

**VWR® LABORATORY  
EQUIPMENT**



# VWR COMPETITIVE ADVANTAGES



- Five-year warranty on parts and labor for all products
- Manufactured in the USA
- All products are tested for safety and electrical with a nationally recognized agency; UL, cUL, CSA, TUV and are all 50/60 Hz. 230V items are CE marked and 50/60 Hz
- No dropship fees
- Trial program allows customer to evaluate a new product for 30 days, and if not satisfied, return the product for full credit without restocking fees. Ask your VWR Sales Representative for details
- Most products are in stock and ready to ship
- Competitive pricing
- Custom manufacturing
- Most equipment is available with a NIST-traceable certificate for temperature, speed, and time from Troemner's ISO/IEC 17025 accredited laboratory
- All digital models include a timer

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## VWR® Advanced Melting Point Apparatus

The VWR Advanced Melting Point Apparatus is used in determining the purity of a sample and is optimized to quickly and efficiently heat up to three samples at one time.

- LCD screen displays temperature, date, and time
- Audible alarm when set temperature is reached
- Large, clear viewing window with 8X magnification and white LED to illuminate samples
- On-board memory records up to 1000 tests (4 temperatures per test)
- Extendable arm allows user to adjust height and angle of viewing window
- Five-year warranty
- Available with a NIST Traceable, ISO/IEC 17025 Accredited Calibration Certificate from Troemner

### Operating Features:

**Low profile design:** Takes up minimal bench space.

**LCD display:** Easy-to-use touch pad controls with numeric keypad and LCD display for temperature, date, and time allow operator to view settings efficiently while monitoring samples through the viewing window. Provides repeatable and accurate results every time and is easily visible across lab benches.

**Viewing window with LED lamp:** Viewing window with 8X magnification is illuminated with an LED lamp and aids in viewing samples.

**Adjustable viewing angle:** For optimal viewing, the extendable arm increases the viewing window height up to 16 inches above the bench and allows the user to adjust the viewing window 180°.

**Microprocessor control:** Microprocessor-controlled units maintain precise temperature control from ambient +5°C to 400°C. Adjustments are made in 0.1°C increments.

**Programmable ramp rate:** Advanced electronics allow user to program the temperature ramp rate from 0.1°C to 10°C/minute.

**Onboard memory:** Memory records up to 1000 tests (4 temperatures per test).

**USB:** USB allows user to download test date to upload to a PC and use optional Calibration Key.

**Calibration key:** Optional Calibration Key allows user to calibrate the VWR Advanced Melting Point Apparatus to either reference standards or samples of known melting points. Additionally, the key can be used to fine tune and calibrate the oven temperature to an external temperature device such as a traceable thermometer or probe for up to 5 separate user-defined points.

**Built-in capillary tube holder:** Rear housing features a built-in holder which holds capillary tubes.

### Specifications

Temperature Range	Ambient +5°C to 400°C
Temperature Accuracy	±1% up to 400°C
Ramp Rate Range	0.1°C/min to 10°C/min
Real Time Clock	mm/dd/yy hh:mm A/P
Viewing Angle	0-180 degrees
Capacity	3 capillary tubes
Memory	1000 tests (4 temperatures per test)
Overall Dimensions (L x W x H)	14" x 7.5" x 4.25"
Ship Weight	4.5 lbs (2.0 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Advanced Digital Melting Point Apparatus	120V   5 amps   75 watts	75840-112
Advanced Digital Melting Point Apparatus	230V   5 amps   75 watts	75840-114
Advanced Digital Melting Point Apparatus with NIST-Traceable Certificate	120V   2.5 amps   75 watts	75840-014
Advanced Digital Melting Point Apparatus with NIST-Traceable Certificate	230V   2.5 amps   75 watts	75840-016



### Safety Features:

**Audible alarm:** Audible alarm will sound when the set temperature is reached.

**Indefinite heating time-out:** For additional safety, there is an indefinite heating time-out. If ramping phase is not initiated within 30 minutes of reaching the set temperature, the unit returns to standby mode and the heater turns off to prevent indefinite heating.

**Overheat protection:** To prevent overheating, there is a maximum temperature timeout. After 30 minutes at the maximum temperature, the unit reverts back to the set temperature to prevent overheating.

### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F), maximum 80% relative humidity, non-condensing.

**Applications:** High throughput, applications determining the purity of substances or identifying unknown substances.

### Ordering information:

Units include a 92" (234cm) detachable, 3-wire cord and plug (230V units are supplied with Euro-type plug). Includes capillary tube starter pack of 100 tubes closed on one end. Five-year limited warranty on parts and labor.



## VWR® Basic Melting Point Apparatus

The VWR Basic Melting Point Apparatus is primarily used in determining the purity of a sample and is optimized to quickly and efficiently heat up to three samples at one time.

- LCD screen displays temperature, date, and time
- Audible alarm when set temperature is reached
- Large, clear viewing window with 8X magnification and white LED to illuminate samples
- Five-year warranty
- Available with a NIST Traceable, ISO/IEC 17025 Accredited Calibration Certificate from Troemner

### Operating Features:

**Low profile design:** Lightweight unit takes up minimal bench space.

**LCD display:** Easy-to-use touch pad controls and LCD display for temperature, date, and time allow operator to view settings efficiently while monitoring samples through the viewing window. Provides repeatable and accurate results every time and is easily visible across lab benches.

**Viewing window with LED lamp:** Viewing window with 8X magnification offers an ergonomic viewing angle and is illuminated with an LED lamp which aids in viewing samples.

**Microprocessor control:** Microprocessor-controlled units maintain precise temperature control from ambient +5°C to 400°C. Adjustments are made in 1°C increments.

**Fixed ramp rate:** Temperature heats at a fixed ramp rate of 2°C /minute after set temperature is reached.

**Built-in capillary tube holder:** Rear housing features a built-in holder which holds capillary tubes.

### Safety Features:

**Audible alarm:** Audible alarm will sound when the set temperature is reached.

**Indefinite heating time-out:** For additional safety, there is an indefinite heating time-out. If ramping phase is not initiated within 30 minutes of reaching the set temperature, the unit returns to standby mode and the heater turns off to prevent indefinite heating.

**Overheat protection:** To prevent overheating, there is a maximum temperature timeout. After 30 minutes at the maximum temperature, the unit reverts back to the set temperature to prevent overheating.



### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F), maximum 80% relative humidity, non-condensing.

**Applications:** Determining the purity of substances or identifying unknown substances.

### Ordering information:

Units include a 92" (234cm) detachable, 3-wire cord and plug (230V units are supplied with Euro-type plug). Includes capillary tube starter pack. Five-year limited warranty on parts and labor.

RoHS certified. 120V units are TUV listed. 230V units are additionally CE marked. Calibrated Melting Point Apparatus include a Troemner ISO/IEC Accredited Calibration Certificate traceable to NIST. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Temperature Range	Ambient +5°C to 400°C
Temperature Accuracy	±1% up to 400°C
Fixed Ramp Rate from Set Temperature	2°C/min
Real Time Clock	±2%
Timer	mm/dd/yy hh:mm A/P
Capacity	3 capillary tubes
Overall Dimensions (L x W x H)	10.75" x 7.5" x 4.25"
Ship Weight	4 lbs (1.8 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Basic Digital Melting Point Apparatus	120V   5 amps   400 watts	75840-104
Basic Digital Melting Point Apparatus	230V   5 amps   400 watts	75840-106
Basic Digital Melting Point Apparatus with NIST-Traceable Certificate	120V   5 amps   400 watts	75840-108
Basic Digital Melting Point Apparatus with NIST-Traceable Certificate	230V   5 amps   400 watts	75840-110

## Melting Point Apparatus Accessories:

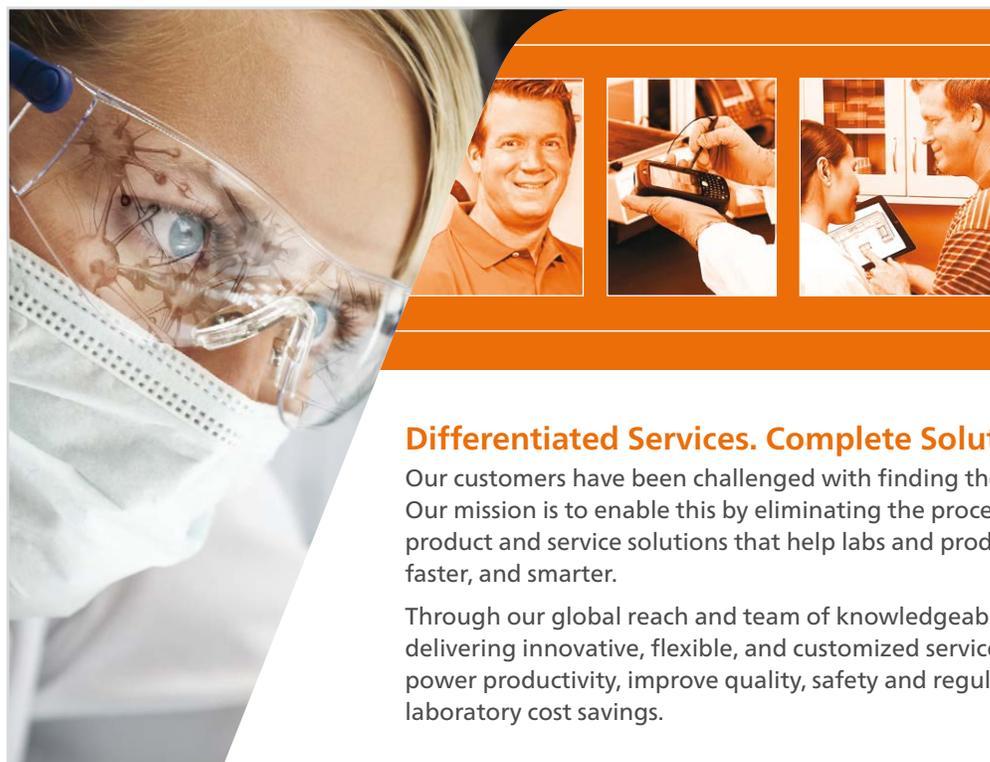
**Capillary tubes:** Case of 2000 tubes packaged in packs of 100. Tubes feature one opened end for efficient sample collection.

**Cooling block:** Cooling blocks are designed to fit in the VWR Melting Point Apparatus to rapidly cool the oven back to room temperature. Constructed of copper, the block absorbs the heat and draws the heat from the oven to provide efficient transition between tests. Ideal for use in applications that require a large amount of tests with a variety of temperatures in a short amount of time.

**Calibration USB:** Calibration USB allows for calibrating the VWR Advanced Melting Point Apparatus to fine tune the oven temperature to an external temperature device, such as a thermometer or temperature probe. Calibration USB can also be used to calibrate the unit to a reference sample with a known melting point. Up to five calibration points can be used.



Description	Cat. No.
Capillary Tubes	75840-018
Cooling Block	75840-020
Calibration USB	75840-102



## Complex Problems Require Sophisticated Solutions.

### Differentiated Services. Complete Solutions.

Our customers have been challenged with finding the answers that help improve lives. Our mission is to enable this by eliminating the process complexities and identifying product and service solutions that help labs and production facilities work better, faster, and smarter.

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**Differentiated Services** delivered by a team of people focused on your success.  
**Together, We Enable Science.**

## VWR® Open-Air Shaker Selection Guide



Model	Orbital Shaker Standard 3500	Orbital Shaker Advanced 3500	Advanced Dura-Shaker for Extreme Environments	Reciprocating Shaker Advanced 3750
Speed Range	25 to 500 rpm	15 to 500 rpm	15 to 500 rpm	20 to 300 rpm
Timer	1 to 120 minutes	1 second to 160 hours	1 second to 160 hours	1 second to 160 hours
Motion	Orbital	Orbital	Orbital	Reciprocating
Orbit	19 mm	19 mm	19 mm	Stroke: 19 mm
Maximum Weight Capacity	35 lbs	35 lbs	35 lbs	15 lbs
Audible Alarm	NO	YES	YES	YES
Load Sensor	NO	YES	YES	YES
Motor Type	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor
CO <sub>2</sub> Environment	YES	YES	YES	YES
Overload Protection	NO	YES	YES	YES
User Calibration (Speed)	NO	YES	YES	YES
RS-232 Interface	NO	YES	YES	YES
Included Tray (L x W)	11 x 13"	11 x 13"	11 x 13"	11 x 13"
Tray / Platform Options (L x W)	11 x 13", 13 x 13", 18 x 18", 18 x 24" Adjustable Platform Separatory Funnel Platform	11 x 13", 13 x 13", 18 x 18", 18 x 24" Adjustable Platform Separatory Funnel Platform	11 x 13", 13 x 13", 18 x 18", 18 x 24" Adjustable Platform Separatory Funnel Platform	11 x 13", 13 x 13", 18 x 18", 18 x 24" Adjustable Platform Separatory Funnel Platform



Model	Orbital Shaker Advanced 15000-2	Orbital Shaker Standard 1000	Mini Shaker	Mini Shaker 15
Speed Range	15 to 300 rpm	40 to 300 rpm	100 to 1200 rpm	40 to 300 rpm
Timer	1 second to 160 hours	N/A	1 second to 160 hours	1 second to 160 hours
Motion	Orbital	Orbital	Orbital	Orbital
Orbit	51 mm	15 mm	3 mm	15 mm
Maximum Weight Capacity	150 lbs	8 lbs	8 lbs	8 lbs
Audible Alarm	YES	NO	YES	YES
Load Sensor	YES	NO	NO	NO
Motor Type	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor
CO <sub>2</sub> Environment	YES	YES	YES	YES
Overload Protection	YES	NO	YES	YES
User Calibration (Speed)	YES	NO	NO	NO
RS-232 Interface	YES	NO	NO	NO
Included Tray (L x W)	24 x 36"	11.75 x 8.75"	11.75 x 8.75"	11.75 x 8.75"
Tray / Platform Options (L x W)	24 x 36" Large Vessel Carrier Platform	N/A	Adjustable Platform	Adjustable Platform

## VWR® Open-Air Shaker Selection Guide



Model	Orbital Shaker Standard 5000	Orbital Shaker Advanced 5000	Orbital Shaker Advanced 10000-1	Orbital Shaker Advanced 10000-2	Orbital Shaker Advanced 15000-1
Speed Range	25 to 500 rpm	20 to 500 rpm	15 to 500 rpm	15 to 300 rpm	15 to 500 rpm
Timer	1 to 120 minutes	1 second to 160 hours	1 second to 160 hours	1 second to 160 hours	1 second to 160 hours
Motion	Orbital	Orbital	Orbital	Orbital	Orbital
Orbit	25 mm	25 mm	25 mm	51 mm	25 mm
Maximum Weight Capacity	50 lbs	50 lbs	100 lbs	100 lbs	150 lbs
Audible Alarm	NO	YES	YES	YES	YES
Load Sensor	NO	YES	YES	YES	YES
Motor Type	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor
CO <sub>2</sub> Environment	YES	YES	YES	YES	YES
Overload Protection	NO	YES	YES	YES	YES
User Calibration (Speed)	NO	YES	YES	YES	YES
RS-232 Interface	NO	YES	YES	YES	YES
Included Tray (L x W)	18 x 24"	18 x 24"	24 x 24"	24 x 24"	24 x 36"
Tray / Platform Options (L x W)	18 x 24", 18 x 30" Adjustable Platform Large Vessel Carrier Platform	18 x 24", 18 x 30" Adjustable Platform Large Vessel Carrier Platform	24 x 24" Large Vessel Carrier Platform	24 x 24" Large Vessel Carrier Platform	24 x 36" Large Vessel Carrier Platform



Model	Microplate Shaker	High Speed Microplate Shaker Advanced	Analog Rocker	Rocking Platform Shaker	Analog 3-D Waving Platform Shaker	3-D Rotator Waver
Speed Range	100 to 1200 rpm	600 to 2500 rpm	1 to 75 rpm*	1 to 50 rpm*	1 to 75 rpm*	1 to 30 rpm*
Timer	1 second to 160 hours	1 second to 160 hours	1 minute to 120 minutes	1 second to 160 hours	1 minute to 120 minutes	1 second to 160 hours
Motion	Orbital	Orbital	Rocking	Rocking	Waving	Waving
Orbit	3 mm	3.6 mm	Tilt Angle: 0 to 15° *	Tilt Angle: 0 to 15° *	Tilt Angle: 0 to 16° *	Tilt Angle: 0 to 20° *
Maximum Weight Capacity	4 microplates / 2 micro-tube racks	48 microplates	16 lbs**	10 lbs**	5 lbs**	5 lbs**
Audible Alarm	YES	NO	NO	YES	NO	YES
Load Sensor	NO	NO	NO	NO	NO	NO
Motor Type	Brushless DC Motor	DC Motor	Stepper Motor	Stepper Motor	Stepper Motor	Stepper Motor
CO <sub>2</sub> Environment	YES	NO	NO	YES	YES	YES
Overload Protection	YES	NO	NO	YES	YES	YES
User Calibration (Speed)	NO	NO	NO	NO	NO	NO
RS-232 Interface	NO	YES	NO	NO	NO	NO
Included Tray (L x W)	11 x 7.75"	11 x 12.25"	14 x 11"	12.75 x 10"	12.75 x 10"	11.75 x 8.75"
Tray / Platform Options (L x W)	N/A	N/A	Stacking Tray	Stacking Tray	Stacking Tray	Stacking Tray

\* Maximum speed/tilt angle may vary with heavy or unbalanced loads

\*\* Centered on tray.

## VWR® Incubating Shaker Selection Guide



Model	Thermal Shake Touch	Cooling Thermal Shake Touch	Incubating 3500 Orbital Shaker	Incubating 5000I Orbital Shaker	Incubating/Refrigerating 5000IR Orbital Shaker
Temperature Range	4°C above ambient to 100°C	17°C below ambient to 100°C	Ambient +5° to 65°C	Ambient +5° to 65°C	15°C Below Ambient to 65°C
Speed Range	300 to 3000 rpm	300 to 3000 rpm	15 to 500 rpm	15 to 500 rpm	15 to 500 rpm
Timer	1 minute to 99 hours, 59 min.	1 minute to 99 hours, 59 min.	1 second to 160 hours	1 second to 160 hours	1 second to 160 hours
Motion	Orbital	Orbital	Orbital	Orbital	Orbital
Orbit	3 mm	3 mm	19 mm	25 mm	25 mm
Maximum Weight Capacity	1 Block	1 Block	35 lbs	50 lbs	50 lbs
Audible Alarm	YES	YES	YES	YES	YES
Load Sensor	NO	NO	YES	YES	YES
Drive System	N/A	N/A	Triple Eccentric	Triple Eccentric	Triple Eccentric
Motor Type	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor
Set-Point Retention	YES - Displays Last Setting	YES - Displays Last Setting	YES - Displays Last Setting	YES - Displays Last Setting	YES - Displays Last Setting
Restart / Power Out	YES	YES	YES	YES	YES
Ramp to Speed	YES	YES	YES	YES	YES
Overload Protection	NO	NO	YES	YES	YES
User Calibration (Temperature)	YES	YES	YES	YES	YES
User Calibration (Speed)	NO	NO	YES	YES	YES
Interface	USB	USB	RS-232	RS-232	RS-232
Warranty	5 years	5 years	5 years	5 years	5 years
Overall Dimensions (L x W x H)	10.25 x 9.75 x 5.2"	10.25 x 9.75 x 5.2"	25.5 x 14 x 16"	32.1 x 26.6 x 23.5"	41.1 x 26.6 x 23.5"
Included Tray (L x W)	NO	NO	13 x 11"	18 x 18"	18 x 18"
Platform Options (L x W)	N/A	N/A	13 x 11"	18 x 18"	18 x 18"



### VWR Production Chemicals | complexity simplified



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**SERVICES**



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## VWR® Incubating Shaker Selection Guide



Model	Incubating Mini Shaker	Incubating Microplate Shaker	Incubating/Cooling Shaker for PCR	Incubating/Cooling Orbital Shaker	Incubating Rocking Platform Shaker	Incubating 3-D Rotator Waver
Temperature Range	Ambient +5° to 65°C	Ambient +5° to 65°C	10°C Below Ambient to 95°C	10°C Below Ambient to 65°C	Ambient +5° to 65°C	Ambient +5° to 65°C
Speed Range	100 to 1200 rpm	100 to 1200 rpm	100 to 1600 rpm	100 to 1200 rpm	1 to 50 rpm	1 to 30 rpm
Timer	1 second to 160 hours	1 second to 160 hours	up to 160 hours	1 second to 160 hours	1 second to 160 hours	1 second to 160 hours
Motion	Orbital	Orbital	Orbital	Orbital	Rocking	Waving
Orbit	3 mm	3 mm	3 mm	3 mm	Tilt Angle: 0 to 15° *	Tilt Angle: 0 to 20° *
Maximum Weight Capacity	8 lbs	4 Microplates / 2 Micro-Tube Racks	2 PCR Plates	2 Microplates / 2 Modular Blocks	10 lbs**	5 lbs**
Audible Alarm	YES	YES	YES	YES	YES	YES
Load Sensor	NO	NO	NO	NO	NO	NO
Drive System	Triple Eccentric	Triple Eccentric	Triple Eccentric	Triple Eccentric	Cable	Cable
Motor Type	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor	Brushless DC Motor	Stepper Motor	Stepper Motor
Set-Point Retention	YES - Displays Last Setting	YES - Displays Last Setting	YES - Displays Last Setting	YES - Displays Last Setting	YES - Displays Last Setting	YES - Displays Last Setting
Restart / Power Out	YES	YES	YES	YES	YES	YES
Ramp to Speed	YES	YES	YES	YES	YES	YES
Overload Protection	YES	YES	YES	YES	YES	YES
User Calibration (Temperature)	YES	YES	YES	YES	NO	NO
User Calibration (Speed)	NO	NO	NO	NO	NO	NO
Interface	NO	NO	NO	NO	NO	NO
Warranty	5 years	5 years	5 years	5 years	5 years	5 years
Overall Dimensions (L x W x H)	17 x 11 x 10.7"	17 x 11 x 7.75"	17.9 x 11 x 10.5"	17.9 x 11 x 10.5"	17 x 11 x 10.5"	17 x 11 x 10.5"
Included Tray (L x W)	11 x 7.75"	11 x 7.75"	N/A	N/A	10 x 7.5"	9.25 x 7.25"
Platform Options (L x W)	N/A	N/A	N/A	N/A	N/A	N/A

\* Maximum speed/tilt angle may vary with heavy or unbalanced loads

\*\* Centered on tray.

### Chemical Tracking & Management

With the industry's leading chemical tracking and management technology, VWR CATALYST™ can make sure you know the location and usage of every chemical at your site. We provide the information you need to comply with all federal, state, and local regulations. Our programs include:

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- Procurement
- Management
- Tracking
- Staging
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- Metrics

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## VWR® Standard 3500 Orbital Shaker



- Microprocessor controls
- Continuous or timed operation
- 35 lbs weight capacity

The VWR® Standard 3500 Orbital Shaker is designed for a wide range of applications that require basic shaking control. Shaker provides reproducible motion that is evenly distributed throughout the entire surface of the tray.

### Operating Features:

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. The shaker will automatically restart after a power interruption.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**Adjustment knobs:** Basic speed and time knobs with dial settings from 1 to 10.

### Safety Features:

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Spill-resistant design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from 0 to 40°C (32 to 104°F), maximum 80% relative humidity, non-condensing.

### Applications:

Bacterial suspensions, staining/destaining, and general mixing.

### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Unit is also supplied with an 11 x 13" (27.9 x 33cm) non-skid rubber mat. Five-year limited warranty on parts and labor.



89032-092 with optional platform 89027-702 and flask clamps 57018-811 & 14215-224

### Specifications

<b>Speed Range</b>	25 to 500 rpm
<b>Timer</b>	1 minute to 120 minutes
<b>Orbit</b>	19 mm (0.75")
<b>Maximum Weight Capacity</b>	35 lbs (16 kg)
<b>Tray Material</b>	Aluminum
<b>Tray Dimensions (L x W)</b>	11 x 13" (27.9 x 33 cm)
<b>Overall Dimensions (L x W x H)</b>	16.25 x 14 x 5.75" (41.3 x 35.6 x 14.6 cm)
<b>Ship Weight</b>	49 lbs (22.2 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Standard 3500 Orbital Shaker	120V   5 amps   75 watts	89032-092
Standard 3500 Orbital Shaker	230V   2.5 amps   75 watts	89032-094

## VWR® Advanced 3500 Orbital Shaker

- LED displays for speed and time
- Patented Accu-Drive Shaking System
- Calibration mode for speed

The VWR® Advanced 3500 Orbital Shaker is designed for a wide range of applications including cell cultures that require accurate and repeatable results. The microprocessor control provides consistent uniform shaking while safely ramping to the set speed.

### Operating Features:

**Accu-Drive Shaking System:** The exclusive patented Accu-Drive Shaking System delivers exceptional speed control, accuracy, and durability. The shaking system continuously monitors shaking speed and maintains set point, even under changing loads. When unit is set to a speed above 100rpm, the speed accuracy is  $\pm 1\%$  of set speed. When set under 100rpm, speed accuracy is  $\pm 1$ rpm.

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set point and will restart if power is interrupted.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**RS-232 interface:** Provides two-way communication for data logging and unit control.

**Speed calibration mode:** Allows user to automatically recalibrate speed display.

### Safety Features:

**Load sensor:** A built-in load sensor detects unbalanced conditions and automatically reduces rpm to a safe speed to protect samples.

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Spill-resistant design:** Channels fluids away from internal components.

### Specifications

Speed Range	15 to 500 rpm
Speed Accuracy	above 100 rpm $\pm 1\%$ of set speed below 100 rpm $\pm 1$ rpm
Timer	1 second to 160 hours
Orbit	19 mm (0.75")
Maximum Weight Capacity	35 lbs (16 kg)
Tray Material	Aluminum
Tray Dimensions (L x W)	11 x 13" (27.9 x 33 cm)
Overall Dimensions (L x W x H)	16.25 x 14 x 5.75" (41.3 x 35.6 x 14.6 cm)
Ship Weight	49 lbs (22.2 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Advanced 3500 Orbital Shaker	120V   5 amps   75 watts	89032-096
Advanced 3500 Orbital Shaker	230V   2.5 amps   75 watts	89032-098
Advanced 3500 Orbital Shaker with NIST-Traceable Certificate	120V   5 amps   75 watts	10027-142
Advanced 3500 Orbital Shaker with NIST-Traceable Certificate	230V   2.5 amps   75 watts	10027-144



89032-096 with optional platform 97003-602

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, solubility studies, and extraction procedures.

### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Unit is also supplied with an 11 x 13" (27.9 x 33cm) non-skid rubber mat. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

## VWR® Advanced Dura-Shaker for Extreme Environments



- Designed for use in CO<sub>2</sub> incubators
- Can withstand extreme environments up to 100% humidity
- Remote controller magnetically attached to most incubators

The VWR® Dura-Shaker is designed for a wide range of applications including cell cultures that require CO<sub>2</sub> and humidity for optimal cell growth. The microprocessor control provides consistent uniform shaking while safely ramping to the set speed.

### Operating Features:

**Accu-Drive Shaking System:** The exclusive patented Accu-Drive Shaking System delivers exceptional speed control, accuracy, and durability. The shaking system continuously monitors shaking speed and maintains set point, even under changing loads. When unit is set to a speed above 100rpm, the speed accuracy is ±1% of set speed. When set under 100rpm, speed accuracy is ±1rpm.

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. The shaker will automatically restart after a power interruption.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**Remote Controller:** The control module is designed to sit outside of the incubator. Settings can be easily viewed or changed from outside of the incubator without disturbing the incubator's atmosphere. The thin ribbon cable is 5.5-feet long and easily passes underneath an incubator door or through incubators utility port (minimum diameter 1.2" (3cm). Controller magnetically attaches to most incubator doors or can sit on a lab bench of 1.6" (40.6mm) diameter or larger.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**RS-232 interface:** Provides two-way communication for data logging and unit control.

**Speed calibration mode:** Allows user to automatically recalibrate speed display.

### Safety Features:

**Overload protection:** Audible and visual signals will activate when system detects an obstruction.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Spill-resistant design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), up to 100% humidity.

### Applications:

Cell cultures, solubility studies, and extraction procedures.



### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Unit is also supplied with an 11 x 13" (27.9 x 33cm) non-skid rubber mat. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

<b>Speed Range</b>	15 to 500 rpm	
<b>Speed Accuracy</b>	above 100 rpm ±1% of set speed below 100 rpm ±1 rpm	
<b>Timer</b>	1 second to 160 hours	
<b>Orbit</b>	19 mm (0.75")	
<b>Maximum Weight Capacity</b>	~ 35 lbs (16 kg) at 75 rpm ~ 5 lbs (2.3 kg) at 500 rpm	
<b>Tray Material</b>	Aluminum	
<b>Tray Dimensions (L x W)</b>	13 x 11" (33 x 27.9 cm)	
<b>Overall Dimensions (L x W x H)</b>	<b>Shaker</b>	11.85 x 14 x 6.1" (30.1 x 35.6 x 15.4 cm)
	<b>Remote</b>	5.3 x 14 x 4.6" (13.5 x 35.6 x 11.6 cm)
<b>Ship Weight</b>	49 lbs (22.2 kg)	
<b>Base Net Weight</b>	45 lbs (20.4 kg)	
<b>Front Panel Net Weight</b>	1.5 lbs (0.6 kg)	

Description	Electrical (50/60 Hz)	Cat. No.
Advanced Dura-Shaker	120V   0.5 amps   30 watts	10159-960
Advanced Dura-Shaker	230V   0.3 amps   30 watts	10159-962
Advanced Dura-Shaker with NIST-Traceable Certificate	120V   0.5 amps   30 watts	10159-964
Advanced Dura-Shaker with NIST-Traceable Certificate	230V   0.3 amps   30 watts	10159-966

## VWR® Advanced 3750 Reciprocating Shaker



- LED displays for speed and time
- Exceptional speed control, accuracy, and durability
- Calibration mode for speed

The VWR® Advanced 3750 Reciprocating Shaker is designed for a wide range of applications including cell cultures that require accurate and repeatable results. The microprocessor control provides consistent uniform shaking while safely ramping to the set speed.

