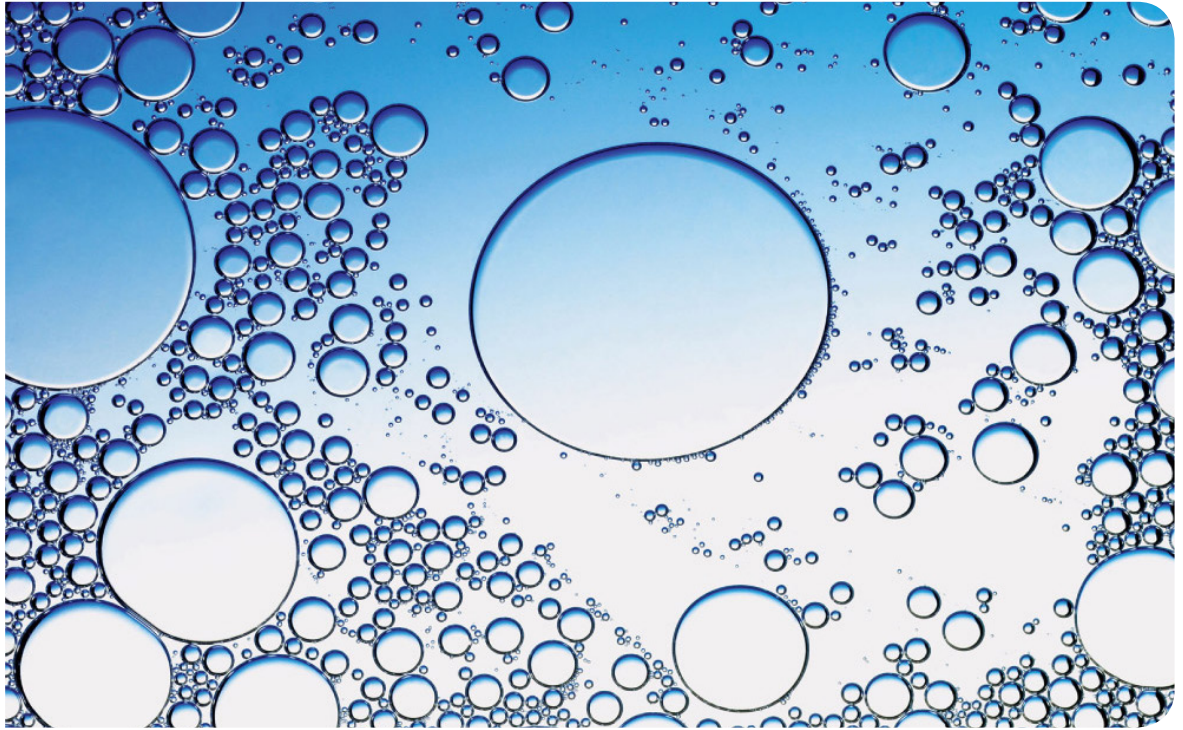


WIGGENS
Quality Built On Innovation

ChemVak
Innovative Vacuum Technology

www.chemvak.com www.wiggins.com



2015 Catalog

General Laboratory Equipment
Laboratory Vacuum Equipment



About WIGGENS

Wiggins is a manufacturer of high quality laboratory equipment based in Beijing, China. We started out as distributor for laboratory equipment and soon became an exclusive distributor for most reputable lab equipment manufacturers. After being established as a well-respected and highly successful distributor all around China, we made the successful transition from a mere distributor to producing high level laboratory equipment itself.

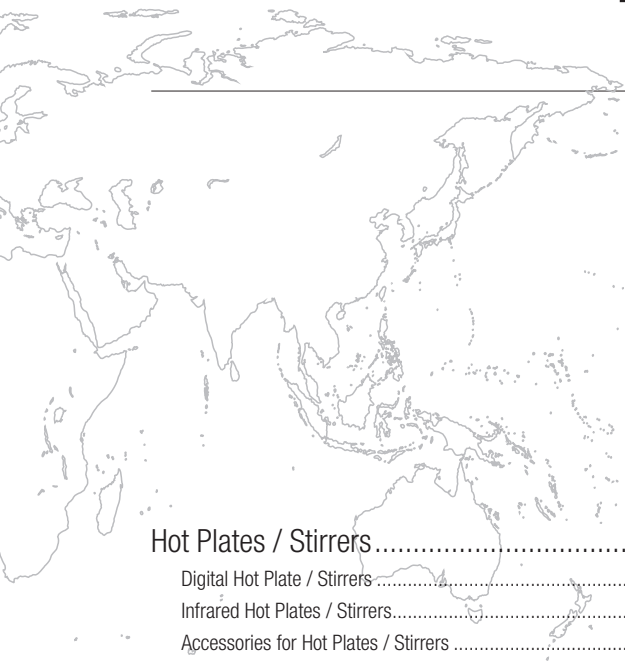
Since 2006 we produce top-quality laboratory equipment and, by making use of our well-established distribution network, we were able to quickly establish our products in the domestic market.

Our two brands Wiggins and ChemVak stand for high quality, long durability, and remarkable performance.

Wiggins is your general laboratory companion and provides products that can be used in all kinds of laboratory environments. The Wiggins product range entails different kinds of magnetic stirrers and hot plates. It even provides hot plates with integrated stirring functions for an even heat distribution among your solvents. In addition to the magnetic stirrers Wiggins also provides overhead stirrers with diverse characteristics to perfectly match the solvent used. In addition, Wiggins offers homogenizers of different magnitudes as well as a broad range of shakers, multi-purpose heaters and colony counters. As a new feature in the 2014 range Wiggins now also provides incubators and water baths for full temperature control.

ChemVak on the other hand has been created as a brand specialized in vacuum equipment. Different kinds of vacuum pumps, including chemical-resistant diaphragm pumps and oil-free piston pumps, are complemented by vacuum filtration equipment to form whole filtration systems for a wide range of different applications. In addition, Water-jet aspirator pumps and bio-suction systems are part of the product range. In 2014, a new line of gas generators became part of the ChemVak product line and round out the picture of ChemVak as a specialist for vacuum and gas related operations.

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Hot Plates / Stirrers

Digital Hot Plate / Stirrers

- Reliable performance
- Accurate and stable heating capacity
- Digital setting of temperature, stirring speed, working time, and overheating protection
- Liquid drainage above the control board to prevent liquids from accessing the system
- Direct connection for Pt100 temperature sensor
- Memory function for stirring speed and temperature control, which helps to enhance the effectiveness of repetitive processes
- Heating capacity up to 380°C
- Stirring speed ranging from 50 to 1200 rpm
- Sealed outer shell for enhanced longevity



HT Series Features

- New infrared technology
- Higher maximum temperature
- Low fluctuations when maximum temperature is reached
- Very quick obtainment of desired temperature
- Chemical resistant ceramic glass plate with excellent conduction characteristics
- Easy to clean
- Over-temperature protection

WH220-R Features

- LCD display for convenient monitoring and setup
- Round top plate for efficient heating of round bottom flasks
- Sealed outer shell for enhanced longevity
- Wide range of Accessories to fit a vast variety of flask sizes

Specifications

| Model | WH220 PLUS | WH240 PLUS | WH220-HT | WH240-HT | WH220-R |
|---|-------------|----------------------|-------------|----------------------|-------------|
| Display Mode | 4-digit LED | 4-digit LED | 4-digit LED | 4-digit LED | LCD |
| Top Plate Dimensions (mm) | 145 × 180 | 145 × 180 | 190 × 150 | 190 × 150 | Ø 135 |
| Temperature Range in °C | 50 ~ 380 | 50 ~ 380 | 50 ~ 500 | 50 ~ 500 | 50 ~ 500 |
| Solvent Temperature (Pt100 sensor) in °C | 40 ~ 200 | 40 ~ 200 | 40 ~ 300 | 40 ~ 300 | 40 ~ 300 |
| Temperature Stability (Pt100sensor) in °C | ± 2 | ± 2 | ± 2 | ± 2 | ± 2 |
| Rotating Speed (rpm) | 100 - 1200 | 100 - 1200 | 100 - 1200 | 100 - 1200 | 100 - 1200 |
| Max. Capacity (L) | 10 | 10 | 10 | 10 | 10 |
| Timer (min) | -- | 1 - 999 / continuous | -- | 1 - 999 / continuous | -- |
| Order No. for EU/UK-Plug | 400300-E/UK | 400400-E/UK | 400301-E/UK | 400401-E/UK | 400500-E/UK |
| Order No. for US-Plug | 400300-U | 400400-U | 400301-U | 400401-U | 400500-U |

Note: The actual temperature of the media can deviate significantly from the hot plate temperature, depending on several factors like the vessel capacity or the isolation level.

Hot Plates / Stirrers

Infrared Hot Plates / Stirrers

- Smooth and corrosion-resistant glass ceramic top plate
- Excellent transmittance of the infrared light
- The top plate can resist up to 700°C thermal shocks
- Hermetically sealed, corrosion-resistant, solid casing
- Non-flammable top made of duro-plastic
- Fast heating and excellent temperature stability
- External control by the connection of a Pt100 temperature sensor
- Large LCD screen displays the set and actual temperature and speed
- A high-temperature indicator warns the user and prevents burning injuries
- Compressed air connector optionally available for the use in aggressive environments



Specifications

| Model | SLR |
|--|-----------------|
| Display Mode | LCD |
| Heating Capacity (kW) | 1.8 |
| Max. Hot Plate Temperature (°C) | 550 |
| Min. Time to Boiling Point for 1 L H2O (min) | 10 |
| Speed Range (rpm) | 50 ~ 1200 |
| Top Plate Area (mm) | 190 x 190 |
| Heating Zone (mm) | ∅ 190 |
| Temperature Sensor Connector | Pt100 |
| Top Plate Material | Glass Ceramic |
| Dimensions (L x W x H in mm) | 395 x 295 x 110 |
| Mixing Capacity (L) | 25 |
| Protection Category | IP20 |
| Order No. for EU/UK-Plug | 285416373-E/UK |

Note: The actual temperature of the media can deviate significantly from the hot plate temperature, depending on several factors like the vessel capacity or the isolation level.

Wiggins



Accessories for Hot Plates / Stirrers

| Model | Description | Order No. |
|------------------------------------|---|-----------|
| PT100 Temperature sensor, Type I | Length: 170 mm; Diameter: 4 mm; Material: Stainless steel; Admissible temperature: -30 ~ +300°C | PT100-01 |
| PT100 Temperature sensor, Type II | Length: 300 mm; Material: Stainless steel | PT100-02 |
| PT100 Temperature sensor, Type III | Length: 150 mm; Material: Stainless steel, PTFE coated | PT100-03 |
| PT100 Temperature sensor, Type IV | Length: 300 mm; Material: Stainless steel, PTFE coated | PT100-04 |
| PT100 Temperature Sensor, Type VI | Length: 250 mm; Diameter: 4 mm; Material: Glass; Admissible temperature: -30 ~ +300°C | PT100-06 |
| Holder for Temperature Sensor | Holder and clamp for PT100 temperature sensor; Suitable for WH220 Plus, WH240 Plus, WH220-HT, WH240-HT, SLR, SLK, and WH200D Series | PT100-05 |

Stirrers

Stirrers

Magnetic Stirrers

WH-A Series

- Control knob for precise setting of stirring speed
- Leading microprocessor control technology ensures accuracy and stability of the stirring speed
- Stirring plate surface made of stainless steel
- Wide speed range between 100 and 1500 rpm
- Each plate is individually controllable



WH-D Series

- LED display for convenient control and monitoring of the stirring speed
- Leading microprocessor control technology ensures accuracy and stability of the stirring speed
- Stirring plate surface made of stainless steel
- Wide speed range between 100 and 1500 rpm
- Individual control for each plate and master control for all plates at once



WH-210 Magnetic Stirrer

- Digital display of the stirring speed
- Elegant and convenient on-touch control of the stirring speed
- Leading microprocessor control technology ensures the accuracy and stability of the stirring speed
- Memory function for stirring speed, which helps to enhance the effectiveness of repetitive processes
- Top plate made of ceramic
- Splash-resistant shell
- Liquid drainage above the control board to prevent liquids from accessing the system
- Wide speed range between 50 and 1500 rpm



Specifications

| Model | WH-210A | WH-410A | WH-610A | WH-210D | WH-410D | WH-610D | WH-210 |
|--------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|
| Display Mode | Scale display | Scale display | Scale display | LED | LED | LED | LED |
| Speed Range (rpm) | 100 ~ 1500 | 100 ~ 1500 | 100 ~ 1500 | 100 ~ 1500 | 100 ~ 1500 | 100 ~ 1500 | 100 ~ 1200 |
| Number of Plates | 1 | 4 | 6 | 1 | 4 | 6 | 1 |
| Mixing Capacity (ml) | 50 ~ 3000 | 50 ~ 2000 | 50 ~ 2000 | 50 ~ 3000 | 50 ~ 2000 | 50 ~ 2000 | 50 ~ 10.000 |
| Plate Dimensions (W × L in mm) | 158 × 143 | 313 × 303 | 473 × 303 | 158 × 143 | 313 × 303 | 473 × 303 | 145 × 180 |
| Overall Dimensions (W × L × H in mm) | 189 × 215 × 48 | 344 × 377 × 48 | 504 × 377 × 48 | 189 × 215 × 48 | 344 × 377 × 48 | 504 × 377 × 48 | 225 × 215 × 115 |
| Order No. for EU/UK-Plug | 400210-E/UK | 400211-E/UK | 400212-E/UK | 400214-E/UK | 400215-E/UK | 400216-E/UK | 400200-E/UK |
| Order No. for US-Plug | 400210-U | 400211-U | 400212-U | 400214-U | 400215-U | 400216-U | 400200-U |

Stirrers

Electromagnetic Stirrers

- 30% more stirring power than comparable systems
- Cutting edge inductive stirring technology
- Wide speed range of up to 2000 rpm
- Soft-start function for jerk-free stirring right from the beginning
- 4-step power setting for either viscous liquids or long-term operation
- Stable long-term operation of the stirrer without heating dissipation
- Clear LED display for setting of stirrer speed and power
- Quick-setting of initial and maximum speed
- Automatic memory function which saves the last used settings
- Hermetically sealed system with robust stainless steel surface
- Super-flat space-saving design of the stirring modules
- Synchronous speed for multiple stirring units
- Low-consumption power supply unit
- 100% Maintenance free
- No wear and tear



Specification

| Model | WHMIX 1 | WHMIX 1 Eco | WHMIX 4 MS | WHMIX 6 |
|--|------------------------------|------------------------------|------------------------------|------------------------------|
| Stirring Speed (rpm) | 100 – 2000 | 120 – 1400 | 100 – 2000 | 100 – 2000 |
| Mixing Capacity (mL) | 1 – 10.000 | 1 – 3000 | 1 – 3000 | 1 – 3000 |
| Number of Plates | 1 | 1 | 4 | 6 |
| Power (W) | 20 | 10 | 28 (4 x 7) | 20 |
| Power Setting | 25 / 50 / 75 / 100% | - | 25 / 50 / 75 / 100% | 25 / 50 / 75 / 100% |
| Stirring Point Distance (mm) | - | - | 140 | 130 |
| Individual Speed Setting for Stirring Drives | - | - | Yes | No |
| Mains Requirements | 100-240 V / 50-60 Hz / 1.5 A | 100-240 V / 50-60 Hz / 1.5 A | 100-240 V / 50-60 Hz / 1.5 A | 100-240 V / 50-60 Hz / 1.5 A |
| Admissible Temperature (°C) | -10 ~ 50 | -10 ~ 50 | -10 ~ 50 | -10 ~ 50 |
| Admissible Humidity | Up to 80% | Up to 80% | Up to 80% | Up to 80% |
| Casing Material | Stainless Steel | Stainless Steel | Stainless Steel | Stainless Steel |
| Protection Category | IP64 | IP64 | IP64 | IP64 |
| Dimensions (W x D x H in mm) | 180 x 230 x 38 | 120 x 120 x 35 | 245 x 425 x 38 | 245 x 425 x 38 |
| Weight (kg) | 4.0 | 1.7 | 8.9 | 8.8 |
| Order No. for EU/UK-Plug | 30001-E/UK | 30101-E/UK | 30404-E/UK | 30006-E/UK |
| Order No. for US-Plug | 30001-U | 30101-U | 30404-U | 30006-U |

Wiggins



Stirrers

Electromagnetic Stirrers With Remote Controller

Individual combination possibilities of stirring unit and controller
 Cutting edge inductive stirring technology
 Extremely robust construction
 Stirrer unit submersible in water or oil bath
 4-step power setting for either viscous liquids or long-term operation
 Stable long-term operation of the stirrer without heating dissipation
 Clear LED display for setting of stirrer speed and power
 Quick-setting of initial and maximum speed

Automatic memory function which saves the last used settings
 Jerk-free stirring even at low speed
 Super-flat space-saving design of the stirring and control modules
 Synchronous speed for multiple stirring units
 Suitable for CO₂-incubators and ovens
 100% Maintenance free
 No wear and tear

Controller Specifications

| Model | MIX Control 20 | MIX Control eco |
|---|---------------------|-----------------|
| Stirring Speed (rpm) | 100 – 1600 | 120 – 1200 |
| Power (W) | 20 | 10 |
| Power Setting | 25 / 50 / 75 / 100% | - |
| Admissible Temperature (°C) | 0 ~ 40 | 0 ~ 40 |
| Admissible Humidity | Up to 80% | Up to 80% |
| Casing Material | Stainless Steel | Plastic |
| Protection Category | IP20 | IP20 |
| Dimensions (W x D x H in mm) | 200 x 155 x 38 | 120 x 100 x 24 |
| Weight (kg) | 1.4 | 0.5 |
| Order No. for EU/UK-Plug | 90200-E/UK | 90100-E/UK |
| Order No. (incl. RS232 connection) for EU/UK-Plug | 90210-E/UK | - |
| Order No. for US-Plug | 90200-U | 90100-U |
| Order No. (incl. RS232 connection) for US-Plug | 90210-U | - |



Two Different Temperature Resistance Versions Available:

Basic-Version for up to +50°C
 HT-Version for up to +95°C submerged in water baths and up to +200°C in ovens

Wiggins



Stir Unit Specifications

| Model | WHMIX Drive 1 | WHMIX Drive 1 eco | WHMIX Drive 6 |
|--|----------------------------------|----------------------------------|----------------------------------|
| Mixing Capacity (ml) | 1 – 10000 | 1 – 3000 | 1 – 3000 |
| Number of Plates | 1 | 1 | 6 |
| Power (W) | 20 | 10 | 40 |
| Stirring Point Distance (mm) | - | - | 130 |
| Admissible Temperature (°C) (Basic Version) | -10 ~ 50 (at 100% humidity) | -10 ~ 50 (at 100% humidity) | 10 ~ 50 (at 100% humidity) |
| Admissible Temperature (°C) (HT-Version) | +95 (in water) +200 (in oven) | +95 (in water) +200 (in oven) | +95 (in water) +200 (in oven) |
| Casing Material | Stainless Steel | Stainless Steel | Stainless Steel |
| Protection Category | IP68 | IP68 | IP68 |
| Dimensions (W x D x H in mm) | 180 x 180 x 38 | 120 x 120 x 35 | 245 x 375 x 38 |
| Weight (kg) | 3.3 | 1.5 | 9.5 |
| Order No. (Basic Version) for EU/UK-Plug | 40001-E/UK | 40101-E/UK | 40006-E/UK |
| Order No. (HT-Version) for EU/UK-Plug | 40201-E/UK | 40301-E/UK | 40206-E/UK |
| Order No. (Basic Version) for US-Plug | 40001-U | 40101-U | 40006-U |
| Order No. (HT-Version) for US-Plug | 40201-U | 40301-U | 40206-U |

Stirrers

Magnetic Stirrer Accessories



Wiggins

Stir Bar and Retriever Examples

| Order No. | Description |
|----------------|---|
| 001.110.6 | Cylindrical Stirrer Bars |
| 001.210.6 | Plain Stir Bars |
| 001.513.3 | Octahedral Stir Bars |
| 001.513-R/B/Y | Colored Octahedral Stir Bars |
| 001.802 | Micro Stir Bars |
| 001.802-R/B/Y | Colored Micro Stir Bars |
| 001.610 | Oval Stir Bars |
| 001.3319 | Octaoval Stir Bars |
| 001.1712 | Cylindrical Stir Bars With a Removable Pivot Ring |
| 001.1910 | Tapered Stir Bars |
| 001.1335 | Double Ended Stir Bars (Natural) |
| 001.1335-R/B/Y | Double Ended Stir Bars (Colored) |
| 001.412 | Triangular Stir Bars |
| 001.1812 | Ribbed Triangular Stir Bars |

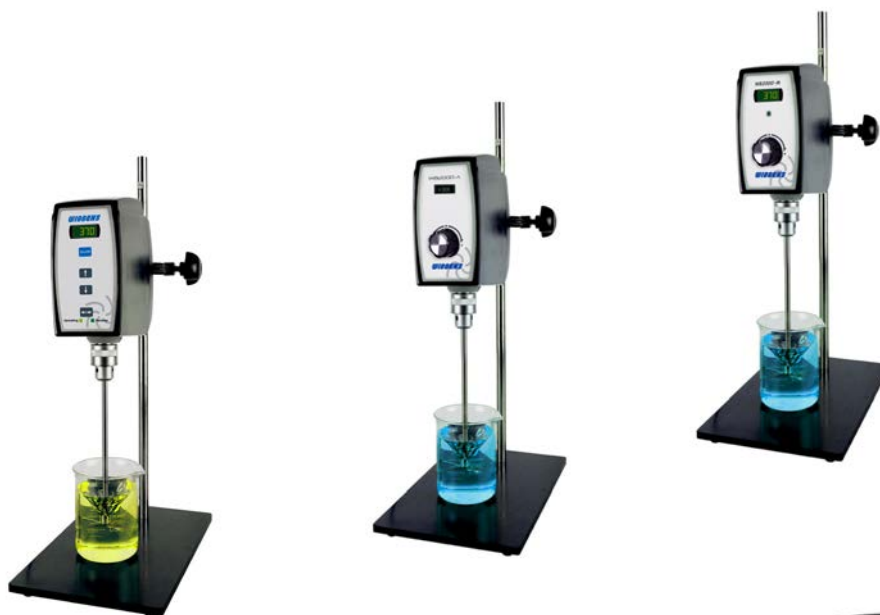
| Order No. | Description |
|-------------|---|
| 001.2201.1 | Test Tube Wings |
| 001.2401 | Cross-Shaped Stir Bars |
| 001.1110 | Crosshead Stirrer Magnets(Double Sided) |
| 001.1110.1 | Crosshead Stirrer Magnets(Single Sided) |
| 001.2301 | Hub Stirrer Magnets |
| 001.1609 | Tube Stirrer Magnets |
| 001.709 | Disc-Shaped Stirrer Magnets |
| 001.1512 | Spherical Stirrer Magnets |
| 001.1206 | Glass Encased Stir Bars |
| 001.0120 | Extra Large Stir Bars |
| 001.3003 | Stir Bar Sets (18 Bars) |
| 001.2610.RE | Rare Earth 'Turbo' Stir Bars |
| 004.150 | Stir Bar Retrievers |

Stirrers

Overhead Stirrers

Brushless DC motor, which is very suitable for long-term experimental applications
 Stable and accurate stirring process due to latest micro-processor technology
 Totally enclosed and compact casing
 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 WB2000-A / D / C come with a reversible rotation function
 The WB2000-D employs new technology soft key control and a bright LED speed display
 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



Wigens

Remotely Controllable Overhead Stirrer

Employs all basic functions of the WB2000-D overhead stirrer
 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
 Rotation speed can be lowered to 20 rpm for very sensitive stirring processes