### Operating Features:

The shaking system continuously monitors shaking speed and maintains set point, even under changing loads. When unit is set to a speed above 100rpm, the speed accuracy is  $\pm 1\%$  of set speed. When set under 100rpm, speed accuracy is  $\pm 1$ rpm.

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set point and will restart if power is interrupted.

**Single-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**RS-232 interface:** Provides two-way communication for data logging and unit control.

**Speed calibration mode:** Allows user to automatically recalibrate speed display.

### Safety Features:

**Load sensor:** A built-in load sensor detects unbalanced conditions and automatically reduces rpm to a safe speed to protect samples.

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Spill-resistant design:** Channels fluids away from internal components.



97007-742 with optional platform 97003-632

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, solubility studies, and extraction procedures.

### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Unit is also supplied with an 11 x 13" (27.9 x 33cm) non-skid rubber mat. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Speed Range	20 to 300 rpm
Speed Accuracy	above 100 rpm $\pm 1\%$ of set speed below 100 rpm $\pm 1$ rpm
Timer	1 second to 160 hours
Stroke	19 mm (0.75")
Maximum Weight Capacity	15 lbs (6.8 kg)
Tray Material	Aluminum
Tray Dimensions (L x W)	11 x 13" (27.9 x 33 cm)
Overall Dimensions (L x W x H)	16.25 x 14 x 5.75" (41.3 x 35.6 x 14.6 cm)
Ship Weight	49 lbs (22.2 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Advanced 3750 Reciprocating Shaker	120V   5 amps   40 watts	97007-742
Advanced 3750 Reciprocating Shaker with NIST-Traceable Certificate	120V   5 amps   40 watts	10027-166
Advanced 3750 Reciprocating Shaker with NIST-Traceable Certificate	230V   2.5 amps   40 watts	10027-240

## VWR® Standard 5000 Orbital Shaker

- Microprocessor controls
- Continuous or timed operation
- 50 lbs weight capacity

The VWR® Standard 5000 Orbital Shaker is designed for applications with heavy duty loads. Shaker provides reproducible motion that is evenly distributed throughout the entire surface of the tray.

### Operating Features:

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. The shaker will automatically restart after a power interruption.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**Adjustment knobs:** Basic speed and time knobs with dial settings from 1 to 10.

### Safety Features:

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Spill-resistant design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from 0 to 40°C (32 to 104°F), maximum 80% relative humidity, non-condensing.

### Applications:

Bacterial suspensions, staining/destaining, and general mixing.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Units are also supplied with an 18 x 24" (45.7 x 61cm) non-skid rubber mat. Five-year limited warranty on parts and labor.



89032-100 with optional platform 97003-604

### Specifications

Speed Range	25 to 500 rpm
Timer	1 minute to 120 minutes
Orbit	25 mm (1")
Maximum Weight Capacity	50 lbs (22.7 kg)
Tray Material	Aluminum
Tray Dimensions (L x W)	18 x 24" (45.7 x 61 cm)
Overall Dimensions (L x W x H)	23.5 x 26.7 x 6" (59.7 x 67.8 x 15.2 cm)
Ship Weight	109 lbs (49.5 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Standard 5000 Orbital Shaker	120V   5 amps   75 watts	89032-100
Standard 5000 Orbital Shaker	230V   2.5 amps   75 watts	89032-102

## VWR® Advanced 5000 Orbital Shaker

- LED displays for speed and time
- Patented Accu-Drive Shaking System
- 50 lbs weight capacity

The VWR® Advanced 5000 Orbital Shaker is designed for a wide range of applications with larger or heavier loads that require accurate and repeatable results.

### Operating Features:

**Accu-Drive Shaking System:** The exclusive patented Accu-Drive Shaking System delivers exceptional speed control, accuracy, and durability. The shaking system continuously monitors shaking speed and maintains set point, even under changing loads. When unit is set to a speed above 100rpm, the speed accuracy is  $\pm 1\%$  of set speed. When set under 100rpm, speed accuracy is  $\pm 1$ rpm.

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set point and will restart if power is interrupted.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**RS-232 interface:** Provides two-way communication for data logging and unit control.

**Speed calibration mode:** Allows user to automatically recalibrate speed display.

### Safety Features:

**Load sensor:** A built-in load sensor detects unbalanced conditions and automatically reduces rpm to a safe speed to protect samples.

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Spill-resistant design:** Channels fluids away from internal components.

### Specifications

Speed Range	20 to 500 rpm
Speed Accuracy	above 100 rpm $\pm 1\%$ of set speed below 100 rpm $\pm 1$ rpm
Timer	1 second to 160 hours
Orbit	25 mm (1")
Maximum Weight Capacity	50 lbs (22.7 kg)
Tray Material	Aluminum
Tray Dimensions (L x W)	18 x 24" (45.7 x 61 cm)
Overall Dimensions (L x W x H)	23.6 x 26.7 x 6" (59.9 x 67.8 x 15.2 cm)
Ship Weight	109 lbs (49.5 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Advanced 5000 Orbital Shaker	120V   5 amps   75 watts	89032-104
Advanced 5000 Orbital Shaker	230V   2.5 amps   75 watts	89032-106
Advanced 5000 Orbital Shaker with NIST-Traceable Certificate	120V   5 amps   75 watts	10027-146
Advanced 5000 Orbital Shaker with NIST-Traceable Certificate	230V   2.5 amps   75 watts	10027-148



89032-104 with optional platform  
97003-590 and flask clamps 14215-224

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, solubility studies, and extraction procedures.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Units are also supplied with an 18 x 24" (45.7 x 61cm) non-skid rubber mat. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

## VWR® Advanced 10000 Orbital Shakers



- Patented Accu-Drive Shaking System
- 100 lbs weight capacity
- Available with either 1" or 2" orbit

VWR® Advanced 10000-1 and 10000-2 Orbital Shakers are large capacity shakers. They have a more powerful drive mechanism and larger orbits for optimal shaking of large vessels.

### Operating Features:

**Accu-Drive Shaking System:** The exclusive patented Accu-Drive Shaking System delivers exceptional speed control, accuracy, and durability. The system continuously monitors shaking speed and maintains set point, even under changing loads. When unit is set to a speed above 100rpm, the speed accuracy is  $\pm 1\%$  of set speed. When set under 100rpm, speed accuracy is  $\pm 1\text{rpm}$ .

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set point and will restart if power is interrupted.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**RS-232 interface:** Provides two-way communication for data logging and unit control.

**Speed calibration mode:** Allows user to automatically recalibrate speed display.

### Safety Features:

**Load sensor:** A built-in load sensor detects unbalanced conditions and automatically reduces rpm to a safe speed to protect samples.

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Spill-resistant design:** Channels fluids away from internal components.

### Operating Conditions:

Units can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, solubility studies, and extraction procedures.



89032-112

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Units are also supplied with a 24 x 24" (61 x 61cm) non-skid rubber mat. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Speed Range	
10000-1	15 to 500 rpm
10000-2	15 to 300 rpm
Speed Accuracy	
	above 100 rpm $\pm 1\%$ of set speed below 100 rpm $\pm 1\text{rpm}$
Timer	
	1 second to 160 hours
Orbit	
10000-1	25 mm (1")
10000-2	51 mm (2")
Maximum Weight Capacity	
	100 lbs (45.4 kg)
Tray Material	
	Aluminum
Tray Dimensions (L x W)	
	24 x 24" (61 x 61 cm)
Overall Dimensions (L x W x H)	
	28.25 x 26.7 x 7" (71.8 x 67.8 x 17.8 cm)
Ship Weight	
	200 lbs (90.8 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Advanced 10000-1 Orbital Shaker	120V   5 amps   80 watts	89032-108
Advanced 10000-2 Orbital Shaker	120V   5 amps   80 watts	89032-112
Advanced 10000-1 Orbital Shaker with NIST-Traceable Certificate	120V   5 amps   80 watts	10027-150
Advanced 10000-1 Orbital Shaker with NIST-Traceable Certificate	230V   2.5 amps   80 watts	10027-152
Advanced 10000-2 Orbital Shaker with NIST-Traceable Certificate	120V   5 amps   80 watts	10027-154
Advanced 10000-2 Orbital Shaker with NIST-Traceable Certificate	230V   2.5 amps   80 watts	10027-156

## VWR® Advanced 15000 Orbital Shakers

- Patented Accu-Drive Shaking System
- Available with either 1" or 2" orbit
- Calibration mode for speed

VWR® Advanced 15000-1 and 15000-2 Orbital Shakers are the largest capacity shakers designed for the heaviest of loads. They have the most powerful drive mechanism of all the shakers and large orbits for optimal shaking of larger vessels.

### Operating Features:

**Accu-Drive Shaking System:** The exclusive patented Accu-Drive Shaking System delivers exceptional speed control, accuracy, and durability. The system continuously monitors shaking speed and maintains set point, even under changing loads. When unit is set to a speed above 100rpm, the speed accuracy is  $\pm 1\%$  of set speed. When set under 100rpm, speed accuracy is  $\pm 1$ rpm.

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set point and will restart if power is interrupted.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**RS-232 interface:** Provides two-way communication for data logging and unit control.

**Speed calibration mode:** Allows user to automatically recalibrate speed display.

### Safety Features:

**Load sensor:** A built-in load sensor detects unbalanced conditions and automatically reduces rpm to a safe speed to protect samples.

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Spill-resistant design:** Channels fluids away from internal components.

### Operating Conditions:

Units can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, solubility studies, and extraction procedures.



89032-116 with optional platform  
97003-596 and flask clamps 14215-224

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Units are also supplied with a 24 x 36" (61 x 91cm) non-skid rubber mat. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Speed Range	
15000-1	15 to 500 rpm
15000-2	15 to 300 rpm
Speed Accuracy	
	above 100 rpm $\pm 1\%$ of set speed below 100 rpm $\pm 1$ rpm
Timer	
	1 second to 160 hours
Orbit	
15000-1	25 mm (1")
15000-2	51 mm (2")
Maximum Weight Capacity	
	150 lbs (68 kg)
Tray Material	
	Aluminum
Tray Dimensions (L x W)	
	24 x 36" (61 x 91 cm)
Overall Dimensions (L x W x H)	
	28.3 x 26.7 x 7" (71.8 x 67.8 x 17.8 cm)
Ship Weight	
	230 lbs (104.4 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Advanced 15000-1 Orbital Shaker	120V   5 amps   80 watts	89032-116
Advanced 15000-1 Orbital Shaker	230V   2.5 amps   80 watts	89032-118
Advanced 15000-2 Orbital Shaker	120V   5 amps   80 watts	89032-120
Advanced 15000-1 Orbital Shaker with NIST-Traceable Certificate	120V   5 amps   80 watts	10027-158
Advanced 15000-1 Orbital Shaker with NIST-Traceable Certificate	230V   2.5 amps   80 watts	10027-160
Advanced 15000-2 Orbital Shaker with NIST-Traceable Certificate	120V   5 amps   80 watts	10027-162
Advanced 15000-2 Orbital Shaker with NIST-Traceable Certificate	230V   2.5 amps   80 watts	10027-164

## VWR® Standard 1000 Orbital Shaker



- Variable speed microprocessor control
- Low-profile design
- 15 mm orbit

The VWR® Standard 1000 Orbital Shaker is an economical shaker designed for educational labs or basic shaking applications.

### Operating Features:

**Low-profile design:** Takes up less space and easily fits into most hoods and incubators. Cast aluminum base offers durability and added stability.

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**Adjustment knob:** Basic speed knob with dial settings from 1 to 10.

### Safety Features:

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Spill-resistant design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from 0 to 40°C (32 to 104°F), maximum 80% relative humidity, non-condensing.

### Applications:

Blotting techniques, staining/destaining, and general shaking procedures.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Units are also supplied with an 11.75 x 8.75" (29.9 x 22.2cm) non-skid rubber mat. Five-year limited warranty on parts and labor.



89032-088

### Specifications

Speed Range	40 to 300 rpm
Orbit	15 mm (0.6")
Maximum Weight Capacity	8 lbs (3.6 kg)
Tray Material	Aluminum
Tray Dimensions (L x W)	11.75 x 8.75" (29.9 x 22.2 cm)
Overall Dimensions (L x W x H)	17 x 11 x 4" (43.2 x 27.9 x 10.2 cm)
Ship Weight	25 lbs (11.3 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Standard 1000 Orbital Shaker	120V   5 amps   25 watts	89032-088
Standard 1000 Orbital Shaker	230V   2.5 amps   25 watts	89032-090

## VWR® Mini Shaker and Mini Shaker 15



- General purpose shaker
- LED displays for speed and time
- 3 mm or 15 mm orbit

VWR® Mini Shaker and Mini Shaker 15 are ideal for a wide variety of shaking applications. Tray includes a non-skid rubber mat. Remove the mat to mount a variety of optional flask clamps or test tube racks directly onto the tray.

### Operating Features:

**Low-profile design:** Takes up less space and easily fits into most hoods and incubators. Cast aluminum base offers durability and added stability.

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set point and will restart if power is interrupted.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

### Safety Features:

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero.

**Spill-resistant design:** Channels fluids away from internal components.



12620-938 with optional flask clamps 57018-811

### Operating Conditions:

Units can be run in cold rooms, incubators, and CO<sub>2</sub> environments.

**Mini Shaker:** -10 to 60°C (14 to 140°F)

**Mini Shaker 15:** -10 to 40°C (14 to 104°F)

Maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, immunoassays, and protein studies.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Units are also supplied with an 11.75 x 8.75" (29.9 x 22.2cm) non-skid rubber mat. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Speed Range	
Mini Shaker	100 to 1200 rpm
Mini Shaker 15	40 to 300 rpm
Speed Accuracy	
	±2% above 100 rpm ±2 rpm below 100 rpm
Timer	
	1 second to 160 hours
Orbit	
Mini Shaker	3 mm (0.12")
Mini Shaker 15	15 mm (0.6")
Maximum Weight Capacity	
	8 lbs (3.6 kg)
Tray Material	
	Aluminum
Tray Dimensions (L x W)	
	11.75 x 8.75" (29.9 x 22.2 cm)
Overall Dimensions (L x W x H)	
	17 x 11 x 4" (43.2 x 27.9 x 10.2 cm)
Ship Weight	
	25 lbs (11.3 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Mini Shaker	120V   5 amps   25 watts	12620-938
Mini Shaker	230V   5 amps   25 watts	12620-940
Mini Shaker 15	120V   5 amps   25 watts	97109-890
Mini Shaker 15	230V   5 amps   25 watts	97109-892
Mini Shaker with NIST-Traceable Certificate	120V   5 amps   25 watts	10027-116
Mini Shaker with NIST-Traceable Certificate	230V   5 amps   25 watts	10027-118
Mini Shaker 15 with NIST-Traceable Certificate	120V   5 amps   25 watts	10027-202
Mini Shaker 15 with NIST-Traceable Certificate	230V   5 amps   25 watts	10027-204

## VWR® Microplate Shaker

- Holds up to four microplates or two micro-tube racks
- Accepts deep well plates
- Timer with audible alarm



The VWR® Microplate Shaker is ideal for immunoassays and general microplate shaking, and is designed to be used in a variety of environmental conditions.

### Operating Features:

**Low-profile design:** Takes up less space and easily fits into most hoods and incubators. Cast aluminum base offers durability and added stability.

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set point and will restart if power is interrupted.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.



12620-926

### Safety Features:

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero.

**Spill-resistant design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

ELISA assays and DNA studies.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

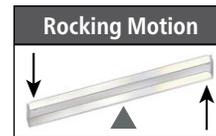
<b>Speed Range</b>	100 to 1200 rpm
<b>Speed Accuracy</b>	±2%
<b>Timer</b>	1 second to 160 hours
<b>Orbit</b>	3 mm (0.12")
<b>Maximum Weight Capacity</b>	4 microplates or 2 micro-tube racks
<b>Tray Material</b>	Aluminum
<b>Tray Dimensions (L x W)</b>	11 x 7.75" (27.9 x 19.7 cm)
<b>Overall Dimensions (L x W x H)</b>	17 x 11 x 4" (43.2 x 27.9 x 10.2 cm)
<b>Ship Weight</b>	25 lbs (11.3 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Microplate Shaker	120V   5 amps   25 watts	12620-926
Microplate Shaker	230V   5 amps   25 watts	12620-928
Microplate Shaker with NIST-Traceable Certificate	120V   5 amps   25 watts	10027-120
Microplate Shaker with NIST-Traceable Certificate	230V   5 amps   25 watts	10027-122

## VWR® Analog Rocker

- Variable control for speed, tilt, and time
- 16 lbs capacity
- Two-tier model doubles workable capacity

The VWR® Analog Rocking Shaker is an easy and economical option for all of your rocking needs. The rocking shaker is ideal for cell culture and blotting applications and is designed to be used in a variety of environmental conditions. Rocker is supplied with a 14 x 11" (35.6 x 27.9cm) non-skid rubber mat.



### Operating Features:

**Low-profile design:** Takes up less bench space and fits in most hoods and incubators. Two-tier option increases the capacity with the same footprint and provides a 3.5" (8.9cm) clearance between platforms. Cast aluminum base offers durability and added stability.

**Microprocessor control:** The microprocessor control provides tilt adjustment which allows user to easily change rocking angle from 0 to 15° while unit is operating. Smooth speed control with low-speed rocking motion.

**Independent control knobs:** Independent control knobs for speed, tilt, and time allow for easy adjustments.

### Safety Features:

**Overload protection:** Audible signal will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Timer:** Timer will automatically stop rocking motion when timer reaches zero.

**Spill-resistant design:** Channels fluids away from internal components.



### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Staining and destaining gels, hybridization procedures, hematology, and blotting techniques.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230V units are supplied with a Euro-type plug). Units are also supplied with a 14 x 11" (35.6 x 27.9cm) non-skid rubber mat. Two-tier models include a second tray, non-skid mat and hardware.

#### Specifications

Speed Range	1 to 75 rpm*	
Tilt Angle	0 to 15°*	
Timer	1 minute to 120 minutes	
Maximum Weight Capacity	16 lbs (7.3 kg)**	
Tray Material	Aluminum	
Tray Dimensions (L x W)	14 x 11" (35.6 x 27.9 cm)	
Overall Dimensions (L x W x H)	1 Tier	17 x 11 x 5" (43.2 x 27.9 x 12.7cm)
	2 Tier	17 x 11 x 9" (43.2 x 27.9 x 22.9cm)
Ship Weight	15.5 lbs (7 kg)	

\* Maximum speed/tilt angle may vary with heavy or unbalanced loads.

\*\* Centered on tray.

Description	Electrical (50/60 Hz)	Cat. No.
Analog Rocker - One Tier	120V   0.125 amps   15 watts	10127-872
Analog Rocker - One Tier	230V   0.065 amps   15 watts	10127-874
Analog Rocker - Two Tier	120V   0.125 amps   15 watts	10127-876
Analog Rocker - Two Tier	230V   0.065 amps   15 watts	10127-724

## VWR® Rocking Platform Shaker

- Electronic tilt adjustment from 0 to 15° while unit is operating
- Displays for speed, tilt angle, and time
- Timer with audible alarm

The VWR® Rocking Platform Shaker is ideal for cell culture work and is designed to be used in a variety of environmental conditions.

### Operating Features:

**Low-profile design:** Takes up less space and easily fits into most hoods and incubators. Cast aluminum base offers durability and added stability.

**Microprocessor control:** The microprocessor control provides electronic tilt-angle adjustment which allows user to easily adjust rocking angle from 0 to 15° while unit is operating. Precise speed control provides smooth, low-speed rocking motion down to 1rpm.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed, tilt angle, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

### Safety Features:

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero.

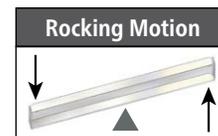
**Spill-resistant design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Staining and destaining gels, hybridization procedures, hematology, and blotting techniques.



12620-906

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro -type plug). Units are also supplied with a 12.75 x 10" (32.4 x 25.4cm) non-skid rubber mat. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Speed Range	1 to 50 rpm*
Speed Accuracy	±1 rpm
Tilt Angle	0 to 15° *
Timer	1 second to 160 hours
Maximum Weight Capacity	10 lbs (4.5 kg)**
Tray Material	Aluminum
Tray Dimensions (L x W)	12.75 x 10" (32.4 x 25.4 cm)
Overall Dimensions (L x W x H)	17 x 11 x 5" (43.2 x 27.9 x 12.7 cm)
Ship Weight	15.5 lbs (7 kg)

\* Maximum speed/tilt angle may vary with heavy or unbalanced loads.

\*\* Centered on tray.

Description	Electrical (50/60 Hz)	Cat. No.
Rocking Platform Shaker	120V   5 amps   25 watts	12620-906
Rocking Platform Shaker	230V   5 amps   25 watts	12620-908
Rocking Platform Shaker with NIST-Traceable Certificate	120V   5 amps   25 watts	10027-104
Rocking Platform Shaker with NIST-Traceable Certificate	230V   5 amps   25 watts	10027-106

## VWR® Analog 3-D Waving Platform Shaker



- Variable control for speed, tilt, and time
- 5 lbs capacity
- Five-year warranty on parts and labor

VWR® Analog 3-D Waving Platform Shakers are an easy and economical option for all of your waving needs. Ideal for cell culture and blotting applications, and is designed to be used in a variety of environmental conditions.

### Operating Features:

**Low-profile design:** Takes up less bench space and fits in most hoods and incubators. Cast aluminum base offers durability and added stability.

**Microprocessor control:** Provides tilt adjustment which allows user to easily change waving angle from 0 to 16° while unit is operating. Smooth speed control with low-speed waving motion.

Independent control knobs for speed, tilt, and time allow for easy adjustments.

### Safety Features:

**Overload protection:** Audible signal will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Timer:** If engaged, will automatically stop waving motion when timer reaches zero.

**Spill-resistant design:** Channels fluids away from internal components



10811-240

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.

### Applications:

Staining and destaining gels, hybridization procedures, hematology, and blotting techniques.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230V units are supplied with a Euro-type plug). Units are also supplied with a 14 x 11" (35.6 x 27.9cm) non-skid rubber mat. Five-year limited warranty on parts and labor. TUV listed. 230V units are CE marked.

### Specifications

<b>Speed Range</b>	1 to 75 rpm*
<b>Tilt Angle</b>	0 to 16° *
<b>Timer</b>	1 minute to 120 minutes
<b>Maximum Weight Capacity</b>	5 lbs (2.3 kg)**
<b>Tray Material</b>	Aluminum
<b>Tray Dimensions (L x W)</b>	14 x 11" (35.6 x 27.9 cm)
<b>Overall Dimensions (L x W x H)</b>	17 x 11 x 6" (43.2 x 27.9 x 15.2 cm)
<b>Ship Weight</b>	15.5 lbs (7 kg)

\* Maximum speed/tilt angle may vary with heavy or unbalanced loads.

\*\* Centered on tray.

Description	Electrical (50/60 Hz)	Cat. No.
Analog 3-D Waving Platform Shaker	120V   0.125 amps   15 watts	10811-240
Analog 3-D Waving Platform Shaker	230V   0.065 amps   15 watts	10811-242
Dimpled Mat	-	10127-728

## VWR® 3-D Rotator Waver

- Electronic tilt adjustment from 0 to 20° while unit is operating
- Displays for speed, tilt angle, and time
- Timer with audible alarm

The VWR® 3-D Rotator Waver provides precise speed control and a smooth, low-foaming, three-dimensional “wave” motion. Ideal for use in a wide range of laboratory applications and designed to be used in a variety of environmental conditions. Tray includes a non-skid rubber mat that is suitable for holding Petri dishes.

### Operating Features:

**Low-profile design:** Takes up less space and easily fits into most hoods and incubators. Cast aluminum base offers durability and added stability.

**Microprocessor control:** The microprocessor control provides electronic tilt-angle adjustment which allows user to easily adjust waving angle from 0 to 20° while unit is operating. Precise speed control provides smooth, low-speed waving motion down to 1rpm.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed, tilt angle, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last settings, even after power has been turned off.

### Safety Features:

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

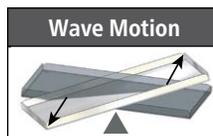
**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero.

**Spill-resistant design:** Channels fluids away from internal components.

### Operating Conditions:

Unit can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 60°C (14 to 140°F), maximum 80% relative humidity, non-condensing.



12620-916

### Applications:

Blood samples, DNA extractions, blotting techniques, and general mixing of various size tubes.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Units are also supplied with an 11.75 x 8.75" (29.9 x 22.2cm) non-skid rubber mat. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Speed Range	1 to 30 rpm*
Speed Accuracy	±1 rpm
Tilt Angle	0 to 20° *
Timer	1 second to 160 hours
Maximum Weight Capacity	5 lbs (2.3 kg)**
Tray Material	Aluminum
Tray Dimensions (L x W)	11.75 x 8.75" (29.9 x 22.2 cm)
Overall Dimensions (L x W x H)	17 x 11 x 6" (43.2 x 27.9 x 15.2 cm)
Ship Weight	16 lbs (7.3 kg)

\* Maximum speed/tilt angle may vary with heavy or unbalanced loads.

\*\* Centered on tray.

Description	Electrical (50/60 Hz)	Cat. No.
3-D Rotator Waver	120V   5 amps   25 watts	12620-916
3-D Rotator Waver	230V   5 amps   25 watts	12620-918
3-D Rotator Waver with NIST-Traceable Certificate	120V   5 amps   25 watts	10027-108
3-D Rotator Waver with NIST-Traceable Certificate	230V   5 amps   25 watts	10027-110

## VWR® Advanced High-Speed Microplate Shaker



- Programmable pulse feature
- Shakes traditional or deep-well microplates
- Shakes up to 48 microplates at one time

The VWR® Advanced High-Speed Microplate Shakers handle shaking for difficult applications. These units operate at up to 2500rpm while holding deep-well blocks and small diameter test tubes no taller than 5" (12.7cm).

Advanced High-Speed Microplate Shakers have variable speed control from 600 to 2500rpm.

### Operating Features:

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Programmable "pulsing" feature:** Enhances shaking action and allows user to program the unit to stop and start in a wide range of intervals.

**RS-232 interface:** Provides two-way communication for data logging and unit control.

### Operating Conditions:

Unit can be run in cold rooms and incubators from 4 to 40°C (39 to 104°F), 20% to 80% relative humidity, non-condensing.

### Applications:

Emulsifications and cell lysing.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.



13500-890

### Specifications

<b>Speed Range</b>	600 to 2500 rpm
<b>Timer</b>	1 second to 160 hours
<b>Orbit</b>	3.6 mm (0.14")
<b>Maximum Weight Capacity</b>	48 microplates or up to 7 lbs (3.2 kg)
<b>Tray Material</b>	Aluminum
<b>Tray Dimensions (L x W)</b>	12.25 x 11" (31.1 x 27.9 cm)
<b>Overall Dimensions (L x W x H)</b>	15.5 x 12 x 12.8" (39.4 x 30.5 x 32.5 cm)
<b>Ship Weight</b>	50 lbs (22.7 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Advanced High Speed Microplate Shaker	120V   1 amp   120 watts	13500-890
Advanced High Speed Microplate Shaker	230V   1 amp   120 watts	14216-214
Advanced High Speed Microplate Shaker with NIST-Traceable Certificate	120V   1 amp   120 watts	10027-220
Advanced High Speed Microplate Shaker with NIST-Traceable Certificate	230V   1 amp   120 watts	10027-168

## VWR® Thermal Shake Touch



- Intuitive 4.3" color LCD touch screen
- Ability for rapid heating and high-speed shaking
- Internal memory stores five separate 5-step programs
- Supplied with 1.5mL block

The VWR® Thermal Shake Touch is designed for applications that require consistent and precise results. With heating and shaking capabilities, the VWR® Thermal Shake Touch uses interchangeable blocks to accommodate a wide variety of tubes and microplates. The easy-to-use 4.3" color LCD touch screen allows the user to save and visibly track progress through the live status bar for five user-defined programs, each with five individual steps. The unit's enhanced electronics and temperature sensor provide accurate, dependable temperature settings across the operating range.

### Operating Features:

**Low-profile design:** The low-profile design minimizes the unit's footprint on the bench.

**LCD touch screen:** Enables faster setting of temperature, speed, and time, which can all be viewed at once. Display features on-screen help topics with operational tips available in six languages. Touch screen is compatible with rubber gloves used in labs. USB port can transfer information to a flash drive for data logging, program storage, and software updates.

**Program control:** Program-control capabilities allow user-programmable operation for automated use and memory. Storage for five separate 5-step programs, or unlimited number of programs with the use of the USB.

**Temperature ramp rate:** Adjustable temperature ramp rate feature separately defines the heating rate in increments of 0.5°C/min.

**Single-point calibration mode:** For maximum temperature accuracy, the single-point calibration procedure allows the user to calibrate up to 6 different user-defined temperatures.

**Pulse mode feature:** The unit is equipped with a pulse mode feature ideal for quick vortex applications.

### Safety Features:

**Cool-touch housing:** Constructed from a high-quality heat- and chemical-resistant polymer. The unit's housing remains cool to the touch throughout normal operating temperatures.

**Maximum temperature limiting function:** Ensures the temperature will not exceed user-defined limits, allowing the user control of temperature sensitive samples.

**Heat caution indicator:** A hot-symbol warning light will illuminate when the temperature reaches 40°C and will remain lit until the unit is sufficiently cooled.

**Audible alarm:** In timed mode, an alarm will sound when the time reaches zero or set-point temperature is reached. Additionally, the heat function will automatically shut off if the unit recognizes an internal issue.

### Operating Conditions:

Unit can operate in conditions from 5 to 35°C (41 to 95°F), maximum 80% relative humidity, non-condensing.



89232-908

### Applications:

Cell cultures, DNA, RNA, hybridization, and protein studies.

### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Unit is also supplied with a 1.5mL block, clear rack and cover. Five-year limited warranty on parts and labor. Eppendorf® Thermomixer R® blocks are compatible on the VWR® Thermal Shake Touch.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Temperature Range	4°C above ambient to 100°C
Temperature Accuracy	±1°C between 20°C and 45°C ±2°C above 45°C
Speed Range	300 to 3000 rpm
Speed Accuracy	±2%
Timer	1 minute to 99 hours, 59 minutes
Orbit	3 mm (0.12")
Heating Rate	5°C/minute
Overall Dimensions (L x W x H)	10.25 x 9.75 x 5.2" (26 x 24.8 x 13.2 cm)
Ship Weight	17 lbs (7.7 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Thermal Shake Touch	120V   1.8 amps   215 watts	89232-908
Thermal Shake Touch with NIST-Traceable Certificate	120V   1.8 amps   215 watts	10027-174
Thermal Shake Touch with NIST-Traceable Certificate	230V   0.9 amps   210 watts	10027-176

## VWR® Cooling Thermal Shake Touch

- Intuitive 4.3" color LCD touch screen
- Ability for rapid heating, cooling, and high-speed shaking
- Internal memory stores five separate 5-step programs
- Supplied with 1.5 mL block

The VWR® Cooling Thermal Shake Touch is designed for applications that require consistent and precise results. With heating, cooling, and shaking capabilities, the VWR® Cooling Thermal Shake Touch uses interchangeable blocks to accommodate a wide variety of tubes and microplates. The easy-to-use 4.3" color LCD touch screen allows the user to save and visibly track progress through the live status bar for five user-defined programs, each with five individual steps. The unit's enhanced electronics and dual temperature sensors provide accurate, dependable temperature settings across the operating range.

### Operating Features:

**Low-profile design:** The low-profile design minimizes the unit's footprint on the bench.

**LCD touch screen:** Enables faster setting of temperature, speed and time, which can all be viewed at once. Display features on-screen help topics with operational tips available in six languages. Touch screen is compatible with rubber gloves used in labs. USB port can transfer information to a flash drive for data logging, program storage and software updates.

**Program control:** Program-control capabilities allow user-programmable operation for automated use and memory. Storage for five separate 5-step programs, or unlimited number of programs with the use of the USB.

**Temperature ramp rate:** Adjustable temperature ramp rate feature separately defines the heating and cooling rates in increments of 0.5°C/min.

**Single-point calibration mode:** For maximum temperature accuracy, the single-point calibration procedure allows the user to calibrate up to 6 different defined temperatures.

**Pulse mode feature:** The unit is equipped with a pulse mode feature ideal for quick vortex applications.

### Safety Features:

**Cool-touch housing:** Constructed from a high-quality heat- and chemical-resistant polymer. The unit's housing remains cool to the touch throughout normal operating temperatures.

**Maximum temperature limiting function:** Ensures the temperature will not exceed user-defined limits, allowing the user control of temperature sensitive samples.

**Heat caution indicator:** A hot-symbol warning will illuminate when the temperature reaches 40°C and will remain lit until the unit is sufficiently cooled.

**Audible alarm:** In timed mode, an alarm will sound when the time reaches zero or set-point temperature is reached. Additionally, the heat function will automatically shut off if the unit recognizes an internal issue.

### Operating Conditions:

Unit can operate in conditions from 5 to 35°C (41 to 95°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, DNA, RNA, hybridization, and protein studies.



89232-904

### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Unit is also supplied with a 1.5mL block, a rack and a cover. Five-year limited warranty on parts and labor. Eppendorf® Thermomixer R® blocks are compatible on the VWR® Cooling Thermal Shake Touch.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Temperature Range	17°C below ambient to 100°C
Temperature Accuracy	± 0.5°C between 20°C and 45°C ±2°C below 20°C and above 45°C
Speed Range	300 to 3000 rpm
Speed Accuracy	±2%
Timer	1 minute to 99 hours, 59 minutes
Orbit	3 mm (0.12")
Heating Rate	5°C/min
Cooling Rate	above ambient: 2-3°C/min below ambient: 0.5-1.0°C/min
Overall Dimensions (L x W x H)	10.25 x 9.75 x 5.2" (26 x 24.8 x 13.2 cm)
Ship Weight	11.9 lbs (5.4 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Cooling Thermal Shake Touch	120V   1.8 amps   215 watts	89232-904
Cooling Thermal Shake Touch	230V   0.9 amps   210 watts	89232-906
Cooling Thermal Shake Touch with NIST-Traceable Certificate	120V   1.8 amps   215 watts	10027-170
Cooling Thermal Shake Touch with NIST-Traceable Certificate	230V   0.9 amps   210 watts	10027-172



## VWR® Thermal Shake Touch Modular Blocks

### VWR® Microplate Blocks

Sample Type	No. of Wells	Well Size	Well Depth	Dimensions	Cat. No.
Microplate Thermal Block with Lid	1	3.1 x 5.1" (7.87 x 12.95 cm)	0.9" (2.3 cm)	4.7 x 6.4 x 3.0" (11.9 x 16.3 x 7.6 cm)	<b>89232-912</b>
Sample Type	No. of Wells	Well Diameter	Well Depth	Dimensions	Cat. No.
384-Well Plate Thermal Block with Lid	384	0.16" (0.4 cm)	0.32" (0.81 cm)	4.7 x 6.4 x 3.0" (11.9 x 16.3 x 7.6 cm)	<b>10810-738</b>
0.2 mL PCR Plate Thermal Block with Lid	96	0.25" (0.64 cm)	0.50" (1.27 cm)	4.7 x 6.4 x 3.0" (11.9 x 16.3 x 7.6 cm)	<b>10810-870</b>

### VWR® Tube Blocks

Sample Type	No. of Wells	Well Diameter	Well Depth	Dimensions	Cat. No.
0.5 mL Microtubes*	30	0.31" (0.79 cm)	0.97" (2.46 cm)	4.0 x 5.6 x 1.8" (10.2 x 14.2 x 4.6 cm)	<b>89232-914</b>
1.5 mL Microtubes*	24	0.44" (1.11 cm)	1.39" (3.53 cm)	4.0 x 5.6 x 2.1" (10.2 x 14.2 x 5.3 cm)	<b>89232-916</b>
2.0 mL Microtubes*	24	0.45" (1.15 cm)	1.39" (3.53 cm)	4.0 x 5.6 x 2.1" (10.2 x 14.2 x 5.3 cm)	<b>89232-918</b>
12 mm Tubes	24	0.48" (1.23 cm)	1.28" (3.25 cm)	4.0 x 5.6 x 2.2" (10.2 x 14.2 x 5.6 cm)	<b>89232-920</b>

\* Supplied with clear rack and cover

### VWR® Cryo Tube Block

Sample Type	No. of Wells	Well Diameter	Well Depth	Dimensions	Cat. No.
2.0 mL Cryo Tubes	24	0.50" (1.26 cm)	1.20" (3.05 cm)	4.0 x 5.6 x 2.2" (10.2 x 14.2 x 5.6 cm)	<b>89232-922</b>

### VWR® Conical Tube Blocks

Sample Type	No. of Wells	Well Diameter	Well Depth	Dimensions	Cat. No.
5 mL Eppendorf Tube Block	9	0.66" (1.68 cm)	1.93" (4.9 cm)	4.2 x 5.8 x 5.0" (10.7 x 14.7 x 12.7 cm)	<b>89232-924</b>
15 mL Conical Tubes	9	0.68" (1.73 cm)	4.11" (10.44 cm)	4.2 x 5.8 x 5.0" (10.7 x 14.7 x 12.7 cm)	<b>89232-924</b>
50 mL Conical Tubes	4	1.18" (3.0 cm)	3.97" (10.09 cm)	4.0 x 5.7 x 4.8" (10.2 x 14.5 x 12.2 cm)	<b>89232-926</b>

## VWR® Incubating 3500 Orbital Shaker

The VWR® Incubating 3500 Orbital Shaker offers exceptional temperature uniformity and is designed for a variety of shaking and incubating applications, such as cell cultures.

### Operating Features:

**Accu-Drive Shaking System:** The exclusive patented Accu-Drive Shaking System delivers exceptional speed control, accuracy, and durability. The system continuously monitors shaking speed and maintains set point, even under changing loads. When unit is set to a speed above 100rpm, the speed accuracy is  $\pm 1\%$  of set speed. When set under 100rpm, speed accuracy is  $\pm 1$ rpm.

**Opti-Flow Forced Ventilation System:** The exclusive patented Opti-Flow Forced Ventilation System uses twin induction fans and air deflectors to deliver exceptional temperature uniformity and stability.

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set point and will restart if power is interrupted.

**PID temperature controller:** Maintains precise temperature control from ambient +5°C to 65°C. Easy-to-use controls allow users to adjust temperature in 1°C increments. Meets ASTM E1292 specification for temperature uniformity.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed, and time allow operator to view all settings at once. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Temperature calibration mode:** Allows user to calibrate unit to an external temperature device.

**Speed calibration mode:** Allows user to automatically recalibrate speed display.

**RS-232 interface:** Provides two-way communication for data logging and unit control.

### Safety Features:

**Load sensor:** A built-in load sensor detects unbalanced conditions and automatically reduces rpm to a safe speed to protect samples.

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Overshoot protection:** Audible and visual signals will activate if temperature deviates  $\pm 1^\circ\text{C}$  from set point.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Heat caution indicator:** Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

**Spill-resistant design:** Channels fluids away from internal components.

**Polycarbonate lid:** Permits viewing of samples without disturbing internal temperature. When lid is opened, automatic shut off of the circuit will stop the shaker tray to protect operator.

### Operating Conditions:

Unit can be run in conditions from 15 to 32°C (59 to 90°F), maximum 80% relative

Description	Electrical (50/60 Hz)	Cat. No.
Incubating 3500 Orbital Shaker	120V   5 amps   450 watts	12620-946
Incubating 3500 Orbital Shaker	230V   5 amps   450 watts	12620-948
Incubating 3500 Orbital Shaker with NIST-Traceable Certificate	120V   5 amps   450 watts	10027-242
Incubating 3500 Orbital Shaker with NIST-Traceable Certificate	230V   5 amps   450 watts	10027-244



12620-946 with optional platform  
89027-702 and flask clamps 57018-822

humidity, non-condensing.

### Applications:

Cell cultures, solubility studies, bacterial suspensions, and extraction procedures.

#### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Unit is also supplied with a 13 x 11" (33 x 27.9cm) non-skid rubber mat. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature and speed ranges and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

#### Specifications

Temperature Range	Ambient +5°C to 65°C
Temperature Uniformity	$\pm 0.5^\circ\text{C}$ at 37°C
Speed Range	15 to 500 rpm
Speed Accuracy	above 100 rpm $\pm 1\%$ of set speed below 100 rpm $\pm 1$ rpm
Timer	1 second to 160 hours
Orbit	19 mm (0.75")
Maximum Weight Capacity	35 lbs (15.9 kg)
Tray Material	Aluminum
Tray Dimensions (L x W)	13 x 11" (33 x 27.9 cm)
Interior Dimensions	13.4 x 12 x 9.5" (34 x 30.5 x 24.1 cm)
Overall Dimensions (L x W x H)	25.5 x 14 x 16" (64.8 x 35.6 x 40.6 cm)
Ship Weight	83 lbs (37.7 kg)

## VWR® Incubating 5000I Orbital Shaker

- Patented Opti-Flow Forced Ventilation System
- Patented Accu-Drive Shaking System
- Calibration mode for temperature and speed

The VWR® Incubating 5000I Orbital Shakers are designed for a variety of shaking and incubating applications such as cell cultures.

### Operating features:

**Accu-Drive Shaking System:** The exclusive patented Accu-Drive Shaking System delivers exceptional speed control, accuracy, and durability. The system continuously monitors shaking speed and maintains set point, even under changing loads. When unit is set to a speed above 100rpm, the speed accuracy is ±1% of set speed. When set under 100rpm, speed accuracy is ±1rpm.

**Opti-Flow Forced Ventilation System:** The exclusive patented Opti-Flow Forced Ventilation System uses twin induction fans and air deflectors to deliver exceptional temperature uniformity and stability.

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set point and will restart if power is interrupted.

**PID temperature controller:** Maintains precise temperature control from ambient +5°C to 65°C. Easy-to-use controls allow user to adjust temperature in 1°C increments.

**Triple-eccentric drive:** Permanently lubricated bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. The timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last settings, even after power has been turned off.

**Temperature calibration mode:** Allows user to calibrate unit to an external temperature device.

**Speed calibration mode:** Allows user to automatically recalibrate speed display.

**RS-232 Interface:** Provides two-way communication for data logging and unit control.

### Safety features:

**Load sensor:** A built-in load sensor detects unbalanced conditions and automatically reduces rpm to a safe speed, or stops unit, to protect samples.

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Overshoot protection:** Unit will shut down and activate audible and visual alarms if temperature deviates ±1°C from set point.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Polycarbonate lid:** Permits viewing of samples without disturbing internal temperature. When lid is opened, automatic shut off of the circuit will stop the shaker tray to protect operator.

**Spill-resistant design:** Channels fluids away from internal components.



97009-890



**Heat caution indicator:** Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

### Operating Conditions:

Units can be run in conditions from 15 to 32°C (59 to 90°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, solubility studies, bacterial suspensions, and extraction procedures.

### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Unit is also supplied with a non-skid rubber mat that fits the 18 x 18" (45.7 x 45.7cm) tray. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature and speed ranges and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Temperature Range	Ambient +5°C to 65°C
Temperature Uniformity	±0.5°C at 37°C
Speed Range	15 to 500 rpm
Speed Accuracy	above 100 rpm ±1% of set speed below 100 rpm ±1rpm
Timer	1 second to 160 hours
Orbit	25 mm (1")
Maximum Weight Capacity	50 lbs (22.7 kg)
Tray Material	Aluminum
Tray Dimensions (L x W)	18 x 18" (45.7 x 45.7 cm)
Interior Dimensions	20.6 x 24.8 x 17" (52.3 x 62.9 x 43.18 cm)
Overall Dimensions (L x W x H)	32.1 x 26.6 x 23.5" (81.5 x 67.5 x 59.6 cm)
Ship Weight	228 lbs (103.4 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Incubating 5000I Orbital Shaker	120V   8 amps   800 watts	97009-890
Incubating 5000I Orbital Shaker with NIST-Traceable Certificate	120V   8 amps   800 watts	10027-258
Incubating 5000I Orbital Shaker with NIST-Traceable Certificate	230V   8 amps   800 watts	10027-214

## VWR® Incubating/Refrigerating 5000IR Orbital Shaker

- Patented Opti-Flow Forced Ventilation System
- Patented Accu-Drive Shaking System
- Calibration mode for temperature and speed

The VWR® Incubating/Refrigerating 5000IR Orbital Shakers are designed for a variety of shaking and incubating applications such as cell cultures.

### Operating features:

**Accu-Drive Shaking System:** The exclusive patented Accu-Drive Shaking System delivers exceptional speed control, accuracy, and durability. The system continuously monitors shaking speed and maintains set point, even under changing loads. When unit is set to a speed above 100rpm, the speed accuracy is  $\pm 1\%$  of set speed. When set under 100rpm, speed accuracy is  $\pm 1$ rpm.

**Opti-Flow Forced Ventilation System:** The exclusive patented Opti-Flow Forced Ventilation System uses a powerful fan and air deflectors to deliver exceptional temperature uniformity and stability.

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set point and will restart if power is interrupted.

**PID temperature controller:** Maintains precise temperature control from 15°C below ambient to 65°C. Easy-to-use controls allow user to adjust temperature in 1°C increments.

**Triple-eccentric drive:** Permanently lubricated bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. The timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last settings, even after power has been turned off.

**Temperature calibration mode:** Allows user to calibrate unit to an external temperature device.

**Speed calibration mode:** Allows user to automatically recalibrate speed display.

**RS-232 Interface:** Provides two-way communication for data logging and unit control.

### Safety features:

**Load sensor:** A built-in load sensor detects unbalanced conditions and automatically reduces rpm to a safe speed, or stops unit, to protect samples.

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Overshoot protection:** Unit will shut down and activate audible and visual alarms if temperature deviates  $\pm 1^\circ\text{C}$  from set point.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Polycarbonate lid:** Permits viewing of samples without disturbing internal temperature. When lid is opened, automatic shut off of the circuit will stop the shaker tray to protect operator.

**Spill-resistant design:** Channels fluids away from internal components.



97009-894

**Heat caution indicator:** Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

### Operating Conditions:

Units can be run in conditions from 15 to 32°C (59 to 90°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, solubility studies, bacterial suspensions, and extraction procedures.

### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Unit is also supplied with a non-skid rubber mat that fits the 18 x 18" (45.7 x 45.7cm) tray. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature and speed ranges and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

<b>Temperature Range</b>	15°C below ambient to 65°C
<b>Temperature Uniformity</b>	$\pm 0.5^\circ\text{C}$ at 37°C
<b>Speed Range</b>	15 to 500 rpm
<b>Speed Accuracy</b>	above 100 rpm $\pm 1\%$ of set speed below 100 rpm $\pm 1$ rpm
<b>Timer</b>	1 second to 160 hours
<b>Orbit</b>	25 mm (1")
<b>Maximum Weight Capacity</b>	50 lbs (22.7 kg)
<b>Tray Material</b>	Aluminum
<b>Tray Dimensions (L x W)</b>	18 x 18" (45.7 x 45.7 cm)
<b>Interior Dimensions</b>	20.6 x 24.8 x 17" (52.3 x 62.9 x 43.18cm)
<b>Overall Dimensions (L x W x H)</b>	41.1 x 26.6 x 23.5" (104.4 x 67.5 x 59.6cm)
<b>Ship Weight</b>	295 lbs (133.8 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Incubating/Refrigerating 5000IR Orbital Shaker	120V   10 amps   800 watts	97009-894
Incubating/Refrigerating 5000IR Orbital Shaker	230V   10 amps   800 watts	97009-896
Incubating/Refrigerating 5000IR Orbital Shaker with NIST-Traceable Certificate	120V   10 amps   800 watts	10027-216
Incubating/Refrigerating 5000IR Orbital Shaker with NIST-Traceable Certificate	230V   10 amps   800 watts	10027-218

## VWR® Incubating Mini Shaker

- LED displays for temperature, speed, and time
- Timer with audible alarm
- Calibration mode for temperature

The VWR® Incubating Mini Shakers are designed to heat and shake a variety of samples.

### Operating Features:

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set point and will restart if power is interrupted.

**PID temperature controller:** Maintains precise temperature control from ambient +5°C to 65°C. Easy-to-use controls allow users to adjust temperature in 1°C increments.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Temperature calibration mode:** Allows user to calibrate unit to an external temperature device.

### Safety Features:

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero.

**Heat caution indicator:** Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

**Spill-resistant design:** Channels fluids away from internal components.

**Polycarbonate lid:** Permits viewing of samples without disturbing internal temperature.



12620-942

### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell cultures, bacterial suspensions, and hybridizations.

### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature and speed ranges and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Temperature Range	Ambient +5°C to 65°C
Temperature Uniformity	±0.5°C at 37°C
Speed Range	100 to 1200 rpm
Speed Accuracy	±2% of set speed
Timer	1 second to 160 hours
Orbit	3 mm (0.12")
Maximum Weight Capacity	8 lbs (3.6 kg)
Tray Material	Aluminum
Tray Dimensions (L x W)	11 x 7.75" (27.9 x 19.7 cm)
Interior Dimensions (L x W x H)	11.3 x 8.3 x 5.7" (28.7 x 21.1 x 14.5 cm)
Overall Dimensions (L x W x H)	17 x 11 x 10.7" (43.2 x 27.9 x 27 cm)
Ship Weight	30 lbs (13.6 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Incubating Mini Shaker	120V   5 amps   400 watts	12620-942
Incubating Mini Shaker	230V   5 amps   400 watts	12620-944
Incubating Mini Shaker with NIST-Traceable Certificate	120V   5 amps   400 watts	10027-124
Incubating Mini Shaker with NIST-Traceable Certificate	230V   5 amps   400 watts	10027-126

## VWR® Incubating Microplate Shaker

- LED displays for temperature, speed, and time
- Timer with audible alarm
- Available with opaque lid for light-sensitive samples

The VWR® Incubating Microplate Shakers are optimized for shaking microplates, deep-well plates, or micro-tubes.

### Operating Features:

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set point and will restart if power is interrupted.

**PID temperature controller:** Maintains precise temperature control from ambient +5°C to 65°C. Easy-to-use controls allow users to adjust temperature in 1°C increments.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Temperature calibration mode:** Allows user to calibrate unit to an external temperature device.

### Safety Features:

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero.

**Heat caution indicator:** Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

**Spill-resistant design:** Channels fluids away from internal components.

### Specifications

Temperature Range	Ambient +5°C to 65°C
Temperature Uniformity	±0.5°C at 37°C
Speed Range	100 to 1200 rpm
Speed Accuracy	±2%
Timer	1 second to 160 hours
Orbit	3 mm (0.12")
Maximum Weight Capacity	4 microplates or 2 micro-tube racks
Tray Material	Aluminum
Tray Dimensions (L x W)	11 x 7.75" (27.9 x 19.7 cm)
Overall Dimensions (L x W x H)	17 x 11 x 7.75" (43.2 x 27.9 x 19.7 cm)
Ship Weight	30 lbs (13.6 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Incubating Microplate Shaker	120V   5 amps   400 watts	12620-930
Incubating Microplate Shaker	230V   5 amps   400 watts	12620-932
Incubating Microplate Shaker with Opaque Lid	120V   5 amps   400 watts	97043-606
Incubating Microplate Shaker with Opaque Lid	230V   5 amps   400 watts	97043-608
Incubating Microplate Shaker with NIST-Traceable Certificate	120V   5 amps   400 watts	10027-128
Incubating Microplate Shaker with NIST-Traceable Certificate	230V   5 amps   400 watts	10027-130
Incubating Microplate Shaker with Opaque Lid with NIST-Traceable Certificate	120V   5 amps   400 watts	10027-132
Incubating Microplate Shaker with Opaque Lid with NIST-Traceable Certificate	230V   5 amps   400 watts	10027-134



12620-930

**Polycarbonate lid:** Clear lid permits viewing of samples without disturbing internal temperature. Opaque lid prohibits light exposure to light sensitive samples.

### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F), maximum 80% relative humidity, non-condensing.

### Applications:

Immunoassays and hybridizations.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature and speed ranges and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

## VWR® Incubating/Cooling Orbital Shaker for PCR

- Heats to 95°C and cools to 10°C below ambient
- 3 modes of operation: standard, pre-programmed, user programmable
- Holds 2 PCR plates in precisely machined blocks

The VWR® Incubating/Cooling Orbital Shaker for PCR has a higher temperature and speed range than most comparable models in the marketplace. Designed for assays that benefit from highly precise temperature control and shaking speed, this heating/cooling unit accommodates up to two standard SBS PCR plates simultaneously.

### Operating Features:

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. In standard mode, microprocessor will display last set point and will restart if power is interrupted.

**PID temperature controller:** Maintains precise temperature control from 10°C below ambient to 95°C. Easy-to-use controls allow users to adjust temperature in 1°C increments.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. In standard mode, display will show last used settings, even after power has been turned off.

**3 modes of operation:** Standard mode allows unit to run at user-defined temperature, speed, or time, or continuously. Pre-programmed profile mode has preset settings for temperature, temperature change ramp rates, time, and speeds. The user-programmable mode allows the user to define multiple programs for temperature, temperature change ramp rates, time, and speed.

**Temperature calibration mode:** Allows user to calibrate unit to an external temperature device.

### Safety Features:

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero.

**Heat caution indicator:** Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

**Spill-resistant design:** Channels fluids away from internal components.

**Polycarbonate lid:** Permits viewing of samples without disturbing internal temperature.

**Custom vibration-dampening feet:** Reduces vibration transmitted to bench or counter top.

### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F).



97027-346

### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug (if a 230V plug is required, please request at time of order). Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature and speed ranges and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Temperature Range	
Standard Mode	10°C below ambient to 95°C
User-Programmable Mode	10°C below ambient to 95°C
Pre-Programmed Mode	45°C to 68°C
Temperature Uniformity	±0.5°C at 37°C
Speed Range using Microplates	
Standard Mode	100 to 1600 rpm
User-Programmable Mode	100 to 1600 rpm
Pre-Programmed Mode	1400 rpm
Speed Accuracy	±2% up to 999 rpm ±5% 1000-1600 rpm
Timer	up to 160 hours in 1 minute increments
Orbit	3 mm (0.12")
Maximum Weight Capacity	2 PCR Plates
Overall Dimensions (L x W x H)	17.9 x 11 x 10.5" (45.5 x 27.9 x 26.7 cm)
Ship Weight	34 lbs (15.4 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Incubating/Cooling Orbital Shaker for PCR 120V/230V	120V   2 amp   200 watts 230V   1 amp   200 watts	97027-346
Incubating/Cooling Orbital Shaker for PCR 120V/230V with NIST-Traceable Certificate	120V   2 amp   200 watts 230V   1 amp   200 watts	10027-140

## VWR® Incubating/Cooling Orbital Shaker

- Heats to 65°C and cools to 10°C below ambient
- LED displays for temperature, speed, and time
- Calibration mode for temperature

The VWR® Incubating/Cooling Orbital Shaker is microplate-ready without the need for any additional accessories. Optional modular blocks can accommodate microtubes, centrifuge tubes, vials, or culture tubes. Unit holds microplates or modular blocks with a 5" (12.7cm) tall interior capacity. Ideal for analyses that requires a stable, controlled temperature.

### Operating Features:

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform shaking action. Microprocessor will display last set point and will restart if power is interrupted.

**PID temperature controller:** Maintains precise temperature control from 10°C below ambient to 65°C. Easy-to-use controls allow users to adjust temperature in 1°C increments.

**Triple-eccentric drive:** Permanently lubricated ball bearings and maintenance-free, brushless DC motor provide reliable service and continuous duty operation.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Temperature calibration mode:** Allows user to calibrate unit to an external temperature device.

### Safety Features:

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero. Alarm has optional mute function which can be set from the touch pad control.

**Heat caution indicator:** Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

**Spill-resistant design:** Channels fluids away from internal components.

### Specifications

Temperature Range	10°C below ambient to 65°C
Temperature Uniformity	± 0.5°C at 37°C
Speed Range using Microplates	100 to 1200 rpm
Speed Range using Modular Blocks	100 to 600 rpm
Speed Accuracy	±2%
Timer	1 second to 160 hours
Orbit	3 mm (0.12")
Maximum Weight Capacity	2 microplates or 2 modular blocks
Overall Dimensions (L x W x H)	17.9 x 11 x 10.5" (45.5 x 27.9 x 26.7cm)
Ship Weight	34 lbs (15.4 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Incubating/Cooling Orbital Shaker	120V   2 amps   200 watts	12620-934
Incubating/Cooling Orbital Shaker	230V   1 amps   200 watts	12620-936
Incubating/Cooling Orbital Shaker with NIST-Traceable Certificate	120V   2 amps   200 watts	10027-136
Incubating/Cooling Orbital Shaker with NIST-Traceable Certificate	230V   1 amps   200 watts	10027-138



12620-934 with optional modular blocks 13259-254 and 13259-130

**Polycarbonate lid:** Permits viewing of samples without disturbing internal temperature.

### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F), maximum 80% relative humidity, non-condensing.

### Applications:

Cell and bacterial cultures, hybridizations, and enzyme reactions.

### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Units are also supplied with an adapter bracket to hold optional modular blocks. See pages 74-76 for block options. Five-year limited warranty on parts and labor.

**Optional NIST-Traceable Calibration Certificate** provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature and speed ranges and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

Plates



Tubes



Vials



## VWR® Incubating/Cooling Orbital Shaker Modular Blocks

### Modular Blocks

VWR® Modular Blocks are constructed from a solid anodized aluminum block. The close contact of tubes-to-block-walls allow for maximum temperature transfer.

**Block dimensions (L x W x H):** 3.75 x 3 x 2" (9.5 x 7.6 x 5.1 cm)

### Applications:

Cell cultures, hybridizations, and extraction procedures.

**VWR modular blocks also fit in the VWR® Dry Block Heaters.**

**Constructed of anodized aluminum, this material is ideal for its temperature conducting and corrosion-resistant properties. Color of block may vary.**

## Microcentrifuge Tube Blocks

Single block.



Sample Type	No. of Wells	Well Dia.	Well Depth	Cat. No.
0.5 mL Tube	30	7.9 mm	27.6 mm	13259-000
1.5 mL Tube	20	11.1 mm	39.1 mm	13259-286
2 mL Tube	20	11.5 mm	38.1 mm	12985-048

## Conical-Bottom Centrifuge Tube Blocks

Single block.