Specifications

| Model | WB2000-A | WB2000-M | WB2000-D | WB2000-C |
|--|------------------------------|------------------------------------|--|--|
| Display / Control Mode | Scale Display / Knob Control | LED Digital Display / Knob Control | LED Digital Display / On-Touch Control | LCD Digital Display / On-Touch Control |
| Speed Range (rpm) | 40 ~ 2000 | 40 ~ 2000 | 40 ~ 2000 | 20 ~ 2000 |
| Maximum Torque (N-cm) | 70 | 70 | 70 | 70 |
| Maximum Viscosity (cps) | 20000 | 20000 | 20000 | 20000 |
| Maximum Capacity (L) | 20 | 20 | 20 | 20 |
| Clockwise and Counter Clockwise Mixing | Yes | No | Yes | Yes |
| Input / Output Power (W) | 70 / 50 | 70 / 50 | 70 / 50 | 70 / 50 |
| Dimensions (W x L x H in mm) | 105 x 160 x 185 | 105 x 160 x 185 | 105 x 160 x 185 | 105 x 160 x 185 |
| Order No. for EU/UK-Plug | 100100-E/UK | 100300-E/UK | 100200-E/UK | 100500-E/UK |
| Order No. for US-Plug | 100100-U | 100300-U | 100200-U | 100500-U |

Stirrers

High Torque / High Speed Overhead Stirrers

- Brushless DC motor
- Totally enclosed and compact metal casing
- Smart and convenient on-touch control
- Bright LED screen, which can display stirring speed and torque
- Transmission can be switched between low speed / high torque, and high speed / low torque
- Spinning chuck protection
- Precise speed adjustment
- Set speed can be maintained when viscosity of liquid changes
- Easy and time saving impeller adjustments



Specifications

| Model | WB3000-D | WB1800-D | WB6000-D |
|------------------------------|---|---|---|
| Display / Control Mode | LED Digital Display / On-Touch Control | LED Digital Display / On-Touch Control | LED Digital Display / On-Touch Control |
| Speed Accuracy | +/- 1 rpm | +/- 1 rpm | +/- 1 rpm |
| Torque Accuracy | +/- 1 in-lb | +/- 1 in-lb | +/- 1 in-lb |
| Speed Range (rpm) | Low: 20 ~ 600 High: 600 ~ 3000 | Low: 12 ~ 360 High: 360 ~ 1800 | Low: 40 ~ 1200 High: 1200 ~ 6000 |
| Maximum Torque (N-cm) | 339 | 565 | 170 |
| Maximum Viscosity (cps) | 100000 | 150000 | 70000 |
| Maximum Capacity (L) | 40 | 40 | 40 |
| Output Power (W) | 150 | 150 | 150 |
| Dimensions (W x L x H in mm) | 200 x 95 x 230 | 200 x 95 x 230 | 200 x 95 x 230 |
| Order No. for EU/UK-Plug | 100400-E/UK | 100600-E/UK | 100800-E/UK |
| Order No. for US-Plug | 100400-U | 100600-U | 100800-U |

Wiggins

Remotely Controllable Ultra High Torque / High Speed Stirrers

- Suitable for reaction systems and other high torque / high speed applications
- Set speed can be maintained when viscosity of liquid changes
- 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
- Monitoring and control via PC software



Specifications

| Model | WB3000-C | WB1800-C | WB3000-EC | WB1800-EC |
|------------------------------------|---|---------------|---------------|---------------|
| Control Type | LCD Display for Speed and Torque and On-Touch Control | | | |
| Speed Range (rpm) | 70 ~ 3000 | 20 ~ 800 | 70 ~ 3000 | 20 ~ 800 |
| Accuracy (rpm) | ± 1 | ± 1 | ± 1 | ± 1 |
| Maximum Viscosity (cps) | 100000 | 150000 | 200000 | 300000 |
| Maximum Torque (N-cm) | 100 | 400 | 210 | 840 |
| Rated Torque (N-cm) | 47 | 188 | 116 | 464 |
| Maximum Capacity (L) | 50 | 50 | 100 | 100 |
| Power (W) | 150 | 150 | 450 | 450 |
| Motor Dimensions (W x L x H in mm) | 157 x 65 x 65 | 216 x 65 x 65 | 165 x 75 x 75 | 225 x 75 x 75 |
| Motor Weight (kg) | 1.8 | 2.3 | 2.8 | 3.4 |
| Order No. for EU/UK-Plug | 100401-E/UK | 100601-E/UK | 100402-E/UH | 100602-E/UK |
| Order No. for US-Plug | 100401-U | 100601-U | 100402-U | 100602-U |

Stirrers

Accessories for Overhead Stirrers

PTFE Impellers

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°C

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

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.

| Impeller Diameter Range | Shaft Diameter Range | Shaft Length Range |
|-------------------------|----------------------|--------------------|
| 40 - 120 mm | 6 - 19 mm | 300 - 1000 mm |



Anchor Impeller (PTFE Coated)

Produces tangential flow and strong shearing force. Used for slow-speed stirring, for high viscosity mixtures.

| Impeller Diameter Range | Shaft Diameter Range | Shaft Length Range |
|-------------------------|----------------------|--------------------|
| 80 - 180 mm | 6 - 19 mm | 300 - 1000 mm |



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.

| Impeller Diameter Range | Shaft Diameter Range | Shaft Length Range |
|-------------------------|----------------------|--------------------|
| 40 - 80 mm | 6 - 19 mm | 300 - 1000 mm |



Retreat Curve Impeller (PTFE Coated)

The blades are formed in a 30° angle. Creates tangential and axial flow as well as high shearing force. Used for mid- and slow-speed stirring, and for all levels of viscosity.

| Impeller Diameter Range | Shaft Diameter Range | Shaft Length Range |
|-------------------------|----------------------|--------------------|
| 80 - 180 mm | 6 - 19 mm | 300 - 1000 mm |



Plain Impeller Shafts (PTFE Coated)

Plain shafts with a stainless steel core and PTFE coating, as well as an exposed stainless steel end.

| End Diameter Range | Shaft Diameter Range | Shaft Length Range |
|--------------------|----------------------|--------------------|
| 5 - 10 mm | 8 - 19 mm | 300 - 1000 mm |



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

| Shaft Diameter Range | Shaft Length Range |
|----------------------|--------------------|
| 6 - 19 mm | 300 - 1000 mm |



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)

| Length Range | Thickness Range |
|--------------|-----------------|
| 52 - 150 mm | 14 - 28 mm |



Impeller Units, Adjustable in Height (PTFE Coated)

Adjustable impeller units which can be mounted on standard shafts and locked in place to give the most effective stirring patterns. Available are propeller blades, flat blades, and turbo blades.

| Nut Inner Diameter Range | Impeller Diameter Range |
|--------------------------|-------------------------|
| 6 - 19 mm | 40 - 150 mm |



Stirrers

Stainless Steel Impellers

Pivoting Blade Impeller

For mixing media from coarse to liquid, for mid-speed stirring, and for mid to low viscosity mixtures.

| Impeller Height | Impeller Diameter Range | Shaft Diameter Range | Shaft Length Range |
|-----------------|-------------------------|----------------------|--------------------|
| 18 mm | 60 mm | 8 mm | 300 - 500 mm |



Straight 2-Blade Impeller

For mixing media from coarse to liquid, for mid-speed stirring, and for mid to low viscosity mixtures.

| Impeller Height | Impeller Diameter Range | Shaft Diameter Range | Shaft Length Range |
|-----------------|-------------------------|----------------------|--------------------|
| 12 mm | 50 mm | 8 mm | 300 - 500 mm |



Straight 4-Blade Impeller

For mixing media from coarse to liquid, for mid-speed stirring, and for mid to low viscosity mixtures.

| Impeller Height | Impeller Diameter Range | Shaft Diameter Range | Shaft Length Range |
|-----------------|-------------------------|----------------------|--------------------|
| 12 mm | 50 - 100 mm | 8 - 10 mm | 300 - 500 mm |



3(6)-Hole Blade Impeller

For mixing media from coarse to liquid, for mid-speed stirring, and for mid to low viscosity mixtures.

| Impeller Diameter Range | Shaft Diameter Range | Shaft Length Range |
|-------------------------|----------------------|--------------------|
| 50 - 100 mm | 8 - 10 mm | 300 - 500 mm |



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.

| Impeller Height | Impeller Diameter Range | Shaft Diameter Range | Shaft Length Range |
|-----------------|-------------------------|----------------------|--------------------|
| 10 mm | 90/15 mm | 8 - 10 mm | 300 - 650 mm |



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.

| Impeller Height | Impeller Diameter Range | Shaft Diameter Range | Shaft Length Range |
|-----------------|-------------------------|----------------------|--------------------|
| 12 mm | 50 - 100 mm | 8 - 10 mm | 300 - 800 mm |



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.

| Impeller Diameter Range | Shaft Diameter Range | Shaft Length Range |
|-------------------------|----------------------|--------------------|
| 45 - 65 mm | 7 - 8 mm | 400 mm |



Anchor Impeller

Produces tangential flow and strong shearing force. Used for slow-speed stirring, for high viscosity mixtures.

| Impeller Diameter Range | Shaft Diameter Range | Shaft Length Range |
|-------------------------|----------------------|--------------------|
| 70 - 140 mm | 8 - 10 mm | 500 - 800 mm |



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.

| Impeller Diameter Range | Shaft Diameter Range | Shaft Length Range |
|-------------------------|----------------------|--------------------|
| 50 mm | 7 - 8 mm | 400 mm |



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.

| Impeller Diameter Range | Shaft Diameter Range | Shaft Length Range | Speed |
|-------------------------|----------------------|--------------------|------------------------------|
| 80 - 120 mm | 10 mm | 500 mm | 120 - 500 / 200 - 700 rpm |



Stirrers

Stirring Seals

PTFE Stirring Seals

Universal stirring seal made of PTFE. Employs high chemical resistance, has a standard grinding interface, and an additional O type ring to strengthen the sealing effect.



| Shaft Diameter | Outlet Size Range | Height (excl. joint) | Stirring Seal Diameter |
|----------------|-------------------|----------------------|------------------------|
| 8 mm | 24/40 - 34/45 | 60 mm | 42 mm |

Universal Stirrer Guide

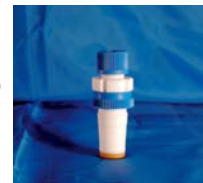
Composite PTFE / PEEK seal plus an inside glass seal to maintain a smooth stirring operation. This unique design can ensure a high vacuum of up to 5 Torr and high pressure of up to 3-5 psi. It doesn't harm the stirring rod and is highly chemical resistant. The highest recommended stirring speeds are 500 rpm in continuous operation and 800 rpm in intermittent operation.



| Shaft Diameter Range | Outlet Size Range | Height (excl. joint) | Stirring Seal Diameter Range |
|----------------------|-------------------|----------------------|------------------------------|
| 6-12 mm | 19/22 - 29/42 | 96-110 mm | 45-55 mm |

High-Performance Shaft Guide

Composite PTFE / PEEK seal plus an inside glass seal to maintain a smooth stirring operation. This unique design can ensure a high vacuum of up to 5 Torr. It doesn't harm the stirring rod and is highly chemical resistant.



| Shaft Diameter Range | Outlet Size Range | Height (excl. joint) | Stirring Seal Diameter Range |
|----------------------|-------------------|----------------------|------------------------------|
| 6-19 mm | 19/22 - 45/50 | 60-70 mm | 42-58 mm |

High Vacuum Shaft 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 1 Torr. The highest recommended stirring speed is 400 rpm.



| Shaft Diameter Range | Outlet Size Range |
|----------------------|-------------------|
| 10 - 30 mm | 24/40 - 45/50 |

Lubricants

Stir-Lube

Low-melting. Only very thin film needed. A non-cooled bearing can be operated at 1500 rpm, and water-cooled bearings up to 2000 rpm for many hours with negligible wear.



| Order No. | Description |
|-----------|-------------|
| 8117-10 | 28 (1 oz) |
| 8117-20 | 113 (4 oz) |

HI-LUBE Lubricant for Strong Liquids

Resistance to acid and alkali, soluble in organic solvents, and suitable for oxidizing gases. The temperature can reach 260°C, it is non-combustible, and non-oxidized.



| Order No. | Description |
|-----------|-------------|
| 8119-07 | 30mL |

Piston Lubricant

Smooth, stable, odorless oil based lubricants, free of silicone, suitable for lubrication of joint and piston. The melting point is 52°C, can be cleared with xylene.



| Order No. | Description |
|-----------|--------------|
| 8118-10 | 75 (2.65 oz) |

Krytox LVP High Vacuum Grease

Low vapor pressure, non-combustible, strong inert oil, suitable for high vacuum systems. It can be used at pressures of 1×10^{-13} Torr at 20°C and 1×10^{-5} Torr at 200°C



| Order No. | Description |
|-----------|-------------|
| 8116-10 | 2 oz |

Krytox GPL Fluorinated Grease

Good chemical stability, no reaction with oxygen, hydrogen, hydrocarbons and other chemical substances. The usable temperature range is -35°C ~ 290°C



| Order No. | Description |
|-----------|-------------|
| 8115-08 | 2 oz |

Stirrers

Platforms

Electric Lifting Platform

Adjustable lifting platform with unique design
 Wireless remote control
 Simple operation
 Continuous height adjustment with smooth start and stop regulation
 CE and GS certified



Laboratory Lifting platform

Manually adjustable
 Dimensions: 240 x 240 mm
 Made of Stainless Steel



Clamps

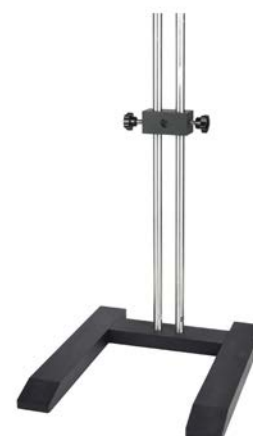
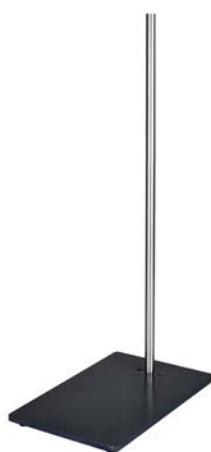


| Model | Extended Length Range | Diameter Range |
|--------------------------|-----------------------|----------------|
| Three Jaw Clamp | 17~30 cm | 20~80 cm |
| Double Jaw Clamp | 23 cm | 64 cm |
| Enhanced Three Jaw Clamp | 15.6~16.1 cm | 2.8~10 cm |

Wiggins

Stands

Strong Base for optimal weight distribution
 Made of cast iron or stainless steel
 Different heights available
 WH-S and WH-D Series include perfectly fitting clamps
 Suitable for overhead stirrers as well as high speed hor



| Model | WF Series Stands | WH-S Series Stands | WH-D Series Stands |
|------------------|------------------|--------------------|--------------------|
| Height | 550~950 mm | 550~950 mm | 550~950 mm |
| Base Dimensions. | 315X200 cm | 340X300 cm | 340X300 cm |

Hot Plates

Digital Hot Plates

- 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 temperature



Specifications

| Model | WH200D-1K | WH200D-2K | WH200D-3K |
|----------------------------|-------------|-------------|-------------|
| Display Mode | LED | LED | LED |
| Temperature Stability (°C) | ±2 | ±2 | ±2 |
| Hot Plate Temperature (°C) | 350 | 350 | 350 |
| Power (W) | 680 | 1000 | 1500 |
| Dimensions (W x L in mm) | 170 x 170 | 250 x 250 | 400 x 300 |
| Order No. for EU/UK-Plug | 400110-E/UK | 400111-E/UK | 400112-E/UK |
| Order No. for US-Plug | 400110-U | 400111-U | 400112-U |

Soxhlet 6-Plate Heater

The distance between the plates is 55mm (as required by the DIN 44548 standard) and the heating plate diameter is 85 mm. The unit is durable, space saving and maintenance-free.

- Embedded heating resistor
- Sturdy and durable
- Surface temperature up to 425°C
- Independent heating control knobs
- Housing material: Coated Stainless Steel

| Model | WH106 |
|-----------------------------|-----------------|
| Number of Plates | 6 |
| Plate Diameter | 85 mm |
| Spacing Between Plates | 55 mm |
| Max. Temperature (°C) | 425 |
| Heating Power | 6 x 450W |
| Dimensions(L x W x H in mm) | 475 x 395 x 160 |
| Order No. for EU/UK-Plug | WH106-E/UK |

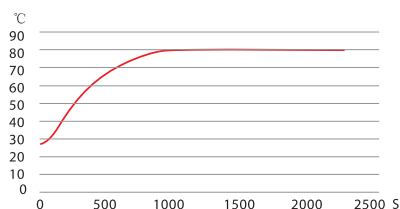


Hot Plates

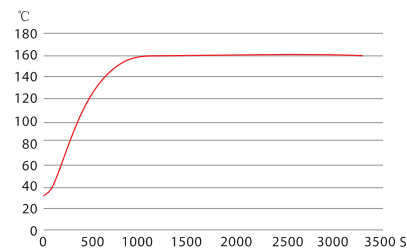
Infrared Hot Plates

Smooth and corrosion resistant glass ceramic 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
 Non-flammable top plate made of duro-plastic
 Fast heating and excellent temperature stability
 Temperature can be externally controlled by the connection of a Pt100 temperature sensor
 Timer function of up to 1800 seconds for automatic heating up
 Large LCD screen displays the set and actual temperature
 A high-temperature indicator warns the user and prevents burning injuries

Compressed air connector optionally available for the use of the hotplate in an aggressive environment
 Rod holder can be conveniently used to connect diverse accessories such as a temperature sensor
 SLK1 / SLK2 Infrared Hot Plates employ a 24 step temperature regulator
 SLK2-T can be connected to an external temperature sensor for direct and precise temperature control



The heating curve (SLK2-T, 1L water, temperature is 80 °C)



The heating curve (SLK2-T, 1L oil, temperature is 160°C)

Specifications

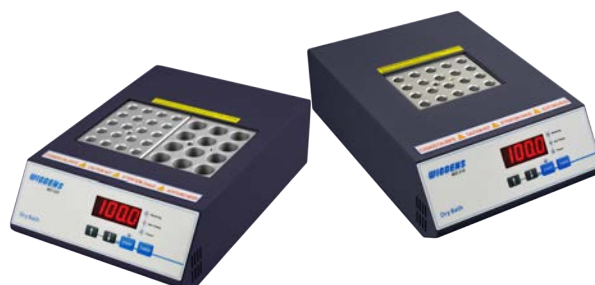
| Model | SLK1 | SLK2 | SLK2-T |
|---|-----------------|-----------------|-----------------|
| Display Mode | LCD | LCD | LCD |
| Heating power (kW) | 1.2 | 1.8 | 1.8 |
| Max. Hot Plate Temperature (°C) | 550 | 550 | 550 |
| Min. Time to Boiling Point for 1L H2O (min) | 10 | 7 | 7 |
| Top Plate Area (W x L in mm) | 280 x 280 | 280 x 280 | 280 x 280 |
| Heating Zone (mm) | 155 | 190 | 190 |
| Temperature Sensor Connector | - | - | - |
| Top Plate Material | Glass Ceramic | Glass Ceramic | Glass Ceramic |
| Dimensions (L x W x H in mm) | 395 x 295 x 110 | 395 x 295 x 110 | 395 x 295 x 110 |
| Maximum Capacity (L) | 25 | 25 | 25 |
| Admissible Ambient Temperature (°C) | 10-40 | 10-40 | 10-40 |
| Admissible Air Humidity (%) | 85 | 85 | 85 |
| Protection Category | IP20 | IP20 | IP20 |
| Protection Class | 1 | 1 | 1 |
| Order No. for EU/UK-Plug | 285416616-E/UK | 285416324-E/UK | 285416324-E/UK |

Hot Plates

Multi-Purpose Heater

WD310 / 320

Precise temperature control provided by leading microprocessor technology
 One-piece heating chamber made of aluminum material with PTFE coating
 Heating chamber can alternatively be used as a small water bath
 Various optional heating blocks available



| Model | WD310 | WD320 |
|--|----------------|----------------|
| Constant Temperature (°C) | Ambient +5~150 | Ambient +5~150 |
| Temperature Stability (°C) | ±0.1 | ±0.1 |
| Temperature Accuracy (°C) | ±0.2 | ±0.2 |
| Temperature Safety (°C) | Cut off at 170 | Cut off at 170 |
| Setting Time (min) | 0~9999 | 0~9999 |
| Block No. | 1 | 2 |
| Display | 4 1/2" LED | 4 1/2" LED |
| Outer Dimensions (W x L x H in mm) | 200 x 270 x 80 | 200 x 270 x 80 |
| Heating Block Dimensions (W x L x H in mm) | 79 x 104 x 50 | 79 x 104 x 50 |
| Order No. for EU/UK-Plug | 179310-22-E/UK | 179320-11-E/UK |
| Order No. for US-Plug | 179310-22-U | 179320-11-U |

COD Reactor

4-digit LED screen which can display the set temperature, the set time, the process temperature, and the residual time
 Timer can be set on continuous operation or on 1 – 999 min operation with automatic shut down and audio alarm
 High accuracy of ±2°C
 Temperature can be adjusted between 60 and 200°C or fixed at 150°C for the COD program
 The casing is made of stainless steel with a powder paint coating
 The block is made of anodized aluminum
 Standard block capacity is 25 x 16 mm sample vials; optional 8 x 20 mm or 6 x 25 mm blocks are available
 Safety can be ensured by a hot temperature LED indicator (for temperatures over 70°C) and an automatic shut-off when the system temperatures exceeds 210°C



Wiggins

Heating Mantles

Provision of even heating
 Maximum surface coverage
 Preferred to Bunsen burners for organic liquids
 Many different sizes
 Single or Combo-Heating Mantles



| Model | For Round Bottom Flasks | With Magnetic Stirrer Unit |
|------------------------|-------------------------|----------------------------|
| Capacity Range (in ml) | 100 - 72.000 | 250 - 3000 |

| Model | 6-Unit Heating Mantle | | 3-Unit Heating Mantle | |
|-------------------|---|------------------------|------------------------|------------------------|
| Type | Mid-Temp. | High-Temp | Mid-Temp | High-Temp |
| Capacity (in ml) | 250/300 | 100 / 125 / 250 / 3000 | 500 / 650 / 800 / 1000 | 500 / 650 / 800 / 1000 |
| Flask Bottom Type | Can be chosen between flat and round bottom | | | |

Hot Plates

Hot Plate Accessories

Temperature Sensors and Holders

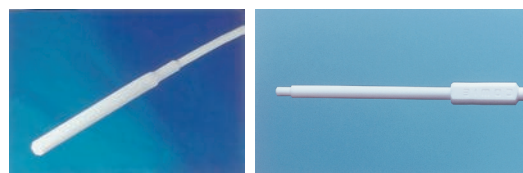
Standard Temperature Sensors and Holders

| Model | Description | Order No. |
|------------------------------------|---|-----------|
| PT100 Temperature Sensor, Type I | Length: 170 mm; Diameter: 4 mm; Material: Stainless steel; Admissible temperature: -30 ~ +300°C | PT100-01 |
| PT100 Temperature Sensor, Type II | Length: 300 mm; Material: Stainless steel | PT100-02 |
| PT100 Temperature Sensor, Type III | Length: 150 mm; Material: Stainless steel, PTFE coated | PT100-03 |
| PT100 Temperature Sensor, Type IV | Length: 300 mm; Material: Stainless steel, PTFE coated | PT100-04 |
| PT100 Temperature Sensor, Type VI | Length: 250 mm; Diameter: 4 mm; Material: Glass; Admissible temperature: -30 ~ +300°C | PT100-06 |
| Holder for Temperature Sensor | Holder and clamp for PT100 temperature sensor; Suitable for WH220 Plus, WH240 Plus, WH220-HT, WH240-HT, SLR, SLK, and WH200D Series | PT100-05 |



PTFE Temperature Probes

- Outstanding chemical resistance
- No contamination of working area
- A wide range of operating temperature and tolerances
- Almost any shape or size
- Can eliminate thermowells
- Completely coated with PTFE



| Model | Body Diameter Range | Body Length Range | Ferrule Length Range | Baffle (W x D x L) | Total Length |
|-----------------------------------|---------------------|-------------------|----------------------|----------------------------------|--------------|
| Platinum Resistance Probes | 6 - 9 mm | 100 - 900 mm | 35 - 45 mm | | 135 - 945 mm |
| Total Immersion | 5 mm | 50 mm | - | | 50 mm |
| Thermocouple Probes Type K | 6 - 9 mm | 100 - 900 mm | 35 - 45 mm | | 135 - 945 mm |
| Platinum Resistance Baffle Probes | 8 - 16 mm | 150 - 250 mm | - | 16 x 12 x 150 - 35 x 22 x 250 | 300 - 500 mm |
| Thermocouple Baffle Probes | 8 - 16 mm | 150 - 250 mm | - | 16 x 12 x 150 - 35 x 22 x 250 | 300 - 500 mm |

Heating Blocks for WD310 and WD320



| Order No. | Size (mL) | Number of Holes | Ø x H (mm) |
|-----------|--------------|-----------------|------------|
| 179300-01 | 0.2 | 64 | 6 x 17 |
| 179300-02 | 0.5 | 20 | 8 x 25 |
| 179300-03 | 1.5 (or 2.0) | 20 | 11 x 35 |
| 179300-04 | 10 | 20 | 10 x 33 |
| 179300-05 | 13 | 20 | 13 x 36 |
| 179300-06 | 20 | 12 | 20 x 48 |
| 179300-07 | 25 | 6 | 25 x 45 |
| 179300-10 | 17 | 12 | 17 x 44 |

Homogenizers

High Speed Homogenizer

Simple and easy to handle
 Fast and stable process for high quality results
 Enough speed and power to emulsify, suspend, cut-up, and disrupt
 Rotor/Stator independence for maximum flexibility
 Wide range of stators and rotors for application in various environments
 Overload protection



Handheld Homogenizer

Rotor / stator type handheld homogenizer
 Rapid homogenization, dispersion, and emulsifying possible
 Operation in 0.1 – 50 ml or 1 – 125 ml liquids depending on the dispersion shaft
 Suspended material is drawn into the core by a rotor with a speed of up to 30.000 rpm
 Material is repeatedly cycled through narrow slits, rapidly sheared and disintegrated via high speed mechanical action
 Complete homogenization of tissues in a few seconds
 Very low heat production
 Support rod for convenient placing optionally available



Specifications

| Model | D-500 | D-130 |
|------------------------------|-----------------------------|----------------------|
| Speed with Zero-Load (rpm) | 10000 ~ 30000 | 8000 ~ 30000 |
| Process Range H2O (mL) | 10 ~ 40000 (H2O) | 0.1 ~ 250 (H2O) |
| Input / Output Power (W) | 500 / 320 | 220V, 50 Hz / 130W |
| Contact Material | 316L Stainless Steel / PTFE | 316L Stainless Steel |
| Dimensions (W x L x H in mm) | 70 x 70 x 225 | n.a. |
| Order No. for EU/UK-Plug | 1710500-E/UK | 1710130-E/UK |

Flapping Homogenizer

Leading microprocessor technology for flap control
 Adjustable flapping speed for the HG400V and the HG400VW (5 – 8 times / sec)
 Working time can be set on continuous or between 1 sec and 10 min
 Maintenance-free brushless DC motor
 Stainless steel housing with plastic coating
 Easy to clean working chamber
 The HG400 and the HG400W employ digital setting and display of the working time

Specifications

| Model | Door Design | Flapping Speed | Capacity Range |
|---------|---------------------------------|----------------------------------|----------------|
| HG400 | Stainless Steel Door | Fixed to 8 Times / Sec | 50 - 400 mL |
| HG400V | Stainless Steel Door | Adjustable Between 5 And 8 Times | 50 - 400 mL |
| HG400W | SS-Door With Observation Window | Fixed to 8 Times / Sec | 50 - 400 mL |
| HG400VW | SS-Door With Observation Window | Adjustable Between 5 And 8 Times | 50 - 400 mL |



*Rotor not included on order. Range of suitable rotors on next page.