Sample Type	No. of Wells	Well Dia.	Well Depth	Cat. No.
15 mL Tube	12	17.1 mm	44.5 mm	13259-250
50 mL Tube	5	29 mm	47.6 mm	13259-254

## Standard Test Tube Blocks

Single block.

Sample Type	No. of Wells	Well Dia.	Well Depth	Cat. No.
6 mm Tube	30	8.3 mm	48.4 mm	13259-105
10 mm Tube	24	10.7 mm	48.4 mm	13259-107
12/13 mm Tube	20	13.9 mm	48.4 mm	13259-130



## Centrifuge Tube Combination Block

Single block. These blocks are designed for variable-sized samples.

Sample Type	No. of Wells	Well Dia.	Well Depth	Cat. No.
1.5 mL	4	11.1 mm	39.1 mm	12985-040
15 mL	3	17.1 mm	44.5 mm	
50 mL	2	29 mm	47.6 mm	



## Vial Blocks

Single block. Designed for sample/serum and scintillation vials.

Sample Type	No. of Wells	Well Dia.	Well Depth	Cat. No.
12 mm Vial	20	12.7 mm	30 mm	12621-124
15 mm Vial	20	15.8 mm	35 mm	12621-126
16 mm Vial	15	16.4 mm	45 mm	12985-066
17 mm Vial	12	17.8 mm	45 mm	12621-128
19 mm Vial	12	19.7 mm	45 mm	12621-130
21 mm Vial	9	21.7 mm	45 mm	12621-132
23 mm Vial	8	23.8 mm	45 mm	12621-134
25 mm Vial	8	25.8 mm	45 mm	12621-136
28 mm Vial	6	28.8 mm	45 mm	12621-138



## Sustainability with VWR

At VWR, we recognize that being a good corporate citizen is in the best interest of our company, our customers, and our community. Therefore, we follow the three primary goals as defined by the United Nations for sustainability: Environmental Protection, Social Impact, and Economic Growth. For more information, visit [vwr.com /sustainability](https://www.vwr.com/sustainability).



## VWR® Incubating Rocking Platform Shaker

- Electronic tilt-adjustment from 0 to 15° while unit is operating
- LED displays for temperature, speed, tilt angle, and time
- Timer with audible alarm

The VWR® Incubating Rocking Platform Shaker combines smooth rocking motion and general purpose incubation in one compact bench-top unit.

### Operating Features:

**Microprocessor control:** The microprocessor control provides electronic tilt-angle adjustment which allows user to easily adjust rocking angle from 0 to 15° while unit is operating. Precise speed control provides smooth, low-speed rocking motion down to 1rpm.

**PID temperature controller:** Maintains precise temperature control from ambient +5°C to 65°C. Easy-to-use controls allow users to adjust temperature in 1°C increments.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed, tilt angle, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

### Safety Features:

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero.

**Heat caution indicator:** Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

**Spill-resistant design:** Channels fluids away from internal components.

**Polycarbonate lid:** Permits viewing of samples without disturbing internal temperature.

### Operating Conditions:

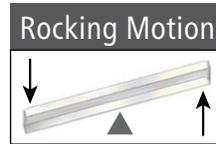
Unit can be run in conditions from 5 to 40°C (41 to 104°F), maximum 80% relative humidity, non-condensing.

### Specifications

Temperature Range	Ambient +5°C to 65°C
Temperature Uniformity	±0.5°C at 37°C
Speed Range	1 to 50 rpm*
Speed Accuracy	±1 rpm
Tilt Angle	0 to 15° *
Timer	1 second to 160 hours
Maximum Weight Capacity	10 lbs (4.5 kg)**
Tray Material	Aluminum
Tray Dimensions (L x W)	10 x 7.5" (25.4 x 19.1 cm)
Interior Dimensions (L x W x H)	10.75 x 7.75 x 3.8" (27.3 x 19.7 x 9.7 cm)
Overall Dimensions (L x W x H)	17 x 11 x 10.5" (43.2 x 27.9 x 26.7 cm)
Ship Weight	22 lbs (10 kg)

\* Maximum speed/tilt angle may vary with heavy or unbalanced loads.

\*\* Centered on tray.



### Applications:

Cell cultures, staining and destaining gels, hybridization procedures, and blotting techniques.

### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature and speed ranges and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

Description	Electrical (50/60 Hz)	Cat. No.
Incubating Rocking Platform Shaker	120V   5 amps   450 watts	12620-910
Incubating Rocking Platform Shaker with NIST-Traceable Certificate	120V   5 amps   450 watts	10027-112

## VWR® Incubating 3-D Rotator Waver

- Electronic tilt-adjustment from 0 to 20° while unit is operating
- LED displays for temperature, speed, tilt angle, and time
- Timer with audible alarm

The VWR® Incubating 3-D Rotator Waver combines the unique vertical and horizontal “wave” motion with general purpose incubation in one compact bench-top unit.

### Operating Features:

**Microprocessor control:** The microprocessor control provides electronic tilt-angle adjustment which allows user to easily adjust waving angle from 0 to 20° while unit is operating. Precise speed control provides smooth, low-speed waving motion down to 1rpm.

**PID temperature controller:** Maintains precise temperature control from ambient +5°C to 65°C. Easy-to-use controls allow users to adjust temperature in 1°C increments.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed, tilt angle, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

### Safety Features:

**Overload protection:** Audible and visual signals will activate when system detects an obstruction or overload of the tray.

**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**Audible alarm:** In timed mode, alarm will sound when the time reaches zero.

**Heat caution indicator:** Symbol illuminates when the temperature of the air in the chamber reaches 40°C and remains lit until temperature cools down.

**Spill-resistant design:** Channels fluids away from internal components.

**Polycarbonate lid:** Permits viewing of samples without disturbing internal temperature.

### Operating Conditions:

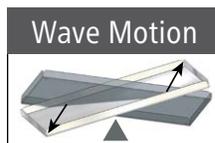
Unit can be run in conditions from 5 to 40°C (41 to 104°F), maximum 80% relative humidity, non-condensing.

### Specifications

Temperature Range	Ambient +5°C to 65°C
Temperature Uniformity	±0.5°C at 37°C
Speed Range	1 to 30 rpm*
Speed Accuracy	±1 rpm
Tilt Angle	0 to 20° *
Timer	1 second to 160 hours
Maximum Weight Capacity	5 lbs (2.3 kg)**
Tray Material	Aluminum
Tray Dimensions (L x W)	9.25 x 7.25" (23.5 x 18.4 cm)
Interior Dimensions (L x W x H)	10.75 x 7.75 x 3.4" (27.3 x 19.7 x 8.6 cm)
Overall Dimensions (L x W x H)	17 x 11 x 10.5" (43.2 x 27.9 x 26.7 cm)
Ship Weight	22 lbs (10 kg)

\* Maximum speed/tilt angle may vary with heavy or unbalanced loads.

\*\* Centered on tray.



12620-920 with optional  
26985-034

### Applications:

Cell cultures, hybridization procedures, and blotting techniques.

### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature and speed ranges and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

Description	Electrical (50/60 Hz)	Cat. No.
Incubating 3-D Rotator Waver	120V   5 amps   450 watts	12620-920
Incubating 3-D Rotator Waver with NIST-Traceable Certificate	120V   5 amps   450 watts	10027-114

## VWR® Platforms

### Universal Platforms

- Allows for mounting of flask clamps, test tube racks, and bottle clamps
- Platform slides over top of included tray and is tightened with adjustment screws
- Optional accessories screw directly into mounting point openings
- Two-tier braces allow stacking of platforms with a 10" clearance (available for select sizes\*)
- Optional non-skid rubber mat can be placed on platform for an added non-slip surface
- Constructed of type 304 stainless steel



Description	Used on Shakers	Cat. No.
11 x 13" (27.9 x 33 cm) Universal Platform	Standard/Advanced/Incubating 3500, Dura-Shaker, Advanced 3750	89027-702
13 x 13" (33 x 33 cm) Universal Platform	Standard/Advanced 3500, Dura-Shaker, Advanced 3750	97003-586
18 x 18" (45.7 x 45.7 cm) Universal Platform *	Standard/Advanced 3500, Dura-Shaker, Advanced 3750 **	97003-588
18 x 18" (45.7 x 45.7 cm) Universal Platform	Incubating 5000I/5000IR	97021-954
18 x 24" (45.7 x 61 cm) Universal Platform *	Standard/Advanced 3500, Dura-Shaker, Advanced 3750**, Standard/Advanced 5000**	97003-590
24 x 24" (61 x 61 cm) Universal Platform	Advanced 10000-1 / 10000-2	97003-592
18 x 30" (45.7 x 76.2 cm) Universal Platform *	Standard/Advanced 5000	97003-594
24 x 36" (61 x 91.4 cm) Universal Platform	Advanced 15000-1 / 15000-2	97003-596
Two-Tier Braces (set of 4)	Standard/Advanced 3500, Standard/Advanced 5000	97003-646

Description	Used on Shakers	Cat. No.
11 x 13" (27.9 x 33 cm) Rubber Mat	Standard/Advanced/Incubating 3500, Dura-Shaker, Advanced 3750	97019-050
13 x 13" (33 x 33 cm) Rubber Mat	Standard/Advanced 3500, Dura-Shaker, Advanced 3750	12985-054
18 x 18" (45.7 x 45.7 cm) Rubber Mat	Standard/Advanced 3500, Dura-Shaker, Advanced 3750	12985-056
18 x 24" (45.7 x 61 cm) Rubber Mat	Standard/Advanced 3500, Dura-Shaker, Advanced 3750, Standard/Advanced 5000	97019-052
24 x 24" (61 x 61 cm) Rubber Mat	Advanced 10000-1 / 10000-2	12985-058
24 x 36" (61 x 91.4 cm) Rubber Mat	Advanced 15000-1 / 15000-2	12985-060

### Culture Platforms

- Ideal for slow-speed applications; Petri dishes, culture flasks, and other flat-bottom, low-profile vessels
- Two-tier braces (available for both sizes) allow stacking of platforms with a 10" clearance
- Constructed of type 304 stainless steel
- Platform has a non-skid rubber surface



Description	Used on Shakers	Cat. No.
18 x 18" (45.7 x 45.7 cm) Culture Platform *	Standard/Advanced 3500*, Dura-Shaker, Advanced 3750**	97003-598
18 x 24" (45.7 x 61 cm) Culture Platform *	Standard/Advanced 3500*, Dura-Shaker, Advanced 3750**, Standard/Advanced 5000	97003-600
Two-Tier Braces (set of 4)	Standard/Advanced 3500, Dura-Shaker, Standard/Advanced 5000	97003-646

\*Two-tier ready

\*\*Stacking of platforms is not recommended for Model 3750

## VWR® Platforms

### Dedicated Platforms

- Pre-mounted flask clamps for maximum utilization of platform space for flasks of the same size
- Two-tier braces allow stacking of platforms with a 10" clearance (available for select sizes\*)
- Platform is constructed of type 304 stainless steel
- Flask clamps are constructed of PVC
- Ideal for polycarbonate flasks



Platform Size / Flask Clamps Size	Flask Capacity	Used on Shakers	Cat. No.
13 x 13" (33 x 33 cm) Dedicated Platform / 125 mL Flask Clamp	16	Standard/Advanced 3500, Dura-Shaker, Advanced 3750	97003-616
13 x 13" (33 x 33 cm) Dedicated Platform / 250 mL Flask Clamp	12	Standard/Advanced 3500, Dura-Shaker, Advanced 3750	97003-618
13 x 13" (33 x 33 cm) Dedicated Platform / 500 mL Flask Clamp	8	Standard/Advanced 3500, Dura-Shaker, Advanced 3750	97003-620
13 x 13" (33 x 33 cm) Dedicated Platform / 1 L Flask Clamp	4	Standard/Advanced 3500, Dura-Shaker, Advanced 3750	97003-622
18 x 18" (45.7 x 45.7 cm) Dedicated Platform / 125 mL Flask Clamp *	27	Standard/Advanced 3500, Dura-Shaker, Advanced 3750**	97003-624
18 x 18" (45.7 x 45.7 cm) Dedicated Platform / 250 mL Flask Clamp *	20	Standard/Advanced 3500, Dura-Shaker, Advanced 3750**	97003-626
18 x 18" (45.7 x 45.7 cm) Dedicated Platform / 500 mL Flask Clamp *	13	Standard/Advanced 3500, Dura-Shaker, Advanced 3750**	97003-628
18 x 18" (45.7 x 45.7 cm) Dedicated Platform / 1 L Flask Clamp	9	Standard/Advanced 3500, Dura-Shaker, Advanced 3750**	97003-630
Two-Tier Braces (set of 4)		Standard/Advanced 3500, Dura-Shaker	97003-632

### Adjustable Platforms

- Adjustable clamping bars accommodate various vessel types
- Stainless steel construction
- Base tray has a non-skid rubber surface



Description	Bar Size	Overall Dimensions	Net Weight	Used on Shakers	Cat. No.
2-bar Adjustable Platform	8.6" (21.8 cm)	8.6 x 11.7" (21.8 x 29.7 cm)	3.25 lbs (1.48 kg)	Mini Shaker, Mini Shaker 15	12620-964
4-bar Adjustable Platform	18" (45.7 cm)	18 x 18" (45.7 x 45.7 cm)	11 lbs (5 kg)	Standard/Advanced 3500, Dura-Shaker	97003-602
4-bar Adjustable Platform	18" (45.7 cm)	18 x 24" (45.7 x 61 cm)	20 lbs (9 kg)	Standard/Advanced 5000	97003-604

Replacement Part	Used with Platform	Cat. No.
18" (45.7 cm) adjustable bar (with mounting hardware)	97003-602, 97003-604	97003-612

\*Two-tier ready

\*\*Stacking of platforms is not recommended for Model 3750

### VWR® Large Vessel Carrier Platforms

- Ideal for large sample containers like carboys, jugs, and bottles
- High side-walls secure samples
- Heavy-duty design
- Stainless steel construction
- Base tray has a non-skid rubber surface



Description	Bar Size	Overall Dimensions (L x W x H)	Used on Shakers	Cat. No.
4-bar Large Vessel Carrier Platform	18" (45.7 cm)	30.1 x 18.1 x 13.9 (76.4 x 45.9 x 93.7 cm)	Standard/Advanced 5000	97003-606
4-bar Large Vessel Carrier Platform	24" (61 cm)	24.4 x 24.3 x 14.2 (61.9 x 61.7 x 36.0 cm)	Advanced 10000-1 / 10000-2	97003-608
5-bar Large Vessel Carrier Platform	24" (61 cm)	36.9 x 24.3 x 14.2 (93.7 x 61.7 x 36.0 cm)	Advanced 15000-1 / 15000-2	97003-610

Replacement Part	Used with Carrier	Cat. No.
18" (45.7 cm) adjustable bar (with mounting hardware)	97003-606	97003-612



## Separatory Funnel Platform

- Holds 3 funnels at once on the included 18 x 18" (45.7 x 45.7 cm) platform
- Accommodates 500 mL to 2 L separatory funnels
- Stainless steel construction
- Includes platform, clamps, and hardware to secure 3 funnels

Description	Used on Shakers	Cat. No.
Separatory Funnel Platform	Standard/Advanced 3500, Dura-Shaker, Advanced 3750	97003-632

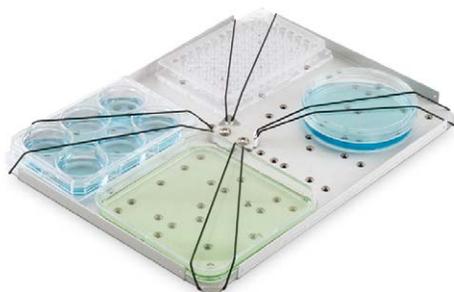


## Microplate Clamp

- Holds one standard microplate or deep-well plate
- Constructed of type 304 stainless steel

Platform Capacities for Microplate Clamps		
Platform Size	Platform Cat. No.	Microplate Clamps
11 x 13	89027-702	4
13 x 13	97003-586	6
18 x 18	97003-588	12
18 x 18	97021-954	12
18 x 24	97003-590	18
18 x 30	97003-594	21
24 x 24	97003-592	24
24 x 36	97003-596	36

Description	Used on Shakers	Cat. No.
Microplate Clamp	Standard/Advanced/Professional 3500, 5000, 10000, 15000, Dura-Shaker	97003-634



## Universal Harness

- Attaches to tray to secure low-profile plates

Description	Used on Shakers	Cat. No.
Universal Harness	Mini Shaker, Mini Shaker 15	12620-954

## Dimpled Mat

Designed to hold centrifuge tubes, vials, culture tubes, and micro-tubes securely in place. Mat can be easily removed for cleaning and transporting of tubes from bench to tray.

Description	Used on Unit	Cat. No.
Dimpled Mat, 12.75 x 10" (32.4 x 25.4 cm)	Rocking Platform Shaker	12985-030
Dimpled Mat, 11.75 x 8.75" (29.9 x 22.2 cm)	3-D Rotator Waver	12985-034
Dimpled Mat, 10 x 7.5" (25.4 x 19.1 cm)	Incubating Rocking Platform Shaker	12985-032
Dimpled Mat, 9.25 x 7.25" (23.5 x 18.4 cm)	Incubating 3-D Rotator Waver	12985-036
Dimpled Mat, 11.75 x 8.75" (29.9 x 22.2 cm)	Mini Shaker, Mini Shaker 15	12985-038
Dimpled Mat, 14 x 11" (35.6 x 27.9 cm)	Analog Rocker, Analog Waver	10127-728



## Stacking Tray

Easily attaches to the unit-included tray to add a second tier for higher capacity applications. Second-tier tray mounts 3.5" (8.9cm) above lower tray and includes a non-skid rubber mat.

Description	Used on Unit	Cat. No.
Stacking Tray, 12.75 x 10" (32.4 x 25.4 cm)	Rocking Platform Shaker	12620-914
Stacking Tray, 11.75 x 8.75" (29.9 x 22.2 cm)	3-D Rotator Waver	12620-924
Stacking Tray, 14 x 11" (35.6 x 27.9 cm)	Analog Rocker	10127-726



## Dilution Cup Tray

- Constructed of type 304 stainless steel
- Holds 24 x 28mm dilution vials

Description	Used on Unit	Cat. No.
Dilution Rack Tray, 6.9 x 10" (17.5 x 25.4 cm)	Mini Shaker, Mini Shaker 15	97009-898



## Micro-Tube Rack

Optional 1.5 to 2mL Micro-Tube Rack attaches to tray to hold up to seventy 1.5mL or 2mL micro-tubes. Tray can accommodate up to two micro-tube racks.

Description	Used on Unit	Cat. No.
1.5 to 2 mL Micro-Tube Rack	Mini Shaker, Mini Shaker 15, Microplate Shaker, Incubating Microplate Shaker	12620-952



## VWR® Flask Clamps

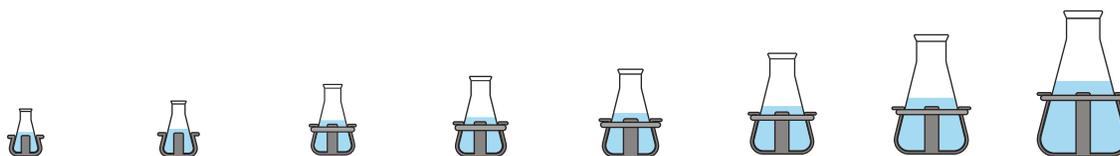
### Stainless Steel Flask Clamps

- Designed to hold Erlenmeyer flasks from 10 mL to 6 L
- Constructed of type 302 and 304 stainless steel
- Includes hardware for easy attachment to platforms
- Flask clamps 50 mL and higher are supplied with a spring to hold flask in place
- 2.8 L clamp is designed to hold a Fernbach flask
- Media bottle clamps feature the same details as flask clamps

### Erlenmeyer Flask Clamps



### Media Bottle Flask Clamps



10 mL Erlenmeyer Flask Clamp	25 mL Erlenmeyer Flask Clamp	50 mL Erlenmeyer Flask Clamp	125 mL Erlenmeyer Flask Clamp	250 mL Erlenmeyer Flask Clamp	500 mL Erlenmeyer Flask Clamp	1 L Erlenmeyer Flask Clamp	2 L Erlenmeyer Flask Clamp
Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
57018-775	57018-786	57018-797	57018-800	57018-811	57018-822	14215-224	14215-226

Tray or Platform	Number of Flask Clamps per Tray or Platform							
11.75 x 8.75" (29.9 x 22.2 cm)								
Mini Shaker, Mini Shaker 15 *	35	20	15	12	6	4	N/A	N/A
11 x 7.75" (27.9 x 19.7 cm)								
Incubating Mini Shaker *	35	20	12	8	5	N/A	N/A	N/A
11 x 13" (27.9 x 33 cm)								
Standard/Advanced 3500 **	60	25	13	10	9	7	4	N/A
Incubating 3500	60	25	13	10	9	7	4	N/A
Advanced 3750	60	25	13	10	9	7	4	N/A
13 x 13" (33 x 33 cm)								
Standard/Advanced 3500 **	60	30	15	12	12	8	4	3
Advanced 3750	60	30	15	12	12	8	4	3
18 x 18" (45.7 x 45.7 cm)								
Standard/Advanced 3500 **	113	64	32	20	20	13	8	5
Advanced 3750	113	64	32	20	20	13	8	5
5000I / 5000IR	113	64	32	20	20	13	8	5
18 x 24" (45.7 x 61 cm)								
Standard/Advanced 3500 **	158	88	44	28	28	20	12	6
Advanced 3750	158	88	44	28	28	20	12	6
Standard/Advanced 5000	158	88	44	28	28	20	12	6
18 x 30" (45.7 x 76.2 cm)								
Standard/Advanced 5000	203	112	56	36	36	26	15	8
24 x 24" (61 x 61 cm)								
Advanced 10000-1/10000-2	221	121	61	41	41	25	16	9
24 x 36" (61 x 91.4 cm)								
Advanced 15000-1/15000-2	336	160	94	61	64	40	24	14

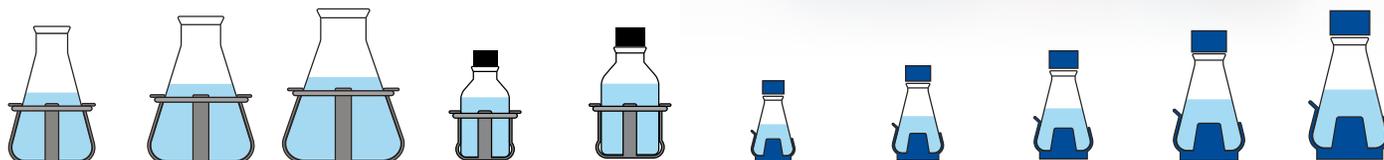
\* All units require an accessory/platform for mounting flask clamps or test tube racks with the exception of the Mini Shaker, Mini Shaker 15 and Incubating Mini Shaker

\*\* Dura-Shaker platform options, see Standard/Advanced 3500

## VWR® Flask Clamps

### PVC Flask Clamps

- Autoclavable
- One piece, molded PVC construction
- Will not scratch or mark flask like other clamps
- Includes hardware for easy attachment to platforms
- Attaching and removing of flasks is quick and easy



2.8 L & 3 L Erlenmeyer Flask Clamp	4 L Erlenmeyer Flask Clamp	5 L & 6 L Erlenmeyer Flask Clamp	500 mL Media Bottle Clamp	1 L Media Bottle Clamp	125 mL Erlenmeyer Flask Clamp	250 mL Erlenmeyer Flask Clamp	500 mL Erlenmeyer Flask Clamp	1 L Erlenmeyer Flask Clamp	2 L Erlenmeyer Flask Clamp
Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	PVC	PVC	PVC	PVC	PVC
<b>2.8 L-14215-228</b> <b>3 L-10789-250</b>	<b>14215-230</b>	<b>5 L-75804-636</b> <b>6 L-14215-232</b>	<b>14215-236</b>	<b>14215-238</b>	<b>97003-576</b>	<b>97003-578</b>	<b>97003-580</b>	<b>97003-582</b>	<b>97003-584</b>

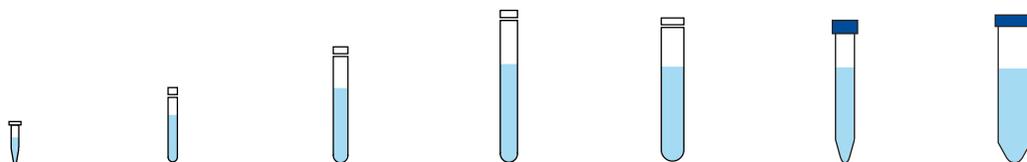
#### Number of Flask Clamps per Tray or Platform

N/A	N/A	N/A	N/A	N/A	3	N/A	12	6	4	N/A	N/A
N/A	8	4	N/A	N/A	N/A						
N/A	N/A	N/A	N/A	N/A	5	2	10	8	5	2	N/A
N/A	N/A	N/A	N/A	N/A	5	2	10	8	5	2	N/A
N/A	N/A	N/A	N/A	N/A	5	2	10	8	5	2	N/A
1	1	1	1	1	6	5	12	10	6	4	3
1	1	1	1	1	6	5	12	10	6	4	3
2	2	4	4	2	16	10	20	18	12	8	4
2	2	4	4	2	16	10	20	18	12	8	4
2	2	4	4	2	16	10	20	18	12	8	4
3	3	4	4	3	20	13	28	25	16	10	6
3	3	4	4	3	20	13	28	25	16	10	6
3	3	4	4	3	20	13	28	25	16	10	6
3	4	6	6	4	28	18	36	33	20	14	8
5	5	5	5	5	25	18	41	35	24	13	9
7	7	9	7	7	40	30	61	55	38	22	13

## VWR® Test Tube Racks

### Test Tube Racks - Half Size, Stationary

- PVC-coated steel
- Includes hardware for easy attachment to platforms
- 5L x 7W x 4H" (12.7 x 17.8 x 10.2 cm) / Micro-Tube Rack: 1.7H" (4.3 cm)



1.5 to 2 mL Micro-Tube Rack Half Size, Stationary Tube Capacity = 70	10 to 13 mm Test Tube Rack Half Size, Stationary Tube Capacity = 63	14 to 16 mm Test Tube Rack Half Size, Stationary Tube Capacity = 48	18 to 20 mm Test Tube Rack Half Size, Stationary Tube Capacity = 35	22 to 25 mm Test Tube Rack Half Size, Stationary Tube Capacity = 24	15 mL Centrifuge Tube Rack Half Size, Stationary Tube Capacity = 35	50 mL Centrifuge Tube Rack Half Size, Stationary Tube Capacity = 12
12620-952	12620-956	12620-958	12620-960	12620-962	11301-134	11301-136

Tray or Platform	Number of Test Tube Racks per Tray or Platform						
11.75 x 8.75" (29.9 x 22.2 cm)							
Mini Shaker, Mini Shaker 15 *	2	2	2	2	2	2	2
11 x 7.75" (27.9 x 19.7 cm)							
Incubating Mini Shaker *	2	1	1	N/A	N/A	1	1
Microplate Shaker *	2	N/A	N/A	N/A	N/A	N/A	N/A
Incubating Microplate Shaker *	2	N/A	N/A	N/A	N/A	N/A	N/A
11 x 13" (27.9 x 33 cm)							
Standard/Advanced 3500 **	2	2	2	2	2	2	2
Incubating 3500	2	2	2	2	2	2	2
Advanced 3750	2	2	2	2	2	2	2
13 x 13" (33 x 33 cm)							
Standard/Advanced 3500 **	2	2	2	2	2	2	2
Advanced 3750	2	2	2	2	2	2	2
18 x 18" (45.7 x 45.7 cm)							
Standard/Advanced 3500 **	4	4	4	4	4	4	4
Advanced 3750	4	4	4	4	4	4	4
5000I / 5000IR	4	4	4	4	4	4	4
18 x 24" (45.7 x 61 cm)							
Standard/Advanced 3500 **	6	6	6	6	6	6	6
Advanced 3750	6	6	6	6	6	6	6
Standard/Advanced 5000	6	6	6	6	6	6	6
18 x 30" (45.7 x 76.2 cm)							
Standard/Advanced 5000	8	8	8	8	8	8	8
24 x 24" (61 x 61 cm)							
Advanced 10000-1/10000-2	8	8	8	8	8	8	8
24 x 36" (61 x 91.4 cm)							
Advanced 15000-1/15000-2	7	7	7	7	7	7	7

\* All units require an accessory/platform for mounting flask clamps or test tube racks with the exception of the Mini Shaker, Mini Shaker 15, Microplate Shaker, Incubating Mini Shaker and Incubating Microplate Shaker

\*\* Dura-Shaker platform options, see Standard/Advanced 3500

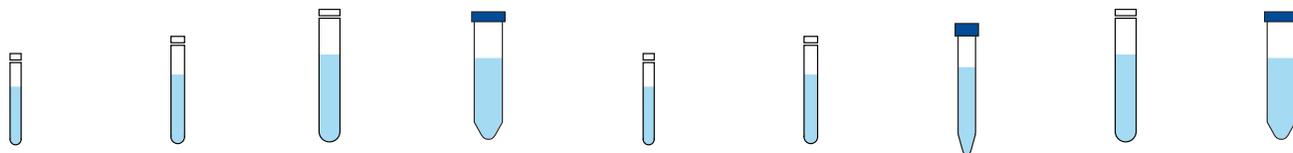
## VWR® Test Tube Racks

### Test Tube Racks - Full Size, Stationary

- PVC-coated steel
- Includes hardware for easy attachment to platforms
- 3.75L x 16.5W x 4H" (9.5 x 41.9 x 10.2 cm)

### Test Tube Racks - Full Size, Pivoting

- Adjustable angle, custom tilt
- Stainless steel holder includes removable plastic rack
- Rack is easily removed to transport from work area to shaker
- Dimensions (L x W x H)  
 Inside Rack: 5.1 x 10.8 x 3.9" (12.9 x 27.4 x 9.9 cm)  
 Outer Rack: 5 x 10.9 x 5" (12.7 x 27.6 x 12.7 cm)



10 to 14 mm Test Tube Rack Full Size, Stationary Tube Capacity = 48 <b>14215-240</b>	16 to 20 mm Test Tube Rack Full Size, Stationary Tube Capacity = 33 <b>14215-242</b>	21 to 25 mm Test Tube Rack Full Size, Stationary Tube Capacity = 21 <b>14215-244</b>	50 mL Centrifuge Tube Rack Full Size, Stationary Tube Capacity = 17 <b>12985-052</b>	13 mm Test Tube Rack Full Size, Pivoting Tube Capacity = 90 <b>97003-636</b>	16 mm Test Tube Rack Full Size, Pivoting Tube Capacity = 60 <b>97003-638</b>	20 mm Test Tube Rack Full Size, Pivoting Tube Capacity = 40 <b>97003-640</b>	25 mm Tube Rack Full Size, Pivoting Tube Capacity = 24 <b>97003-642</b>	30 mm Tube Rack Full Size, Pivoting Tube Capacity = 21 <b>97003-644</b>
<b>Number of Test Tube Racks per Tray or Platform</b>								
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	1	1	1	1	1
N/A	N/A	N/A	N/A	1	1	1	1	1
N/A	N/A	N/A	N/A	1	1	1	1	1
N/A	N/A	N/A	N/A	2	2	2	2	2
N/A	N/A	N/A	N/A	2	2	2	2	2
3	3	3	3	2	2	2	2	2
3	3	3	3	2	2	2	2	2
3	3	3	3	2	2	2	2	2
5	5	5	5	3	3	3	3	3
5	5	5	5	3	3	3	3	3
5	5	5	5	3	3	3	3	3
6	6	6	6	4	4	4	4	4
7	7	7	7	4	4	4	4	4
5	5	5	5	6	6	6	6	6

## VWR® Hotplate/Stirrer Selection Guide



Model	Hotplates, Stirrers & Hotplate Stirrers Professional	Hotplates, Stirrers & Hotplate Stirrers Advanced	Hotplates, Stirrers & Hotplate Stirrers Standard	Round Top Hotplate Stirrers Professional	Round Top Hotplate Stirrers Advanced
Top Plate Dimensions (L x W)	7 x 7", 10 x 10"	4 x 4", 7 x 7", 10 x 10"	4 x 4", 7 x 7", 10 x 10"	5.3" Diameter	5.3" Diameter
Overall Dimensions (L x W x H)	See Page 50	See Page 52	See Page 54	14.8 x 9.9 x 4.3" (37.6 x 25.1 x 10.9 cm)	14.8 x 9.9 x 4.3" (37.6 x 25.1 x 10.9 cm)
Temperature Range Ceramic Aluminum Stainless Steel	Ambient +5° to 500°C Ambient +5° to 400°C N/A	Ambient +5° to 500°C Ambient +5° to 400°C N/A	Ambient +5° to 500°C Ambient +5° to 400°C N/A	N/A N/A Ambient +5° to 400°C	N/A N/A Ambient +5° to 400°C
Temperature Stability Ceramic Aluminum Stainless Steel	±1%* ±1%* N/A	±3%** ±2%** N/A	±3%** ±2%** N/A	N/A N/A ±1%***	N/A N/A ±3%**
Speed Range	60 to 1600 rpm	60 to 1600 rpm	60 to 1600 rpm	60 to 1600 rpm	60 to 1600 rpm
Speed Stability	±2%	±2%	±2%	±2%	±2%
Timer (Digital Models)	1 second to 160 hours	N/A	N/A	1 second to 160 hours	N/A
Maximum Capacity (H <sub>2</sub> O)	2500 mL, 6000 mL	600mL, 2500mL, 6000mL	600mL, 2500mL, 6000mL	1500 mL	1500 mL
Ship Weight	See Page 50	See Page 52	See Page 54	11.7 lbs (5.3 kg)	9.4 lbs (4.3 kg)

\* Plate Control: Below 100°C ±2°C. Environmental and sample conditions permitting.

Probe Control: Below 100°C ±1°C. Environmental and sample conditions permitting.

\*\* Below 100°C ±2°C. Environmental and sample conditions permitting.

\*\*\* Below 100°C ±1°C. Environmental and sample conditions permitting.

## How to Select a Hotplate/Stirrer

Review the following points to help you select the appropriate hotplate/stirrer for your unique application.

### 1. Control types:

The Professional series also offers a closed-loop PID microprocessor for both temperature and speed control, but additionally offers electronic feedback for control of both temperature and speed. These units offer the best in accuracy and precision. A built-in timer allows for greater independence. Also included with the Professional-series Hotplates and Hotplate Stirrers is an external stainless steel temperature probe. It guarantees the utmost in sample temperature monitoring and control, delivering ±1% temperature stability and supplied with an 18" stainless steel support rod, hook connector and a thermometer/temperature probe extension clamp.

The Advanced series is very accurate and offers a closed-loop PID microprocessor for both temperature and speed which automatically stabilizes the top plate for temperature and or stirring speeds by regulating for variations in the system with regards to the original set point. Utilizing electronic user-feedback, it offers the most optimal measure for temperature control by providing greater accuracy and ease-in-use for reproducing your results.

The Basic Mini series offers an open-loop speed control and a mechanical thermostat that is not designed for exact regulation over speed or temperature. When precision is not needed these units offer an economical and reliable alternative.

### 2. Temperature needs:

Temperature uniformity refers to the consistency of the temperature across the top plate. Each top plate material has its pros and cons. Ceramic top plates are more chemical resistant, heat up very quickly, and are easy to clean. The white reflective surface aids in viewing the sample. However; ceramic tops are subject to thermal shock. Heating of metallic vessels should be avoided. The edges of a ceramic top plate may not be as hot as the center where the heating element is located. Aluminum top plates offer a more uniform heating surface, will not crack or chip but are more susceptible to corrosion and more difficult to clean.

## VWR® Hotplate/Stirrer Selection Guide



Model	Hotplates, Stirrers & Hotplate Stirrers Basic Mini	High-Volume Stirrer Standard / Advanced	Large-Capacity Stirrer Model 1000 / Model 2000 Advanced	Multi-Position Stirrer Standard / Advanced	Slow-Speed Stirrer 4 Position / 10 L Standard/Advanced	Slow-Speed Stirrer 1 Position Standard/Advanced
Top Plate Dimensions (L x W)	5 x 5"	12.5 x 11"	21.25 x 25"	12.5 x 11"	12.5 x 11"	7 x 7"
Overall Dimensions (L x W x H)	7.9 x 6 x 4.9" (20.1 x 15.2 x 12.4 cm)	17 x 11 x 4" (43.2 x 27.9 x 10.2 cm)	28.5 x 26.75 x 5.25" (72.4 x 68 x 13.3 cm)	17 x 11 x 4" (43.2 x 27.9 x 10.2 cm)	17 x 11 x 4" (43.2 x 27.9 x 10.2 cm)	14.8 x 9.9 x 4.3" (37.6 x 25.1 x 10.9 cm)
Temperature Range Ceramic Aluminum Stainless Steel	N/A to 400°C N/A	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A
Temperature Stability Ceramic Aluminum Stainless Steel	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A
Speed Range	100 to 1200 rpm	60 to 1400 rpm	100 to 1800 rpm	60 to 1400 rpm	1 to 150 rpm	1 to 150 rpm
Speed Stability	N/A	±2%	±2%	±2%	±1%	±1%
Timer (Digital Models)	N/A	1 second to 160 hours	1 second to 160 hours	1 second to 160 hours	1 second to 160 hours	1 second to 160 hours
Maximum Capacity (H <sub>2</sub> O)	1000 mL	25 L	100 L / 200 L	See Page 63	1 L / 10 L	2 L
Ship Weight	4 lbs (1.8 kg)	14.6 lbs (6.6 kg)	63 lbs (28.6 kg)	14.75 lbs (6.69 kg)	14.5 lbs (6.6 kg)	8.8 lbs (4 kg)

### How to Select a Hotplate/Stirrer

#### 3. Sample size:

The size or volume of your sample is another important factor to consider when selecting a hotplate or stirrer. Always consider the largest sample that you may be working with and look for one that can handle that capacity. The capacities listed are based on water. A viscous sample will weigh more than water.

#### 4. Viscosity:

Sample viscosity plays a role in selecting a stirrer. The magnetic coupling strength is a factor in determining which size stirrer to choose. The right drive-magnet and stir bar combination is needed to efficiently stir the sample. Variables such as sample size or weight and top plate size dictate which stirrer will work best. The stir bar size and shape, the distance between the drive magnet and the stir bar, vessel shape and size, speed and viscosity also must be considered. The more viscous the sample, the greater magnetic coupling strength needed.

## VWR® Professional Hotplates, Stirrers & Hotplate Stirrers

- Excellent temperature uniformity
- Cool-touch, chemical-resistant housing
- Includes RTD temperature-probe kit

VWR® Professional Hotplates, Stirrers, and Hotplate Stirrers are designed for applications that require exceptional accuracy, stability, and repeatability. Exclusive safety features help protect operator and sample. Enhanced microprocessor control offers an external RTD probe option that delivers superior temperature control of the sample. Stirring function, with continuous-duty motor and a powerful magnet, maintains set speed even under changing load or viscosity. Separate LED displays for temperature, speed, and time allow user to view all settings at once.

### Operating Features:

**Low-profile design:** Takes up minimal space and fits easily into fume hoods. Spill-resistant design channels fluids away from internal components.

**Microprocessor control:** Advanced electronics regulate both heating and stirring and bring samples to temperature quickly and efficiently. An internal RTD accurately measures and controls temperature. Precise speed control provides consistent stirring at all speeds. Powerful continuous-duty motor delivers dependable and reliable stirring.

**Control panel:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible from outside fume hoods or across lab benches. Shows set point and actual temperatures. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Ceramic or aluminum top plate materials:** Ceramic tops feature a chemical-resistant, reflective-white top plate surface that is easy to clean. Durable aluminum tops will not crack or chip, and provide a more even temperature distribution.

**Built-in support rod holder:** Rear housing features an off-centered, built-in support rod holder with locking knob that accepts the probe kit supplied with heating models.

**RTD probe kit:** Heating models are supplied with a probe kit which includes an 8" (20.3cm) stainless steel PT1000 RTD temperature-probe, 18" stainless steel support rod, hook connector and a thermometer/temperature-probe extension clamp.

### Safety Features:

**Cool-touch housing:** Housing is made of a heat-resistant polymer that is not only cool to the touch, but is also chemical resistant.

**Heat caution indicator:** For additional safety, a hot-symbol warning light is illuminated when heat is turned on and remains on until top plate cools down (for hotplates or hotplate stirrers).

**Stir protection:** If stirrer motor stops or fails, unit will automatically shut down heater (for hotplate stirrers).

**Speed ramping feature:** Slowly increases motor speed for improved safety and enhanced coupling. Avoids splashing, improves spin bar control, and provides excellent low-end speed control (for stirrers or hotplate stirrers).

**Maximum temperature limiting:** (Plate over temperature limit) Ensures plate temperature will never exceed user's programmed set-temperature limit, allowing for control of samples with sensitive flash points (for hotplates or hotplate stirrers).

**Audible alarm:** In timed mode, alarm will sound when time reaches zero or when unit reaches set-point temperature (for hotplates or hotplate stirrers).

**Probe protection:** If probe disengages from sample, unit will automatically shut off heater (for hotplates or hotplate stirrers).



### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F), 20% to 80% relative humidity, non-condensing.

Not recommended for use in vacuum or low-pressure environments.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230V units are supplied with Euro-type plug). Stirrers and hotplate stirrers are supplied with a 1.5" (3.8cm) PTFE-coated stir bar. Hotplates and hotplate stirrers are supplied with a probe kit which includes an 8" (20.3cm) stainless steel RTD temperature-probe, 18" stainless steel support rod, hook connector and a thermometer/temperature probe extension clamp. All units include a Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature and speed ranges and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

Replacement probes are available, see accessories on page 61.

### Specifications

Top Plate Dimensions	
7 x 7" Units	7 x 7" (17.8 x 17.8 cm)
10 x 10" Units	10 x 10" (25.4 x 25.4 cm)
Temperature Range	
Ceramic Top Plate Units	Ambient +5°C to 500°C
Aluminum Top Plate Units	Ambient +5°C to 400°C
Temperature Stability*	±1%
Speed Range	60 to 1600 rpm
Speed Stability	±2%
Timer	1 second to 160 hours
Maximum Capacity (H <sub>2</sub> O)	
7 x 7" Units	2500 mL
10 x 10" Units	6000 mL
Overall Dimensions	
7 x 7" Units	14.8 x 9.9 x 4.3" (37.6 x 25 x 10.9 cm)
10 x 10" Units	17.9 x 13 x 4.3" (45.5 x 33 x 10.9 cm)
Ship Weight	
7 x 7" Units	12 lbs (5.4 kg)
10 x 10" Units	17.4 lbs (7.9 kg)

\* Plate Control: Below 100°C ±2°C. Environmental and sample conditions permitting.

\* Probe Control: Below 100°C ±1°C. Environmental and sample conditions permitting.

Description	Top Plate Material	Electrical (50/60 Hz)			Cat. No.
<b>VWR® Professional Hotplates</b>					
7 x 7" (17.8 x 17.8 cm) Hotplate	Ceramic	120V	7.9 amps	950 watts	97042-690
7 x 7" (17.8 x 17.8 cm) Hotplate	Ceramic	230V	4.4 amps	1000 watts	97042-692
7 x 7" (17.8 x 17.8 cm) Hotplate	Aluminum	120V	7.9 amps	950 watts	97042-698
7 x 7" (17.8 x 17.8 cm) Hotplate with NIST-Traceable Certificate	Ceramic	120V	7.9 amps	950 watts	10027-246
7 x 7" (17.8 x 17.8 cm) Hotplate with NIST-Traceable Certificate	Ceramic	230V	4.4 amps	1000 watts	10027-022
7 x 7" (17.8 x 17.8 cm) Hotplate with NIST-Traceable Certificate	Aluminum	120V	7.9 amps	950 watts	10027-024
7 x 7" (17.8 x 17.8 cm) Hotplate with NIST-Traceable Certificate	Aluminum	230V	4.4 amps	1000 watts	10027-026
10 x 10" (25.4 x 25.4 cm) Hotplate	Ceramic	120V	10.8 amps	1300 watts	97042-730
10 x 10" (25.4 x 25.4 cm) Hotplate	Ceramic	230V	6.7 amps	1550 watts	97042-732
10 x 10" (25.4 x 25.4 cm) Hotplate	Aluminum	120V	10.8 amps	1300 watts	97042-738
10 x 10" (25.4 x 25.4 cm) Hotplate	Aluminum	230V	6.7 amps	1550 watts	97042-740
10 x 10" (25.4 x 25.4 cm) Hotplate with NIST-Traceable Certificate	Ceramic	120V	10.8 amps	1300 watts	10027-028
10 x 10" (25.4 x 25.4 cm) Hotplate with NIST-Traceable Certificate	Ceramic	230V	6.7 amps	1550 watts	10027-030
10 x 10" (25.4 x 25.4 cm) Hotplate with NIST-Traceable Certificate	Aluminum	120V	10.8 amps	1300 watts	10027-048
10 x 10" (25.4 x 25.4 cm) Hotplate with NIST-Traceable Certificate	Aluminum	230V	6.7 amps	1550 watts	10027-050
<b>VWR® Professional Stirrers</b>					
7 x 7" (17.8 x 17.8 cm) Stirrer	Ceramic	120V	0.4 amps	50 watts	97042-706
7 x 7" (17.8 x 17.8 cm) Stirrer	Aluminum	120V	0.4 amps	50 watts	97042-710
7 x 7" (17.8 x 17.8 cm) Stirrer	Aluminum	230V	0.2 amps	50 watts	97042-712
7 x 7" (17.8 x 17.8 cm) Stirrer with NIST-Traceable Certificate	Ceramic	120V	0.4 amps	50 watts	10027-074
7 x 7" (17.8 x 17.8 cm) Stirrer with NIST-Traceable Certificate	Ceramic	230V	0.2 amps	50 watts	10027-082
7 x 7" (17.8 x 17.8 cm) Stirrer with NIST-Traceable Certificate	Aluminum	120V	0.4 amps	50 watts	10027-084
7 x 7" (17.8 x 17.8 cm) Stirrer with NIST-Traceable Certificate	Aluminum	230V	0.2 amps	50 watts	10027-086
10 x 10" (25.4 x 25.4 cm) Stirrer	Ceramic	120V	0.4 amps	50 watts	97042-746
10 x 10" (25.4 x 25.4 cm) Stirrer	Aluminum	120V	0.4 amps	50 watts	97042-750
10 x 10" (25.4 x 25.4 cm) Stirrer with NIST-Traceable Certificate	Ceramic	120V	0.4 amps	50 watts	10027-088
10 x 10" (25.4 x 25.4 cm) Stirrer with NIST-Traceable Certificate	Ceramic	230V	0.2 amps	50 watts	10027-222
10 x 10" (25.4 x 25.4 cm) Stirrer with NIST-Traceable Certificate	Aluminum	120V	0.4 amps	50 watts	10027-032
10 x 10" (25.4 x 25.4 cm) Stirrer with NIST-Traceable Certificate	Aluminum	230V	0.2 amps	50 watts	10027-034
<b>VWR® Professional Hotplate Stirrers</b>					
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer	Ceramic	120V	8.3 amps	1000 watts	97042-714
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer	Ceramic	230V	4.6 amps	1050 watts	97042-716
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer	Aluminum	120V	8.3 amps	1000 watts	97042-722
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer	Aluminum	230V	4.6 amps	1050 watts	97042-724
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer with NIST-Traceable Certificate	Ceramic	120V	8.3 amps	1000 watts	10027-052
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer with NIST-Traceable Certificate	Ceramic	230V	4.6 amps	1050 watts	10027-054
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer with NIST-Traceable Certificate	Aluminum	120V	8.3 amps	1000 watts	10027-056
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer with NIST-Traceable Certificate	Aluminum	230V	4.6 amps	1050 watts	10027-058
10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer	Ceramic	120V	11.2 amps	1345 watts	97042-754
10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer	Ceramic	230V	7.0 amps	1600 watts	97042-756
10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer	Aluminum	120V	11.2 amps	1345 watts	97042-762
10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer with NIST-Traceable Certificate	Ceramic	120V	11.2 amps	1345 watts	10027-060
10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer with NIST-Traceable Certificate	Ceramic	230V	7.0 amps	1600 watts	10027-062
10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer with NIST-Traceable Certificate	Aluminum	120V	11.2 amps	1345 watts	10027-064
10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer with NIST-Traceable Certificate	Aluminum	230V	7.0 amps	1600 watts	10027-066

### VWRCATALYST Site Services

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## VWR® Advanced Hotplates & Hotplate Stirrers



- Excellent temperature uniformity
- Cool-touch, chemical-resistant housing
- LED display for temperature

VWR® Advanced Hotplates and Hotplate Stirrers deliver accurate and repeatable results. The units are microprocessor controlled and have an LED display for temperature. Control panel features easy-to-use controls which allow users to dial in adjustments. Rear housing features an integral support rod holder with locking knob to accept the optional support rod and clamp kit.

### Operating Features:

**Low-profile design:** Takes up minimal space and fits easily into fume hoods. Spill-resistant design channels fluids away from internal components.

**LED display:** Shows set-point temperature. Display is easy-to-read and provides repeatable and accurate results every time.

**Control panel:** Adjustment knob for temperature displays set point in LED display. Stir-control knob has rpm adjustment markings.

**Recall last temperature:** Built-in memory allows users to recall last set temperature, even when unit has been turned off.

**Microprocessor control:** Advanced electronics regulate both heating and stirring and bring samples to temperature quickly and efficiently. An internal RTD accurately measures and controls temperature. Precise speed control provides consistent stirring at all speeds. Powerful continuous-duty motor delivers dependable and reliable stirring.

**Heating capacity:** Robust heater allows heating surface to reach set point quickly.

**Ceramic or aluminum top plate materials:** Ceramic tops feature a chemical-resistant, reflective-white top plate surface that is easy to clean. Durable aluminum tops will not crack or chip, and provide a more even temperature distribution.

**Built-in support rod holder:** Rear housing features an off centered, built-in support rod holder with locking knob that accepts the optional Support Rod and Clamp Kit.

### Safety Features:

**Cool-touch housing:** Housing is made of a heat-resistant polymer that is not only cool to the touch, but is also chemical resistant.

**Heat caution indicator:** For additional safety, a hot-symbol warning light is illuminated when heat is turned on and remains on until top plate cools down (for hotplates and hotplate stirrers).

**Stir protection:** If stirrer motor stops or fails, unit will automatically shut down heater (for hotplate stirrers).

**Speed ramping feature:** Slowly increases speed for improved safety and enhanced coupling. Avoids splashing, improves spin bar control and provides excellent low-end speed control (for stirrers and hotplate stirrers).

### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F), maximum 80% relative humidity, non-condensing.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Stirrers and Hotplate Stirrers are supplied with a 1.5" (3.8cm) PTFE-coated stir bar. Five-year limited warranty on parts and labor.

**Optional Support Rod and Clamp Kit:** Kit includes 18" (45.7cm) stainless steel support rod, 3-prong medium swivel clamp, thermometer/temperature-probe extension clamp, and hook connector (see page 71).



### Specifications

Top Plate Dimensions	
4 x 4" Units	4 x 4" (10.2 x 10.2 cm)
7 x 7" Units	7 x 7" (17.8 x 17.8 cm)
10 x 10" Units	10 x 10" (25.4 x 25.4 cm)
Temperature Range	
Ceramic Top Plate Units	Ambient +5°C to 500°C
Aluminum Top Plate Units	Ambient +5°C to 400°C
Temperature Stability*	
Ceramic Top Plate Units	±3%
Aluminum Top Plate Units	±2%
Speed Range	60 to 1600 rpm
Speed Stability	±2%
Maximum Capacity (H <sub>2</sub> O)	
4 x 4" Units	600 mL
7 x 7" Units	2500 mL
10 x 10" Units	6000 mL
Overall Dimensions	
4 x 4" Units	10.8 x 6.6 x 4.3" (27.4 x 16.8 x 10.9 cm)
7 x 7" Units	14.8 x 9.9 x 4.3" (37.6 x 25 x 10.9 cm)
10 x 10" Units	17.9 x 13 x 4.3" (45.5 x 33 x 10.9 cm)
Ship Weight	
4 x 4" Units	6.2 lbs (2.8 kg)
7 x 7" Units	10.5 lbs (4.8 kg)
10 x 10" Units	15.9 lbs (7.2 kg)

\* Below 100°C ±2°C. Environmental and sample conditions permitting.

Description	Top Plate Material	Electrical (50/60 Hz)			Cat. No.
<b>VWR® Advanced Hotplates</b>					
4 x 4" (10.2 x 10.2 cm) Hotplate	Ceramic	120V	2.9 amps	350 watts	97042-578
4 x 4" (10.2 x 10.2 cm) Hotplate	Ceramic	230V	1.5 amps	350 watts	97042-580
4 x 4" (10.2 x 10.2 cm) Hotplate	Aluminum	120V	2.9 amps	350 watts	97042-582
4 x 4" (10.2 x 10.2 cm) Hotplate	Aluminum	230V	1.5 amps	350 watts	97042-584
7 x 7" (17.8 x 17.8 cm) Hotplate	Ceramic	120V	7.9 amps	950 watts	97042-618
7 x 7" (17.8 x 17.8 cm) Hotplate	Aluminum	120V	7.9 amps	950 watts	97042-622
7 x 7" (17.8 x 17.8 cm) Hotplate	Aluminum	230V	4.4 amps	1000 watts	97042-624
10 x 10" (25.4 x 25.4 cm) Hotplate	Ceramic	120V	10.8 amps	1300 watts	97042-658
10 x 10" (25.4 x 25.4 cm) Hotplate	Ceramic	230V	6.7 amps	1550 watts	97042-660
10 x 10" (25.4 x 25.4 cm) Hotplate	Aluminum	120V	10.8 amps	1300 watts	97042-662
10 x 10" (25.4 x 25.4 cm) Hotplate	Aluminum	230V	6.7 amps	1550 watts	97042-664
<b>VWR® Advanced Hotplate Stirrers</b>					
4 x 4" (10.2 x 10.2 cm) Hotplate Stirrer	Ceramic	120V	3.3 amps	400 watts	97042-602
4 x 4" (10.2 x 10.2 cm) Hotplate Stirrer	Ceramic	230V	1.7 amps	400 watts	97042-604
4 x 4" (10.2 x 10.2 cm) Hotplate Stirrer	Aluminum	120V	3.3 amps	400 watts	97042-606
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer	Ceramic	120V	8.3 amps	1000 watts	97042-642
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer	Ceramic	230V	4.6 amps	1050 watts	97042-644
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer	Aluminum	120V	8.3 amps	1000 watts	97042-646
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer	Aluminum	230V	4.6 amps	1050 watts	97042-648
10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer	Ceramic	120V	11.2 amps	1345 watts	97042-682
10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer	Ceramic	230V	7.0 amps	1600 watts	97042-684
10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer	Aluminum	120V	11.2 amps	1345 watts	97042-686
10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer	Aluminum	230V	7.0 amps	1600 watts	97042-688



**Complex Problems  
Require  
Sophisticated  
Solutions.**

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**Together, We Enable Science.**

## VWR® Standard Hotplates, Stirrers & Hotplate Stirrers



- Excellent temperature uniformity
- Enhanced electronics
- Cool-touch, chemical-resistant housing

VWR® Standard Hotplates, Stirrers and Hotplate Stirrers are microprocessor controlled and designed for general laboratory heating and stirring. These analog units feature easy-to-use controls which allow dial-in adjustments. Rear housing features an integral support rod holder with locking knob to accept the optional Support Rod and Clamp Kit.

### Operating Features:

**Low-profile design:** Takes up minimal space and fits easily into fume hoods. Spill-resistant design channels fluids away from internal components.

**Control panel:** Features easy-to-use adjustment knobs with markings allowing users to dial-in set points to estimate temperature and speed control.

**Microprocessor control:** Advanced electronics regulate both heating and stirring and bring samples to temperature quickly and efficiently. An internal RTD accurately measures and controls temperature. Precise speed control provides consistent stirring at all speeds. Powerful continuous-duty motor delivers dependable and reliable stirring.

**Heating capacity:** Robust heater allows heating surface to reach set point quickly.

**Ceramic or aluminum top plate materials:** Ceramic tops feature a chemical-resistant, reflective-white top plate surface that is easy to clean. Durable aluminum tops will not crack or chip, and provide a more even temperature distribution.

**Built-in support rod holder:** Rear housing features an off-centered, built-in support rod holder with locking knob that accepts the optional Support Rod and Clamp Kit.

### Safety Features:

**Cool-touch housing:** Housing is made of a heat-resistant polymer that is not only cool to the touch, but is also chemical resistant.

**Heat caution indicator:** For additional safety, a hot-symbol warning light is illuminated when heat is turned on and remains on until top plate cools down (for hotplates and hotplate stirrers).

**Speed ramping feature:** Slowly increases speed for improved safety and enhanced coupling. Avoids splashing, improves spin bar control and provides excellent low-end speed control (for stirrers and hotplate stirrers).

### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F), maximum 80% relative humidity, non-condensing.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Stirrers and Hotplate Stirrers are supplied with a 1.5" (3.8cm) PTFE-coated stir bar. Five-year limited warranty on parts and labor.

**Optional Support Rod and Clamp Kit:** Kit includes 18" (45.7cm) stainless steel support rod, 3-prong medium swivel clamp, thermometer/temperature-probe extension clamp, and hook connector (see page 71).



97042-594



97042-638

### Specifications

Top Plate Dimensions	
4 x 4" Units	4 x 4" (10.2 x 10.2 cm)
7 x 7" Units	7 x 7" (17.8 x 17.8 cm)
10 x 10" Units	10 x 10" (25.4 x 25.4 cm)
Temperature Range	
Ceramic Top Plate Units	Ambient +5°C to 500°C
Aluminum Top Plate Units	Ambient +5°C to 400°C
Temperature Stability*	
Ceramic Top Plate Units	±3%
Aluminum Top Plate Units	±2%
Speed Range	60 to 1600 rpm
Speed Stability	±2%
Maximum Capacity (H <sub>2</sub> O)	
4 x 4" Units	600 mL
7 x 7" Units	2500 mL
10 x 10" Units	6000 mL
Overall Dimensions	
4 x 4" Units	10.8 x 6.6 x 4.3" (27.4 x 16.8 x 10.9 cm)
7 x 7" Units	14.8 x 9.9 x 4.3" (37.6 x 25 x 10.9 cm)
10 x 10" Units	17.9 x 13 x 4.3" (45.5 x 33 x 10.9 cm)
Ship Weight	
4 x 4" Units	6.2 lbs (2.8 kg)
7 x 7" Units	10.5 lbs (4.8 kg)
10 x 10" Units	15.9 lbs (7.2 kg)

\* Below 100°C ±2°C. Environmental and sample conditions permitting.