**Rotor included on order. Please choose suitable rotor on next page.

Homogenizers

Accessories for Homogenizers



Rotors for High-Speed Homogenizer

| Rotor Name / Order No. | Function Description | Process Volume (mL) | Linear Velocity (m/s) | Rotor Diameter (mm) | Stator Diameter (mm) | Min. / Max. Immersion Depth | Suspending Liquid Dispensing Size | Latices Dispensing Size | Disinfection Method | Applications |
|------------------------|------------------------------|---------------------|-----------------------|---------------------|----------------------|-----------------------------|-----------------------------------|-------------------------|----------------------|-----------------|
| SS20CSR20 | Solid-Liquid Mixing Material | 10-5000 | 23.5 | 15 | 20 | 40/175 | 10-50 | 1-10 | | P,CI,PC,SD |
| SS20CCR20 | Fiber Material | 10-5000 | 23.5 | 15 | 20 | 40/175 | 10-50 | 1-10 | | SP,M,F,PT,TI |
| SS20CMR20 | Solid-Liquid Mixing Material | 10-5000 | 23.5 | 15 | 20 | 40/175 | 10-50 | 1-10 | | CI,PI |
| SS20FER20 | Latices | 10-5000 | 23.5 | 15 | 20 | 40/175 | 10-50 | 1-10 | | SP,PI,PT,P |
| SS20FCR20 | Fiber Material | 10-5000 | 23.5 | 15 | 20 | 40/175 | 10-50 | 1-10 | | SP,BT,M,F,PT,TI |
| SS20FMR20 | Solid-Liquid Mixing Material | 10-5000 | 23.5 | 15 | 20 | 40/175 | 10-50 | 1-10 | | CI,C,PI,F,PT,PC |
| SS30CMR20 | Stirring Paddle Function- | 250-20000 | 36.1 | 15 | 30 | 40/175 | High Speed Homogenizing | | Suitable for All | CI,F,SP |
| SS30CSR30 | Solid-Liquid Mixing Material | 100-8000 | 36.1 | 23 | 30 | 40/175 | 5-25 | 1-5 | Disinfection Methods | SP,M,F,PT,P |
| SS30CCR30 | Fiber Material | 100-8000 | 36.1 | 23 | 30 | 40/175 | 5-25 | 1-5 | | SP,M,F,PT,P |
| SS30CMR30 | Solid-Liquid Mixing | 100-8000 | 36.1 | 23 | 30 | 40/175 | 5-25 | 1-5 | | CI,PI |
| SS30FSR30 | Solid-Liquid Mixing Material | 100-8000 | 36.1 | 23 | 30 | 40/175 | 5-25 | 1-5 | | SP,PI,PT,P |
| SS30FER30 | Latices | 100-8000 | 36.1 | 23 | 30 | 40/175 | 5-25 | 1-5 | | SP,PI,PT,P |
| SS30FMR30 | Solid-Liquid Mixing Material | 100-8000 | 36.1 | 23 | 30 | 40/175 | 5-25 | 1-5 | | CI,C,P,F,DT,TI |
| SS30CMR30 | Stirring Paddle | 100-8000 | 36.1 | 23 | 40 | 40/175 | High Speed Homogenizing | | | CI,F,SP |
| Shaft 5 | Solid-Liquid Mixing Material | 0.2-50 | 6.3 | 4 | 3.8 | 40/175 | 10-50 | 1-10 | | BT, M |

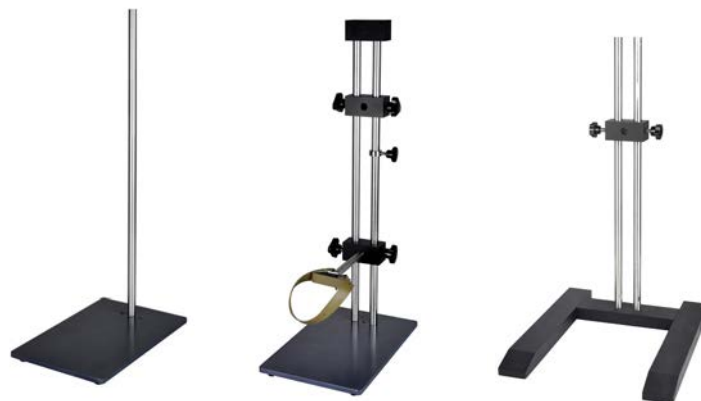
Note: BT = Biology; F = Food Industry; P = Pharmaceutical Industry; C = Cosmetic Industry; M = Medical Analysis; PC = Petrochemical Industry; PT = Paper Production Industry; SP = Wastewater Analysis; CI = Ceramic Industry; CH = Chemical Industry; PI = Paint Industry; TI = Tobacco Industry

Rotors for Handheld Homogenizer

| Type | Diameter | Length | Feasible Volume |
|--------|----------|--------|-----------------|
| Type A | 5 mm | 90 mm | 0.1 - 50 ml |
| Type B | 10 mm | 150 mm | 1 - 250 ml |

Stands

Strong Base for optimal weight distribution
 Made of cast iron or stainless steel
 Different heights available
 WH-S and WH-D Series include perfectly fitting clamps
 Suitable for overhead stirrers as well as high speed homogenizers



| Model | WF Series Stands | WH-S Series Stands | WH-D Series Stands |
|------------------|------------------|--------------------|--------------------|
| Height | 550-950 mm | 550-950 mm | 550-950 mm |
| Base Dimensions. | 315X200 cm | 340X300 cm | 340X300 cm |

Shakers

Shakers

Separatory Funnel Shakers

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 LED 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 sound
- Easily adjustable flask holder (max. 5 flasks per side)
- Two holders for a total of 6 flasks included

Specifications

| Model | WS-1 |
|------------------------------|------------------------------------|
| Motion Type | Vertical Reciprocation |
| Speed Range (rpm) | 50 ~ 300 |
| Timer | 0 - 60 min or Continuous Operation |
| Vertical Stroke Length (mm) | 40 |
| Dimensions (W×L×H in mm) | 445×730×505 |
| Max. Load For Each Side (kg) | 3 |
| Net Weight (kg) | 24 |
| Mains Requirements | 230V, 60Hz, 0.4A |
| Order No. for EU/ | WS-1 32012KA-E/UK |
| UK-Plug | WS-1 PLUS 32012KB-E/UK |



Funnel Capacities (per Side)

| Capacity | Round Type Funnel | Slim Type Funnel |
|--------------|-------------------|------------------|
| Under 500 ml | 3 - 5 | 5 |
| 500 ml | 3 | 3 |
| 1 L | - | 3 |

Wigens

Orbital Shakers

- Two different shaking functions: back and forth, and orbital
- Adjustable shaking speed and range
- Timer function for maximum flexibility
- Corrosion resistant stainless steel housing,
- Easy to clean and maintain
- Large mounting surface and big load capacity of up to 15 kg
- Ideal for vessels with more than 250 ml capacity, like round flasks, Erlenmeyer flasks, culture flasks, or culture bottles
- Widely used for bacterial cultures, fermentation, hybridization, biochemical reactions, enzyme or tissue research



Specifications

| Model | WS-50D | WS-50DR | WS-100D | WS-150D | WS-200D |
|--------------------------------------|--|---------------|--|--|--|
| Display and Control | LED Digital Display / On-Touch Control | | LED Digital Display / On-Touch Control | LED Digital Display / On-Touch Control | LED Digital Display / On-Touch Control |
| Vibration Style | Orbital | Reciprocating | Back and Forth / Orbital | Back and Forth / Orbital | Back and Forth / Orbital |
| Frequency of Vibration (rpm) | 10 - 300 | 10 - 250 | 10 - 300 | 10 - 300 | 10 - 300 |
| Amplitude of Vibration (mm) | 20 | 20 | 30 (Standard); 20, 40 (Optional) | 30 (Standard); 20, 40 (Optional) | 30 (Standard); 20, 40 (Optional) |
| Speed Adjustment Steps | ±2 rpm | ±2 rpm | ±1 rpm | ±1 rpm | ±1 rpm |
| Maximum Timer Length (min) | 999 hr 59 min | 999 hr 59 min | 999 hr 59 min | 999 hr 59 min | 999 hr 59 min |
| Maximum Load (including clamps) (kg) | 20 | 20 | 7.5 | 15 | 30 |
| Order No. for EU/UK-Plug | 3A126-E/UK | 3A226-E/UK | 200200-E/UK | 200300-E/UK | 200400-E/UK |

Shakers

Vortex Shakers

Vortex 3000

Elaborate design for safe and reliable vortex shaking
 Speed can be set between 200 and 3000 rpm
 Very 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.
 Corrosion-resistant PP housing
 Available in 7 different colors
 Diverse accessories available



Specifications

| Model | Vortex 3000 |
|------------------------------|-------------------------|
| Shaking Method | Vortex Shaking |
| Shaking Operation | On-Touch or Continuous |
| Shaking Diameter (mm) | 4 |
| Vortex Speed (rpm) | 200 - 3000 |
| Motor Input / Output (W) | 12 / 6 |
| Max. Load (kg) | 1.1 |
| Product Material | PP Housing, Rubber Feet |
| Dimensions (W x D x H in mm) | 148 x 159 x 87 |
| Net Weight (kg) | 2.6 |
| Safety Standard | IP42 |
| Order No. for EU/US/UK-Plug | 360115-E/U/UK |

TM Series Vortex Shakers

Very accurate shaking speed due to 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
 Rotation direction can be switched
 Suitable for shaking test tubes or other small volume vials
 Large range of platforms and other accessories



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 Amplitude (mm) | 4.5 | 4.5 | 4.5 | 4.5 |
| Speed Control | Turning Knob | Turning Knob | Turning Knob | Turning Knob |
| Display | Scale Display | Scale Display | LED Display | 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 |
| Power (W) | 17.3 | 17.3 | 17.3 | 17.3 |
| Dimensions (L x D x H in mm) | 115 x 230 x 60 | 115 x 230 x 60 | 115 x 230 x 60 | 115 x 230 x 60 |
| Order No. for EU/US/UK-Plug | 360110-E/U/UK | 36011F-E/U/UK | 360120-E/U/UK | 36012F |

Shakers

Accessories for Shakers

Accessories for TM & Vortex 3000 Series

Universal Tray

Can be used with different foam plastic platforms for simultaneous shaking of several test tubes

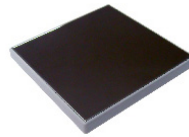
Order No.: 3601-01



Magnetic Stirring Plate

Can be directly installed on the shaker and used for stirring of smaller samples

Order No.: 3601-02



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

Order No.: 3601-05



Elisa Plate Tray

Can be used with an ELISA Plate

Order No.: 3601-03



Universal Base Plate

Base plate for foam plastic platforms with 120 mm diameter

Order No.: 3602-01



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

Order No.: 3601-04



Test Tube Platform (24 Holes)

Can be used in combination with the universal base plate for shaking operation of 24 Eppendorf tubes

Order No.: 3602-02



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

Order No.: 3602-05



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

Order No.: 3602-03



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

Order No.: 3602-06



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

Order No.: 3602-04



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



Sterilization Equipment

Bunsen Burners

Economy Line Bunsen Burners

Features

- Automatic ignition due to piezo effect
- Max. Temperature: 1300°C
- Adjustable flame
- Refillable butane tank

Applications

- Sterilizing
- Welding
- Heating
- Cooking



Dragon 100



Dragon 220



Dragon 200

| Model | Dragon 100 | Dragon 200 | Dragon 220 |
|------------------------------|----------------|---------------|---------------|
| Max. Temperature (°C) | 1300 | 1300 | 1300 |
| Tank Capacity (g) | 45 | 45 | 45 |
| Working Time (min) | 60 | 60 | 60 |
| Dimensions (H x W x D in mm) | 161 x 137 x 79 | 92 x 115 x 79 | 94 x 115 x 78 |
| Net Weight (g) | 380 | 407 | 425 |

Hand-Operated Laboratory Bunsen Burner

- Automatic ignition due to piezo effect
- Connection for gas cartridge or gas tubing
- Stainless steel stand

- Gas supply only when bar is pressed
- For use with propane, butane, and natural gas
- Safe handling due to one-handed operation



Powerjet 2



Powerjet

| Model | Powerjet | Powerjet2 |
|--------------------------|----------------------------|---|
| Gas Types | Liquid gas, gas cartridges | Natural gas E/LL, liquid gas, Express 444 |
| Connected Load | 0,12 kg / h liquid gas | 0,13 kg / h liquid gas |
| Flame Temperature | 1350°C on liquid gas | 1350°C on liquid gas, 1300°C on natural gas (E) |
| Temp. Threshold Level | 1.54 kW liquid gas | 1.7 kW liquid gas, 1kW natural gas |
| Dimensions (W x H in mm) | 150 x 180 | 150 x 210 |
| Weight | 300g | 500g |

Fuego Safety Laboratory Gas Burner

- Graphical installation instruction
- Zero-pressure shut off
- Gas consumption display
- Acoustic signals as operating aids
- User-friendly stainless steel knobs
- Animated high-contrast graphic display

- Individually adjustable Single or DoubleClick IR motion sensor
- Automatic unit cut-off
- Cooling reminder for inoculation loops
- Temperature regulation for heating media



| Model | Fuego Basic | Fuego Basic RF | Fuego SCS | Fuego SCS Pro |
|------------------------------|----------------|----------------|----------------|-------------------------|
| LCD Display | No | No | Yes | Yes |
| Infrared Temp. Sensor | No | No | Yes | Yes |
| Safety Control System | Yes | Yes | Yes | Yes |
| Battery Operation | No | No | No | Yes (Holds for 9 Hours) |
| Foot Pedal Included | Yes | Yes | No | No |
| Gas Consumption | 70g / h | 70g / h | 70g / h | 70g / h |
| Flame Temperature (°C) | 1350 | 1350 | 1350 | 1350 |
| Power (kW) | 1 | 1 | 1 | 1 |
| Dimensions (W x H x L in mm) | 103 x 49 x 130 | 103 x 39 x 130 | 103 x 39 x 130 | 103 x 39 x 130 |

Sterilization Equipment

Carrousel For Flame Sterilizing Inoculation Loops

Precise setting of the required sterilization time
 Exact setting of the cooling time for the inoculation loops
 Monitoring of the sterilization operation by an intelligent sensor
 Quick start button
 Coordinated mounts and reliable optical detectors for loop holders

Optimal sterilization due to intelligent sterilization monitor
 Saves energy, time, and costs
 Fabricated entirely of stainless steel, anodized aluminum, and a display, protected by heat resistant glass

Specifications

| Model | Autoloop Pro |
|----------------------|--|
| Technology | Microchip based control |
| Operation Mode | Completely Automatic |
| Inoculation Loops | 1 - 4 |
| Sterilization Time | 1 - 15 sec |
| Cooling Time | 1 - 45 sec |
| Display | LED |
| Alarm Type | LED Light |
| Automatic Shut-Off | Yes (Programmable) |
| Control Type | Turning Knobs / Foot Controller |
| Rotational Direction | Left / Right (depends on removed holder) |
| Material | Stainless Steel |



Wiggins

Infrared Loop Sterilizer

Annealing without flame
 Double tube system (Ceramic / Quartz glass)
 Stainless steel design
 Sterilization period of 5-7 seconds
 Self-locking angular adjustment
 Two sizes available
 Universal support for all inoculation loop holders
 Inoculation loops made of special stainless steel
 Mountable tray for easy placement of inoculation loops
 Timer with stainless steel holder for sidewise attachment
 Tool holder made of stainless steel



| Model | SteriMax Type 1 | SteriMax Type 2 |
|-----------------------------------|---|---|
| Diameter (in mm) | 15 | 20 |
| Length (in mm) | 118 | 161 |
| Angular Adjustments | 7 | 7 |
| Sterilization Temperature (in °C) | 900 - 950 | 900 - 950 |
| Power Supply (W) | 160 | 225 |
| Heating Up Time (in min) | 10 - 16 | 10 - 16 |
| Sterilization Time (in sec) | 5 - 7 | 5 - 7 |
| Safety Features | Residual heat display | Residual heat display |
| Casing | Stainless steel, UV and solvent resistant | Stainless steel, UV and solvent resistant |
| Weight (in g) | 960 | 1060 |
| Measurements (W x H x D in mm) | 175 x 129 x 139 | 175 x 129 x 169 |
| Order No. for EU/UK-Plug | 5.001.000-E/UK | 5.101.000-E/UK |
| Order No. for US-Plug | 5.002.000-U | 5.102.000-U |

Sterilization Equipment

Turntable for Inoculation of Petri Dishes

- Extremely simple operation by mere hand movement or foot pedal use
- Variable rotational speed control
- Short time operation of 1 - 125 seconds
- Low working height allows effortless work
- Turntable with silicone covering & centring ring (autoclavable)
- Stainless steel construction to ensure high durability and the highest degree of sterility
- UV-resistant and flame-sterilizable
- Minimum space required



Specifications

| Model | Sensorturn | Sensorturn Pro |
|----------------------------------|-------------------------------|-------------------------------|
| Rotary Speed Range (in rpm) | 14 - 110 | 14 - 210 |
| Petri Dish Size (Diameter in mm) | 100 (150 optional) | 100 (150 optional) |
| Rotational Direction | Clockwise | Clockwise |
| Detection Range IR-Sensor | 5 - 50 mm, adjustable | 5 - 50 mm, adjustable |
| Connector for Foot Pedal | Yes | Yes |
| Timer Range (in sec) | 1 - 25 or 1 - 125, adjustable | 1 - 25 or 1 - 125, adjustable |
| Constant Operation | Unlimited | Unlimited |
| Operating Voltage | 9V - 15V DC / 1.5VA | 9V - 15V DC / 1.5VA |
| Protection Class | 2 | 2 |
| Dimensions (W x H x D in mm) | 109 x 59 x 130 | 109 x 59 x 130 |
| Order No. for EU/US/UK-Plug | 7.001.000-E/U/UK | 7.002.000-E/U/UK |

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
- Exclusive BACK button, which enables convenient data deduction when over counting occurred
- Pressure sensor allows the use of any marking pen, without the contamination of the sample
- Optional computer software, which offers various tools such as data recording and tracing, report generation, etc.
- CE certification
- Suitable for total bacteria and total coliform counting



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 |
| Count Back | Yes |
| Illumination | Ring-Shaped Lamp |
| Pressure Sensitivity | Adjustable |
| Acoustical Counting Signal | Adjustable |
| Output | RS232 |
| Dimensions (W x L x H in mm) | 313 x 346 x 360 |
| Net Weight (kg) | 5.2 |

Ordering Information

| Order No. | Product Description |
|-----------|---|
| 175200-22 | Galaxy 230 Colony Counter, AC 110V / 60Hz (220V / 50Hz) |
| 175300-22 | Galaxy 230 Colony Counter + PC software + RS232 interface connection cable, AC110V / 60Hz (220V / 50Hz) |
| 175300-12 | PC software + RS232 interface connection cable |

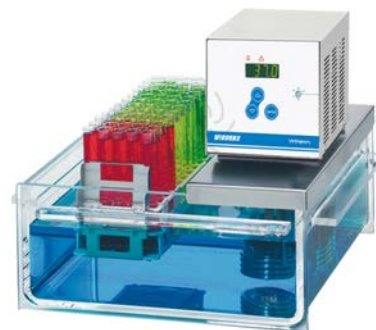
Water Baths and Ultrasonic Cleaners

Open Water Baths

- Easy and convenient operation with the 3-button control panel
- Bright LED display for convenient examinations
- Heating capacity up to 95°C
- PID temperature control technology
- Powerful 1.5 kW motor for fast heating up
- Strong pump capacity
- Suitable for internal and external circulation
- Adjustable ratio of internal to external circulation
- Over temperature cut-off, adjustable within working temperature range
- Float switch with cut-off feature for low liquid level protection
- Standby and Auto-Start functions to choose instrument mode after power outage
- Great interior design and voluminous space for heat radiation for ensuring a high durability of the circulator
- High quality corrosion-resistant non-soiling stainless steel heating coil

Transparent Water Baths

- Three different sizes available
- Heat resistance of 100°C
- Mostly suitable for biological and pharmaceutical laboratories
- Low temperature fluctuation
- Convenience through visibility



Specifications

| Model | Unit | W-Therm B1 | W-Therm B3 | W-Therm B5 | W-Therm 5M | W-Therm 13M | W-Therm 19M |
|--------------------------------|-------|---------------------------|---------------------------|---------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| Product Description | | Water Bath for Circulator | Water Bath for Circulator | Water Bath for Circulator | Transparent Water Bath for Circulator | Transparent Water Bath for Circulator | Transparent Water Bath for Circulator |
| Working Temperature Range | °C | Ambient + 5 ~ +95 | Ambient + 5 ~ +95 | Ambient + 5 ~ +95 | Ambient + 5 ~ +95 | Ambient + 5 ~ +95 | Ambient + 5 ~ +95 |
| Temperature Stability | °C | ±0.05 | ±0.05 | ±0.05 | ±0.05 | ±0.05 | ±0.05 |
| Power | W | 1500 | 1500 | 1500 | 1500 | 1500 | 1500 |
| Flow Rate | L/min | 10 | 10 | 10 | 10 | 10 | 10 |
| Pressure | mbar | 230 | 230 | 230 | 230 | 230 | 230 |
| Filling Volume | L | 4.5 | 12 | 18 | 5 | 13 | 19 |
| Weight | kg | 8.2 | 8.2 | 11.2 | | | |
| Inner Dimensions (W × L × H) | cm | 15 × 33 × 15 | 32 × 29 × 15 | 49 × 29 × 15 | | | |
| Opening Dimensions (W × L × H) | cm | 15 × 15 × 15 | 18 × 30 × 15 | 36 × 30 × 15 | 12 × 14 × 15 | 18 × 30 × 15 | 36 × 30 × 15 |
| Outer Dimensions (W × L × H) | cm | 17 × 33 × 38 | 39 × 33 × 38 | 57 × 33 × 38 | 14 × 40 × 35 | 41 × 33 × 36 | 55 × 33 × 36 |
| Order No. for EU/US/UK Plug | | 9WT10B1-E/U/UK | 9WT10B3-E/U/UK | 9WT10B5-E/U/UK | 9WT105M-E/U/UK | 9WT1013M-E/U/UK | 9WT1019M-E/U/UK |

Water Baths and Ultrasonic Cleaners

Heating and Cooling Water Baths

Compact design
 Low noise
 Spacious interior
 Easy and convenient operation with the 3-button control panel
 PID temperature control technology
 Powerful 1.5 kW motor for fast heating up
 Strong pump capacity
 Suitable for internal and external circulation
 Adjustable ratio of internal to external circulation
 Over temperature cut-off, adjustable within working temperature range
 Float switch with cut-off feature for low liquid level protection
 Standby and Auto-Start functions to choose instrument mode after power outage
 Great interior design and voluminous space for heat radiation for ensuring a high durability of the circulator

Drain valve at the front for convenient discharge of the liquid
 High quality corrosion-resistant non-soiling stainless steel heating coil
 Active Cooling Control technology, for provision of refrigeration at any given time and at any value within the working temperature range
 Employment of R134a, a fluorine-free economically friendly cooling agent

Heating and Cooling Water Baths contain:

W-Therm circulator
 Stainless steel water bath
 2 meter CR tubing
 4 hose clamps
 Operation manual (in English)
 "Made in Germany" seal



Wiggins

Specifications

| Model | Unit | WT2 | WT4 |
|-----------------------------|-----------------|--------------------------------------|--------------------------------------|
| Product Description | | Heating and Refrigerating Water Bath | Heating and Refrigerating Water Bath |
| Working Temperature Range | °C | -20 ~ +95 | -25 ~ +95 |
| Temperature Stability | °C | ±0.05 | ±0.05 |
| Power | W | 1500 | 1500 |
| Pump Flow Rate | L / min | 10 | 10 |
| Pump Pressure | mbar | 230 | 230 |
| Refrigeration Capacity | 20°C | 150 | 300 |
| | 10°C | 140 | 280 |
| | 0°C | 110 | 220 |
| | -10°C | 100 | 170 |
| | -20°C | 50 | 70 |
| Filling Volume | L | 4 ~ 6 | 4 ~ 6 |
| Opening Dimensions | W × L in cm | 12.5 × 11.5 | 12.5 × 11.5 |
| Immersion Depth | cm | 19 | 19 |
| Weight | kg | 14 | 14 |
| Outer Dimensions | W × L × H in cm | 22.5 × 42 × 62 | 22.5 × 42 × 62 |
| Order No. for EU/US/UK-Plug | | 9WT1R02-E/U/UK | 9WT1R04-E/U/UK |

Water Baths and Ultrasonic Cleaners

Ultrasonic Cleaners

Application Areas

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 digregation

Technology

The cavitation phenomenon consist 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 40kHz. These bubbles break in all directions and attack every surface in contact with water, erasing dirt, impurities and pollutants when contacting with the materials or pieces into the bath. This phenomenon allows cleaning all kind of piece without need of disassembling, due to it is taking part in all surface in contact with the liquid. The heat allows accelerate this clearing process.



Wiggins

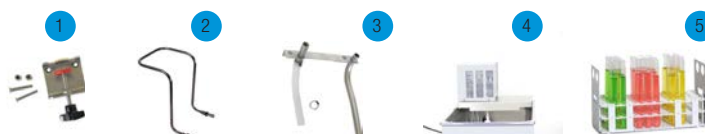
Specifications

| Model | Capacity (l) | Power (W) | Heater Power (W) | Temp. (°C) | Frequency | Timer | Drain | Type | Working Power |
|---------|--------------|-----------|------------------|------------|-----------|-------|-------|---------|---------------|
| UE03SFD | 3 | 90 | - | - | 40 | Yes | No | Digital | - |
| UE06SFD | 6 | 160 | - | - | 40 | Yes | Yes | Digital | - |
| UE10SFD | 10 | 250 | - | - | 40 | Yes | Yes | Digital | - |
| UA03MFD | 3 | Max. 90 | 100 | 20 - 80 | 40 / 59 | Yes | No | Digital | 40 - 100% |
| UA06MFD | 6 | Max. 160 | 260 | 20 - 80 | 40 / 59 | Yes | Yes | Digital | 40 - 100% |
| UA10MFD | 10 | Max. 250 | 300 | 20 - 80 | 40 / 59 | Yes | Yes | Digital | 40 - 100% |
| UA22MFD | 22.5 | Max. 500 | 650 | 20 - 80 | 40 / 59 | Yes | Yes | Digital | 40 - 100% |

Accessories for Water Baths and Ultrasonic Cleaners


General Accessories for Water Baths

| Order No. | Product Name | Description | Suitable for | Picture |
|-----------|----------------------------------|---|--------------|---------|
| 9WX1005 | Bath clamp | Used for fixation of the circulator on a water bath | W-Therm | 1 |
| 9WX1001 | Cooling coil | Used for connecting tap water or an external refrigeration device | W-Therm | 2 |
| 9WX1002 | External circulation connections | Used for connecting the pump with external circulation | W-Therm | 3 |
| 9WX1003 | Stainless steel bridge | Used for stable installation of the circulator on a water bath | W-Therm | 4 |
| 9WX1030 | Test tube rack | For the placement of up to 90 test tubes with 12 / 13 mm diameter Placement Possibilities: 1 rack for B3; 2 racks for B5 | B3/B5 | 5 |
| 9WX1031 | Test tube rack | For the placement of up to 60 test tubes with 16 / 17 mm diameter Placement Possibilities: 1 rack for B3; 2 racks for B5 | B3/B5 | 5 |




Water Baths and Ultrasonic Cleaners


Plexiglas Test Tube Racks (Highest admissible temperature: +80°C)

| Order No. | Product Name | Description | Suitable for | Picture |
|-----------|----------------|---|--------------|---|
| 9WX0000 | Test tube rack | For the placement of up to 20 test tubes with dimensions 100 x 17mm Placement Possibilities: 2 racks for 5M | 5M |  |
| 9WX0002 | Test tube rack | For the placement of up to 36 test tubes with dimensions 400 x 10/11mm Placement Possibilities: 2 racks for 5M | 5M | |
| 9WX0003 | Test tube rack | For the placement of up to 30 test tubes with dimensions 50 x 12/13mm Placement Possibilities: 2 racks for 5M | 5M | |
| 9WX0010 | Test tube rack | For the placement of up to 20 test tubes with dimensions 160 x 17mm Placement Possibilities: 2 racks for 5M | 5M | |
| 9WX0013 | Test tube rack | For the placement of up to 6 Falcom test tubes with 50ml Placement Possibilities: 2 racks for 5M | 5M | |

Stainless Steel Test Tube Racks (Highest admissible temperature: +150°C)

| Order No. | Product Name | Description | Suitable for | Picture |
|-----------|----------------|--|--------------|--|
| 9WX0307 | Test tube rack | For the placement of up to 50 test tubes 16/17mm diameter Placement Possibilities: 1 rack for 13M; 2 racks for 19M | 13M/19M |  |
| 9WX0308 | Test tube rack | For the placement of up to 90 test tubes 12/13mm diameter Placement Possibilities: 1 rack for 13M; 2 racks for 19M | 13M/19M | |
| 9WX0309 | Test tube rack | For the placement of up to 90 microliter test tubes 11/12mm diameter Placement Possibilities: 1 rack for 13M; 2 racks for 19M | 13M/19M | |
| 9WX0310 | Test tube rack | For the placement of up to 21 test tubes 30mm diameter Placement Possibilities: 1 rack for 13M; 2 racks for 19M | 13M/19M | |

PT100 Temperature Sensors

| Order No. | Material | Shaft Length (in mm) | Diameter (in mm) | Cable Length (in m) | Picture |
|-----------|--|----------------------|------------------|---------------------|---|
| 9WX2003 | Stainless steel | 200mm | Ø6mm | 1.5m |  |
| 9WX2005 | Glass | 200mm | Ø6mm | 1.5m | |
| 9WX2006 | Stainless steel | 20mm | Ø2mm | 1.5m | |
| 9WX2010 | Stainless steel | 300mm | Ø6mm | 1.5m | |
| 9WX2011 | Glass | 300mm | Ø6mm | 1.5m | |
| 9WX2013 | PTFE coated stainless steel | 600mm | Ø6mm | 3m | |
| 9WX2014 | PTFE coated stainless steel | 1200mm | Ø6mm | 3m | |
| 9WX2020 | M+R Adapter with PT100 temperature sensor (2m cable length) | | | | |
| 9WX2103 | Extension cable for PT100 temperature sensor (3.5m cable length) | | | | |

Other Accessories for Water Baths

| Order No. | Product Name | Description | Suitable for | Picture |
|-----------|---------------------------------------|--|----------------------|---------|
| 9WX1040 | Test tube rack with adjustable height | Adjustable height for non-standard immersion depths Placement Possibilities: 1 rack for B3; 2 racks for B5 | B3/B5 | 1 |
| 9WX0010 | Steam protection pellets | Suitable for all open water baths; slows down the steam production; made of PP; 200mm diameter; 100 pcs / package | All open water baths | 2 |
| 9WX0006 | Bath protection liquid | Prevents algae development; change of colour to indicate when it gets ineffective, and when to refill; 100ml per bottle, 6 bottles per pack | All open water baths | 3 |
| 9WX0502 | Adjustable immersion platform | Easily adjustable platform for non-standard immersion depths Applicable for 13l and 19l baths | All water baths | 4 |
| 9WX01020 | Stainless steel bath lid | Suitable for B3 water bath; reduces heat loss | B3 | 5 |
| 9WX1021 | Stainless steel bath lid | Suitable for B5 water bath; reduces heat loss | B5 | 5 |
| 9WX0291-S | Special bath lid | Stainless steel lid with round openings | B5/19M | 6 |



Water Baths and Ultrasonic Cleaners

Liquids for High / Low Temperatures

| Product Name | Unit | Thermal G | Thermal H10 | Thermal H20S | Thermal H200 | Thermal M |
|------------------------------|---------------------|--------------|-------------|--------------|--------------|-------------|
| Admissible Temperature Range | °C | -30 ~ +80 | -20 ~ 180 | 0 ~ 220 | 60 ~ 200 | 40 ~ 170 |
| Flash Point | °C | -- | 190 | 230 | 292 | 284 |
| Fire Point | °C | -- | 216 | 274 | 334 | 306 |
| Viscosity (20°C) | mm ² / s | 3.87 | 10 | < 51.5 | 84 | 350 |
| Density (20°C) | g / cm ³ | 1.084 | 0.93 | 0.97 | 1.07 | 1.15 |
| Pour Point | °C | < -35 | -90 | -70 | -50 | -39 |
| Boiling Point | °C | 107 | > 300 | > 315 | > 300 | -- |
| Auto-ignition temperature | °C | -- | > 400 | > 400 | > 400 | > 255 |
| Color | | Light yellow | Transparent | Light brown | Transparent | Transparent |
| Order No. | 10 L | 9WX0124 | 9WX0114 | 9WX0108 | 9WX0134 | 9WX0100 |
| | 5 L | 9WX0125 | 9WX0115 | 9WX0109 | 9WX0135 | 9WX0101 |

Tubing

CR Tubing

| Order No. | Description | Inner Diameter | Admissible Temperature Range (in °C) | Suitable for |
|-----------|-------------|----------------|--------------------------------------|---|
| 9WX1051 | CR-Tube | 8 mm | -20 ~ +120 | All Wiggins products that lie within the stated temperature range |
| 9WX1050 | CR-Tube | 10 mm | -20 ~ +120 | All Wiggins products that lie within the stated temperature range |

Viton Tubing

| Order No. | Description | Inner Diameter | Admissible Temperature Range (in °C) | Suitable for |
|-----------|-------------|----------------|--------------------------------------|---|
| 9WX2053 | Viton Tube | 8 mm | -50 ~ +200 | All Wiggins products that lie within the stated temperature range |
| 9WX2054 | Viton Tube | 10 mm | -50 ~ +200 | All Wiggins products that lie within the stated temperature range |

Heat Insulation Tubing

| Order No. | Description | Inner Diameter | Suitable for |
|-----------|--------------------------|----------------|---|
| 9WX1056 | 1 m Heat Insulation Tube | 14 mm | CR Tube with 8 mm diameter CR Tube with 10 mm diameter |
| 9WX1057 | 1 m Heat Insulation Tube | 18 mm | CR Tube with 12 mm diameter |

Hose Clamps

| Order No. | Description | Piece per Unit | Suitable for |
|-----------|-------------|----------------|--|
| 9WX1054 | Hose Clamp | 2 | CR Tube with 8 mm diameter |
| 9WX1055 | Hose Clamp | 2 | CR Tube with 10 mm diameter CR Tube with 12 mm diameter |

Single Metal Layer Heat Insulation Tubing

| Order No. | Description | Length | Admissible Temperature Range (in °C) | Suitable for |
|-----------|---|--------|--------------------------------------|---|
| 9WX1058 | Single Metal Layer Heat Insulation Tube | 0.5m | -50 ~ +200 | All Wiggins products that lie within the stated temperature range |
| 9WX1059 | Single Metal Layer Heat Insulation Tube | 1 m | -50 ~ +200 | All Wiggins products that lie within the stated temperature range |
| 9WX1060 | Single Metal Layer Heat Insulation Tube | 1.5 m | -50 ~ +200 | All Wiggins products that lie within the stated temperature range |
| 9WX1061 | Single Metal Layer Heat Insulation Tube | 3 m | -50 ~ +200 | All Wiggins products that lie within the stated temperature range |



Incubators

Constant Temperature Incubators

Applicable in life-science, pharmacy, medical science, chemistry, biology, and related fields for storage of samples which need a 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 with possible setting of start time and duration

3 pre-programmed often used temperature settings

Can be opened anytime when necessary

Temperature measure unit can be set as either °C or °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

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

In case of temperature deviations, the BIAS function sets in, which makes operation convenient

For the case of an unexpected power breakdown the incubator offers two working options: Automatic re-operation and automatic stop

Upon opening the incubator, a light turns on, and the fan and heating device stop operation

Alarm sound for sample protection sets in when the door is open for more than 60 seconds



Wiggins

Specifications

| Product Name | WH-05 | WH-15 | WH-25 |
|------------------------------|--|---|---|
| Volume | 50 L | 70 L | 140 L |
| Temperature Range | Ambient Temperature + 5°C ~ 80°C | Ambient Temperature + 5°C ~ 80°C | Ambient Temperature + 5°C ~ 80°C |
| Accuracy | < ±0.1°C | < ±0.1°C | < ±0.1°C |
| Temperature Stability | ±0.1°C (37°C) | ±0.1°C (37°C) | ±0.1°C (37°C) |
| Temperature Controller | Touch Control; Digital Display with PID automatic regulation | Touch Control; Digital Display with PID automatic regulation | Touch Control; Digital Display with PID automatic regulation |
| Materials | Interior: Stainless steel ; Shelves: Polished stainless steel ; Inner glass door: 5 mm high temperature resistant safety glass Casing: Steel plate, Spray coating ; Heat insulation: Inflammable polystyrol | | |
| Timer | Start / Stop setting; Max. 99hr 59min; Unit: 1 min | | |
| Heating Capacity | 450 W | 450 W | 450 W |
| Mains Requirements | AC 220 ~ 240V, 50/60 Hz | AC 220 ~ 240V, 50/60 Hz | AC 220 ~ 240V, 50/60 Hz |
| Shelves (included / max.) | 2 / 3 | 2 / 4 | 2 / 5 |
| Inner Dimensions (W × D × H) | 400 × 400 × 320 (mm) | 400 × 400 × 400 (mm) | 550 × 550 × 460 (mm) |
| Outer Dimensions (W × D × H) | 510 × 535 × 698 (mm) | 550 × 535 × 778 (mm) | 660 × 690 × 858 (mm) |
| Order No. for EU/US/UK-Plug | 21162-E/U/UK | 21172-E/U/UK | 21182-E/U/UK |

Incubators

Low Temperature Incubators

Applicable in life-science, pharmacy, medical science, chemistry, biology, and related fields for storage of samples which need a constant temperature and for incubation.

Digital temperature display and control

PID controller for temperature stability and safety protection

Stainless steel shelves

Very good heating characteristics

Ecologically friendly

Easy to clean

Timer function

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 opened anytime when necessary

Temperature measure unit can be set as either °C or °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

A professional controller adjusts the circular fans inside and regulates the defrosting cycle

An observation window made of tempered glass is installed, which makes the examination of samples easy and convenient, and which does not lead to unnecessary disruptions of the incubation process

The magnetic door and high-quality gasket can absorb external shocks and comprise excellent sealing characteristics

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

For the case of an unexpected power breakdown the incubator offers two working options: Automatic re-operation and automatic stop

When opening the incubator, a light turns on, and the fan and heating device stop operation. After one minute without closing the door an alarm sets in

The WH-11CA and the WH-21CA 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

Software for temperature control is optionally available



Specifications

| Product Name | WH-11C | WH21C |
|------------------------------|---|---|
| Temperature Control Method | Forced circulation method (fans integrated in the work environment) | Heat transfer method (no fans integrated in the work environment) |
| Volume | 150 L | 250 L |
| Temperature Range | +4°C ~ 60°C | +4°C ~ 60°C |
| Accuracy | <±0.1°C | < ±0.1°C |
| Temperature Stability | ±0.2°C ~ 0.3°C | ±0.2°C ~ 0.5°C |
| Temperature Controller | Touch Control; Digital Display with PID automatic regulation | |
| Materials | Interior: Stainless steel ; Shelves: Polished stainless steel ; Inner glass door: 5mm high temperature resistant safety glass | |
| Timer | Start / Stop setting; Max. 99hr 59min; Unit: 1 min | |
| Heating Capacity | 450 W | 450 W |
| Cooling Capacity | 300 W | 350 W |
| Mains Requirements | AC 220 ~ 240V, 50/60 Hz | AC 220 ~ 240V, 50/60 Hz |
| Shelves (included / max.) | 2/5 | 3/7 |
| Inner Dimensions (W × D × H) | 550 × 455 × 640 (mm) | 550 × 455 × 1000 (mm) |
| Outer Dimensions (W × D × H) | 652 × 604 × 1050 (mm) | 652 × 604 × 1450 (mm) |
| Order No. for EU/US/UK-Plug | 22041-E/U/UK | 22051-E/U/UK |

Incubators

Low Temperature Mini Incubators

Applicable in life-science, pharmacy, medical science, chemistry, biology, and related fields for storage of samples which need a constant temperature and for incubation.

Peltier refrigeration system with fewer vibrations, a lower noise level, and lower heat development than common incubators

The WH-01 with a width of only 400mm and the WH-02 with a width of only 416mm can be put into narrow spaces.

PID controller for temperature stability and safety protection

Very good heating characteristics

Ecologically friendly

Easy to clean

Timer function with possible setting of start time and duration

3 pre-programmed often used temperature settings

Can be opened anytime when necessary

Temperature measure unit can be set as either °C or °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

The inner door is made of tempered glass, so that observation of samples is possible only by opening the outer door

Forced circulation method to create and maintain an even temperature

Liquid cooling method for strong refrigeration

Automatic defrosting function, which prevents ice formation even under long term operation

Employs durable and environmental friendly EPDM rubber for temperature stability enhancement

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

In case of temperature deviations, the BIAS function sets in, which makes operation convenient

For the case of an unexpected power breakdown the incubator offers two working options: Automatic re-operation and automatic stop

Upon opening the incubator, a light turns on, and the fan and heating device stop operation

Alarm sound for sample protection sets in when the door is open for more than 60 seconds



Wiggins

Specifications

| Product Name | WH-01 | WH-02 |
|------------------------------|--|--|
| Volume | 14 L | 48 L |
| Temperature Range | +3°C ~ 60°C (at 20°C ambient temperature) | +3°C ~ 60°C (at 20°C ambient temperature) |
| Accuracy | 0.1°C (20°C) | 0.1°C (20°C) |
| Temperature Stability | 0.4°C (37°C) | 0.4°C (37°C) |
| Temperature Controller | Peltier refrigeration system, forced circulation method | Peltier refrigeration system, forced circulation method |
| Material | Interior: Stainless steel, Shelves: Polished stainless steel, Casing: Steel plate, Spray coating Heat insulation: Inflammable polystyrol, Inner glass door: 5mm high temperature resistant safety glass | |
| Timer | Start / Stop setting; Max. 99hr 59min; Unit: 1 min | |
| Heating Capacity | 150 W | 300 W |
| Mains Requirements | AC 230V, 50Hz, 1.3A | AC 230V, 50Hz, 2.6A |
| Net Weight (kg) | 24 | 35 |
| Loading Capacity | 3 × 100ml beakers and 3 × 300ml beakers can be placed simultaneously | A shelf can be placed inside, which creates double the loading capacity of the WH-01 |
| Inner Dimensions (W × D × H) | 315 × 200 × 230 (mm) | 334 × 421 × 334 (mm) |
| Outer Dimensions (W × D × H) | 400 × 535 × 385 (mm) | 416 × 590 × 656 (mm) |
| Order No. for EU/US/UK-Plug | 24031-E/U/UK | 24041-E/U/UK |

Incubators

Low Temperature Incubation

Applicable for fermentation processes with high demands on the precision of the shaking frequency, bacteria incubation, hybridization, life science, pharmacy, medical science, food industry, chemistry, biology, and other laboratory environments.