Description	Top Plate Material	Electrical (50/60 Hz)			Cat. No.
<b>VWR® Standard Hotplates</b>					
4 x 4" (10.2 x 10.2 cm) Hotplate	Ceramic	120V	2.9 amps	350 watts	97042-570
4 x 4" (10.2 x 10.2 cm) Hotplate	Aluminum	120V	2.9 amps	350 watts	97042-574
7 x 7" (17.8 x 17.8 cm) Hotplate	Ceramic	120V	7.9 amps	950 watts	97042-610
7 x 7" (17.8 x 17.8 cm) Hotplate	Ceramic	230V	4.4 amps	1000 watts	97042-612
7 x 7" (17.8 x 17.8 cm) Hotplate	Aluminum	120V	7.9 amps	950 watts	97042-614
10 x 10" (25.4 x 25.4 cm) Hotplate	Ceramic	120V	10.8 amps	1300 watts	97042-650
10 x 10" (25.4 x 25.4 cm) Hotplate	Ceramic	230V	6.7 amps	1550 watts	97042-652
10 x 10" (25.4 x 25.4 cm) Hotplate	Aluminum	120V	10.8 amps	1300 watts	97042-654
10 x 10" (25.4 x 25.4 cm) Hotplate	Aluminum	230V	6.7 amps	1550 watts	97042-656
<b>VWR® Standard Stirrers</b>					
4 x 4" (10.2 x 10.2 cm) Stirrer	Ceramic	120V	0.4 amps	50 watts	97042-586
4 x 4" (10.2 x 10.2 cm) Stirrer	Ceramic	230V	0.2 amps	50 watts	97042-588
4 x 4" (10.2 x 10.2 cm) Stirrer	Aluminum	120V	0.4 amps	50 watts	97042-590
7 x 7" (17.8 x 17.8 cm) Stirrer	Ceramic	120V	0.4 amps	50 watts	97042-626
7 x 7" (17.8 x 17.8 cm) Stirrer	Ceramic	230V	0.2 amps	50 watts	97042-628
7 x 7" (17.8 x 17.8 cm) Stirrer	Aluminum	120V	0.4 amps	50 watts	97042-630
7 x 7" (17.8 x 17.8 cm) Stirrer	Aluminum	230V	0.2 amps	50 watts	97042-632
10 x 10" (25.4 x 25.4 cm) Stirrer	Ceramic	120V	0.4 amps	50 watts	97042-666
10 x 10" (25.4 x 25.4 cm) Stirrer	Ceramic	230V	0.2 amps	50 watts	97042-668
10 x 10" (25.4 x 25.4 cm) Stirrer	Aluminum	120V	0.4 amps	50 watts	97042-670
<b>VWR® Standard Hotplate Stirrers</b>					
4 x 4" (10.2 x 10.2 cm) Hotplate Stirrer	Ceramic	120V	3.3 amps	400 watts	97042-594
4 x 4" (10.2 x 10.2 cm) Hotplate Stirrer	Ceramic	230V	1.7 amps	400 watts	97042-596
4 x 4" (10.2 x 10.2 cm) Hotplate Stirrer	Aluminum	120V	3.3 amps	400 watts	97042-598
4 x 4" (10.2 x 10.2 cm) Hotplate Stirrer	Aluminum	230V	1.7 amps	400 watts	97042-600
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer	Ceramic	120V	8.3 amps	1000 watts	97042-634
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer	Ceramic	230V	4.6 amps	1050 watts	97042-636
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer	Aluminum	120V	8.3 amps	1000 watts	97042-638
7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer	Aluminum	230V	4.6 amps	1050 watts	97042-640
10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer	Ceramic	120V	11.2 amps	1345 watts	97042-674
10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer	Ceramic	230V	7.0 amps	1600 watts	97042-676
10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer	Aluminum	120V	11.2 amps	1345 watts	97042-678

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## VWR® Professional Round Top Hotplate Stirrers



- Excellent temperature uniformity
- Cool-touch, chemical-resistant housing
- Includes RTD temperature-probe kit

VWR® Professional Round Top Hotplate Stirrers are designed for applications that require exceptional accuracy, stability, and repeatability. Exclusive safety features help protect operator and sample. Enhanced microprocessor control offers an external RTD probe option that delivers superior temperature control of the sample. Stirring function, with continuous-duty motor and a powerful magnet, maintains set speed even under changing load or viscosity. Separate LED displays for temperature, speed, and time allow user to view all settings at once.

### Operating Features:

**Low-profile design:** Takes up minimal space and fits easily into fume hoods. Spill-resistant design channels fluids away from internal components.

**Microprocessor control:** Advanced electronics regulate both heating and stirring and bring samples to temperature quickly and efficiently. Temperature measurement is controlled more accurately by utilizing an internal RTD. Speed is precisely controlled, and provides consistent stirring at all speeds. Powerful continuous-duty motor delivers dependable and reliable stirring.

**Control panel:** Touch pad controls with easy-to-read, independent LED displays for temperature, speed, and time allow operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible from outside fume hoods or across lab benches. Shows set point and actual temperature. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Stainless steel top plate:** 5.3" (135mm) diameter top plate is durable and will not crack. Accepts optional VWR® base plate that holds a variety of block options for holding multiple samples at one time.

**Built-in support rod holder:** Rear housing features an off-centered, built-in support rod holder with locking knob that accepts the probe kit.

Not recommended for use in vacuum or low-pressure environments.

### Safety Features:

**Cool-touch housing:** Housing is made of a heat-resistant polymer that is not only cool to the touch, but is also chemical resistant.

**Heat caution indicator:** For additional safety, a hot-symbol warning light is illuminated when heat is turned on and remains on until top plate cools down.

**Stir protection:** If stirrer motor stops or fails, unit will automatically shut down heater.

**Speed ramping feature:** Slowly increases speed for improved safety and enhanced coupling. Avoids splashing, improves spin bar control and provides excellent low-end speed control.

**Maximum temperature limiting:** (plate over temperature limit) Ensures plate temperature will never exceed user's programmed set-temperature limit, allowing for control of samples with sensitive flash points.

**Audible alarm:** In timed mode, alarm will sound when time reaches zero or when unit reaches set-point temperature.

**Probe Protection:** If probe disengages from sample, unit will automatically shut off heater.



89171-864

### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F), 20% to 80% relative humidity, non-condensing.

Not recommended for use in vacuum or low-pressure environments.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230V units are supplied with Euro-type plug). Units are also supplied with a 1.5" (3.8cm) PTFE-coated stir bar and RTD probe kit which includes a PT1000, 8" (20.3cm) stainless steel RTD temperature-probe, 18" stainless steel support rod, hook connector and a thermometer/temperature probe extension clamp. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature and speed ranges and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Temperature Range	Ambient +5° to 400°C
Temperature Stability*	±1%
Speed Range	60 to 1600 rpm
Speed Stability	±2%
Maximum Capacity	1500 mL
Top Plate Dimensions (Dia.)	5.3" (135 mm)
Overall Dimensions (L x W x H)	14.8 x 9.9 x 4.3" (37.6 x 25.1 x 10.9 cm)
Ship Weight	11.7 lbs (5.3 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Professional Round Top Hotplate Stirrer	120V   8.3 amps   500 watts	89171-864
Professional Round Top Hotplate Stirrer	230V   4.6 amps   500 watts	89171-866
Professional Round Top Hotplate Stirrer with NIST-Traceable Certificate	120V   8.3 amps   500 watts	10027-206
Professional Round Top Hotplate Stirrer with NIST-Traceable Certificate	230V   4.6 amps   500 watts	10027-208

## VWR® Advanced Round Top Hotplate Stirrers



- Excellent temperature uniformity
- Cool-touch, chemical-resistant housing
- LED display for temperature

VWR® Advanced Round Top Hotplate Stirrers deliver accurate and repeatable results. These units are microprocessor controlled and have an LED display for temperature. Control panel features easy-to-use controls which allow users to dial-in adjustments. Rear housing features an integral support rod holder with locking knob to accept the optional Support Rod and Clamp Kit.

### Operating Features:

**Low-profile design:** Takes up minimal space and fits easily into fume hoods. Spill-resistant design channels fluids away from internal components.

**LED display:** Shows set-point temperature. Display is easy-to-read and provides repeatable and accurate results every time.

**Control panel:** Adjustment knob for temperature displays set point in LED display. Stir control knob has rpm adjustment markings.

**Recall last temperature:** Built-in memory allows users to recall last set temperature, even when unit has been turned off.

**Microprocessor control:** Advanced electronics regulate both heating and stirring and bring samples to temperature quickly and efficiently. Temperature measurement is controlled more accurately by utilizing an internal RTD. Speed is precisely controlled, and provides consistent stirring at all speeds. Powerful continuous-duty motor delivers dependable and reliable stirring.

**Heating capacity:** Robust heater allows heating surface to reach set point quickly.

**Stainless steel top plate:** 5.3" (135mm) diameter top plate is durable and will not crack. Accepts optional VWR® base plate that holds a variety of block options for holding multiple samples at one time.

**Built-in support rod holder:** Rear housing features an off-centered, built-in support rod holder with locking knob that accepts the optional Support Rod and Clamp Kit.

### Safety Features:

**Cool-touch housing:** Housing is made of a heat-resistant polymer that is not only cool to the touch, but is also chemical resistant.

**Heat caution indicator:** For additional safety, a hot-symbol warning light is illuminated when heat is turned on and remains on until top plate cools down.

**Stir protection:** If stirrer motor stops or fails, unit will automatically shut down heater.



89171-860

**Speed ramping feature:** Slowly increases speed for improved safety and enhanced coupling. Avoids splashing, improves spin bar control, and provides excellent low-end speed control.

**Optional Support Rod and Clamp Kit:** Kit includes 18" (45.7cm) stainless steel support rod, 3-prong medium swivel clamp, thermometer/temperature-probe extension clamp, and hook connector.

### Operating Conditions:

Unit can be run in conditions from 5 to 40°C (41 to 104°F), 20% to 80% relative humidity, non-condensing.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug. Units are also supplied with a 1.5" (3.8cm) PTFE-coated stir bar. Five-year limited warranty on parts and labor.

### Specifications

Temperature Range	Ambient +5° to 400°C
Temperature Stability*	±3%
Speed Range	60 to 1600 rpm
Speed Stability	±2%
Maximum Capacity	1500 mL
Top Plate Dimensions (Dia.)	5.3" (135 mm)
Overall Dimensions (L x W x H)	14.8 x 9.9 x 4.3" (37.6 x 25.1 x 10.9 cm)
Ship Weight	9.4 lbs (4.3 kg)

\* Below 100°C ±2°C. Environmental and sample conditions permitting.

Description	Electrical (50/60 Hz)	Cat. No.
Advanced Round Top Hotplate Stirrer	120V   8.3 amps   500 watts	89171-860

## VWR® Round Top Hotplate Stirrer Accessories

- Heat and stir a variety of samples simultaneously on one hotplate
- Uni and sectional blocks accommodate 9 different sample sizes
- Anodized aluminum with close block to tube contact ensures optimal transfer of heat

The VWR® Multi-Sample Reaction Station enables you to heat and stir multiple samples of one size or up to five multiple samples of different sizes, all with one unit. The base plate can hold 5 sectional blocks or one uni-block. For added versatility, the base plate has a centrally located threaded opening to accommodate a 1/2" (13mm) support rod. Both block styles are offered in 9 different sample-size configurations for vials and test tubes. Blocks are made of anodized aluminum to provide superior temperature stability and heat transfer. Each block has a thermometer well for measuring block temperature. Base plate is designed to fit on the VWR® Professional or Advanced Round Top or other 135mm diameter top models. Safety handles are available to aid in the safe removal of the blocks or base plate.



### UNI-BLOCKS

#### Test Tubes

Sample Type	No. of Wells	Well Dia.	Well Depth	Cat. No.
12 mm Tube	40	12.7 mm	45.7 mm	89171-904
16 mm Tube	32	17.5 mm	45.7 mm	89171-906
20 mm Tube	32	20.5 mm	45.7 mm	89171-908
25 mm Tube	24	25.4 mm	41.9 mm	89171-910



#### Vials

Sample Type	No. of Wells	Well Dia.	Well Depth	Cat. No.
12 mm Vial (2 mL)	40	12.7 mm	16.8 mm	89171-894
15 mm Vial (1 dram)	40	15.5 mm	16.8 mm	89171-896
17 mm Vial (2 dram)	32	17.8 mm	16.8 mm	89171-898
21 mm Vial (4 dram)	24	21.5 mm	16.8 mm	89171-900
28 mm Vial	16	28.8 mm	16.8 mm	89171-902



### SECTIONAL BLOCKS

#### Test Tubes

Sample Type	No. of Wells	Well Dia.	Well Depth	Cat. No.
12 mm Tube	9	12.7 mm	45.7 mm	89171-886
16 mm Tube	8	17.5 mm	45.7 mm	89171-888
20 mm Tube	6	20.5 mm	45.7 mm	89171-890
25 mm Tube	5	25.4 mm	41.9 mm	89171-892



#### Vials

Sample Type	No. of Wells	Well Dia.	Well Depth	Cat. No.
12 mm Vial (2 mL)	9	12.7 mm	16.8 mm	89171-876
15 mm Vial (1 dram)	10	15.5 mm	16.8 mm	89171-878
17 mm Vial (2 dram)	7	17.8 mm	16.8 mm	89171-880
21 mm Vial (4 dram)	5	21.5 mm	16.8 mm	89171-882
28 mm Vial	3	28.8 mm	16.8 mm	89171-884



### OTHER ACCESSORIES

Accessory	Cat. No.
Base Plate for 135 mm Dia. Plates	89171-872
Safety Handles (2)	89171-874



## VWR® Basic Mini Hotplates, Stirrers & Hotplate Stirrers



- New ergonomic design
- Hotplates & Hotplate Stirrers boil 300 mL of water in 16 minutes
- Ideal for educational labs
- Built in support rod holder

VWR® Basic Mini Hotplates, Stirrers, and Hotplate Stirrers are rugged, compact units that heat and stir up to 1000mL of liquid. Durable, cast aluminum top plate will not crack or chip, and provides an even heating surface. Bi-metallic thermostat offers reliable temperature control. Powerful heater reaches maximum temperature in only minutes. Powerful motor and magnet deliver reliable and consistent stirring. Compact design saves bench space. Built-in support rod holder with locking knob accepts optional Support Rod and Clamp Kit.

Basic Mini Fixed Temperature Hotplate features an illuminated rocker switch to activate the preset fixed temperature of 375°C.

Basic Mini Auto-Stirrer is automatically activated by the minimum weight of a flask or beaker and will stop stirring when mixing vessel is removed.

### Operating Features:

**Adjustment knobs:** Basic speed and temperature control-knob with dial markings from 1 to 10.

### Operating Conditions:

Units can be run in conditions from 5 to 40°C (41 to 104°F), 20% to 85% relative humidity, non-condensing.

### Applications:

Academia, Basic Chemistry

### Ordering Information

Units include a 72" (183cm), 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Stirrers and Hotplate Stirrers are supplied with a 1.5" (3.8cm) PTFE-coated stir bar. Five-year limited warranty on parts and labor.



### Specifications

Temperature Range	to 375°C *
Speed Range	100 to 1200 rpm
Maximum Capacity (H <sub>2</sub> O)	1000 mL
Top Plate Dimensions	5 x 5" (12.7 x 12.7 cm)
Overall Dimensions (L x W x H)	7.9 x 6 x 4.9" (20.1 x 15.2 x 12.4 cm)
Ship Weight	4 lbs (1.8 kg)

\* Fixed Temperature Hotplate has a fixed temperature of 375°C.

Description	Electrical (50/60 Hz)	Cat. No.
<b>VWR® Basic Mini Hotplates</b>		
Basic Mini Hotplate	120V   6 amps   565 watts	10153-300
Basic Mini Hotplate	230V   2.5 amps   430 watts	10153-302
Basic Mini Fixed Temperature Hotplate	120V   6 amps   565 watts	10153-312
<b>VWR® Basic Mini Stirrers</b>		
Basic Mini Stirrer	120V   0.5 amps   20 watts	10153-304
Basic Mini Stirrer	230V   0.25 amps   20 watts	10153-306
Basic Mini Auto-Stirrer	120V   0.5 amps   20 watts	10153-314
Basic Mini Auto-Stirrer	230V   0.25 amps   20 watts	10153-316
<b>VWR® Basic Mini Hotplate Stirrers</b>		
Basic Mini Hotplate Stirrer	120V   6 amps   565 watts	10153-308
Basic Mini Hotplate Stirrer	230V   2.5 amps   430 watts	10153-310

## VWR® Standard & Advanced High-Volume Stirrers



- Powerful motor and magnet mix up to 25 L of liquid
- Large top plate surface
- Microprocessor controls

VWR® Standard and Advanced High-Volume Stirrers are designed for large capacity applications. Powerful magnet and motor offer exceptional magnetic coupling force capable of stirring 25L.

### Operating Features:

**Low-profile design:** Takes up minimal space. Spill-resistant housing channels fluids away from internal components. Cast aluminum base offers durability and added stability.

**Glass-filled nylon top plate:** Features a chemical-resistant, reflective-white top plate surface that is easy to clean.

**Large top plate:** Accommodates oversized vessels.

**Microprocessor control:** Precisely regulates speed through the entire range. Stirring function, with continuous-duty motor and magnet, maintains set speed even under changing load or viscosity.

**Adjustment knob:** Basic speed control-knob with dial markings from 1 to 10 (Standard Series).

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed and time. Speed is adjustable in 10rpm increments. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero (Advanced Series).

### Safety Features:

**Audible alarm:** In timed mode, alarm will sound when time reaches zero. (Advanced Series)

**Speed ramping feature:** Slowly increases speed for improved safety and enhanced coupling. Avoids splashing, improves spin bar control and provides excellent low-speed control.

### Operating Conditions:

Units can be run in conditions from 5 to 40°C (41 to 104°F), 20% to 80% relative humidity, non-condensing.

Not recommended for use in vacuum or low-pressure environments.

### Applications:

Carboys, chromatography, and large volume sample stirring.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Units are also supplied with a 2.75" (7cm) PTFE-coated stir bar. Five-year limited warranty on parts and labor.



12621-050



12621-054

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

<b>Speed Range</b>	60 to 1400 rpm
<b>Speed Stability</b>	60 to 250 rpm ±5 rpm 250 to 1400 rpm ±2%
<b>Timer (Advanced Series)</b>	1 second to 160 hours
<b>Maximum Capacity (H<sub>2</sub>O)</b>	25 L
<b>Maximum Vessel Diameter</b>	10" (25 cm)
<b>Top Plate Material</b>	Glass-filled nylon
<b>Top Plate Dimensions (L x W)</b>	12.5 x 11" (31.8 x 27.9 cm)
<b>Overall Dimensions (L x W x H)</b>	17 x 11 x 4" (43.2 x 27.9 x 10.2 cm)
<b>Ship Weight</b>	14.6 lbs (6.6 kg)

Description	Electrical (50/60 Hz)	Positions	Cat. No.
<b>VWR® Standard High Volume Stirrer</b>			
Standard High Volume Stirrer	120V   1.3 amps   75 watts	1	12621-050
Standard High Volume Stirrer	230V   0.65 amps   75 watts	1	12621-052
<b>VWR® Advanced High Volume Stirrer</b>			
Advanced High Volume Stirrer	120V   1.3 amps   75 watts	1	12621-054
Advanced High Volume Stirrer	230V   0.65 amps   75 watts	1	12621-056
Advanced High Volume Stirrer with NIST-Traceable Certificate	120V   1.3 amps   75 watts	1	10027-232
Advanced High Volume Stirrer with NIST-Traceable Certificate	230V   0.65 amps   75 watts	1	10027-234

## VWR® Advanced Large-Capacity Stirrers



- LED Displays for speed and time
- Durable, stainless steel construction
- Mixes up to 200L

VWR® Advanced Model 1000 and Model 2000 Large-Capacity Stirrers are ideal for high-volume applications. The powerful magnetic drive is capable of mixing high-viscosity materials. Stainless steel base offers durability and added stability.

### Operating Features:

**Microprocessor control:** Precisely regulates speed through the entire range. Stirring function, with continuous-duty motor and magnet, maintains set speed even under changing load or viscosity.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed and time. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero.

### Safety Features:

**Audible alarm:** In timed mode, alarm will sound when time reaches zero.

**Speed ramping Feature:** Slowly increases speed for improved safety and enhanced coupling. Avoids splashing, improves spin bar control and provides excellent low-speed control.

### Operating Conditions:

Units can be run in conditions from 5 to 40°C (41 to 104°F), 20% to 80% relative humidity, non-condensing.

### Applications:

Mixing viscous materials, polymers, and pilot scale.



12621-058

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Model 1000 units are supplied with a 2.75" (7cm) egg shaped PTFE-coated stir bar. Model 2000 units are supplied with a 4" (10.2cm) PTFE-coated stir bar with a pivot ring. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Speed Range	
Model 1000 Model 2000	100 to 1800 rpm 100 to 1650 rpm (increased in 10 rpm increments)
Speed Stability	±2%
Timer	1 second to 160 hours
Maximum Capacity H <sub>2</sub> O	
Model 1000 Model 2000	100 L 200 L
Maximum Weight Capacity	425 lbs (193 kg)
Top Plate Material	304 stainless steel
Top Plate Dimensions (L x W)	21.25 x 25" (54 x 63.5 cm)
Overall Dimensions (L x W x H)	28.5 x 26.75 x 5.25" (72.4 x 68 x 13.3 cm)
Ship Weight	63 lbs (28.6 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Model 1000 Advanced Large-Capacity Stirrer, 100L	120V   1 amp   41 watts	12621-058
Model 1000 Advanced Large-Capacity Stirrer, 100L	230V   0.5 amps   41 watts	12621-060
Model 2000 Advanced Large-Capacity Stirrer, 200L	120V   1 amp   82 watts	12621-062
Model 2000 Advanced Large-Capacity Stirrer, 200L	230V   0.5 amps   82 watts	12621-064
Model 1000 Advanced Large-Capacity Stirrer, 100 L with NIST-Traceable Certificate	120V   1 amp   41 watts	10027-236
Model 1000 Advanced Large-Capacity Stirrer, 100 L with NIST-Traceable Certificate	230V   0.5 amps   41 watts	10027-238
Model 2000 Advanced Large-Capacity Stirrer, 200 L with NIST-Traceable Certificate	120V   1 amp   82 watts	10027-090
Model 2000 Advanced Large-Capacity Stirrer, 200 L with NIST-Traceable Certificate	230V   0.5 amps   82 watts	10027-092

## VWR® Standard & Advanced Multi-Position Stirrers



- Stirs up to 9 vessels at once
- Synchronized and uniform mixing
- Low-profile design

VWR® Standard and Advanced Multi-Position Stirrers are powerful magnetic stirrers with precise speed control that offers repeatable performance. Synchronized operation ensures uniform mixing at each position.

### Operating Features:

**Low profile design:** Takes up minimal space. Spill-resistant housing channels fluids away from internal components. Cast aluminum base offers durability and added stability.

**Glass-filled nylon top plate:** Features a chemical-resistant, reflective-white top plate surface that is easy to clean.

**Large top plate:** Stirs up to 9 vessels at once with helpful position indicators.

**Microprocessor control:** Precisely regulates speed through the entire range. Stirring function, with continuous-duty motor and magnet, maintains set speed even under changing load or viscosity.

**Adjustment knob:** Basic speed control-knob with dial markings from 1 to 10 (Standard Series).

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed and time. Speed is adjustable in 10rpm increments. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero (Advanced Series).

### Safety Features:

**Speed ramping feature:** Slowly increases speed for improved safety and enhanced coupling. Avoids splashing, improves spin bar control and provides excellent low-speed control.

**Audible alarm:** In timed mode, alarm will sound when time reaches zero. (Advanced Series)

### Operating Conditions:

Units can be run in conditions from 5 to 40°C (41 to 104°F), 20% to 80% relative humidity, non-condensing.

Not recommended for use in vacuum or low-pressure environments.

### Applications:

Dissolution studies, media/reagent preparations, and titration studies.



12621-046

### Ordering Information

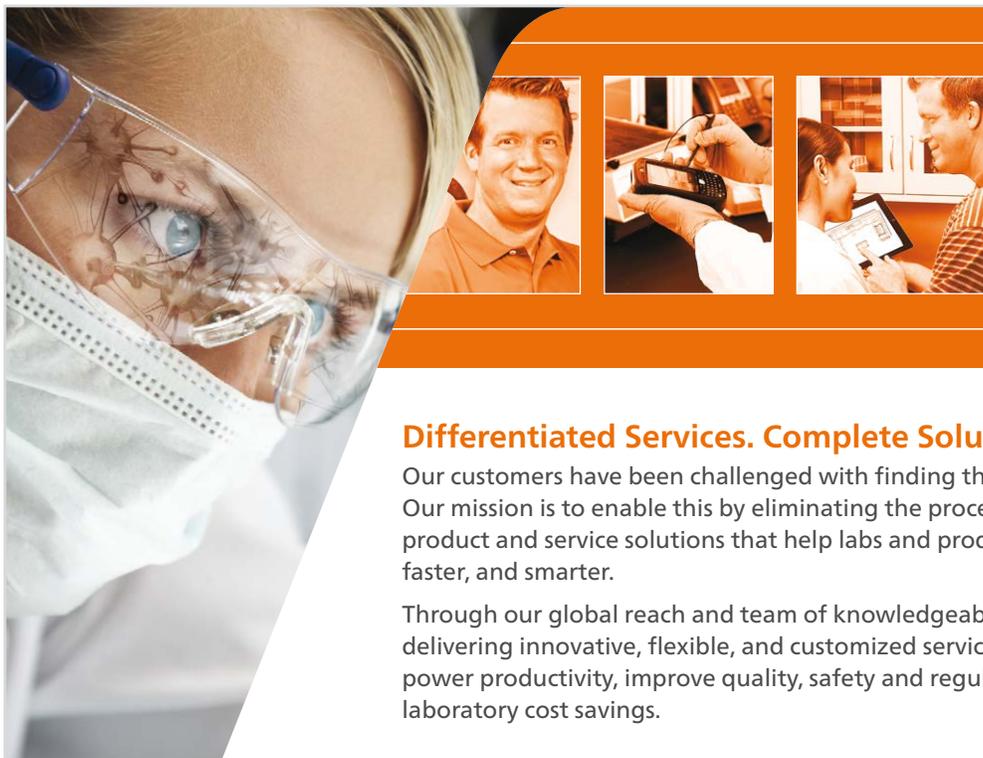
Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Units are also supplied with a 1" (2.5cm) PTFE-coated stir bar for each position. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Speed Range	60 to 1400 rpm
Speed Stability	60 to 250 rpm ±5 rpm > 250 to 1400 rpm ±2%
Timer (Advanced Series)	1 second to 160 hours
Top Plate Material	Glass-filled nylon
Top Plate Dimensions (L x W)	12.5 x 11" (31.8 x 27.9 cm)
Overall Dimensions (L x W x H)	17 x 11 x 4" (43.2 x 27.9 x 10.2 cm)
Ship Weight	14.75 lbs (6.7 kg)

Description	Electrical (50/60 Hz)	Positions	Maximum Capacity (H2O)	Maximum Vessel Diameter	Cat. No.
Standard Multi-Position Stirrer 4	120V   1.3 amps   75 watts	4	1 L	5.1" (13 cm)	12621-018
Standard Multi-Position Stirrer 4	230V   0.65 amps   75 watts	4	1 L	5.1" (13 cm)	12621-020
Standard Multi-Position Stirrer 5	120V   1.3 amps   75 watts	5	600 mL	3.75" (9.5 cm)	12621-026
Standard Multi-Position Stirrer 5	230V   0.65 amps   75 watts	5	600 mL	3.75" (9.5 cm)	12621-028
Standard Multi-Position Stirrer 6	120V   1.3 amps   75 watts	6	400 mL	3.2" (8 cm)	12621-034
Standard Multi-Position Stirrer 6	230V   0.65 amps   75 watts	6	400 mL	3.2" (8 cm)	12621-036
Standard Multi-Position Stirrer 9	120V   1.3 amps   75 watts	9	250 mL	3" (7.5 cm)	12621-042
Standard Multi-Position Stirrer 9	230V   0.65 amps   75 watts	9	250 mL	3" (7.5 cm)	12621-044
<b>VWR® Advanced Multi-Position Stirrers</b>					
Advanced Multi-Position Stirrer 4	120V   1.3 amps   75 watts	4	1 L	5.1" (13 cm)	12621-022
Advanced Multi-Position Stirrer 4	230V   0.65 amps   75 watts	4	1 L	5.1" (13 cm)	12621-020
Advanced Multi-Position Stirrer 5	120V   1.3 amps   75 watts	5	600 mL	3.75" (9.5 cm)	12621-030
Advanced Multi-Position Stirrer 6	120V   1.3 amps   75 watts	6	400 mL	3.2" (8 cm)	12621-038
Advanced Multi-Position Stirrer 6	230V   0.65 amps   75 watts	6	400 mL	3.2" (8 cm)	12621-036
Advanced Multi-Position Stirrer 9	120V   1.3 amps   75 watts	9	250 mL	3" (7.5 cm)	12621-046
Advanced Multi-Position Stirrer 9	230V   0.65 amps   75 watts	9	250 mL	3" (7.5 cm)	12621-048
<b>VWR® Advanced Multi-Position Stirrers with NIST-Traceable Certificate</b>					
Advanced Multi-Position Stirrer 4	120V   1.3 amps   75 watts	4	1 L	5.1" (13 cm)	10027-068
Advanced Multi-Position Stirrer 5	120V   1.3 amps   75 watts	5	600 mL	3.75" (9.5 cm)	10027-070
Advanced Multi-Position Stirrer 5	230V   0.65 amps   75 watts	5	600 mL	3.75" (9.5 cm)	10027-072
Advanced Multi-Position Stirrer 6	120V   1.3 amps   75 watts	6	400 mL	3.2" (8 cm)	10027-076
Advanced Multi-Position Stirrer 9	120V   1.3 amps   75 watts	9	250 mL	3" (7.5 cm)	10027-078
Advanced Multi-Position Stirrer 9	230V   0.65 amps   75 watts	9	250 mL	3" (7.5 cm)	10027-080



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**Together, We Enable Science.**

## VWR® Standard & Advanced Slow-Speed Stirrers

- Ideal for cell culture applications
- Slow start/stop feature
- Efficient drive motor eliminates heat transfer to sample

VWR® Standard and Advanced Slow-Speed Stirrers are designed for growth of suspension and micro-carrier cell cultures. Slow-speed stirrers work with cell culture flasks and other vessels designed for slow magnetic stirring. Ideal for use in cold rooms, incubators, or CO<sub>2</sub> incubators (-10°C to 40°C), 20% to 80% relative humidity, non-condensing environment.