Orbital and reciprocate shaking functions

Setting of the orbital shaking method (clock-wise or counter clock-wise), stopping behavior, and operation time

Intelligent control system, which maintains the operation speed and adjusts to load changes

PID controller for temperature stability and safety protection

Very good heating characteristics

Ecologically friendly

Shakers

Easy to clean

Shaking throw and speed adjustable

Circulation process automatically stops upon opening the door

In case of temperature overshooting an alarm sound is triggered and heating is cut off

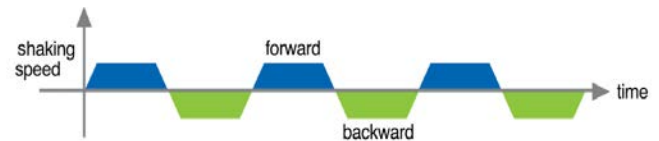
For the case of an unexpected power breakdown the incubator offers two working options: Automatic re-operation and automatic stop

Broad range of available accessories

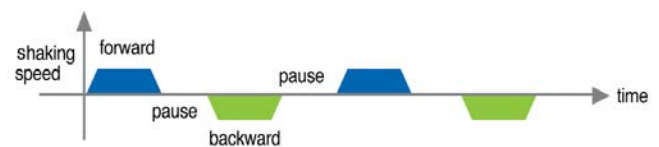


Wiggins

Forward/Backward shaking



Forward/Backward shaking & pause



Specifications

| Product Name | WS-300 | WS-300R | WS-600 | WS-600R | |
|-----------------------------|---------------------------|--|-----------------------|-----------------------|-----------------------|
| Volume | 53 L | 53 L | 83 L | 83 L | |
| Temperature | Range | Ambient +5 ~ 60°C | 15~60°C | Ambient +5 ~ 60°C | 15 ~ 60°C |
| | Accuracy | ±0.1 (38°C) | ±0.1 (38°C) | ±0.1 (38°C) | ±0.1 (38°C) |
| | Stability | ±1.0 (38°C) | ±1.0 (38°C) | ±1.0 (38°C) | ±1.0 (38°C) |
| | Controller | Touch Control; Digital Display with PID automatic regulation | | | |
| | Heater | Heating Plate, 600W | | | |
| | Timer | Start / Stop / Duration setting; 10sec ~999hr 59min 59sec | | | |
| Shaker | Controller | PID automatic regulation | | | |
| | Power Unit | Brushless motor | | | |
| | Methods | Clockwise, Counter-clockwise, forth-back, interrupted, | | | |
| | Shaking Throw (mm) | 20, 30 (standard), 40 | 20, 30 (standard), 40 | 20, 30 (standard), 40 | 20, 30 (standard), 40 |
| | Speed (rpm) | 10 ~ 300 | 10 ~ 300 | 10 ~ 300 | 10 ~ 300 |
| | Stability (rpm) | ± 1 (at 150rpm) | ± 1 (at 150rpm) | ± 1 (at 150rpm) | ± 1 (at 150rpm) |
| Dimensions | Platform (W × D in mm) | 330 × 330 | 330 × 330 | 410 × 410 | 410 × 410 |
| | 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 |
| Net Weight (kg) | 74 | 85 | 91 | 102 | |
| Max. Load (kg) | 10 | 10 | 15 | 15 | |
| Order No. for EU/US/UK-Plug | 23101-E/U/UK | 23112-E/U/UK | 23201-E/U/UK | 23211-E/U/UK | |

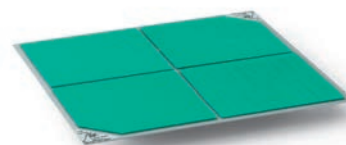
Incubators

Accessories for Incubation Shakers

Sticky Plate

The Wiggins Sticky Plate can be loaded with any kind of vessel with a smooth base. Even at a speed of up to 350 rpm the vessel sticks to the plate. Other vessels, like e.g. microtitre plates can be shaken on the Wiggins Sticky Plate as well. However, only up to a speed of 220 rpm.

| Suitable for | WS-300/300R | WS-600/600R |
|--------------------------|-------------|-------------|
| Dimensions (W x D in mm) | 350 x 350 | 450 x 450 |
| Order No. | 4A901 | 31902 |



Universal Trays

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 | |
|--|-------------|-------------|----|
| Dimensions (W x D in mm) | 350 x 350 | 450x450 | |
| Max. Load of Beaker Holders (kg) | | | |
| | 50 ml | 28 | 45 |
| | 100 ml | 24 | 36 |
| | 250 ml | 13 | 18 |
| | 300 ml | 13 | 18 |
| Beaker Volume | 500 ml | 10 | 13 |
| | 1 L | 5 | 7 |
| | 2 L | 4 | 5 |
| | 2.8 L | 1 | 2 |
| | 4 L | - | - |
| | 6 L | - | - |
| Max. Load of Separatory Funnel Holders (kg) | | | |
| | 250 ml | 4 | 6 |
| | 500 ml | 2 | 3 |
| Separatory Funnel Volume | 1 L | - | 2 |
| | 2 L | - | - |
| Order No. | 31501 | 31502 | |



Deep Well Plates

Deep well plates made of stainless steel for beakers of different volumes.

| Order No. | Beaker Volume |
|-----------|---------------|
| 23550 | 50 ml |
| 23551 | 100 ml |
| 23552 | 250 ml |
| 23556 | 300 ml |
| 23553 | 500 ml |
| 23554 | 1 L |
| 23555 | 2 L |
| 23557 | 2.8 L |
| 23558 | 4 L |
| 23559 | 6 L |



Separatory Funnel Holders

Holders for separatory funnels of different sizes made of stainless steel.

| Funnel Volumes | 250 ml | 500 ml | 1 L | 2 L |
|----------------|--------|--------|-------|-------|
| Order No. | 23562 | 23563 | 23564 | 23565 |



Incubators

Test Tube Holders

Holders for test tubes of different sizes and different quantities.

| Order No. | Quantity | Diameter | Max. Number of Holders Installable per Shaker | | | |
|-----------|---------------|----------|---|---------|--------|---------|
| 23581 | 86 test tubes | 8 mm | | | | |
| 23582 | 86 test tubes | 10 mm | | | | |
| 23583 | 58 test tubes | 12 mm | | | | |
| 23584 | 58 test tubes | 14 mm | WS-300 | WS-300R | WS-600 | WS-600R |
| 23585 | 32 test tubes | 16 mm | 2 | 2 | 4 | 6 |
| 23586 | 19 test tubes | 25 mm | | | | |
| 23594 | 10 test tubes | 35 mm | | | | |



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 |
|-----------------------------|-------------|-------------|
| Max. Load of Beakers | | |
| 50 ml | 16 | 25 |
| 100 ml | 9 | 16 |
| 250 ml | 4 | 9 |
| 300 ml | 4 | 9 |
| Beaker Volume | | |
| 500 ml | 4 | 5 |
| 1 L | 2 | 4 |
| 2 L | 1 | 2 |
| 2.8 L | 2 | 2 |
| Order No. | 31521 | 31522 |



Adjustable Bar Tray and Rubber Surface Tray

Tray with adjustable bars for diverse and unconventional volumes.

| Model | Order No. | Suitable for |
|---------------------|-----------|--------------|
| Adjustable Bar Tray | 31511 | WS-300/300R |
| | 31612 | WS-600/600R |
| Rubber Surface Tray | 31531 | WS-300/300R |
| | 31532 | WS-600/600R |

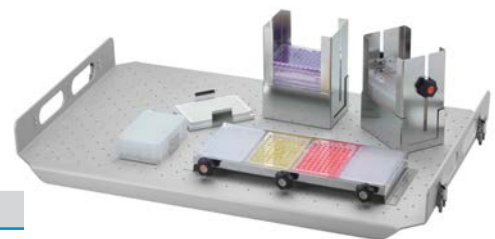


Multi-Pore Holders

The Wiggins multi-pore holders can be installed on the Wiggins sticky plates or the Wiggins 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

| Max. No. of Mountable Holders | Multi-Layer | Four-Position | Three-Position | Single-Position |
|---|-------------|---------------|----------------|-----------------|
| Max. No. of Mountable Holder (for WS-300(R) / WS600(R)) | 6 / 10 | - / 2 | 2 / 3 | 8 / 15 |
| Order No. | 23651 | 23652 | 23653 | 23654 |



Diaphragm Vacuum Pumps and Systems

Chemical Resistant Diaphragm Pumps

All material of the ChemVak Chemical Resistant Diaphragm Pumps which has direct contact with gases is made of PTFE. It can be used in the chemical and petrochemical industry, the pharmacy industry and all industries that make use of chemical resistant vacuum processes, such as filtration, vacuum distillation, rotary evaporation, vacuum and centrifugal concentration, solid phase extraction, etc.

High price-performance ratio, reliable quality, special design, and low noise of 50 dB

Huge product range can fulfill every need in the laboratory work

An ultimate vacuum of 2 mbar can be created

All pumps employ an overheating protection system, which shuts down the pump when the inner temperature is too hot and automatically starts the pump again when cooled down to a safe temperature. This guarantees a stable work of the pump and the safety of the user. You can integrate the chemical resistant diaphragm pumps into vacuum filtration systems and purchase a diverse variety of accessories for your pumps (see P.6 for further information). The special design prevents solid impurities from accessing the pump head and thus guarantees the longevity of the pump. The pressure level can easily be controlled and adjusted



Chemvak

Technical Data

| Model | C300 | C400 | C410 |
|-----------------------------|------------------|------------------|------------------|
| Mains Requirements | 220-240V / 50Hz | 220-240V / 50Hz | 220-240V / 50Hz |
| Power (W) | 60 | 95 | 95 |
| Work Mode | Single | Parallel | In Successions |
| Ultimate Vacuum (mbar) | 100 | 100 | 13 |
| Flow Rate | 1000 mbar | 22 L/min | 25 L/min |
| | 880 mbar | 17 L/min | 22 L/min |
| | 750 mbar | 13 L/min | 20 L/min |
| | 600 mbar | 7 L/min | 12 L/min |
| | 480 mbar | 4 L/min | 7.5 L/min |
| | 280 mbar | 2 L/min | 5 L/min |
| Outlet (mm) | 8 | 8 | 8 |
| Motor Speed (rpm) | 1450 | 1450 | 1450 |
| Weight (kg) | 5 | 7 | 5 |
| Noise Level (dB) | 50 | 50 | 50 |
| Order No. for EU/US/UK-Plug | 169300-22-E/U/UK | 169400-22-E/U/UK | 169410-22-E/U/UK |

Diaphragm Vacuum Pumps and Systems

Chemical Resistant Diaphragm Pumps



Application:

Vacuum filtration, rotary evaporation, conventional drying, gel drying, etc.
Advanced substitute for water-circulation pumps

Technical specifications:

Environmental friendly medium transmission and vacuum extraction
Resists high and low temperatures
Resists chemical corrosion
Can be used in aggressive gas media
Extremely well sealed
Equipped with a fuse against electrical override and an overheating protection system

Technical Data

| Model | C510 | C600 | C610 |
|-----------------------------|------------------|------------------|------------------|
| Mains Requirements | 220-240V / 50Hz | 220-240V / 50Hz | 220-240V / 50Hz |
| Power (W) | 245 | 270 | 245 |
| Work Mode | In Successions | Parallel | In Succession |
| Ultimate Vacuum (mbar) | 8 | 90 | 2 |
| Flow Rate | 1000 mbar | 34 L/min | 60 L/min |
| | 880 mbar | 31 L/min | 55 L/min |
| | 750 mbar | 29 L/min | 51 L/min |
| | 600 mbar | 21 L/min | 38 L/min |
| | 480 mbar | 16 L/min | 32 L/min |
| | 280 mbar | 14 L/min | 29 L/min |
| Outlet (mm) | 10 | 10 | 10 |
| Motor Speed (rpm) | 1450 | 1450 | 1450 |
| Weight (kg) | 7 | 12.6 | 13.4 |
| Noise Level (dB) | 60 | 60 | 60 |
| Order No. for EU/US/UK-Plug | 169510-22-E/U/UK | 169600-22-E/U/UK | 169610-22-E/U/UK |

Diaphragm Vacuum Pumps and Systems

Laboratory Vacuum Systems

Information on Accessories

| Name | Order No. |
|--------------------------------|-----------|
| CSC/CSR/CSH Receiving bottle | CS001 |
| CSC/CSR/CSH Condensation hose | CS002 |
| CSC/CSR/CSH Segregation bottle | CS013 |

The sealed system enables a good distillation environment

Precise control of the evaporation process

Maintenance-free

Environmental friendly design

Very low noise

Buffer bottle attached at the air inlet prevents solid and liquid particles from flowing into the pump chamber

Direct electrical connection to the work system

Ultimate vacuum range: 2-13 mbar

Range of the flow rate: 10-34 L/min

The systems mainly consist of chemical resistant vacuum pumps, base plates, condensers, separators, and digital vacuum controller

The CSC system contains a digital vacuum controller, which can display and control the vacuum automatically. You can precisely set the pressure degree. After the set pressure has been achieved, the vacuum pump turns off automatically, which saves energy and helps prolonging the life of the diaphragm and the pump



CSH System

The inlet of the ChemVak CSH System is connected to a segregation bottle, whereas the outlet is connected to a condenser, which can condensate and recover the solvent

| Model | CSH 410 | CSH 510 | CSH 610 |
|------------------------------------|---------------|---------------|---------------|
| Build in PumpType | C410 | C510 | C610 |
| Power (W) | 95 | 245 | 245 |
| Ultimate Vacuum (mbar) | 13 | 8 | 2 |
| Max.Flow Rate (l/min) | 25 | 34 | 34 |
| Outlet Size (outer diameter in mm) | 8 | 10 | 10 |
| Weight (kg) | 12.5 | 15.8 | 16.6 |
| Order No. for EU/US/UK-Plug | 900512-E/U/UK | 900513-E/U/UK | 900514-E/U/UK |

The ChemVak CSH vacuum system includes: 1 chemical resistant diaphragm pump, 1 separator, 1 condenser, 1 base plate, and a set of hoses.



CSC System

The inlet of the ChemVak CSC System is connected to a segregation bottle, whereas the outlet is connected to a condenser for solvent recovery. Moreover, the system contains a vacuum controller which can set, display, and control the vacuum degree.

| Model | CSC 410 | CSC 510 | CSC 610 |
|------------------------------------|---------------|---------------|---------------|
| Build in Pump Type | C410 | C510 | C610 |
| Power (W) | 95 | 245 | 245 |
| Ultimate Vacuum (mbar) | 13 | 8 | 2 |
| Max. Flow Rate (l/min) | 25 | 34 | 34 |
| Outlet Size (outer diameter in mm) | 8 | 10 | 10 |
| Weight (kg) | 16 | 19.3 | 20.1 |
| Order No. for EU/US/UK-Plug | 900522-E/U/UK | 900523-E/U/UK | 900524-E/U/UK |

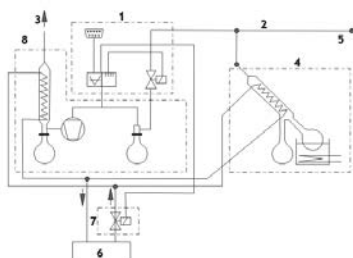
The ChemVak CSC vacuum system includes: 1 chemical resistant diaphragm pump, 1 DVR380 vacuum controller, 1 separator, 1 condenser, 1 base plate, and a set of hoses.

Diaphragm Vacuum Pumps and Systems

Application Guide and Accessories

Application Guide

- Vacuum distillation (e.g. rotary evaporation)
- Liquid ring pump replacement
- Vacuum filtration
- Vacuum waste suction
- Vacuum drying, centrifugation
- Solid phase extraction
- Reaction kettle
- Vacuum inspection, measurement, and detection



Schematic Diagram

- Vacuum controller
- Hose
- Gas outlet
- Rotary evaporator
- Possible extension for multiple rotary evaporators
- Cooling device
- Cooling water control valve
- Vacuum pump

Model selection guide for rotary evaporators

| Vacuum Pump Model | Ultimate Vacuum (mbar) | Flow Rate | Applicable Rotary Evaporator |
|-------------------|------------------------|-----------|------------------------------|
| C410 | 13 | 25 L/min | 1L / 2.5L |
| C510 | 8 | 34 L/min | 5L |
| C600 | 90 | 60 L/min | 10L |
| C610 | 2 | 34 L/min | 5L |



Chemvak



Model selection guide for vacuum ovens

| Vacuum Pump Model | Ultimate Vacuum (mbar) | Flow Rate | Applicable Vacuum oven |
|-------------------|------------------------|-----------|------------------------|
| C410 | 13 | 25 L/min | 15L |
| C510 | 8 | 34 L/min | 45L |
| C600 | 90 | 60 L/min | 60L |
| C610 | 2 | 34 L/min | 30L |

Accessories

Chemical Resistant Connector



| Description | Order No. |
|--------------|-----------|
| 8mm Diameter | 169300-20 |



Chemical Resistant Vacuum Regulator / Filter Equipment

| Description | Order No. |
|---|-----------|
| Set 1 (includes vacuum trap and regulator) | 169311-06 |
| Set 2 (includes vacuum trap only) | 169312-06 |
| Set 3 (neither include vacuum trap nor regulator) | 169313-06 |



Diaphragm and Valve Plate Sets

| Description | Order No. |
|---|-----------|
| Diaphragm and Valve Plate Set 1 (1 diaphragm, 1 valve plate; applicable for C300 / C400 / C410) | 410001 |
| Diaphragm and Valve Plate Set 1 (1 diaphragm, 1 valve plate; applicable for C510 / 600 / 610) | 510001 |

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

Diaphragm Vacuum Pumps and Systems

Accessories For Chemical Resistant Diaphragm Pumps

Tubes and Connectors



PTFE Tubing

| Order No. | Outer Diameter mm | Inner Diameter mm | Thickness mm | Length m |
|-------------|----------------------|----------------------|-----------------|-------------|
| 016.1706.01 | 6 | 4 | 1 | 1 |
| 016.1706.02 | 6 | 4 | 1 | 2 |
| 016.1706.05 | 6 | 4 | 1 | 5 |
| 016.1708.01 | 8 | 6 | 1 | 1 |
| 016.1708.02 | 8 | 6 | 1 | 2 |
| 016.1708.05 | 8 | 6 | 1 | 5 |
| 016.1712.01 | 12 | 10 | 1 | 1 |
| 016.1712.02 | 12 | 10 | 1 | 2 |
| 016.1712.05 | 12 | 10 | 1 | 5 |
| 016.1714.01 | 14 | 12 | 1 | 1 |
| 016.1714.02 | 14 | 12 | 1 | 2 |
| 016.1714.05 | 14 | 12 | 1 | 5 |



Viton Tubing

| Order No. | Outer Diameter mm | Inner Diameter mm | Thickness mm | Length m |
|-----------|----------------------|----------------------|-----------------|-------------|
| 168000-01 | 12 | 6 | 3 | 1 |
| 168000-01 | 12 | 6 | 3 | 2 |
| 168000-01 | 12 | 6 | 3 | 5 |
| 168001-01 | 14 | 8 | 3 | 1 |
| 168001-01 | 14 | 8 | 3 | 2 |
| 168001-01 | 14 | 8 | 3 | 5 |
| 168002-01 | 16 | 10 | 3 | 1 |
| 168002-01 | 16 | 10 | 3 | 2 |
| 168002-01 | 16 | 10 | 3 | 5 |



Straight Through Connector

| Order No. | Outer Diameter (mm) | Bore(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 |



L-Shape Connector

| Order No. | Outer Diameter (mm) | Bore(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 |



T-Shape Connector

| Order No. | Outer Diameter (mm) | Bore(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 |



4-Way Connector

| Order No. | Outer Diameter (mm) | Bore (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 |

Chemvak

Diaphragm Vacuum Pumps and Systems

Accessories For Chemical Resistant Diaphragm Pumps

General Purpose Valves

General Purpose Valves

A range of plug valves for applications with less demand towards pressure and temperature

Max. pressure: 1 bar

Max. Vacuum: 7 mbar

Note: Rapid changes in temperature in excess of 25°C may cause these valves to leak due to the expansion properties of PTFE. Can be sterilised at 135°C.



Straight Through Bayonet

| Order No. | Outer Diameter/mm | Bore (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 |

Straight Through Screw

| Order No. | Outer Diameter/mm | Bore (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 | Bore (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 | Bore (mm) |
|--------------|-------------------|-----------|
| 016.1302.6.2 | 6 | 2 |
| 016.1303.2 | 8 | 3 |
| 016.1304.2 | 8 | 4 |



Oil-Free Piston Pumps

Oil-Free Piston Vacuum Pumps

The ChemVak V series pumps use piston motion to produce a vacuum and are of such design that no oil has to be used to lubricate the pump. They are very easy to maintain, and can not only be used for vacuum creation but also for pressure supply. Because of the unique structure and advanced technology, the noise level of the pumps lies at comparatively low 48.7 to 60.0 dB. Thus, silent and effective work in the laboratory can be maintained.

The basic ChemVak V pump is suitable for non-corrosive materials, as used e.g. in the biological and food industry

All pumps simply need the vacuum / pressure transformation set in order to convert the pump from a vacuum pump into a pressure pump. Thus, the ChemVak V series can be used for a large variety of purposes in the laboratory environment.

According to your needs you can choose from a large range of accessories

Application Range:

- Microbiological detection
- Vacuum extraction
- Liquid filtration
- Vacuum drying
- Suspended solids measurement
- Underwater Air Supply
- Air sampling



Chemvak

Technical Data

| Model | V300 | V400 | V600 | V410 | V610 | V300DC |
|--------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|
| Mains Requirements | 220-240V / 50Hz | 220-240V / 50Hz | 220-240V / 50Hz | 220-240V / 50Hz | 220-240V / 50Hz | DC 12V |
| Power (W) | 80 | 80 | 190 | 80 | 210 | 35 |
| Current (A) | 0.3 | 0.4 | 1 | 0.4 | 1 | 3 |
| Ultimate Vacuum (mbar) | 150 | 150 | 150 | 13 | 13 | 150 |
| Flow Rate | 1000 mbar | 34 L/min | 52 L/min | 19 L/min | 33 L/min | 24 L/min |
| | 880 mbar | 14 L/min | 31 L/min | 46 L/min | 18 L/min | 24 L/min |
| | 750 mbar | 12 L/min | 29 L/min | 40 L/min | 16 L/min | 24 L/min |
| | 600 mbar | 9.5 L/min | 23 L/min | 30 L/min | 14 L/min | 24 L/min |
| | 480 mbar | 7 L/min | 19 L/min | 30 L/min | 11 L/min | 24 L/min |
| | 350 mbar | 4.5 L/min | 13 L/min | 16 L/min | 9 L/min | 24 L/min |
| | 210 mbar | 1.5 L/min | 4 L/min | 6 L/min | 6 L/min | 24 L/min |
| Outlet (mm) | 8 | 10 | 8 | 8 | 8 | 8 |
| Motor Speed (rpm) | 1450 | 1450 | 1450 | 1450 | 1800 | 1800 |
| Weight (kg) | 4.1 | 5.2 | 8.6 | 4.1 | 3.5 | 3.5 |
| Noise Level (dB) | 50 | 60 | 52 | 50 | 52 | 50 |
| Order No. for EU/UK-Plug | 167300-22-E/UK | 167400-22-E/UK | 167600-22-E/UK | 167410-22-E/UK | 167610-22-E/UK | 167330-22-E/UK |

Oil-Free Piston Pumps

Accessories For Oil-Free Piston Pumps



Connectors

| Description | Order No. |
|------------------------|-----------|
| Outlet Diameter 9.5 mm | 167300-20 |
| Outlet Diameter 8 mm | 167300-21 |
| Outlet Diameter 6.4 mm | 167300-26 |
| Outlet Diameter 4.8 mm | 167300-23 |
| Outlet Diameter 3.2 mm | 167300-24 |



L-Shape Connector

| Description | Order No. |
|----------------------|-----------|
| Outlet Diameter 8 mm | 167300-25 |



Quick Connection Outlets

| Description | Order No. |
|-----------------------|-----------|
| Outlet Diameter 12 mm | 168100-12 |
| Outlet Diameter 10 mm | 168100-10 |
| Outlet Diameter 8 mm | 168100-08 |
| Outlet Diameter 6 mm | 168100-06 |
| Outlet Diameter 4 mm | 168100-04 |



Silencer

| Description | Order No. |
|--|-----------|
| Applicable to the ChemVak V300 / V400 / V410 | 167300-42 |
| Applicable to the ChemVak V600 / V610 | 167600-42 |



Non-Chemical-Resistant Filtration Device

| Description | Order No. |
|--|-----------|
| Non-Chemical-Resistant Filtration Device Set 1 (incl. pressure gauge) | 167300-05 |
| Non-Chemical-Resistant Filtration Device Set 2 (does not incl. pressure gauge) | 167300-06 |



Foot Pedal

| Description | Order No. |
|---|-----------|
| Applicable to ChemVak C and V Series Vacuum Pumps | 167200-41 |



Heat Shrink Tubes

| Order No. | Outer Diameter mm | Inner Diameter mm | Thickness mm | Length mm |
|-----------|-------------------|-------------------|--------------|-----------|
| 168010-01 | 6 | 4 | 1 | 1 |
| 168010-02 | 6 | 4 | 1 | 2 |
| 168010-05 | 6 | 4 | 1 | 5 |
| 168011-01 | 8 | 6 | 1 | 1 |
| 168011-02 | 8 | 6 | 1 | 2 |
| 168011-05 | 8 | 6 | 1 | 5 |
| 168012-01 | 10 | 8 | 1 | 1 |
| 168012-02 | 10 | 8 | 1 | 2 |
| 168012-05 | 10 | 8 | 1 | 5 |
| 168013-01 | 12 | 10 | 1 | 1 |
| 168013-02 | 12 | 10 | 1 | 2 |
| 168013-05 | 12 | 10 | 1 | 5 |



Silicon Tubes

| Order No. | Outer Diameter mm | Inner Diameter mm | Thickness mm | Length mm |
|-----------|-------------------|-------------------|--------------|-----------|
| 168020-01 | 12 | 6 | 3 | 1 |
| 168020-02 | 12 | 6 | 3 | 2 |
| 168020-05 | 12 | 6 | 3 | 5 |
| 168021-01 | 14 | 8 | 3 | 1 |
| 168021-02 | 14 | 8 | 3 | 2 |
| 168021-05 | 14 | 8 | 3 | 5 |
| 168022-01 | 16 | 10 | 3 | 1 |
| 168022-02 | 16 | 10 | 3 | 2 |
| 168022-05 | 16 | 10 | 3 | 5 |

Oil-Free Piston Pumps

Vacuum Filtration Systems

ChemVak Filtration Systems are unique vacuum filtration devices. They combine all the necessary steps needed in vacuum filtration in one smart system. This saves precious time and simplifies the process of vacuum filtration enormously

The here installed vacuum pumps have a very low noise level

The systems are easy to maintain.

The basic vacuum filtration system can be applied in environments, where no chemical resistant devices are necessary, like e.g. biology and food science laboratories

ChemVak also offers chemical resistant vacuum filtration systems, which are e.g. applied in the chemical, petrochemical, and pharmaceutical industry. All parts that come in contact with gases are made of PTFE, which can resist acid-based, and organic gases

The outer filtration device can prevent solid impurities from entering the system

The pressure can be controlled manually

The all-in-one system consists of: a 1L suction bottle, a filtration flask, a funnel, and a bracket

ChemVak offers you 2 different types of all-in-one vacuum filtration systems:

1. Basic vacuum filtration system
2. Chemical resistant vacuum filtration system, which entails an additional filter bottle for the further safety of the vacuum pump when using highly corrosive substances



VF203A /205A

The basic edition contains a VF6 filtration flask; the filtration flask can be changed to the VF1 model on request; for further information on filtration glass sets please refer to pp. 17 - 20



VF203B /205B

The basic edition contains a VF2 filtration flask; the filtration flask can be changed to the VF11 model on request; for further information on filtration glass sets please refer to pp. 17 - 20

Available Accessories

ChemVak can offer you different installation methods and funnels of different materials and sizes. Moreover, we can offer different filter membranes as well as Bunsen burners, in order to fulfill all your needs with regard to vacuum filtration.

Technical Data

| Model | VF 203A | VF 203B | VF 205A | VF 205B |
|--------------------------------|------------------------------|-----------------|------------------------------|-----------------|
| Product Type | All-In-One Filtration System | | All-In-One Filtration System | |
| Mains Requirements | 220-240V / 50Hz | 220-240V / 50Hz | 220-240V / 50Hz | 220-240V / 50Hz |
| Power (W) | 60 | 60 | 80 | 80 |
| Current (A) | 0.3 | 0.3 | 0.4 | 0.4 |
| Ultimate vacuum (mbar) | 150 | 150 | 150 | 150 |
| Flow Rate | 1000 mbar | 17 L/min | 34 L/min | 34 L/min |
| | 880 mbar | 14 L/min | 14 L/min | 31 L/min |
| | 750 mbar | 12 L/min | 12 L/min | 29 L/min |
| | 600 mbar | 9.5 L/min | 9.5 L/min | 23 L/min |
| | 480 mbar | 7 L/min | 7 L/min | 19 L/min |
| | 350 mbar | 4.5 L/min | 4.5 L/min | 13 L/min |
| | 210 mbar | 1.5 L/min | 1.5 L/min | 4 L/min |
| Outlet (mm) | 8mm | 8mm | 8mm | 8mm |
| Motor Speed (rpm) | 1450 | 1450 | 1450 | 1450 |
| Weight (kg) | 7.1 | 7.1 | 7.5 | 7.5 |
| Noise Level (dB) | 50 | 50 | 50 | 50 |
| Contained Filtration Glass Set | VF6 | VF62 | VF6 | VF2 |
| Order No. for EU/UK-Plug | 167203A-22-E/UK | 167203B-22-E/UK | 167205A-22-E/UK | 167205B-22-E/UK |

Oil-Free Piston Pumps

Vacuum Filtration Systems

VF203A

This vacuum filtration system contains a VF6 filtration flask set, a VF203 vacuum pump, a high pressure resistant tube, a 0.2 µm water-blocking device, as well as a 0.1 µm fiberglass filter membrane. This system can be used for normal vacuum filtration. It fits especially well for the measurement of suspended solids.

VF203B

This vacuum filtration system contains a VF2 filtration flask set, a VF203 vacuum pump, a Dragon 100 Bunsen burner, a high pressure resistant tube, a 0.2 µm water-blocking device, as well as a 0.1 µm fiberglass filter membrane. This system can be used for normal vacuum filtration. It fits especially well for microorganism determination.

VF205A

This vacuum filtration system contains a VF6 filtration flask set, a VF205 vacuum pump, a high pressure resistant tube, a 0.2 µm water-blocking device, as well as a 0.1 µm fiberglass filter membrane. This system can be used for normal vacuum filtration. It fits especially well for the measurement of suspended solids.

VF205B

This vacuum filtration system contains a VF2 filtration flask set, a VF205 vacuum pump, a Dragon 100 Bunsen burner, a high pressure resistant tube, a 0.2 µm water-blocking device, as well as a 0.1 µm fiberglass filter membrane. This system can be used for normal vacuum filtration. It fits especially well for microorganism determination.

VF204

This vacuum filtration system contains a VF3 filtration flask set, a VF204 vacuum pump, a high pressure resistant tube, and a 0.2 µm water-blocking device. It can be used for HPLC, GC, and AA micro-analysis or for mobile phase decontamination.

VF214

This vacuum filtration system contains a VF3 filtration flask set, a VF214 vacuum pump, a high pressure resistant tube, and a 0.2 µm water-blocking device. It can be used for HPLC, GC, and AA micro-analysis or for mobile phase decontamination.

VF204/214

The basic edition contains a VF3 filtration flask; the filtration flask can be changed to the VF10 model on request; for further information on filtration glass sets please refer to pp. 17 - 20



Technical Data

| Model | VF 204 | VF 214 |
|--------------------------------|---|---|
| Product Type | Chemical Resistant Vacuum Filtration System | Chemical Resistant Vacuum Filtration System |
| Mains Requirements | 220-240V / 50Hz | 220-240V / 50Hz |
| Power (W) | 60 | 95 |
| Current (A) | 0.32 | 0.6 |
| Ultimate Vacuum (mbar) | 210 | 13 |
| 1000 mbar | 22 L/min | 25 L/min |
| 880 mbar | 17 L/min | 22 L/min |
| Flow 750 mbar | 13 L/min | 20 L/min |
| Rate 600 mbar | 7 L/min | 12 L/min |
| 480 mbar | 4 L/min | 7.5 L/min |
| 280 mbar | 2 L/min | 5 L/min |
| Outlet (mm) | 8 mm | 8 mm |
| Motor Speed (rpm) | 1450 | 1450 |
| Weight (kg) | 7.1 | 8.3 |
| Noise Level (dB) | 50 | 50 |
| Contained Filtration Glass Set | VF3 | VF3 |
| Order No. for EU/US/UK-Plug | 169204-22-E/U/UK | 169214-22-E/U/UK |

Filtration Collocations

Vacuum filtration is used in laboratories in a wide range of fields, including the food, pharmaceutical, beverages, and drinking-water industry. Environmental-friendly suspended solids measurement, HPLC, GC, and AA analysis, as well as mobile phase decontamination are common applications of vacuum filtration. ChemVak is one of the leading suppliers of laboratory vacuum filtration equipment and can provide vacuum pumps, filtration funnels, as well as all kinds of filtration equipments, which all undergo the highest quality standards. ChemVak provides you with the ideal vacuum filtration system for your specific application.

V300A Features

Basic Filtration Design

The ChemVak V300A is an economic set designed for basic vacuum filtration purposes. The set entails an oil-free piston pump, a VF6 filtration glass set, filter membranes, and a high-pressure resistant silicon tube.

Environmental Friendly and Maintenance Free

The ChemVak V series uses the piston-movement technique for vacuum creation, and thus does not need any oil for lubrication. Therefore, oil change and pollution both are not an issue.

Low Noise, Low Vibration

The ChemVak vacuum pumps use direct motor transmission, so that no belt is needed. In addition, other devices to lower noise and vibration can be provided in order to guarantee a silent operation.

Air Supply Filtration Applicable

All ChemVak vacuum pumps employ a filter element at the inlet, which can filter out dust and moisture. Thus, the inlet can be kept uncontaminated, which enhances the longevity of the vacuum pump.



V300A Product Application

Water quality measurement
Normal liquids filtration

V300A Ordering Information

Order No.: 167301-22-E/UK

The V300A vacuum filtration set includes the following:

- 167300-22 V300 oil-free piston pump
- 167200-01 VF6 filtration glass set
- 167100-20 Fiberglass filter membranes (47 mm / 1 µm)
- 168021-01 High-pressure resistant silicon tube (1 m)
- 167200-35 PTFE disc filter

V300B Features

Designed for Suspended Solids Measurement

The V300B vacuum system is especially designed for suspended solid measurement. The set includes an oil-free piston pump, a VF1 filtration glass set, filter membranes, a high-pressure resistant tube, as well as a 1 µm fiberglass filter.

Magnetic Stability Design

For the filtration funnels a magnetic stability design is used, and thus no clamp is needed to ensure a smooth filtration process.



V300B Product Application

Suspended solid measurement
Normal liquids filtration

V300B Ordering Information

Order No.:167302-22-E/UK

The V300B vacuum filtration set includes the following:

- 167300-22 V300 oil-free piston pump
- 167200-01 VF1 magnetic filtration glass set
- 167100-20 Fiberglass filter membranes (47 mm / 1 µm)
- 168021-01 High-pressure resistant silicon tube (1 m)
- 167200-35 Disc filter made of PTFE material

| Model | V300A | V300B |
|---------------------------|---------------------|-----------------------|
| Flow Rate of the Pump | 17 l/min | 17 l/min |
| Ultimate Vacuum | 150 mbar | 150 mbar |
| Filtration Glass Set | VF6 | VF1 |
| Suction Bottle Capacity | 1000 ml | 1000 ml |
| Filter Diameter | 47/50 mm | 47/50 mm |
| Filter Flask Capacity | 300 ml | 300 ml |
| Filter Flask Material | (Glass Filter Cup) | (Magnetic Filter Cup) |
| Effective Filtration Area | 9.6 cm ² | 9.6 cm ² |
| Outlet | 8 mm | 8 mm |

Oil-Free Piston Pumps

Filtration Collocations

V300SS Features

Designed for Microbiological Detection

The V300SS is an economic set especially designed for microbiological detection. A set contains an oil-free piston pump, a VF2 filtration glass set, a Bunsen burner, disc filters, a high-pressure resistant silicon tube, and a 0.45 µm filter membrane especially designed for microbiological detection.

Spin-lock Connection

Fast and stable installation of the filter cup which makes a clamp unnecessary.

Quick Sterilization

The filtration funnels are made of SUS316 stainless steel, and with the included Bunsen burner a quick and effective sterilization can be achieved, which enhances the microbiological detection process significantly.

Environmental Friendly and Maintenance Free

The ChemVak V series uses piston-movement for vacuum creation, and thus does not need any oil for lubrication. Therefore, oil change and pollution both are not an issue.

C300A Features

Special Design for Solvent Purification

The ChemVak C300A series is especially designed for sample pretreatment and solvent purification. It includes a chemical resistant diaphragm pump, a VF3 filtration glass set, disc filters, and a high-pressure resistant silicon tube.

Chemical-Resistant Diaphragm Pump

The ChemVak C series pumps are chemical-resistant diaphragm vacuum pumps, where all parts that come into contact with gases are made of PTFE. In addition, the case and switch are also made of chemical-resistant material, so that all sorts of organic and acid gases can be used.

Environmental Friendly and Maintenance Free

The ChemVak C series uses the diaphragm movement technique for vacuum creation, and thus does not need any oil for lubrication. Therefore, oil change and pollution both are not an issue.

Chemvak



V300SS Product Application

Microbiological detection
All kind of liquid filtrations

V300SS Ordering Information

Order No.: 167303-22-E/UK

The V300SS vacuum filtration set includes the following:

| | |
|-----------|---|
| 167300-22 | V300 oil-free piston pump |
| 167200-02 | VF2 filtration glass set |
| 177100-00 | Dragon 100 Bunsen burner |
| 167100-52 | Filter membrane (47 mm / 0.45 µm) |
| 168021-01 | High-pressure resistant silicon tube (1m) |
| 167200-35 | PTFE disc filter (25 mm / 0.2 µm) |



C300A Product Application

Sample pretreatment HPLC, GC, and AA analysis
All kinds of solvent purification (mobile phase)

C300A Ordering Information

Order No.: 169301-22-E/U/UK

The C300A vacuum filtration set includes the following:

| | |
|-----------|---|
| 169300-22 | C300 chemical resistant diaphragm pump |
| 167200-03 | VF3 magnetic filtration glass set |
| 167200-35 | PTFE disc filter |
| 168021-01 | High-pressure resistant silicon tube (1m) |

| Model | V300SS | C300A |
|---------------------------|------------------------------|---------------------|
| Flow Rate of the Pump | 17 l/min | 22 l/min |
| Ultimate Vacuum | 150 mbar | 210 mbar |
| Filtration Glass Set | VF2 | VF3 |
| Suction Bottle Capacity | 1000 ml | 1000 ml |
| Filter Diameter | 47/50 mm | 47/50 mm |
| Filter Flask Capacity | 100 ml | 300 ml |
| Filter Flask Material | (Stainless Steel Filter Cup) | (Glass Filter Cup) |
| Effective Filtration Area | 9.6 cm ² | 9.6 cm ² |
| Outlet | 8 mm | 8 mm |

Oil-Free Piston Pumps

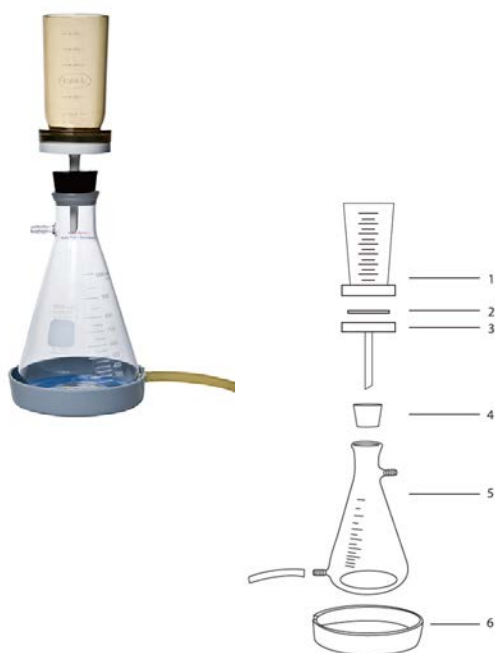
Filtration Glass Sets

Vacuum filtration can be applied in a wide range of fields for all kinds of liquid filtration, including microbiological detection in food, pharmaceuticals, beverages, or drinking water, suspended solid measurement, sample pretreatment like HPLC, GC, and AA analysis, and solvent purification

This set is of a unique design, which consists of a filtration funnel linked to a fast draining filtration flask and seated in a magnetic stand. The design makes it easy to discharge and empty out the filtration flask

VF1 (167200-01)

Suitable for basic liquid vacuum filtration, like suspended solids filtration.



VF9 (167200-09)

Suitable for flame sterilization, microbiological detection, or corrosive sample purification.



Technical Data

| Set | VF1 | VF9 |
|---------------------------|---------------------|---------------------|
| Funnel | PES | SUS316 |
| Funnel Base | PES | SUS316 |
| Membrane Support | PP | SUS316 |
| Stopper | Silicon | Silicon |
| Receiver Flask with Drain | Borosilicate Glass | Borosilicate Glass |
| Specifications | | |
| Funnel Capacity | 300 ml | 300 ml |
| Filtration Flask Capacity | 1000 ml | 1000 ml |
| Filter Diameter | 47 mm | 47 mm |
| Effective Filtration Area | 9.6 cm ² | 9.6 cm ² |
| Outlet | 8 mm | 8 mm |

Ordering Information

| VF1 | 47mm Magnetic Filtering Set | 167200-01 |
|--|----------------------------------|-----------|
| | 300ml Magnetic Funnel | 167100-18 |
| 1 | 300ml Magnetic Filter Cup | 167000-34 |
| 2 | PP Membrane Support | 167000-37 |
| 3 | PES Filter Base | 167000-35 |
| 4 | Silicon Rubber | 167110-17 |
| 5 | 1000ml Receiver Flask with Drain | 167300-08 |
| 6 | Weighted Base | 167200-04 |
| VF9 47mm Stainless Steel Filtration Set | | |
| | 300ml Stainless Steel Funnel | 167103-30 |
| 1 | 300ml Stainless Steel Filter Cup | 167103-63 |
| 2 | Membrane Support | 167100-31 |
| 3 | 47mm Stainless Steel Funnel Base | 167103-60 |
| 4 | Silicon Rubber | 167110-17 |
| 5 | 1000ml Receiver Flask with Drain | 167300-08 |
| 6 | Weighted Base | 167200-04 |

Oil-Free Piston Pumps

47mm Stainless Steel Filtration Glass Sets

Suitable for flame sterilization, microbiological detection, or corrosive sample purification.

VF2 (167200-02)



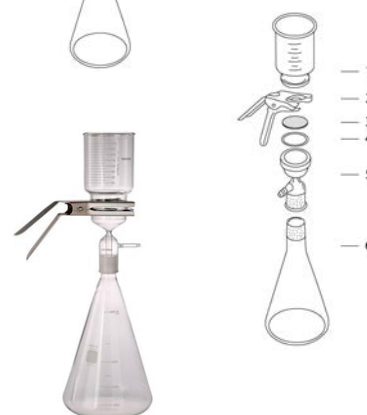
VF3 (167200-03)



VF11 (167200-11)



VF10 (167200-10)



Chemvæk

Technical Data

| Set | VF2 | VF11 |
|---------------------------|---------------------|---------------------|
| Funnel | SUS316 | SUS316 |
| Funnel Base | SUS316 | SUS316 |
| Membrane Support | SUS316 | SUS316 |
| Stopper | Silicon | Silicon |
| Receiver Flask with Drain | Borosilicate Glass | Borosilicate Glass |
| Specifications | | |
| Funnel Capacity | 100 ml | 500 ml |
| Filtration Flask Capacity | 1000 ml | 2000 ml |
| Filter Diameter | 47 mm | 47 mm |
| Effective Filtration Area | 9.6 cm ² | 9.6 cm ² |
| Outlet | 8 mm | 8 mm |

Ordering Information

| VF2 47mm Stainless Steel Filtration Set | 167200-02 |
|--|-----------|
| 100ml Stainless Steel Funnel | 167103-10 |
| 1 100ml Stainless Steel Filtration Cup | 167103-61 |
| 2 Membrane Support | 167100-31 |
| 3 47mm Stainless Steel Funnel Base | 167103-60 |
| 4 Silicon Rubber | 167110-17 |
| 5 1000ml Receiver Flask with Drain | 167300-08 |
| 6 Weighted Base | 167200-04 |
| VF11 47mm Stainless Steel Filtration Set | 167200-11 |
| 500ml Stainless Steel Funnel | 167103-50 |
| 1 500ml Stainless Steel Filtration Cup | 167103-65 |
| 2 Membrane Support | 167100-31 |
| 3 47mm Stainless Steel Funnel Base | 167103-60 |
| 4 Silicon Rubber | 167110-17 |
| 5 2000 ml Receiver Flask with Drain | 167300-13 |

Technical Data

| Set | VF3 | VF10 |
|---------------------------|--------------------------|--|
| Funnel | Borosilicate Glass | Borosilicate Glass |
| Funnel Base | Borosilicate Glass | Borosilicate Glass |
| Membrane Support | Borosilicate Glass | Stainless Steel Micro-Strainer + PTFE Gasket |
| Clamp | Aluminum Magnesium Alloy | Aluminum Magnesium Alloy |
| Filtration Flask | Borosilicate Glass | Borosilicate Glass |
| Specifications | | |
| Funnel Capacity | 300 ml | 1000 ml |
| Filtration Flask Capacity | 1000 ml | 4000 ml |
| Filter Diameter | 47 mm | 90 mm |
| Effective Filtration Area | 9.6 cm ² | 40.6 cm ² |
| Outlet | 8 mm | 8 mm |

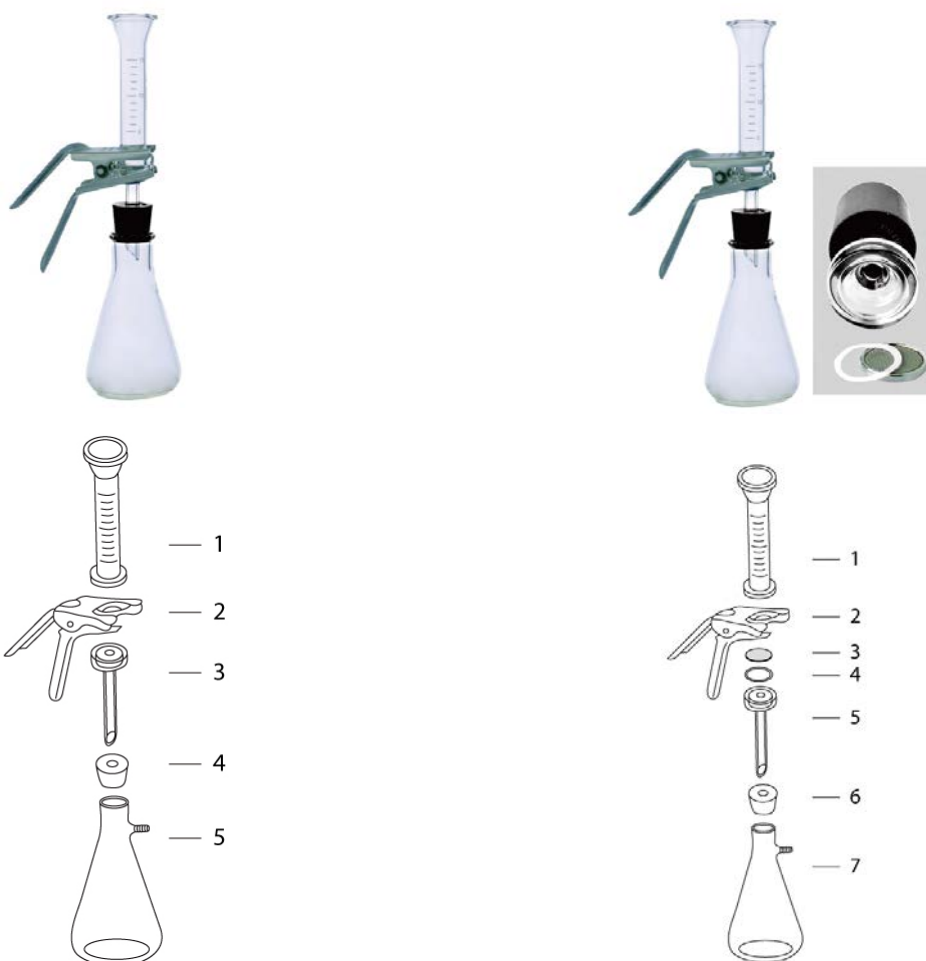
Ordering Information

| VF3 47mm Filtration Glass Set | 167200-03 |
|------------------------------------|-----------|
| 300ml Glass Funnel | 167120-30 |
| 1 300ml Glass Filter Cup | 167210-03 |
| 2 Aluminum Magnesium Alloy Clamp | 167240-01 |
| 3 47mm Glass Support Base | 167230-01 |
| 4 1000ml Receiver Flask | 167250-01 |
| VF10 90mm Filtration Glass Set | 167200-10 |
| 1000 ml Frosted Glass Funnel | 167120-35 |
| 1 1000 ml Glass Filter Cup | 167210-10 |
| 2 Aluminum Magnesium Alloy Bracket | 167240-02 |
| 3 Stainless Steel Support Screen | 167230-33 |
| 4 PTFE Gasket | 167230-43 |
| 5 90mm Glass Support Base | 167230-09 |
| 6 4000ml Receiver Flask | 167250-06 |

Oil-Free Piston Pumps

25mm Filtration Glass Sets For Microanalysis

Suitable for filtration processes as used in pollution analysis or microbiology, like e.g. DNA / RNA hybridization.