### Operating Features:

**Low-profile design:** Takes up minimal space and easily fits into fume hoods and most incubators. Spill-resistant housing channels fluids away from internal components. Cast aluminum base offers durability and added stability.

**Glass-filled nylon top plate:** Features a chemical-resistant, reflective-white top plate surface that is easy to clean (4-position and 10L models).

**Aluminum top plate:** Durable aluminum top will not crack or chip (1-position models).

**Large top plate:** Stirs up to 4 vessels at once with helpful position indicators.

**Microprocessor control:** Precisely regulates speed through the entire range. Stirring function, with continuous-duty motor and magnet, maintains set speed even under changing load or viscosity.

**Adjustment knob:** Basic speed control-knob with dial markings from 1 to 10 (Standard Series).

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed and time. Speed is adjustable in 1rpm increments. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero (Advanced Series).

### Safety Features:

**Speed ramping feature:** Slowly increases speed for improved safety and enhanced coupling. Avoids splashing, improves spin bar control and provides excellent low-speed control. Efficient drive motor eliminates heat transfer to sample.

**Audible alarm:** In timed mode, alarm will sound when time reaches zero (Advanced Series).



12621-076

### Operating Conditions:

Units can be run in cold rooms, incubators, and CO<sub>2</sub> environments from -10 to 40°C (14 to 104°F), 20% to 80% relative humidity, non-condensing.

**Not recommended for use in vacuum or low-pressure environments.**

### Applications:

Uniform suspensions of cell cultures, hybridomas, or any slow controlled stirring.

### Ordering Information

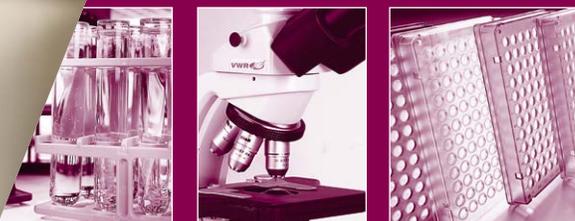
Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Speed Range	1 to 150 rpm
Timer (Advanced Series)	1 second to 160 hours
Top Plate Material	
4-Position / 10 L 1-Position	Glass-filled nylon Aluminum
Top Plate Dimensions (L x W)	
4-Position / 10 L 1-Position	12.5 x 11" (31.8 x 27.9 cm) 7 x 7" (17.8 x 17.8 cm)
Overall Dimensions (L x W x H)	
4-Position / 10 L 1-Position	17 x 11 x 4" (43.2 x 27.9 x 10.2 cm) 11.9 x 8.6 x 3.5" (30.2 x 21.8 x 8.9 cm)
Ship Weight	
4-Position / 10 L 1-Position	14.5 lbs (6.6 kg) 8.8 lbs (4 kg)

Description	Electrical (50/60 Hz)	Positions	Maximum Capacity (H2O)	Maximum Vessel Diameter	Cat. No.
<b>VWR® Standard Slow-Speed Stirrers</b>					
Standard Slow-Speed Stirrer 1	120V   0.14 amps   7.2 watts	1	2 L	5.9" (15 cm)	12621-066
Standard Slow-Speed Stirrer 4	120V   0.14 amps   7.2 watts	4	1 L	5.1" (13 cm)	12621-076
<b>VWR® Advanced Slow-Speed Stirrers</b>					
Advanced Slow-Speed Stirrer 1	120V   0.14 amps   7.2 watts	1	2 L	5.9" (15 cm)	12621-070
Advanced Slow-Speed Stirrer 4	120V   0.14 amps   7.2 watts	4	1 L	5.1" (13 cm)	12621-080
Advanced Slow-Speed Stirrer 4	230V   0.14 amps   14.4 watts	4	1 L	5.1" (13 cm)	12621-082
Advanced Slow-Speed Stirrer 10 L	120V   0.14 amps   7.2 watts	1	10 L	9.8" (25 cm)	12621-072
<b>VWR® Advanced Slow-Speed Stirrers with NIST-Traceable Certificate</b>					
Advanced Slow-Speed Stirrer 1	120V   0.14 amps   7.2 watts	1	2 L	5.9" (15 cm)	10027-094
Advanced Slow-Speed Stirrer 4	120V   0.14 amps   7.2 watts	4	1 L	5.1" (13 cm)	10027-100
Advanced Slow-Speed Stirrer 4	230V   0.14 amps   14.4 watts	4	1 L	5.1" (13 cm)	10027-102
Advanced Slow-Speed Stirrer 10 L	120V   0.14 amps   7.2 watts	1	10 L	9.8" (25 cm)	10027-096
Advanced Slow-Speed Stirrer 10 L	230V   0.14 amps   14.4 watts	1	10 L	9.8" (25 cm)	10027-098
<b>Hotplate/Stirrer Accessories</b>					
<b>Temperature Probes</b>					
8" (20.3 cm) Stainless Steel PT1000 Probe					97042-770
8" (20.3 cm) PTFE PT1000 Probe					97042-772
10" (25.4 cm) Stainless Steel PT1000 Probe					97042-774
10" (25.4 cm) PTFE PT1000 Probe					97042-776
Replacement Probe Kit with 8" (20.3cm) Stainless Steel PT1000 Probe					97042-778



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**Together, We Enable Science.**

## VWR® Dyla Series and Submersible Stirrer

### Dyla Series

- Large 6.5" diameter cast aluminum top plate
- Built-in support rod holder

The economical and durable VWR® Dyla Series hotplate, stirrer and hotplate stirrers are ideal for general heating and stirring. Large 6.5" (16.5cm) diameter cast aluminum top plate provides a stable platform for large vessels. Even heating surface is capable of boiling water or stirring up to 1500mL of water with ease. Electronic speed control and bi-metallic thermostat delivers reliable and repeatable temperature and speed control. Powerful heater reaches maximum temperature in only minutes. Large magnet provides strong magnetic coupling to the spin bar. Indicator lights illuminate when the heater is turned on. Built-in support rod holder with locking knob accepts optional Support Rod and Clamp Kit. Optional Support Rod and Clamp Kit allows unit to be mounted to lab-frames or ring stands (see page 67).

### Ordering Information

Stirrers and hotplate stirrers are supplied with a 1.5" (3.8cm) PTFE-coated stir bar. Five-year limited warranty on parts and labor.

### Specifications

Temperature Range	to 400°C
Speed Range	100 to 1200 rpm
Maximum Capacity (H <sub>2</sub> O)	1500 mL
Top Plate Material	Aluminum
Top Plate Dimensions (diameter)	6.5" (16.5 cm)
Overall Dimensions (L x W x H)	8.75 x 8 x 4.75" (22.2 x 20.3 x 12.1 cm)
Ship Weight	4.6 lbs (2.1 kg)



12620-970

Description	Electrical (50/60 Hz)	Cat. No.
Dylatherm® Hotplate	120V   10 amps   575 watts	12620-978
Dylatherm® Hotplate	230V   5 amps   575 watts	12620-980
Dylastir® Stirrer	120V   0.5 amps   20 watts	12620-974
Dylastir® Stirrer	230V   0.25 amps   20 watts	12620-976
Dyla-Dual® Hotplate Stirrer	120V   10 amps   575 watts	12620-970
Dyla-Dual® Hotplate Stirrer	230V   5 amps   575 watts	12620-972

### Submersible Stirrer

- Mixes up to 1500 mL of water; easily stirs 100% glycerol at 20°C
- Safe, low-voltage DC operation
- Electronic speed control

Compact, submersible magnetic stirrer is housed in a sealed, nickel-plated brass case mounted on a solid brass base. A 38" (96.5cm) cable connects the power supply to the stirring unit. Stirrer operates on low-voltage DC and is safety fused on DC side for safe operation underwater. Unit is easily mounted to rod supports or laboratory frames with standard mounting bracket on rear of power supply. Can also be used as a mini-stirrer in lattice work.

### Specifications

Speed Range	60 to 1000 rpm
Maximum Capacity	1500 mL
Power	20 watts
Dimensions, Stirrer (Dia. x H)	2.75 x 2.75" (7 x 7 cm)
Dimensions, Power Supply (L x W x H)	5 x 4 x 3.5" (12.7 x 10.2 x 8.9 cm)
Ship Weight	2 lbs (0.9 kg)



58947-409



### Ordering Information

Unit is supplied with a 1.5" (3.8cm) PTFE-coated stir bar. Five-year limited warranty on parts and labor.

Description	Electrical (50/60 Hz)	Cat. No.
Model 700 Submersible Stirrer	120V   0.16 amps   20 watts	58947-409

## VWR® Supports

### Support Rod and Clamp Kit

Designed for holding temperature probes, thermometers or other glass tubes. Includes an 18" (45.7cm) stainless steel support rod, thermometer/temperature-probe extension clamp, 3-prong medium swivel clamp, and hook connector.

Recommended for all hotplates or hotplate stirrers.

Support Rod and Clamp Kit includes:



Extension Clamp

3-Prong Swivel Clamp

Hook Connector

**Description**  
Support Rod and Clamp Kit

**Cat. No.**  
11301-110



### Support Plates

Designed to hold Hotplates/Stirrers and other apparatus to lab-frames or ring stands. Aluminum construction offers strength and durability. Support plates include a non-skid rubber mat and can mount to vertical rods up to 0.75" (1.9cm) in diameter.

Small Support Plate recommended for Standard, Advanced 4 x 4 or Basic Mini Hotplates, Stirrers or Hotplate Stirrers.

Medium Support Plate recommended for Professional, Advanced, Standard 7 x 7 or Dyla Series Hotplates, Stirrers or Hotplate Stirrers.

Large Support Plate recommended for multiple units.

Size	Dimensions (L x W x H)	Cat. No.
Small	9.5 x 6.5" (24.1 x 16.5 cm)	11301-124
Medium	12.75 x 9" (32.4 x 22.9 cm)	11301-126
Large	15.75 x 12" (40 x 30.5 cm)	11301-128



## VWR® Advanced Mini Dry Block Heaters

- Compact, ergonomic design
- 6 modular block options

VWR® Advanced Mini Dry Block Heaters are ideal for a variety of applications that require accurate and repeatable results such as LAMP assays, immunoassays, enzyme reactions and denaturations. This personal-sized heater takes up minimal bench space and is small enough to fit in the palm of your hand.

The block heater accepts one interchangeable mini block for 0.2mL, 0.5mL, 1.5mL, 2mL, 15mL, or 50mL tubes. This model includes a clear polycarbonate lid to help prevent evaporation and maintain temperature uniformity. The cover is easily removable when incubating 15mL or 50mL tubes. Efficient heater features close tube-and-block contact with a low-density design for exceptional temperature uniformity. Units include a block-lifting tool.

### Operating Features:

**Microprocessor control:** PID temperature control provides temperature accuracy as low as  $\pm 0.5^{\circ}\text{C}$  and uniformity as low as  $\pm 0.2^{\circ}\text{C}$ . Samples are heated to temperature quickly and accurately. Temperature can be adjusted in  $\pm 0.1^{\circ}\text{C}$  increments.

**LED display:** Touch pad controls with easy-to-read, independent displays for temperature and time. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to a user-defined limit, will shut off when unit reaches zero. Display will show last settings, even after power has been turned off.

**Temperature calibration mode:** Allows user to calibrate unit to an external temperature device.

### Safety Features:

**Audible alarm:** In timed mode, alarm will sound when time reaches zero and when unit reaches set-point temperature.

**Cool-touch housing:** Constructed from a high-quality, heat- and chemical-resistant polymer. The unit's housing remains cool to the touch throughout normal operating temperatures.

Caution! To avoid possible electrical hazard, do not fill well or block opening with water or other fluids. Unit is designed as a dry bath/incubator.

### Operating Conditions:

Units can be run in conditions from 18 to 33°C (64 to 91°F), 20% to 80% relative humidity, non-condensing.

### Applications:

LAMP assays, immunoassays, enzyme reactions and denaturations.

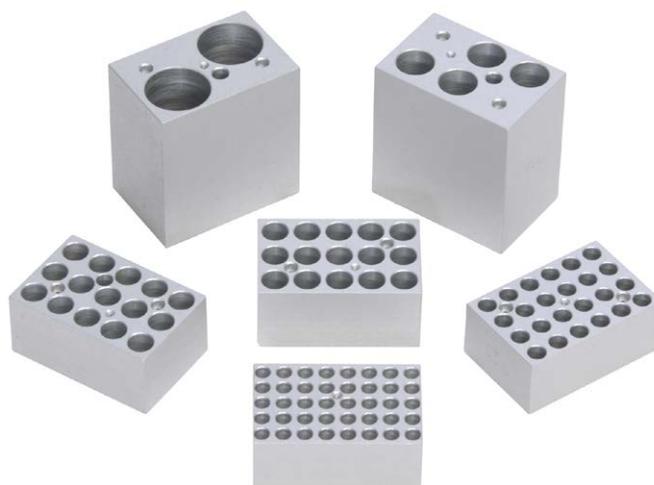
### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Five-year limited warranty on parts and labor. Heaters require a VWR mini modular heating block for operation (sold separately).

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.



10153-318



Accessory blocks see page 74-76

### Specifications

Temperature Range	Ambient +5°C to 100°C
Temperature Accuracy	$\pm 0.5^{\circ}\text{C}$
Temperature Uniformity	$\pm 0.2^{\circ}\text{C}$
Heat-Up Time to 37°C	2 minutes
Timer	1 second to 160 hours
Overall Dimensions (L x W x H)	6.3 x 5 x 4.85" (16 x 12.7 x 12.3 cm)
Ship Weight	3.5 lbs (1.6 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Advanced Mini Dry Block Heater	120V   0.645 amps   80 watts	10153-318
Advanced Mini Dry Block Heater	230V   0.325 amps   75 watts	10153-320
Advanced Mini Dry Block Heater with NIST-Traceable Certificate	120V   0.645 amps   80 watts	10153-352
Advanced Mini Dry Block Heater with NIST-Traceable Certificate	230V   0.325 amps   75 watts	10153-354

## VWR® Advanced Mini Dry Block Heaters with Heated Lid

- Heated lid option reduces condensation on sample lids
- Compact, ergonomic design
- Four modular block options

VWR® Advanced Mini Dry Block Heaters with Heated Lid are ideal for a variety of applications that require accurate and repeatable results such as LAMP assays, immunoassays, enzyme reactions and denaturations. This personal-sized heater takes up minimal bench space and is small enough to fit in the palm of your hand.

The block heater accepts one interchangeable mini block for 0.2 mL, 0.5 mL, 1.5 mL, or 2 mL tubes. The heated lid helps to reduce the amount of condensation on sample lids, regulate the temperature, and maintain temperature uniformity. Efficient heater features close tube-and-block contact with a low-density design for exceptional temperature uniformity. Units include a block-lifting tool.

### Operating Features:

**Microprocessor control:** PID temperature control provides temperature accuracy as low as  $\pm 0.3^{\circ}\text{C}$  and uniformity as low as  $\pm 0.2^{\circ}\text{C}$ . Samples are heated to temperature quickly and accurately. Temperature can be adjusted in  $\pm 0.1^{\circ}\text{C}$  increments.

**LED display:** Touch pad controls with easy-to-read, independent displays for temperature and time. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or, when programmed to a user-defined limit, will shut off when unit reaches zero. Display will show last settings, even after power has been turned off.

**Temperature calibration mode:** Allows user to calibrate unit to an external temperature device.

### Safety Features:

**Audible alarm:** In timed mode, alarm will sound when time reaches zero and when unit reaches set-point temperature.

**Cool-touch housing:** Constructed from a high-quality, heat- and chemical-resistant polymer. The unit's housing remains cool to the touch throughout normal operating temperatures.

Caution! To avoid possible electrical hazard, do not fill well or block opening with water or other fluids. Unit is designed as a dry bath/incubator.

### Operating Conditions:

Units can be run in conditions from 18 to 33°C (64 to 91°F), 20% to 80% relative humidity, non-condensing.



10153-318

### Applications:

LAMP assays, immunoassays, enzyme reactions and denaturations.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Five-year limited warranty on parts and labor. Heaters require a VWR mini modular heating block for operation (sold separately).

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Specifications

Temperature Range	Ambient +5°C to 100°C
Temperature Accuracy	$\pm 0.3^{\circ}\text{C}$
Temperature Uniformity	$\pm 0.2^{\circ}\text{C}$
Heat-Up Time to 37°C	2 minutes
Timer	1 second to 160 hours
Overall Dimensions (L x W x H)	6.3 x 5 x 4.85" (16 x 12.7 x 12.3 cm)
Ship Weight	3.5 lbs (1.6 kg)

Description	Electrical (50/60 Hz)	Cat. No.
<b>VWR® Advanced Mini Dry Block Heater with Heated Lid</b>		
Advanced Mini Dry Block Heater with Heater Lid	120V   0.440 amps   49 watts	10153-348
Advanced Mini Dry Block Heater with Heater Lid	230V   0.250 amps   48 watts	10153-350
Advanced Mini Dry Block Heater with Heater Lid NIST-Traceable Certificate	120V   0.670 amps   76 watts	10153-356
Advanced Mini Dry Block Heater with Heater Lid NIST-Traceable Certificate	230V   0.340 amps   73 watts	10153-358

### VWR® Accessories for Advanced Mini Dry Block Heaters

Description	No. of Wells	Dimensions (D x W x H)	Well Depth	Well Diameter	Thermometer Well	Cat. No.
Mini Block for 0.2 mL Tubes	40	2.8 x 1.85 x 1.05" (7.11 x 4.69 x 2.67 cm)	15.2 mm	6.4 mm	N/A	10153-360
Mini Block for 0.5 mL Tubes	24	2.8 x 1.85 x 1.15" (7.11 x 4.69 x 2.92 cm)	21 mm	7.9 mm	N/A	10153-362
Mini Block for 1.5 mL Tubes	15	2.8 x 1.85 x 1.3" (7.11 x 4.69 x 3.30 cm)	30.5 mm	11.1 mm	Yes	10153-364
Mini Block for 2.0 mL Tubes	15	2.8 x 1.85 x 1.3" (7.11 x 4.69 x 3.30 cm)	30.5 mm	11.5 mm	N/A	10153-366
Mini Block for 15 mL Tubes*	4	2.8 x 1.85 x 2.95" (7.11 x 4.69 x 5.59 cm)	72.4 mm	17.1 mm	Yes	10153-368
Mini Block for 50 mL Tubes*	2	2.8 x 1.85 x 2.95" (7.11 x 4.69 x 5.59 cm)	72.4 mm	30.0 mm	Yes	10153-370

\* Not able to be used with Advanced Mini Dry Block Heater with Heated Lid

## VWR® Advanced Dry Block Heaters

- New design with smaller footprint
- Exceptional temperature uniformity and stability
- Optional external temperature-probe
- Holds interchangeable modular blocks

Designed for applications that require repeatable results and superior temperature stability. These multi-purpose units are ideal for incubation and activation of cultures, enzyme reactions, immunoassays, melting/boiling points, and a wide variety of other laboratory procedures. Integral support rod holder with locking knob accepts optional External Temperature Probe Kit. Optional External Temperature-Probe Kit monitors actual block or sample temperature. Each of the five models accepts separate interchangeable modular blocks, accommodating various tube sizes from 0.2mL micro-tubes to 50mL centrifuge tubes. Each block has a thermometer well for measuring block temperature. Efficient heating due to close tube-and-block contact for maximum heat retention. Heaters require VWR® modular heating blocks for operation. Modular blocks are sold separately (see pages 74-76).

### Operating Features:

**Microprocessor control:** PID temperature control, with optional external RTD probe, offers a temperature stability as low as  $\pm 0.1^\circ\text{C}$  with a temperature uniformity as low as  $\pm 0.1^\circ\text{C}$ . Samples are heated to temperature quickly and accurately. Temperature is adjusted in  $0.1^\circ\text{C}$  increments.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for temperature and time. Provides repeatable and accurate results every time and is easily visible across lab benches. Shows set point and actual temperatures. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Temperature calibration mode:** Allows user to calibrate unit to an external temperature device.

### Safety Features:

**Heat caution indicator:** Hot-symbol warning light is illuminated when the temperature is above  $40^\circ\text{C}$ .

**Audible alarm:** In timed mode, alarm will sound when time reaches zero and when unit reaches set-point temperature.

Caution! To avoid possible electrical hazard, do not fill well or block opening with water or other fluids. Unit is designed as a dry bath/incubator.

### Operating Conditions:

Units can be run in conditions from 18 to  $33^\circ\text{C}$  ( $64$  to  $91^\circ\text{F}$ ), 20% to 80% relative humidity, non-condensing.

### Applications:

Denaturing proteins, DNA applications, ELISA and other immunoassay studies.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Five-year limited warranty on parts and labor. Modular blocks are sold separately (see pages 74-76).

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.



75838-270 with optional block 13259-286 and optional probe kit 11301-112

Size	Temperature Range	Stability @ 37°C	Uniformity Within the Block @ 37°C	Uniformity Across Similar Blocks @ 37°C	Heat-Up Time to 100°C	Timer
1 block	Ambient +5°C to 120°C	120-volt units:	120-volt units:	N/A	45 minutes	1 second to 160 hours
2 block		$\pm 0.1^\circ\text{C}$	$\pm 0.1^\circ\text{C}$	$\pm 0.1^\circ\text{C}$	50 minutes	
4 block		230-volt units:	230-volt units:	$\pm 0.2^\circ\text{C}$	60 minutes	
6 block		$\pm 0.2^\circ\text{C}$	$\pm 0.2^\circ\text{C}$	$\pm 0.3^\circ\text{C}$	65 minutes	

Block Capacity	Dimensional (L x W x H)	Electrical (50/60 Hz)	Ship Weight	Cat. No.
<b>VWR® Advanced Dry Block Heaters</b>				
1	10.6 x 7.7 x 4.6" (26.9 x 19.6 x 11.7 cm)	120V   0.9 amps   100 watts	5 lbs (2.3 kg)	75838-270
1	10.6 x 7.7 x 4.6" (26.9 x 19.6 x 11.7 cm)	230V   0.5 amps   100 watts	5 lbs (2.3 kg)	75838-324
2	13.7 x 7.7 x 4.6" (34.8 x 19.6 x 11.7 cm)	120V   1.8 amps   190 watts	5.7 lbs (2.6 kg)	75838-282
2	13.7 x 7.7 x 4.6" (34.8 x 19.6 x 11.7 cm)	230V   0.9 amps   190 watts	5.7 lbs (2.6 kg)	75838-320
4	16.7 x 7.9 x 4.1" (42.4 x 20.1 x 10.4 cm)	120V   2.7 amps   290 watts	8.8 lbs (4.0 kg)	75838-294
4	16.7 x 7.9 x 4.1" (42.4 x 20.1 x 10.4 cm)	230V   1.3 amps   270 watts	8.8 lbs (4.0 kg)	75838-288
6	20.7 x 7.9 x 4.1" (52.6 x 20.1 x 10.4 cm)	120V   3.4 amps   360 watts	10 lbs (4.5 kg)	75838-306
6	20.7 x 7.9 x 4.1" (52.6 x 20.1 x 10.4 cm)	230V   2.0 amps   420 watts	10 lbs (4.5 kg)	75838-300
<b>VWR® Advanced Dry Block Heaters with NIST-Traceable Certificate</b>				
1	10.6 x 7.7 x 4.6" (26.9 x 19.6 x 11.7 cm)	120V   0.9 amps   110 watts	5 lbs (2.3 kg)	75838-316
1	10.6 x 7.7 x 4.6" (26.9 x 19.6 x 11.7 cm)	230V   0.5 amps   110 watts	5 lbs (2.3 kg)	75838-266
2	13.7 x 7.7 x 4.6" (34.8 x 19.6 x 11.7 cm)	120V   1.7 amps   210 watts	5.7 lbs (2.6 kg)	75838-284
2	13.7 x 7.7 x 4.6" (34.8 x 19.6 x 11.7 cm)	230V   0.9 amps   210 watts	5.7 lbs (2.6 kg)	75838-322
4	16.7 x 7.9 x 4.1" (42.4 x 20.1 x 10.4 cm)	120V   2.6 amps   310 watts	8.8 lbs (4.0 kg)	75838-296
4	16.7 x 7.9 x 4.1" (42.4 x 20.1 x 10.4 cm)	230V   1.3 amps   310 watts	8.8 lbs (4.0 kg)	75838-290
6	20.7 x 7.9 x 4.1" (52.6 x 20.1 x 10.4 cm)	120V   3.4 amps   410 watts	10 lbs (4.5 kg)	75838-308
6	20.7 x 7.9 x 4.1" (52.6 x 20.1 x 10.4 cm)	230V   1.7 amps   410 watts	10 lbs (4.5 kg)	75838-302

### External Temperature-Probe Kit

Enables the unit to read actual block or sample temperature and display that temperature on the control panel. The optional External Temperature-Probe Kit includes a stainless steel RTD PT100 probe, 18" (45.7cm) stainless steel support rod, thermometer/temperature-probe extension clamp and hook connector. The RTD probe is designed to fit perfectly into the thermometer well of each modular block.



Description	Cat. No.
Optional External Temperature-Probe Kit	11301-112



## Complex Problems Require Sophisticated Solutions

For over 160 years, our customers have been challenged with finding the answers that help improve lives. Our mission is to enable this by eliminating the process complexities and identifying product and service solutions that help labs and production facilities work better, faster, and smarter.

Through our global reach and knowledgeable associates, we proudly excel in delivering solutions that improve productivity, accelerate discovery, and encourage innovation.

Delivered by a team of people focused on your success.  
**Together, We Enable Science.**

## VWR® Advanced Dry Block Heater with Heated Lid



- Exceptional uniformity, stability, and regulation of temperature
- Heated lid reduces condensation on sample lids
- Optional external temperature-probe

VWR® Advanced Dry Block Heaters with Heated Lid are designed for applications that require repeatable results and superior temperature stability. These multi-purpose units are ideal for isothermal incubation, enzyme reactions, immunoassays, nucleic acid denaturation and a wide variety of other laboratory procedures. Integral support rod holder with locking knob accepts optional External Temperature-Probe Kit. Optional External Temperature-Probe Kit monitors actual block or sample temperature. Block heater accepts (1) one microplate block or (2) two separate interchangeable modular blocks, accommodating various tube sizes from 0.2mL micro-tubes to test tubes or vials up to 85mm in height. Each block has a thermometer well for measuring block temperature. Efficient heating due to close tube-and-block contact with a low-density design for exceptional temperature uniformity. The heated lid helps to regulate the temperature and reduce the amount of condensation on sample lids. Heaters require VWR® modular heating blocks for operation. Modular blocks are sold separately (see pages 74-76).



75838-278 with optional block 13259-295

### Operating Features:

**Microprocessor control:** PID temperature control, with optional external RTD probe, offers a temperature stability as low as  $\pm 0.1^\circ\text{C}$  with a temperature uniformity as low as  $\pm 0.1^\circ\text{C}$ . Samples are heated to temperature quickly and accurately. Temperature is adjusted in  $0.1^\circ\text{C}$  increments.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for temperature and time. Provides repeatable and accurate results every time and is easily visible across lab benches. Shows set point and actual temperature. Timer will display elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

**Temperature calibration mode:** Allows user to calibrate unit to an external temperature device.

### Safety Features:

**Heat caution indicator:** Hot-symbol warning light is illuminated when the temperature is above  $40^\circ\text{C}$ .

**Audible alarm:** In timed mode, alarm will sound when time reaches zero and when unit reaches set-point temperature.

**CAUTION!** To avoid possible electrical hazard, do not fill well or block opening with water or other fluids. Unit is designed as a dry bath/incubator.

### Operating Conditions:

Units can be run in environments from  $18$  to  $33^\circ\text{C}$  ( $64$  to  $91^\circ\text{F}$ ),  $20\%$  to  $80\%$  relative humidity, non-condensing.

### Applications:

Isothermal incubation, enzyme reactions, immunoassays and nucleic acid denaturation.

### Ordering Information

Units include a  $92''$  ( $234\text{cm}$ ) detachable, 3-wire cord and plug ( $230$ -volt units are supplied with Euro-type plug). Five-year limited warranty on parts and labor. Optional temperature-probe kit available (see page 71). Modular blocks are sold separately (see pages 74-76).