Technical Data

| Set | VF5 | VF8 |
|------------------|--------------------------|--|
| Funnel | Borosilicate Glass | Borosilicate Glass |
| Funnel Base | Borosilicate Glass | Borosilicate Glass |
| Membrane Support | Borosilicate Glass | Stainless Steel Support Screen + PTFE Gasket |
| Clamp | Aluminum Magnesium Alloy | Aluminum Magnesium Alloy |
| Stopper | Silicon | Silicon |
| Receiver Flask | Borosilicate Glass | Borosilicate glass |

| Specifications | | |
|---------------------------|---------------------|---------------------|
| Funnel Capacity | 15 ml | 15 ml |
| Filtration Flask Capacity | 125 ml | 125 ml |
| Filter Diameter | 25 mm | 25 mm |
| Effective Filtration Area | 2.2 cm ² | 2.2 cm ² |
| Outlet | 8 mm | 8 mm |

Ordering Information

| VF5 25mm Glass Filtration Set for Microanalysis | 167200-05 |
|---|-----------|
| 15 ml Glass Funnel | 167120-32 |
| 1 15 ml Glass Filter Cup | 167220-15 |
| 2 Aluminum Magnesium Alloy Clamp | 167240-05 |
| 3 25 mm Glass Filter Base | 167230-04 |
| 4 Silicon Rubber | 167110-18 |
| 5 125 ml Receiver Flask | 167250-05 |

| VF8 25 mm Glass Filtration Set for Microanalysis | 167200-08 |
|--|-----------|
| 15ml Glass Funnel | 167120-34 |
| 1 15ml Glass Filter Cup | 167220-15 |
| 2 Aluminum Magnesium Alloy Bracket | 167240-05 |
| 3 Stainless Steel Support Screen | 167230-32 |
| 4 PTFE Gasket | 167230-42 |
| 5 25mm Glass Filter Base | 167230-08 |
| 6 Silicon Rubber | 167110-18 |
| 7 125ml Receiver Flask | 167250-05 |

Oil-Free Piston Pumps

47mm Filtration Glass Sets

Suitable for solvent purification and normal filtration, like microbiological and suspended solids filtration.



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Technical Data

| Set | VF6 | VF7 |
|------------------|--------------------------|--|
| Funnel | Borosilicate Glass | Borosilicate Glass |
| Funnel Base | Borosilicate Glass | Borosilicate Glass |
| Membrane Support | Borosilicate Glass | Stainless Steel Micro-Strainer + PTFE Gasket |
| Clamp | Aluminum Magnesium Alloy | Aluminum Magnesium Alloy |
| Stopper | Silicon | Silicon |
| Receiver Flask | Borosilicate Glass | Borosilicate Glass |

| Specifications | | |
|---------------------------|---------------------|---------------------|
| Funnel Capacity | 300 ml | 300 ml |
| Filtration Flask Capacity | 1000 ml | 1000 ml |
| Filter Diameter | 47 mm | 47 mm |
| Effective Filtration Area | 9.6 cm ² | 9.6 cm ² |
| Outlet | 8 mm | 8 mm |

Ordering Information

| VF6 47mm Filtration Glass Set | | 167200-06 |
|-------------------------------|--------------------------------|-----------|
| | 300ml Glass Funnel | 167120-31 |
| 1 | 300ml Glass Filter Cup | 167210-03 |
| 2 | Aluminum Magnesium Alloy Clamp | 167240-01 |
| 3 | 47mm Glass Filter Base | 167230-03 |
| 4 | Silicon Rubber | 167110-16 |
| 5 | 1000ml Receiver Flask | 167250-03 |

| VF7 47mm Filtration Glass Set | | 167200-07 |
|-------------------------------|--------------------------------|-----------|
| | 300ml Glass Funnel | 167120-31 |
| 1 | 300ml Glass Filter Cup | 167210-03 |
| 2 | Aluminum Magnesium Alloy Clamp | 167240-01 |
| 3 | Stainless Steel Support Screen | 167230-31 |
| 4 | PTFE Gasket | 167230-41 |
| 5 | 47mm Glass Filter Base | 167230-03 |
| 6 | Silicon Rubber | 167110-16 |
| 7 | 1000ml Receiver Flask | 167250-03 |

Oil-Free Piston Pumps

Multi-Branch Manifolds

SUS316 Stainless Steel

Every branch of the BioVac 330 and the BioVac 630 multi-branch manifolds is made of SUS316 stainless steel, so that heat sterilization can be applied.

Spin-Lock Connection

Fast and stable installation without a clamp.

Independent Valve Control

Each branch of the BioVac 330 / 630 can be independently controlled.

Different Filter Cups Available

The BioVac 330 / 630 multi-branch manifold can be combined with 100 ml, 300 ml, and 500 ml filtration cups for all kinds of filtration experiments.

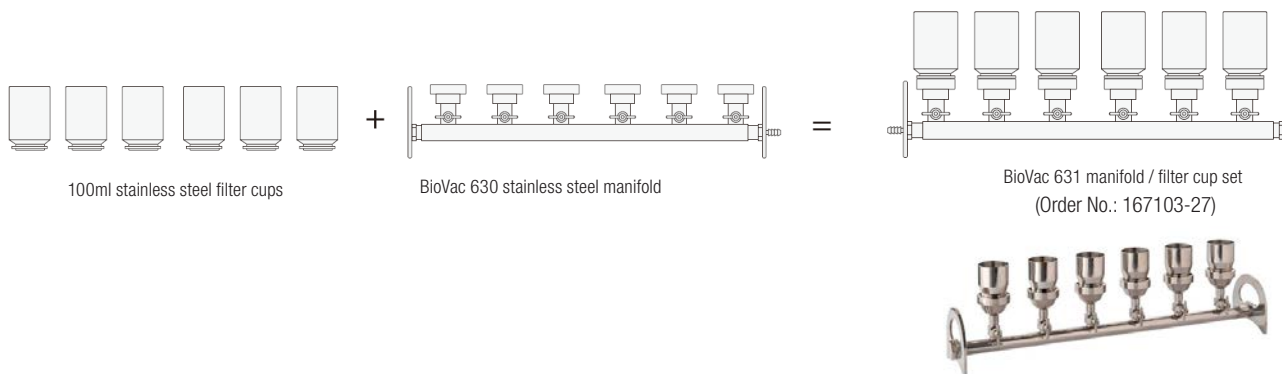


The 3-branch stainless steel manifold BioVac 330
(Order No.: 167103-23)



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

BioVac 630 Application Diagram



Ordering Information

- 167103-23 BioVac 330 3-branch stainless steel manifold (filter cups are not included)
- 167103-26 BioVac 630 6-branch stainless steel manifold (filter cups are not included)
- 167103-24 BioVac 331 3-branch manifold set (incl. three 100 ml stainless steel filter cups)
- 167103-27 BioVac 631 6-branch manifold set (incl. six 100 ml stainless steel filter cups)

Eligible Filter Cups

- 167103-61 100 ml stainless steel filter cup
- 167103-63 300 ml stainless steel filter cup
- 167103-65 500 ml stainless steel filter cup

Product Application

- Microbiological detection
- Chemical experiments
- All kinds of liquid filtration
- Air sampling

Product Specifications

| Type | BioVac330 | BioVac630 |
|---------------------------|-----------------------|-----------------------|
| Number of Branches | 3 | 6 |
| Filter Diameter | 47 / 50 mm | 47 / 50 mm |
| Filter Cup Capacity | 100 /300 /500 ml | 100 /300 /500 ml |
| Effective Filtration Area | 9.6 cm ² | 9.6 cm ² |
| Outlet | 8 mm | 8 mm |
| Dimensions (L x W x H) | 44.5 x 12.9 x 12.5 cm | 68.5 x 12.9 x 12.5 cm |

Oil-Free Piston Pumps

Multi-Branch Manifolds

SUS316 Stainless Steel

Every branch of the BioVac 300 and the BioVac 600 multi-branch manifolds is made of SUS316 stainless steel, so that heat sterilization can be applied.

Spin-Lock Connection

Fast and stable installation without a clamp.

Independent Valve Control

Each branch of the BioVac 300 / 600 can be independently controlled.

Different Filter Cups Available

The BioVac 300 / 600 multi-branch manifold can be combined with 500 ml, 750 ml, and 1000 ml filtration cups for all kinds of filtration experiments.

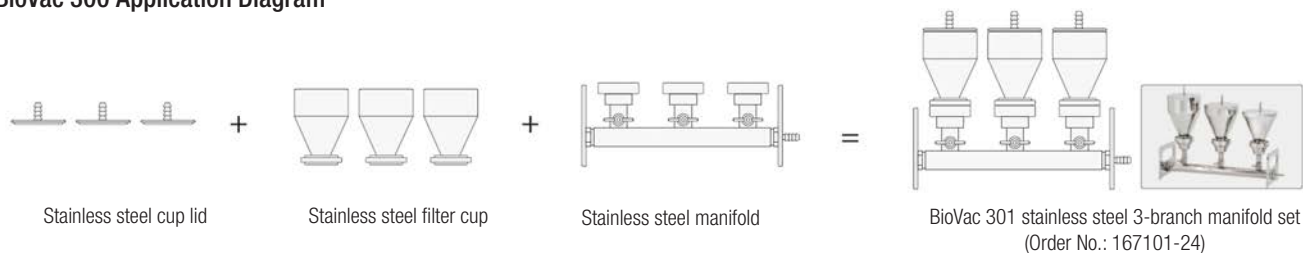


The 3-branch stainless steel manifold BioVac 300
(Order No.: 167101-23)



The 6-branch stainless steel manifold BioVac 600
(Order No.: 167101-26)

BioVac 300 Application Diagram



Ordering Information

- 167101-23 BioVac 300 3-branch stainless steel manifold (filter cups are not included)
- 167101-26 BioVac 600 6-branch stainless steel manifold (filter cups are not included)
- 167101-24 BioVac 301 3-branch manifold set (incl. three 500 ml stainless steel filter cups)
- 167101-27 BioVac 601 6-branch manifold set (incl. six 500 ml stainless steel filter cups)

Eligible Filter Cups

- 167102-50 500 ml stainless steel filter cup
- 167102-75 750 ml stainless steel filter cup
- 167102-99 1000 ml stainless steel filter cup
- 167110-20 Stainless steel cup covers (fit to the above mentioned cups)

Product Application

- Microbiological detection
- Chemical experiments
- All kinds of liquid filtration

Product Specifications

| Type | BioVac300 | BioVac600 |
|---------------------------|---------------------|---------------------|
| Number of Branches | 3 | 6 |
| Filter Diameter | 47 / 50 mm | 47 / 50 mm |
| Filter Cup Capacity | 500 / 750 / 1000 ml | 500 / 750 / 1000 ml |
| Effective Filtration Area | 9.6 cm ² | 9.6 cm ² |
| Outlet | 8 mm | 8 mm |
| Dimensions (L x W x H) | 43.5 x 15 x 14.5 cm | 67.5 x 15 x 14.5 cm |

Oil-Free Piston Pumps

Multi-Branch Manifolds

SUS316 Stainless Steel

Every branch of the BioVac 320 / 620 multi-branch manifolds is made of SUS316 stainless steel, so that heat sterilization can be applied.

Light Aluminum Design

The BioVac 321 manifold is made of anodized aluminum and copper electroplating, resulting in a very light weight, whereas steam sterilization can still be applied.

Independent Valve Control

Each branch of the BioVac 320 / 620 / 321 can be independently controlled.

Different Filter Cups Available

The BioVac 320 / 620 / 321 multi-branch manifolds can be combined with 100 ml, 300 ml, and 500 ml filtration cups for all kinds of filtration experiments.



The BioVac 321 3-branch aluminum manifold
(Order No.: 167200-43)



The BioVac 320 3-branch stainless steel manifold
(Order No.: 167110-23)



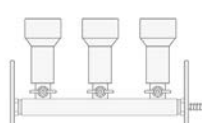
The BioVac 620 6-branch stainless steel manifold
(Order No.: 167110-26)

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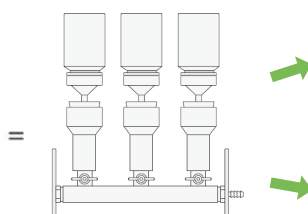
BioVac 320 Application Diagram



Glass / magnetic / stainless steel filter cup



Aluminium manifold



BioVac321 3-branch manifold set

Ordering Information

- 167110-23 BioVac 320 3-branch stainless steel manifold
(filter cups are not included)
- 167110-26 BioVac 620 6-branch stainless steel manifold
(filter cups are not included)
- 167200-43 BioVac 321 3-branch aluminum manifold
(filter cups are not included)
- 167110-17 Silicon Rubber

Product Application

- Microbiological detection
- Chemical experiments
- All kinds of liquid filtration

Eligible filtration cups

- 167103-10/30/50 100 ml, 300 ml, 500 ml stainless steel filter cup
- 167120-31/33 300 ml glass filter cup
- 167100-18 300 ml magnetic filter cup
- 167130-15 150 ml magnetic filter cup
- 167130-50 500 ml magnetic filter cup

Product Specifications

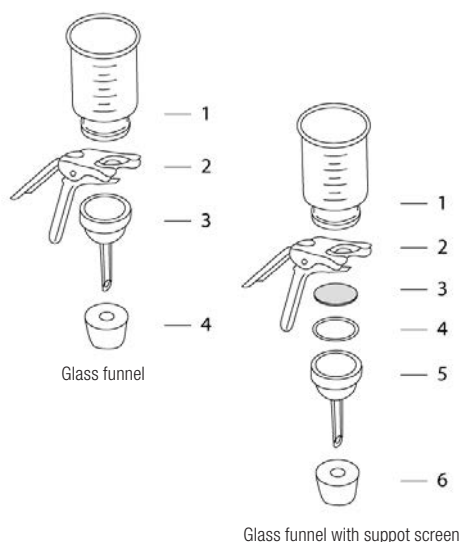
| Type | BioVac320 | BioVac620 | BioVac321 |
|---------------------------|----------------------------------|----------------------------------|----------------------------------|
| Number of Branches | 3 | 6 | 3 |
| Filter Diameter | Dependent on Filter Cup Diameter | Dependent on Filter Cup Diameter | Dependent on Filter Cup Diameter |
| Effective Filtration Area | Dependent on Filter Cup Area | Dependent on Filter Cup Area | Dependent on Filter Cup Area |
| Outlet | 8 mm | 8 mm | 8 mm |
| Dimensions (L x W x H) | 44.5 x 12.9 x 15 cm | 68.5 x 12.9 x 15 cm | 39.5 x 15 x 13.7 cm |

Accessories For Filtration Systems

47mm Glass Funnel

Product Features

Made of chemical-resistant borosilicate glass
Resistant against high temperatures
steam sterilization can be applied



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Product Specifications

| Type | Glass Funnel | Glass Funnel with Micro-Strainer |
|-------------------------|--------------------------|--|
| Funnel | Borosilicate Glass | Borosilicate Glass |
| Funnel base | Borosilicate Glass | Borosilicate Glass |
| Membrane Support | Borosilicate Glass | Stainless Steel Support Screen + PTFE Gasket |
| Clamp | Aluminum Magnesium Alloy | Aluminum Magnesium Alloy |

| Specifications | | |
|----------------------------------|---------------------|---------------------|
| Funnel Capacity | 300 ml | 300 ml |
| Filter Diameter | 47 mm | 47 mm |
| Effective Filtration Area | 9.6 cm ² | 9.6 cm ² |

Ordering Information

| 47 mm Glass Funnel | | 167120-31 |
|--------------------|--------------------------------|-----------|
| 1 | 300 ml Glass Filter Cup | 167210-03 |
| 2 | Aluminum Magnesium Alloy Clamp | 167240-01 |
| 3 | 47 mm Glass Filter Base | 167230-03 |
| 4 | Silicon Rubber | 167110-16 |

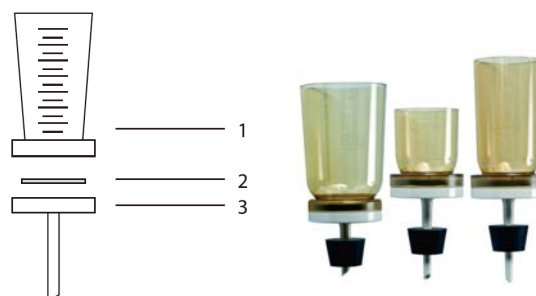
| 47 mm Glass Funnel with Micro-Strainer | | 167120-33 |
|--|--------------------------------|-----------|
| 1 | 300 ml Glass Filter Cup | 167210-03 |
| 2 | Aluminum Magnesium Alloy Clamp | 167240-01 |
| 3 | Stainless Steel Support Screen | 167230-31 |
| 4 | PTFE Gasket | 167230-41 |
| 5 | 47 mm Glass Filter Base | 167230-07 |
| 6 | Silicon Rubber | 167110-16 |

Magnetic Funnel

Unique magnetic base
no bracket needed anymore
high temperature sterilization possible

| Type | | |
|------|------------------|---------|
| 1 | Filter Cup | PES |
| 2 | Membrane Support | PP |
| 3 | Filter Base | PES |
| 4 | Rubber | Silicon |

| Specifications | |
|-------------------------------------|-----------|
| Pall 4242 Funnel (Capacity: 300 ml) | 167100-18 |
| Pall 4247 Funnel (Capacity: 150 ml) | 167130-15 |
| Pall 4238 Funnel (Capacity: 500 ml) | 167130-50 |

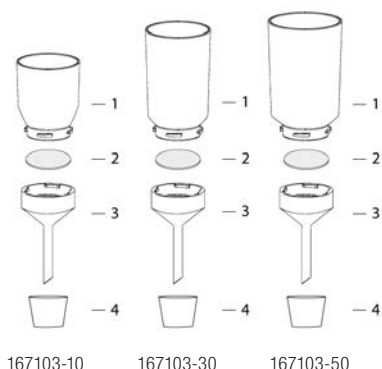


Oil-Free Piston Pumps

Accessories For Filtration Systems

47mm Stainless Steel Funnels

Quick and effective spin-lock system, which makes a clamp redundant
 Made of SUS316 stainless steel material
 Can be used for heat sterilization



Ordering Information

| 100 ml Stainless Steel Funnel | | 167103-10 |
|-------------------------------|-----------------------------------|-----------|
| 1 | 100 ml Stainless Steel Filter Cup | 167103-61 |
| 2 | Support Screen | 167100-31 |
| 3 | 47 mm Stainless Steel Filter Base | 167103-60 |
| 4 | Silicon Rubber | 167110-17 |

| 300 ml Stainless Steel Funnel | | 167103-30 |
|-------------------------------|-----------------------------------|-----------|
| 1 | 300 ml Stainless Steel Filter Cup | 167103-63 |
| 2 | Support Screen | 167100-31 |
| 3 | 47 mm Stainless Steel Filter Base | 167103-60 |
| 4 | Silicon Rubber | 167110-17 |

| 500 ml Stainless Steel Funnel | | 167103-50 |
|-------------------------------|-----------------------------------|-----------|
| 1 | 500 ml Stainless Steel Filter Cup | 167103-65 |
| 2 | Support Screen | 167100-31 |
| 3 | 47 mm Stainless Steel Filter Base | 167103-60 |
| 4 | Silicon Rubber | 167110-17 |

Product Specifications

| Type | 100 ml | 300 ml | 500 ml |
|------------------|--------|--------|--------|
| Funnel | SUS316 | SUS316 | SUS316 |
| Funnel Base | SUS316 | SUS316 | SUS316 |
| Membrane Support | SUS316 | SUS316 | SUS316 |
| Funnel Cover | SUS316 | SUS316 | SUS316 |

| Specifications | | | |
|---------------------------|---------------------|---------------------|---------------------|
| Funnel Capacity | 100 ml | 300 ml | 500 ml |
| Filter Diameter | 47 / 50 mm | 47 / 50 mm | 47 / 50 mm |
| Effective Filtration Area | 9.6 cm ² | 9.6 cm ² | 9.6 cm ² |



Stainless Steel Filter Cup (Cylinder Type)

| Type | 100 ml | 300 ml | 500 ml |
|------------|--------|--------|--------|
| Filter Cup | SUS316 | SUS316 | SUS316 |

| Specifications | | | |
|---------------------------|---------------------|---------------------|---------------------|
| Funnel Capacity | 100 ml | 300 ml | 500 ml |
| Filter Diameter | 47 / 50 mm | 47 / 50 mm | 47 / 50 mm |
| Effective Filtration Area | 9.6 cm ² | 9.6 cm ² | 9.6 cm ² |

| Stainless Steel Filter Cup | Order No. |
|---|-----------|
| 100ml Stainless Steel Filter Cup, Suitable for BioVac 330 / 630 Filtration Systems | 167103-61 |
| 300ml Stainless Steel Filter Cup, Suitable for BioVac 330 / 630 Filtration Systems | 167103-63 |
| 500ml Stainless Steel Filter Cup, Suitable for BioVac 330 / 630 Filtration Systems | 167103-65 |



Stainless Steel Filter Cup (Cone Type)

| Type | 500 ml | 750 ml | 1000 ml |
|------------|--------|--------|---------|
| Filter Cup | SUS316 | SUS316 | SUS316 |

| Specifications | | | |
|---------------------------|---------------------|---------------------|---------------------|
| Funnel Capacity | 500 ml | 700 ml | 1000 ml |
| Filter Diameter | 47 / 50 mm | 47 / 50 mm | 47 / 50 mm |
| Effective Filtration Area | 9.6 cm ² | 9.6 cm ² | 9.6 cm ² |

| Stainless Steel Filter Cup (Cone Type) | Order No. |
|--|-----------|
| 500ml Stainless Steel Filter Cup, Suitable for BioVac 300 / 600 Filtration Systems | 167102-50 |
| 750ml Stainless Steel Filter Cup, Suitable for BioVac 300 / 600 Filtration Systems | 167102-75 |
| 1000ml Stainless Steel Filter Cup, Suitable for BioVac 300 / 600 Filtration Systems | 167102-99 |

Oil-Free Piston Pumps

Accessories For Filtration Systems



Stainless Steel Funnel Lid

| Specifications | 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

| Specifications | | Material | |
|---------------------|------------------|-----------------|---------|
| Suitable for Funnel | Pall 4242 | 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 Liquids

Order No.: 167100-13

| Specifications | | Material | |
|-------------------------|---------|----------|--------------------|
| Capacity | 1000 ml | Bottle | Borosilicate Glass |
| Inlet / Outlet Diameter | 8 mm | Stopper | Silicon |
| Water Outlet | Yes | | |
| Bottle Cork | Yes | | |
| Magnetic Base | Yes | | |



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 |
| Specifications | | | |
| Capacity | 1000 ml | 2000 ml | 3000 ml |
| Outlet | 8 mm | 8 mm | 8 mm |
| Spill-Proof Buoy | Yes | Yes | Yes |
| Autoclavability (121°C) | Possible | Possible | Possible |



Glass Waste Bottle

Order No.: 167120-34

| Specifications | | Material | |
|-------------------------|----------|--------------|-----------------|
| Capacity | 4000 ml | Bottle | Glass |
| Outlet | 8 mm | Bottle Lid | Stainless Steel |
| Spill-Proof Buoy | Yes | Float Switch | PP |
| Autoclavability (121°C) | Possible | | Possible |

Oil-Free Piston Pumps

Accessories For Filtration Systems



Weighted Base

| Specifications | Order No. |
|--|-----------|
| 1000 ml Filtration Flask Base with a Unique Stabilization Design | 167200-04 |



Stand for Suction Bottles

| Specifications | Order No. |
|--|-----------|
| Stand for Suction Bottles Designed for Stabilizing the Bottle in Filtration Work | 167200-39 |



Filter Membranes

| Type | Fiberglass Filter Membranes | MCE Filter Paper |
|-------------------------------|-----------------------------|------------------|
| Order No. | 167100-20 | 167100-52 |
| Brand | Pall | Pall |
| Filter Diameter | 47 mm | 47 mm |
| Filter Pore Size | 1 µm | 0.45 µm |
| Material | Fiberglass | MCE |
| Number of Filters per Package | 200 | 200 |



Disc Filter

| Type | 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 | 35 mm / 0.2 µm | 50 mm / 0.2 µm |
| Outer Diameter | 30 mm | 45 mm | 72 mm |
| Material | PTFE | PTFE | PTFE |
| Outer Material | PP | PP | PP |
| Number of Filters per Package | 1 | 1 | 1 |



Silicon Tubing

| Order No. | Outer Diameter mm | Inner Diameter mm | Thickness mm | Length m |
|-----------|-------------------|-------------------|--------------|----------|
| 168020-01 | 12 | 6 | 3 | 1 |
| 168020-02 | 12 | 6 | 3 | 2 |
| 168020-05 | 12 | 6 | 3 | 5 |
| 168021-01 | 14 | 8 | 3 | 1 |
| 168021-02 | 14 | 8 | 3 | 2 |
| 168021-05 | 14 | 8 | 3 | 5 |
| 168022-01 | 16 | 10 | 3 | 1 |
| 168022-02 | 16 | 10 | 3 | 2 |
| 168022-05 | 16 | 10 | 3 | 5 |



Silicon Drainage Tubing

| Order No. | Outer Diameter mm | Inner Diameter mm | Thickness mm | Length m |
|-----------|-------------------|-------------------|--------------|----------|
| 168030-01 | 12 | 8 | 2 | 1 |
| 168030-02 | 12 | 8 | 2 | 2 |
| 168030-05 | 12 | 8 | 2 | 5 |

Foot Pedal

| Specifications | Order No. |
|---|-----------|
| Suitable for C Series and V Series Vacuum Pumps | 167200-41 |

Oil-Free Piston Pumps

Multi-Branch Filtration Systems

Special Design for Microbiological Filtration

The BioVac 330B and 630B are especially designed for large capacity microbiological inspections. Each system entails a vacuum pump, a stainless steel manifold, a Bunsen burner, a filtration flask, and filter membranes.

SUS316 Stainless Steel Manifold

Every part of the manifold is made of SUS316 stainless steel for enhanced corrosion and heat resistance.

Patented Spin-Lock Design

The patented spin-lock technique is used for the stainless steel multi-branch manifolds. This assures a quick assembly and tightness of the system, and inconvenient clamps are no longer needed.

Chemvak



BioVac 330B



BioVac 630B

BioVac 330B

Order No.: 167403-22-E/UK

The BioVac 330B vacuum filtration system includes the following:

- 167400-22 V400 oil-free piston pump
- 167103-24 BioVac 331 3-branch stainless steel manifold
- 167200-33 3000 ml PC waste bottle
- 177100-00 Dragon 100 Bunsen burner
- 167100-52 Pall GN-6 MCE filter membranes (0.45µm), 200 pcs
- 168021-01 High-pressure resistant silicon tube (1m) x 2

Product Application

- Microbiological detection
- Chemical experiments
- All kinds of liquid filtration

BioVac 630B

Order No.: 167601-22-E/UK

The BioVac 630B vacuum filtration system includes the following:

- 167600-22 V600 oil-free piston pump
- 167103-27 BioVac 631 6-branch stainless steel manifold
- 167200-33 3000 ml PC waste bottle
- 177100-00 Dragon 100 Bunsen burner
- 167100-52 Pall GN-6 MCE filter membranes (0.45µm), 200 pcs
- 168021-01 High-pressure resistant silicon tube (1m) x 2

Product Specifications

| Model | BioVac330B | BioVac630B |
|---------------------------|---------------------|---------------------|
| Flow Rate of the Pump | 34 l/min | 58 l/min |
| Ultimate Vacuum | 150 mbar | 150 mbar |
| Waste Bottle | 3000 ml, PC | 3000 ml, PC |
| Number of Branches | 3 | 3 |
| Filter Diameter | 47 / 50 mm | 47 / 50 mm |
| Filter Cup Capacity | 100 ml | 100 ml |
| Effective Filtration Area | 9.6 cm ² | 9.6 cm ² |
| Outlet | 8 mm | 8 mm |

Multi-Branch Filtration Systems

Designed for Large-Sample Filtration

The BioVac 321A is an economic set designed for large-sample vacuum filtration. Each set includes a vacuum pump, an aluminum manifold, magnetic funnels, and a waste bottle.

Professional Design for Microbiology

The BioVac 321B is especially designed for the purpose of large-sample vacuum filtration in microbiology. Each set includes a vacuum pump, an aluminum manifold, stainless steel funnels, a Bunsen burner, a waste bottle, and filter membranes.

Light Aluminum Design

The manifolds of the BioVac 321A and 321B filtration systems are made of aluminum and steel material, resulting in a very light weight, whereas steam sterilization can still be applied.

Magnetic Base

The funnels in the BioVac 321A filtration system are set in a magnetic funnel base so that no clamps are needed for a consistent connection between funnels and funnel bases.

Patented Spin-Lock Design

The patented spin-lock technique is used for the BioVac 321B filtration system. This assures a quick assembly and tightness of the system, and makes the use of inconvenient clamps redundant.



BioVac 321A



BioVac 321B

BioVac 321A

Order No.: 167401-22-E/UK

The BioVac 321A vacuum filtration system includes the following:

- 167400-22 V400 oil-free piston pump
- 167200-43 BioVac 321 3-branch aluminum steel manifold
- 167100-18 3 magnetic funnels (300 ml)
- 167200-33 3000 ml waste bottle made of PC material
- 167100-52 Pall GN-6 MCE filter membranes (0.45 µm), 200 pcs
- 168021-01 High-pressure resistant silicon tube (1m) x 2

BioVac 321B

Order No.: 167402-22-E/UK

The BioVac 321B vacuum filtration system includes the following:

- 167400-22 V400 oil-free piston pump
- 167200-43 BioVac 321 3-branch aluminum manifold
- 167103-10 3 stainless steel funnels (100 ml)
- 167200-33 3000 ml waste bottle made of PC material
- 177100-00 Dragon 100 Bunsen burner
- 167100-52 Pall GN-6 MCE filter membranes (0.45 µm), 200 pcs
- 168021-01 High-pressure resistant silicon tube (1m) x 2

Product Application

- Microbiological detection
- Chemical experiments
- All kinds of liquid filtration

Product Specifications

| Model | BioVac321A | BioVac321B |
|---------------------------|-------------------------------|--------------------------------------|
| Flow Rate of the Pump | 34 l/min | 34 l/min |
| Ultimate Vacuum | 150 mbar | 150 mbar |
| Waste Bottle | 3000 ml, PC | 3000 ml, PC |
| Number of Branches | 3 | 3 |
| Filter Diameter | 47/50 mm | 47/50 mm |
| Filter Cup Capacity | 300 ml Magnetic Filter Cup | 100 ml Stainless Steel Filter Cup |
| Effective Filtration Area | 9.6 cm ² | 9.6 cm ² |
| Outlet | 8 mm | 8 mm |

Rotary Vane Vacuum Pumps

Rotary Vane Vacuum Pumps

Rotary vane pumps are traditional vacuum pumps, which can be used in a wide area including research and production. The WH series rotary vane pumps are ChemVak's standard vacuum pumps, which can be used individually or as a backing pump in combination with molecular pumps or diffusion pumps in order to create an extremely high vacuum. They are widely used in vacuum distillation, vacuum filtration, vacuum testing, vacuum freeze drying, vacuum plating, leak detection, vacuum packaging, vacuum sorption, and the like.



WH-8D/17D

Product Features

- Compact structure and very good sealing. Even after shut-off there is no returning throughput.
- Oil spout prevention
- Low noise
- Small casing
- Easy to transport
- High flow rate, which quickly leads to a stable ultimate vacuum
- High evaporation resistance
- Comparatively high chemical resistance
- High longevity and very low maintenance rate
- Low oil mist
- Oil-observation window for convenient oil inspection
- Gas ballast valve, which enables the user to let out a certain amount of gas
- Fuse for overcurrent protection
- Fulfills IP54 standards.

Product Specifications

| Type | WH-4SN | WH-12SN | WH-24SN | WH-36SN | WH-8D | WH-17D |
|-----------------------------|----------------------|--|----------------------|----------------------|--------------------|--------------------|
| Pump Heads | Single | Single | Single | Single | Double | Double |
| Flow Rate (L/min) | 50 | 170 | 400 | 600 | 135 | 283 |
| Ultimate Vacuum (mbar) | 2.5×10^{-2} | 2.5×10^{-2} | 6.7×10^{-2} | 6.7×10^{-2} | 4×10^{-4} | 4×10^{-4} |
| Power (W) | 180 | 370 | 400 | 600 | 550 | 750 |
| Noise Level (dB) | < 68 | < 70 | < 70 | < 70 | < 54 | < 56 |
| Oil Capacity (L) | 0.3 | 0.65 | 1.3 | 1.5 | 1.1 | 1.5 |
| Weight (kg) | 7 | 12 | 24 | 28 | 27 | 31 |
| Outlet Specifications | 1/4" SAE Male | 3/8" SAE Male; 1/4" SAE Male; 5/16" SAE Male | DN25KF | DN25KF | DN25KF | DN25KF |
| Order No. for EU/US/UK-Plug | 900101-E/U/UK | 900103-E/U/UK | 900025-E/U/UK | 900035-E/U/UK | 900111-E/U/UK | 900112-E/U/UK |

Rotary Vane Vacuum Pumps

Accessories for Rotary Vane Vacuum Pumps

Filters



| Order No. | Name | Description |
|-----------|----------------------|--|
| 73502 | Exhaust filter | Noise reduction; WH-24SN / 36SN application |
| 900101-1 | Exhaust filter | Noise reduction; WH-8SN / 12SN application |
| 900111-1 | Water filter | Noise reduction; DN25KF, WH-8D / 17D application |
| 900111-1 | Filter element | WH-8D / 17D application |
| 900111-1 | Condensate separator | DN25KF, WH-8D / 17D application |
| 900111-1 | Dust filter | WH-8D / 17D application |

Flanged Joint



| Specifications | Order No. |
|----------------------------|-----------|
| DN25KF with 8 mm diameter | 168900-08 |
| DN25KF with 10 mm diameter | 168900-10 |
| DN25KF with 12 mm diameter | 168900-12 |
| DN25KF with 19 mm diameter | 168900-19 |
| DN25KF with 25 mm diameter | 168900-25 |

Highspeed Pump Oil

ChemVak highspeed oil employs a very good lubricant function, and has a high emulsion and oxidation resistance. It helps to maintain the longevity of the system and to reach a stable ultimate vacuum.



| Specifications | Order No. |
|----------------|-----------|
| 450 mL | 900100-01 |
| 5 L | 900100-02 |
| 10 L | 900100-03 |

Thick Vacuum Tubing

Thick rubber hose, which can be used in vacuum systems and usable for low evaporation pressure. Each hose has a length of 15 m.



| Inner Diameter (mm) | Thickness (mm) | Order No. |
|---------------------|----------------|-----------|
| 8 | 5 | 22690-06 |
| 10 | 9.5 | 22690-11 |
| 12 | 9.5 | 22690-13 |
| 19 | 9.5 | 22690-21 |
| 25 | 9.5 | 22690-26 |

Chemvak

Krytox High-Performance Vacuum Pump Oil

The Krytox isoflourane oil has a very high performance in comparison to other hydrocarbon or silicon based pump oils. It is very suitable for industrial purposes. Krytox vacuum pump oil provides absolutely strict control over the viscosity and steam pressure indicator and fulfills strict cleanliness requirements.

- Excellent anti-oxidation and temperature stabilization properties
- Very high chemical inertia (can only react with carbon, oxygen, and fluorine)
- Optimal radiation-resistance; no sludge formation
- Low steam pressure (10^{-7} at 20°C)
- Wide viscosity range
- High lubrication properties for up to 200°C
- High chemical compatibility with metals, plastics, and rubber.
- Availability of different capacities



Krytox LVP High-Vacuum Grease

Very stable, incombustible silicon grease, which is suitable for high-vacuum systems. In high-vacuum environments or high personal risk environments it can be used as a lubricant or sealing compound for plugs, valves, and connecting pieces. It can be used in laboratory or pilot equipment.



| Specifications | Order No. |
|----------------|-----------|
| 2 oz. | 9116-11 |
| 2 oz. | 9116-09 |

Dow Corning High Vacuum Grease (Order No.: 9230)

Dow Corning high vacuum grease provides excellent sealing properties. It can also be used as a lubricant for plugs, inlets, and glass pieces. It entails a high chemical and heat resistance. One tube contains 150g of grease.

Dual-Channel Liquid Ring Pump

Dual-Channel Liquid Ring Pump

Water gets recycled, which enables an economic use of resources

Dual-channel action for a high flow rate of up to 36 L/min, can be applied for filtration, distillation, rotary evaporation, etc.

Employs two water flow and gas suction devices as well as a check valve, and has an upstream prevention device

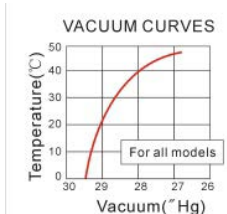
In order to prevent the raised water temperature from influencing the vacuum level, a cooling pipe can be installed

Vacuum can be regulated between 20 mmHg and 74 mmHg on the vacuum gauge

Drain valve installed

The case is made of polypropylene material, which enhances the longevity of the aspirator

In contrast to other vacuum pumps, small amounts of liquid remaining in the machine do not harm the system



Accessories

| Description | Order No. |
|--------------------------|-----------|
| Vacuum Gauge / Regulator | 900701-1 |
| VC-10 Cooling Coil | 900701-2 |
| ET-02 Aspirator | 900701-3 |
| Filter Pack | 900701-4 |



Vacuum Gauge / Regulator



VC-10 Cooling Coil



ET-02 Aspirator



Filter Pack

Technical Data

| | |
|---------------------------------------|--|
| Model | VE-11 |
| Flow Rate | 18 L/min x 2 |
| Water Tank Capacity | 9.5 L |
| Motor Power | 150 W |
| Material (Water Tank) | Polypropylene |
| Dimensions | |
| Water Tank (W x D x H in mm) | 298 x 210 x 227 |
| Case (W x D x H in mm) | 330 x 265 x 390 |
| Absorption Nozzle | 9.5 Ø x 2 |
| Overflow Nozzle | 17 Ø |
| Safety Devices | Fuse, check valve, overheat protection |
| Mains Requirements and Current | 220V AC, 60Hz, 0.7A |
| Weight (kg) | 5.7 |
| Order No. for EU/US/UK-Plug | 900701-E/U/UK |

Hand-Operated Vacuum Pump (Order No.: 167030-00)



Features

This pump is designed for simple laboratory applications and can be used in a wide range of fields

Pump entails a vacuum gauge

Pump entails a 60 cm long transparent vinyl hose, which has an inner diameter of 6 mm

Pump entails a valve which enables the user to easily add pressure without releasing the hose from the pump



Please prevent liquid from accessing the pump!
Please avoid suction of solvents and acid vapors!

Specifications

Material: PVC
Outlet pressure: approx. 21 kPa
Included: 60 cm hose

Pressure Pumps & Compressed Air Supply Systems

Pressure Pumps & Compressed Air Supply Systems

Piston motion for pressure creation

Oil-free technology

Low noise level

The P440 entails a gas tank, which enables long term gas provision.



P320
Pressure Pump



P420
Pressure Pump



P440
Compressed Air Supply System

ChemVak P440 Accessories

Control valve

Pressure gauge

Stainless steel filter

Stainless steel gas tank

Technical Data

| Model | P 320 | P 420 | P 440 | |
|---|-----------------|-----------------|-----------------|----------|
| Mains Requirements | 220-240V / 50Hz | 220-240V / 50Hz | 220-240V / 50Hz | |
| Power (W) | 85 | 125 | 125 | |
| Current (A) | 0.4 | 0.6 | 0.6 | |
| Ultimate Pressure (without the use of a filter cup) | 6.9 | 6.9 | 4.1 | |
| Ultimate Pressure (with the use of a filter cup) | 5.5 | 5.5 | 4.1 | |
| | 0 bar | 12 L/min | 25 L/min | 25 L/min |
| Max. | 1.4 bar | 9.5 L/min | 23 L/min | 23 L/min |
| Flow | 2.0 bar | 8 L/min | 18 L/min | 18 L/min |
| Rate | 2.8 bar | 8 L/min | 16 L/min | 16 L/min |
| | 4.2 bar | 3 L/min | 8 L/min | 11 L/min |
| Outlet (mm) | 8 | 10 | 8 | |
| Motor Speed (rpm) | 1400 | 1400 | 1400 | |
| Weight (kg) | 4.1 | 5.2 | 8.4 | |
| Noise Level (dB) | 50 | 60 | 50 | |
| Order No. for EU/UK-Plug | 167320-22-E/UK | 167420-22-E/UK | 167440-22-E/UK | |

Air Supply System – Pressure Pumps

Air Supply System – Pressure Pumps

Product Features:

- Small scale pressure pump with remarkably high pressure and flow rates
- Easy to transport
- Applicable for the supply of compressed air
- Long-term laboratory operations possible
- Low noise level
- Maintenance free
- Environmentally friendly
- Direct drive transmission
- Temperature protection for the motor
- Filter for dust and liquid particles
- Pressure gauge and controller
- CSA, CE, UL, PSE, FDA & TUV GS approved

Product application:

- Widely used in laboratory environments with high standards on purity levels, such as:
- Fermentation tanks and bioreactors
- Gas chromatography
- Gas purging devices
- Driving compressed air sources



Technical Data

| Model | P520 | P640 |
|-----------------------------|--|--|
| Power | 92W × 2 AC | 180W |
| Mains Requirements | 220-240V/50Hz | 220-240V/50Hz |
| Motion Type | Automatic Motion, Preset Pressure 2.8bar (on) / 4.1 bar (off) | Automatic Motion, Preset Pressure (adjustable) 4.1bar (on) / 5.5bar (off) |
| Max. Flow Rate (L/min) | 50 | 50 |
| Ultimate Pressure (bar) | 4.1 | 5.5 |
| Motor Speed (rpm) | 1400 | 1400 |
| Weight (kg) | 9.5 | 15.0 |
| Gas Tank Volume (L) | -- | 5.5 |
| Dimensions (L×W×H in mm) | 265 × 265 × 225 | 370 × 335 × 315 |
| Accessories | Straight air hoses (3 m) | |
| Gas nozzle holder | Gas container, pressure gauge, Pressure regulation valve, Liquids and dust filter, Straight air hoses (3 m) | |
| Outlet | 1/8" PS | 1/8" PS |
| Noise Level (dB) | 50 | 50 |
| Order No. for EU/UK-Plug | 167520-22-E/UK | 167640-22-E/UK |

Portable Bio-Suction Systems

BioVac Bio-Suction Systems

Bio-suction systems are especially designed for biochemical cultivation and the separation of culture fluids. It is an indispensable partner for a sterile laboratory bench and entails the following features.

Oil-Free Vacuum Pump

The System employs an oil-free vacuum pump, where no lubricant is needed and which is maintenance free. Moreover its noise level is very low.

Convenience

Suction of various liquids and a foot switch makes the system very convenient to use.

Double Overflow Protection

The waste bottle contains a floating ball and between the waste bottle and the vacuum pump a 0.2 µm PTFE disc filter is installed. These two safety measures can protect the system from liquid overflow and the liquid from entering the vacuum pump.

High-Temperature and High-Pressure Sterilization

Waste bottle and disc filter are resistant against high pressure steam sterilization.

Product Application

Waste liquid suction in cell cultivation

All kinds of waste liquid suction in laboratory environments

1. 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.

4. Stable and Durable Casing

The casing is made of ABS material, which is light, and easy to clean

5. Wire Storage Box

The system provides a storage for the foot switch wire, which makes it easy and convenient to use

Portable Bio-Suction System BioVac 240

2. High-Temperature Sterilization

Waste bottle and disc filter can resist high-temperature and high-pressure sterilization

3. Employment of an Oil-Free Vacuum Pump

The oil-free vacuum pump is maintenance-free and has a very low noise level and works stable

6. CE Certified

Safe and high quality product



Portable Bio-Suction Systems

BioVac Bio-Suction Systems

Portable
Bio-Suction System
BioVac 225



Portable
Bio-Suction System
BioVac 235



Time-saving 8-branch suction head

Applicable for all kinds of Petri dishes

Environmental friendly waste treatment

Chemvak

Technical Data

| Type | BioVac 225 | BioVac 235 | BioVac 240 |
|--------------------------|----------------|----------------|----------------|
| Vacuum Creation Method | Diaphragm Pump | Diaphragm Pump | Piston Pump |
| Power (W) | 25 | 25 | 200 |
| Ultimate Vacuum (mbar) | 100 | 100 | 80 |
| Max. Flow Rate (l/min) | 25 | 35 | 40 |
| Foot Switch | No | Yes | Yes |
| Weight (kg) | 4.3 | 6.9 | 12 |
| Dimensions (cm) | 37 × 15 × 25 | 27 × 30 × 28 | 54 × 26 × 35 |
| Order No. for EU/UK-Plug | 167225-22-E/UK | 167235-22-E/UK | 167240-22-E/UK |

Ordering Information

| Order No. | Description |
|-----------|---|
| 167225-22 | BioVac225 Bio-Suction System, AC220V / 50Hz |
| 167235-22 | BioVac235 Bio-Suction System, AC220V / 50Hz |
| 167240-22 | BioVac240 Bio-Suction System, AC220V / 50Hz |
| 167200-31 | 1000 ml waste bottle, floating ball, sterilization |
| 167200-32 | 2000 ml waste bottle, floating ball, sterilization |
| 167200-33 | 3000 ml waste bottle, floating ball, sterilization |
| 167200-35 | PTFE disc filter with 37 mm diameter, 0.2 µm pore size, applicable for BioVac 225 / 235 |
| 167200-36 | PTFE disc filter with 73 mm diameter, 0.2 µm pore size, applicable for BioVac 240 |
| 167200-37 | Liquid filtration set |
| 168021-01 | 1 m silicon tube |
| 167200-39 | Waste bottle clamp |
| 167200-40 | Foot switch for the BioVac 240 |
| 167200-41 | Universal foot switch |
| 167200-42 | Single-branch suction head |

Portable Bio-Suction Systems

Accessories for the BioVac Systems

Quick-Lock Design

The handheld controller of the bio-suction kit needs a skilled and stable hand, but the hermetic lock design makes it easy and labor-saving to operate the controller.

One Hand "Tip" Operation

The innovative 8-branch tip outlet design enables the user to conveniently operate the controller with only one hand.

Convenient Accessory Change

Accessories and the handheld controller are installed via quick-plug, which enables the user to quickly and conveniently change accessories.

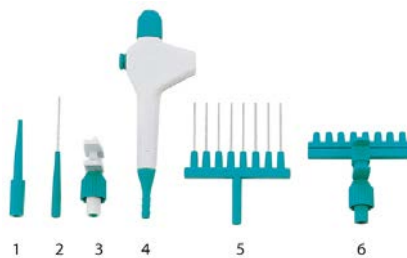
Vapor Sterilization Can Be Applied

All parts except the stand are made of POM or stainless steel, so that vapor sterilization can be applied without damaging the material.



Product Application

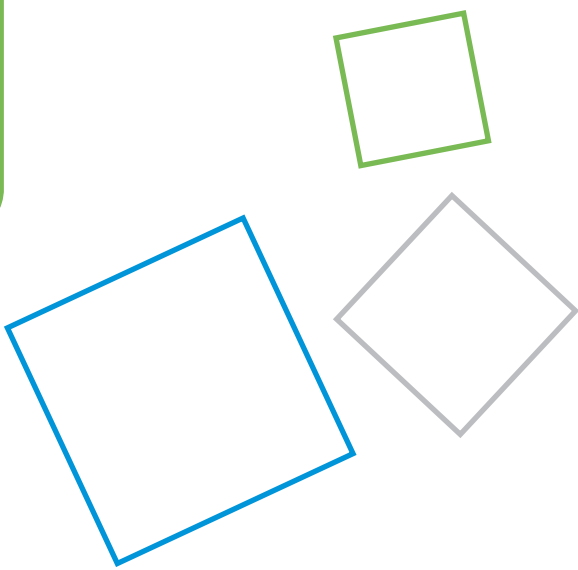
Bio-liquid suction in cell cultivation
All kinds of bio-liquid suction in laboratory environments



Product Specifications

| | |
|------------------------|------------------|
| Bio-Suction | 167200-37 |
| Operation Form | Vacuum Suction |
| Outlet Diameter | 5 mm |

| Used Accessories | Material | Quantity |
|---|------------------------------------|----------|
| 1. Single-branch suction head | POM | 1 |
| 2. Single-branch stainless steel suction head | Main component: POM Tip: SUS304 | 1 |
| 3. Single-branch "tip" plastic suction head | POM | 1 |
| 4. Handheld controller | POM | 1 |
| 5. 8-Branch stainless steel suction head | Main component: POM Tip: SUS304 | 1 |
| 6. 8-Branch "tip" plastic suction head | POM | 1 |
| 7. ABS Depositing rack | | 1 |



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