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the temperature range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

Size	Temperature Range	Stability @ $37^\circ\text{C}$	Uniformity Within the Block @ $37^\circ\text{C}$	Uniformity Across Similar Blocks @ $37^\circ\text{C}$	Heat-Up Time to $100^\circ\text{C}$	Timer
2 block	Ambient $+5^\circ\text{C}$ to $100^\circ\text{C}$	120-volt units $\pm 0.1^\circ\text{C}$ 230-volt units $\pm 0.2^\circ\text{C}$	120-volt units $\pm 0.1^\circ\text{C}$ 230-volt units $\pm 0.2^\circ\text{C}$	$\pm 0.1^\circ\text{C}$ $\pm 0.2^\circ\text{C}$	50 minutes	1 second to 160 hours

Block Capacity	Dimensional (L x W x H)	Electrical (50/60 Hz)	Ship Weight	Cat. No.
<b>VWR® Advanced Dry Block Heaters</b>				
2	13.7 x 7.7 x 7.4" (34.8 x 19.6 x 18.8 cm)	120V   3.0 amps   400 watts	8.7 lbs (3.9 kg)	75838-278
2	13.7 x 7.7 x 7.4" (34.8 x 19.6 x 18.8 cm)	230V   1.65 amps   400 watts	8.7 lbs (3.9 kg)	75838-274
<b>VWR® Advanced Dry Block Heaters with NIST-Traceable Certificate</b>				
2	13.7 x 7.7 x 7.4" (34.8 x 19.6 x 18.8 cm)	120V   3.0 amps   400 watts	8.7 lbs (3.9 kg)	75838-280
2	13.7 x 7.7 x 7.4" (34.8 x 19.6 x 18.8 cm)	230V   1.65 amps   400 watts	8.7 lbs (3.9 kg)	75838-276

## VWR® Standard Dry Block Heaters

- New design with smaller footprint
- Multi-purpose use
- Holds interchangeable modular blocks
- Analog controls

High-wattage, constant-temperature VWR® Standard Dry Block Heaters are economical, versatile and compact. These multi-purpose units are ideal for incubation and activation of cultures, enzyme reactions, immunoassays, melting/boiling points and a wide variety of other laboratory procedures. Each of the five models accepts separate interchangeable modular blocks, accommodating various sample enclosures such as micro-tubes, centrifuge tubes, vials, microplates, and PCR strips or tubes. Each block has a thermometer well for measuring block temperature. Anodized aluminum modular blocks provide superior temperature stability and heat transfer. Heaters require VWR® modular heating blocks for operation. Modular blocks are sold separately (see pages 74-76).

### Operating Features:

**Microprocessor control:** PID temperature controller maintains precise temperature control. Samples are heated to temperature quickly and accurately

**Adjustment knobs:** Dual temperature control-knobs with dial markings from 1 to 10 for low-temperature and high-temperature adjustments. Low-range knob adjusts from ambient to 100°C and high-range knob adjusts from 75°C to 150°C.

Caution! To avoid possible electrical hazard, do not fill well or block opening with water or other fluids. Unit is designed as a dry bath/incubator.

### Operating Conditions:

Units can be run in conditions from 18 to 33°C (64 to 91°F), 20% to 80% relative humidity, non-condensing.

### Applications:

Coagulation and RH Studies.

### Ordering Information

Units include a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Five-year limited warranty on parts and labor. Modular blocks are sold separately (see pages 74-76).



75838-282 with optional blocks  
13259-000 and 13259-130



75838-270 with optional  
block 13259-250

Size	Temperature Range	Stability @ 37°C	Uniformity Within the Block @ 37°C	Uniformity Across Similar Blocks @ 37°C	Heat-Up Time to 100°C
1 block	Low Range: Ambient +5°C to 100°C High Range: 75°C to 150°C	120-volt units ±1.0°C 230-volt units ±1.5°C	120-volt units: ±0.1°C 230-volt units: ±0.2°C	N/A	45 minutes
2 block		120-volt units ±1.5°C 230-volt units ±2.0°C	±0.1°C	50 minutes	
4 block		120-volt units ±2.0°C 230-volt units ±2.5°C	±0.2°C	70 minutes	
6 block		120-volt units ±2.0°C 230-volt units ±2.5°C	±0.3°C	75 minutes	

Block Capacity	Dimensional (L x W x H)	Electrical (50/60 Hz)	Ship Weight	Cat. No.
1	10.6 x 7.7 x 4.6" (26.9 x 19.6 x 11.7 cm)	120V   0.9 amps   110 watts	5 lbs (2.3 kg)	75838-318
1	10.6 x 7.7 x 4.6" (26.9 x 19.6 x 11.7 cm)	230V   0.5 amps   110 watts	5 lbs (2.3 kg)	75838-268
2	13.7 x 7.7 x 4.6" (34.8 x 19.6 x 11.7 cm)	120V   1.7 amps   210 watts	5.7 lbs (2.6 kg)	75838-286
2	13.7 x 7.7 x 4.6" (34.8 x 19.6 x 11.7 cm)	230V   0.9 amps   210 watts	5.7 lbs (2.6 kg)	75838-272
4	16.7 x 7.9 x 4.1" (42.4 x 20.1 x 10.4 cm)	120V   2.6 amps   310 watts	8.8 lbs (4.0 kg)	75838-298
4	16.7 x 7.9 x 4.1" (42.4 x 20.1 x 10.4 cm)	230V   1.3 amps   310 watts	8.8 lbs (4.0 kg)	75838-292
6	20.7 x 7.9 x 4.1" (52.6 x 20.1 x 10.4 cm)	120V   3.4 amps   410 watts	10 lbs (4.5 kg)	75838-310
6	20.7 x 7.9 x 4.1" (52.6 x 20.1 x 10.4 cm)	230V   1.7 amps   410 watts	10 lbs (4.5 kg)	75838-304

## VWR® Modular Blocks & Accessories

VWR® Modular blocks are constructed from a solid anodized aluminum block. The close contact of tubes-to-block-walls allow for maximum heat retention. Each block has a thermometer well for measuring block temperature.

CAUTION! To avoid possible electrical hazard, do not fill well or block with water or other liquids. Units are designed as a dry bath/incubator. Color of block may vary.

Single-block dimensions (L x W x H): 3.75 x 3 x 2" (9.5 x 7.6 x 5.1cm), Double-block dimensions (L x W x H): 6 x 3.75 x 2.25" (15.2 x 9.5 x 5.7cm)



### Microcentrifuge Tube Blocks

Single block.

Brand/Sample Type	No. of Wells	Well Dia.	Well Depth	Cat. No.
0.5 mL Tube	30	7.9 mm	27.6 mm	13259-000
1.5 mL Tube	20	11.1 mm	39.1 mm	13259-286
1.5 mL Eppendorf™ Tube	20	11.5 mm	36.9 mm	13259-002
2 mL Eppendorf™ Tube	20	11.5 mm	38.1 mm	12985-048
2 mL Corning™ Tube	20	10.9 mm	38.1 mm	12985-050



### Titer Plate Block

Double block. Fits 24/6-block Dry Block Heaters. Ideal for 96-well or 384-well titer plates. Recessed well for better stability, flat surface good for flat and round bottom plates.

Sample Type	Well Depth	Cat. No.
Titer Plate	13.5 mm	13259-295



### Conical-Bottom Centrifuge Tube Blocks

Single block.

Sample Type	No. of Wells	Well Dia.	Well Depth	Cat. No.
15 mL Tube	12	17.1 mm	44.5 mm	13259-250
50 mL Tube	5	29 mm	47.6 mm	13259-254



### Standard Test Tube Blocks

Single block.

Sample Type	No. of Wells	Well Dia.	Well Depth	Cat. No.
6 mm Tube	30	8.3 mm	48.4 mm	13259-105
10 mm Tube	24	10.7 mm	48.4 mm	13259-107
12/13 mm Tube	20	13.9 mm	48.4 mm	13259-130
12/13 mm Tube	16	13.9 mm	48.4 mm	13259-120
15/16 mm Tube	12	17.5 mm	48.4 mm	13259-162
17/18 mm Tube	12	19.1 mm	48.4 mm	14216-212
20 mm Tube	8	21 mm	48.4 mm	13259-184
25 mm Tube	6	26.2 mm	48.4 mm	13259-210
35 mm Tube	4	35 mm	47.6 mm	13259-252

## VWR® Modular Blocks & Accessories

### Combination Blocks

Single block. These blocks are designed for variable-sized samples.



Sample Type		No. of Wells	Well Dia.	Well Depth	Cat. No.
Test Tube Combination:	6 mm	6	8.3 mm	48.4 mm	13259-242
	12/13 mm	5	13.8 mm	48.4 mm	
	25 mm	3	26.2 mm	48.4 mm	
Centrifuge Tube Combination:	1.5 mL	4	11.1 mm	39.1 mm	12985-040
	15 mL	3	17.1 mm	44.5 mm	
	50 mL	2	29 mm	47.6 mm	
Micro-Tube Combination:	0.5 mL	6	7.9 mm	27.6 mm	12985-042
	1.5 mL	10	11.1 mm	39.1 mm	
	2 mL	5	11.5 mm	38.1 mm	

### Vial Blocks

Single block. Designed for sample/serum and scintillation vials.



Sample Type	No. of Wells	Well Dia.	Well Depth	Cat. No.
12 mm Vial	20	12.7 mm	30 mm	12621-124
15 mm Vial	20	15.8 mm	35 mm	12621-126
16 mm Vial	15	16.4 mm	45 mm	12985-066
17 mm Vial	12	17.8 mm	45 mm	12621-128
19 mm Vial	12	19.7 mm	45 mm	12621-130
21 mm Vial	9	21.7 mm	45 mm	12621-132
23 mm Vial	8	23.8 mm	45 mm	12621-134
25 mm Vial	8	25.8 mm	45 mm	12621-136
28 mm Vial	6	28.8 mm	45 mm	12621-138

### PCR - Plate, Tube, Strip Blocks

Single and double block. Tapered tube wells for 0.2mL tubes. Spaced for easy access and removal.



Sample Type	Block Size	No. of Wells	Well Dia.	Well Depth	Cat. No.
96-well PCR Plate	Double	96	6.4 mm	15.5 mm	13259-260
10 x 8 Tube Strips	Single	80	6.4 mm	15.5 mm	13259-256
Individual Tubes	Single	64	6.4 mm	20.2 mm	13259-258

### Cuvette Block

Single block. Two parallel slots fit 6 cuvettes in each slot, side-by-side.



Sample Type	No. of Wells	Well Depth	Cat. No.
(12) 12.5 mm Cuvettes	2	25.4 mm	13259-290

## VWR® Modular Blocks & Accessories

### Solid Blocks

Single and double block. For use as a low-temperature hotplate, slide drying, or for custom drilling to make a custom block.

Block Size	Dimension (L x W x H)	Cat. No.
Single	3.75 x 3 x 2" (9.5 x 7.6 x 5.1 cm)	13259-288
Double	6 x 3.75 x 2.25" (15.2 x 9.5 x 5.7 cm)	13259-297



### Stainless Steel Sand Baths

Ideal for irregular vessels. Stainless steel construction for superior corrosion resistance. Designed to hold sand, stainless steel shot or non-volatile liquids.

For Unit	Dimensions (L x W x H)	Cat. No.
1-Block Dry Block Heater	3.8 x 3 x 2.5" (9.5 x 7.6 x 6.4 cm)	13259-262
2-Block Dry Block Heater	3.8 x 5.9 x 2.5" (9.5 x 14.9 x 6.4 cm)	13259-264
3-Block Dry Block Heater	3.8 x 8.8 x 2.5" (9.5 x 22.4 x 6.4 cm)	13259-266
4-Block Dry Block Heater	5.8 x 7.5 x 2.5" (14.7 x 19.1 x 6.4 cm)	13259-268
6-Block Dry Block Heater	5.8 x 11.3 x 2.5" (14.7 x 28.7 x 6.4 cm)	13259-270

Accessory	Cat. No.
Sand, 1 lb (0.45 kg)	13259-272
Stainless Steel Shot, 1 lb (0.45 kg)	13259-274



### Low-Temperature Covers

Plexiglass reduces air flow for additional temperature stability in low-temperature applications. Two sides are open 0.25" (6.4mm).

Block Size	Dimensions (L x W x H)	Cat. No.
2-Block Cover	6.5 x 6.5 x 1.6" (16.5 x 16.5 x 4.1 cm)	13259-301
4-Block Cover	8.5 x 8.5 x 1.6" (21.6 x 21.6 x 4.1 cm)	13259-303
6-Block Cover	12.5 x 8.5 x 1.6" (31.8 x 21.6 x 4.1 cm)	13259-304



## VWR® Standard & Advanced Microplate Vortex Mixers



### VWR® Standard Microplate Vortex Mixer

- Designed for continuous duty
- Designed for shaking microplates or tubes
- Optional double microplate holder available

The VWR® Standard Microplate Vortex Mixer is a variable-speed analog mixer that is designed for continuous duty. The high speed and small orbit is optimal for effectively mixing microplates. Choose from two modes of operation: "Touch" mode, which activates mixing when cup head is depressed, or "On" mode for continuous operation while using the microplate attachments.

#### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

#### Ordering Information:

Mixer includes a cup head, single microplate holder, and a 92" (234cm) detachable, 3-wire cord and plug. Accessories that can be used on the Microplate Vortex Mixer are cup head, single microplate holder and double microplate holder. Five-year limited warranty on parts and labor.



89399-880

#### Specifications

<b>Speed Range</b>	On Mode:	300-2500 rpm
	Touch Mode:	300-3500 rpm
<b>Orbit</b>	3.5 mm (0.13")	
<b>Controls</b>	Analog	
<b>Capacity</b>	2 microplates	
<b>Duty Rating</b>	Continuous duty	
<b>Dimensions (L x W x H)</b>	10.5 x 5.4 x 4.5" (26.7 x 13.7 x 11.4 cm)	
<b>Ship Weight</b>	12 lbs (5.4 kg)	

Description	Electrical (50/60 Hz)	Cat. No.
Standard Vortex Mixer	120V   0.25 amps   30 watts	89399-880

## VWR® Advanced Microplate Vortex Mixer



- Designed for continuous duty
- Designed for shaking microplates or tubes
- LED displays for speed and time

The VWR® Advanced Microplate Vortex Mixer is ideal for applications that demand repeatable results. Mixer features touchpad controls and LED displays for accurate speed (rpm) and time (minutes and seconds) results. Microprocessor control maintains set speed for strong, consistent mixing action. Timer will display elapsed time or shut off when user-defined time limit reaches zero. Choose from two modes of operation: "Touch" mode, which activates mixing when cup head is depressed, or "On" mode for continuous operation while using the microplate attachments.

### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

### Ordering Information:

Mixer includes a cup head, single microplate holder, and a 92" (234cm) detachable, 3-wire cord and plug. (230-volt units are supplied with Euro-type plug). Accessories that can be used on the Microplate Vortex Mixer are cup head, single microplate holder and double microplate holder. Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.



<b>Speed Range</b>	On Mode:	300-2500 rpm
	Touch Mode:	300-3500 rpm
<b>Timer</b>	1 second to 160 hours	
<b>Orbit</b>	3.5 mm (0.13")	
<b>Controls</b>	Touch/Standby/On Rocker Switch, LED Displays For Speed/Time, Up/Down Buttons For Set-Point Control	
<b>Capacity</b>	2 microplates	
<b>Duty Rating</b>	Continuous duty	
<b>Dimensions (L x W x H)</b>	10.5 x 5.4 x 4.5" (26.7 x 13.7 x 11.4 cm)	
<b>Ship Weight</b>	12 lbs (5.4 kg)	

Description	Electrical (50/60 Hz)	Cat. No.
<b>VWR® Advanced Microplate Vortex Mixer</b>		
Advanced Vortex Mixer	120V   0.25 amps   30 watts	89399-884
Advanced Vortex Mixer	230V   0.13 amps   30 watts	89399-886
<b>VWR® Advanced Microplate Vortex Mixer with NIST-Traceable Certificate</b>		
Advanced Vortex Mixer	120V   0.25 amps   30 watts	10027-198
Advanced Vortex Mixer	230V   0.13 amps   30 watts	10027-200

## VWR® Standard & Advanced Heavy-Duty Vortex Mixers



### VWR® Standard Heavy-Duty Vortex Mixer

- Designed for continuous duty
- Includes foam insert for 1.5 mL to 2.0 mL microtubes
- Heavy-duty design

The VWR® Standard Heavy-Duty Vortex Mixer is a variable-speed analog mixer that is designed for continuous duty. The heavy-duty design and efficient motor allow this mixer to operate in continuous duty and handle all accessories over the entire speed range. Choose from two modes of operation: "Touch" mode, which activates mixing when cup head or Universal Holder with cover is depressed, or "On" mode for continuous operation while using any of the accessory attachments.

#### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

#### Ordering Information:

Mixer includes a cup head, Universal Holder with cover, foam microtube-insert for (38) 1.5 to 2.0mL microtubes, and a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Five-year limited warranty on parts and labor.



97043-562 with optional insert 97043-596

<b>Speed Range</b>	On Mode:	300-2500 rpm
	Touch Mode:	300-3500 rpm
<b>Orbit</b>	4.9 mm (0.194")	
<b>Controls</b>	Analog	
<b>Capacity</b>	2.5 lbs (1.1 kg)	
<b>Duty Rating</b>	Continuous duty	
<b>Dimensions (L x W x H)</b>	9.5 x 6.6 x 6.3" (24.1 x 16.8 x 16 cm)	
<b>Ship Weight</b>	15 lbs (6.8 kg)	

Description	Electrical (50/60 Hz)	Cat. No.
Standard Vortex Mixer	120V   0.25 amps   30 watts	97043-562
Standard Vortex Mixer	230V   0.13 amps   30 watts	97043-566

## VWR® Advanced Heavy-Duty Vortex Mixer



- Designed for continuous duty
- LED displays for speed and time
- Includes foam insert for 1.5 mL to 2.0 mL microtubes

The VWR® Advanced Heavy-Duty Vortex Mixer is ideal for applications that demand repeatable results. Mixer features touchpad controls and LED displays for accurate speed (rpm) and time (minutes and seconds) results. The heavy-duty design and efficient motor allow this mixer to operate in continuous duty and handle all accessories over the entire speed range. Choose from two modes of operation: "Touch" mode, which activates mixing when cup head or Universal Holder with cover is depressed, or "On" mode for continuous operation while using any of the accessory attachments. Microprocessor control maintains set speed for strong, consistent mixing action. Timer will display elapsed time or shut off when user-defined time limit reaches zero.

### Ordering Information:

Mixer includes a cup head, Universal Holder with cover, foam microtube-insert for (38) 1.5 to 2.0mL microtubes, and a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.



97043-564 with optional microplate holders  
97043-582 and 97043-580

<b>Speed Range</b>	On Mode:	300-2500 rpm
	Touch Mode:	300-3500 rpm
<b>Timer</b>	1 second to 160 hours	
<b>Orbit</b>	4.9 mm (0.194")	
<b>Controls</b>	Touch/Standby/On Rocker Switch, LED Displays For Speed/Time, Up/Down Buttons For Set-Point Control	
<b>Capacity</b>	2.5 lbs (1.1 kg)	
<b>Duty Rating</b>	Continuous duty	
<b>Dimensions (L x W x H)</b>	9.5 x 6.6 x 6.3" (24.1 x 16.8 x 16 cm)	
<b>Ship Weight</b>	15 lbs (6.8 kg)	

Description	Electrical (50/60 Hz)	Cat. No.
<b>VWR® Advanced Heavy-Duty Vortex Mixer</b>		
Advanced Vortex Mixer	120V   0.25 amps   30 watts	97043-564
Advanced Vortex Mixer	230V   0.13 amps   30 watts	97043-568
<b>VWR® Advanced Heavy-Duty Vortex Mixer with NIST-Traceable Certificate</b>		
Advanced Vortex Mixer	120V   0.25 amps   30 watts	10027-194
Advanced Vortex Mixer	230V   0.13 amps   30 watts	10027-196

**VWR® Accessories**

**Foam Insert for 0.5 mL microtubes**

Foam insert holds fifty-two (52) 0.5mL microtubes. Requires Universal Holder.



Description	Cat. No.
0.5 mL microtubes	97043-584
Universal Holder	97043-574

**Foam Insert for 1.5 to 2.0 mL microtubes**

Foam insert holds thirty-eight (38) 1.5 to 2.0mL microtubes. Requires Universal Holder.



Description	Cat. No.
1.5 to 2.0 mL microtubes	97043-586
Universal Holder	97043-574

**Foam Insert for 12-13 mm test tubes**

Foam insert holds thirty-four (34) 12-13mm diameter test tubes. Requires Universal Holder.



Description	Cat. No.
12-13 mm test tubes	97043-588
Universal Holder	97043-574

**Foam Insert for 15-18 mm test tubes**

Foam insert holds twenty (20) 15-18mm diameter test tubes. Ideal for 15mL centrifuge tubes. Requires Universal Holder.



Description	Cat. No.
15-18 mm test tubes	97043-590
Universal Holder	97043-574

**Foam Insert for 19-21 mm test tubes**

Foam insert holds eighteen (18) 19-21mm diameter test tubes. Requires Universal Holder.



Description	Cat. No.
19-21 mm test tubes	97043-592
Universal Holder	97043-574

**Foam Insert for 22-25 mm test tubes**

Foam insert holds thirteen (13) 22-25mm diameter test tubes. Requires Universal Holder.



Description	Cat. No.
22-25 mm test tubes	97043-594
Universal Holder	97043-574

**Foam Insert for 26-29 mm test tubes**

Foam insert holds four (4) 26-29mm diameter test tubes. Ideal for 50mL centrifuge tubes. Requires Universal Holder.



Description	Cat. No.
26-29 mm test tubes	97043-596
Universal Holder	97043-574

**Single Tube Holder**

Single tube handsfree mixing designed to fit on the Heavy-Duty Vortex Mixer. Easily attaches to the top of mixer and is magnetically secured. Accepts tubes from 2.5 to 4.5" (6.4-11.4cm). Minimum tube diameter is 0.75" (19mm).



Cat. No.
97043-602

**Cup Head \***

Designed for mixing one tube at a time.



Description	Cat. No.
Cup Head	97043-570

**Small Vessel Holder**

Rubber holder secures 125 and 250mL Erlenmeyer flasks. Vessel holder also includes a grip mat. Requires Universal Holder.



Description	Cat. No.
Small Vessel Holder	97043-598
Universal Holder	97043-574

**Large Vessel Holder**

Rubber holder secures 500 and 1000mL Erlenmeyer flasks. Vessel holder also includes a grip mat. Requires Universal Holder.



Description	Cat. No.
Large Vessel Holder	97043-600
Universal Holder	97043-574

**Microplate Holder (single) \***

Designed to hold one standard microplate



Description	Cat. No.
Single Holder	97043-572

**Microplate Holder (double) \***

Designed to hold two standard microplates.



Description	Cat. No.
Double Holder	97043-578

**Microplate Holder (quad)**

Designed to hold four standard microplates.



Description	Cat. No.
Quad Holder	97043-580

**Stackable Microplate Holder**

Designed to maximize the capacity of the Heavy-Duty Vortex Mixer to eight microplates by stacking the tray on top of the four-plate holder.



Description	Cat. No.
Stackable Holder	97043-582

**Flat Foam Insert**

Ideal for custom applications. Can be cut or drilled to fit your specifications. Requires Universal Holder.



Description	Cat. No.
Flat Foam Insert	97043-604
Universal Holder	97043-574

**Universal Holder & Cover**

Replacement for items supplied with Heavy-Duty Vortex Mixer. Cover allows for mixing irregularly shaped objects.



Description	Cat. No.
Universal Holder	97043-574
Universal Holder Cover	97043-576

**NOTE:** Unless noted with an asterisk (\*), for use on Heavy-Duty Vortex only.

## VWR® Fixed Speed & Digital Vortex Mixers

### VWR® Fixed Speed Vortex Mixer

- New ergonomic design
- Fixed high-speed mixing
- Touch-mode operation

New ergonomic design provides optimum comfort and minimal stress. Starts mixing when the cup head is pressed down. Speed is fixed at full rpm to provide vigorous vortexing of samples.

#### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

#### Ordering Information:

Units include a 72" (183cm), 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Includes both cup head and three-inch head with cover. Five-year limited warranty on parts and labor.

Description	Electrical (50/60 Hz)	Cat. No.
Fixed Speed Vortex Mixer	120V   1.2 amps   150 watts	<b>10153-834</b>
Fixed Speed Vortex Mixer	230V   0.6 amps   150 watts	<b>10153-836</b>



10153-834



<b>Speed Range*</b>	120V	3200 rpm
	230V	2500 rpm
<b>Orbit</b>	4.9 mm (0.194")	
<b>Controls</b>	None	
<b>Duty Rating</b>	Intermittent Duty	
<b>Dimensions (L x W x H)</b>	7 x 4.4 x 5.3" (17.8 x 11.2 x 13.5 cm)	
<b>Ship Weight</b>	10 lbs (4.5 kg)	

\* Maximum speed will vary depending on accessory used.

### VWR® Digital Vortex Mixer

- New ergonomic design
- LED displays for speed and time
- Continuous or touch-mode operation
- Microprocessor controls

New ergonomic design provides optimum comfort and minimal stress. Ideal for applications that demand repeatable results. Microprocessor control maintains set speed for strong, consistent mixing action. Timer will display elapsed time or shut off when user-defined time limit reaches zero. Two modes of operation: "Touch" mode, which activates mixing when cup head is depressed, or "On" mode for continuous operation while using accessory attachments.

#### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

#### Ordering Information:

Units include a 72" (183cm), 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Includes both cup head and three-inch head with cover. Five-year limited warranty on parts and labor.

Description	Electrical (50/60 Hz)	Cat. No.
<b>VWR® Digital Vortex Mixer</b>		
Digital Vortex Mixer	120V   1.2 amps   150 watts	<b>10153-842</b>
Digital Vortex Mixer	230V   0.6 amps   150 watts	<b>10153-810</b>
<b>VWR® Digital Vortex Mixer with NIST-Traceable Certificate</b>		
Digital Vortex Mixer	120V   1.2 amps   150 watts	<b>10153-816</b>
Digital Vortex Mixer	230V   0.6 amps   150 watts	<b>10153-818</b>



10153-842



Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

<b>Speed Range*</b>	120V	500 to 3000 rpm
	230V	500 to 2500 rpm
<b>Timer</b>	1 second to 160 hours	
<b>Orbit</b>	4.9 mm (0.194")	
<b>Duty Rating</b>	Intermittent Duty	
<b>Controls</b>	Auto/Standby/On Rocker Switch, LED Displays For Speed/Time, Up/Down Buttons For Set-Point Control	
<b>Dimensions (L x W x H)</b>	7 x 4.4 x 5.3" (17.8 x 11.2 x 13.5 cm)	
<b>Ship Weight</b>	10 lbs (4.5 kg)	

\* Maximum speed will vary depending on accessory used.

## VWR® Analog & Pulsing Vortex Mixers

### VWR® Analog Vortex Mixer

- New ergonomic design
- Variable, analog speed control
- Continuous or touch-mode operation

New ergonomic design provides optimum comfort and minimal stress. Control allows low-rpm startup for gentle shaking or high-speed mixing for vigorous vortexing of samples. Two modes of operation: "Touch" mode, which activates mixing when cup head is depressed, or "On" mode for continuous operation while using accessory attachments.

#### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

#### Ordering Information:

Units include a 72" (183cm), 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Includes both cup head and three-inch head with cover. Five-year limited warranty on parts and labor.

Description	Electrical (50/60 Hz)	Cat. No.
Analog Vortex Mixer	120V   1.2 amps   150 watts	<b>10153-838</b>
Analog Vortex Mixer	230V   0.6 amps   150 watts	<b>10153-840</b>



10153-838

<b>Speed Range*</b>	120V	300 to 3200 rpm
	230V	300 to 2500 rpm
<b>Orbit</b>	4.9 mm (0.194")	
<b>Duty Rating</b>	Intermittent Duty	
<b>Controls</b>	Auto/Off/On Rocker Switch, Speed Knob: Variable 1 to 10 Dial Marks	
<b>Dimensions (L x W x H)</b>	7 x 4.4 x 5.3" (17.8 x 11.2 x 13.5 cm)	
<b>Ship Weight</b>	10 lbs (4.5 kg)	

\* Maximum speed will vary depending on accessory used.

### VWR® Pulsing Vortex Mixer

- New ergonomic design
- LED displays for time and speed
- Continuous or touch-mode operation
- Glass-bead cell disruption/homogenization

New ergonomic design provides optimum comfort and minimal stress. Powerful pulsing vortex action produces excellent cell disruption for glass-bead procedures. Capable of complete cell disruption of samples in only minutes. Unique pulsing action reduces heat generation while providing more effective mixing and disruption. Displayed time counts up during continuous operation and counts down during timed runs.

#### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

#### Ordering Information:

Units include a 72" (183cm), 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Includes cup head, three inch head with cover, and an easy-to-load 1.5 to 2mL Micro-Tube Holder. Holder has a built-in cup head. Five-year limited warranty on parts and labor.

Description	Electrical (50/60 Hz)	Cat. No.
<b>VWR® Pulsing Vortex Mixer</b>		
Pulsing Vortex Mixer	120V   1.2 amps   150 watts	<b>10153-812</b>
Pulsing Vortex Mixer	230V   0.6 amps   150 watts	<b>10153-814</b>
<b>VWR® Pulsing Vortex Mixer with NIST-Traceable Certificate</b>		
Pulsing Vortex Mixer	120V   1.2 amps   150 watts	<b>10153-820</b>
Pulsing Vortex Mixer	230V   0.6 amps   150 watts	<b>10153-822</b>



10153-812

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

<b>Speed Range*</b>	120V	500 to 3000 rpm
	230V	500 to 2500 rpm
<b>Timer</b>	1 second to 160 hours	
<b>Orbit</b>	2.5 mm (0.098")	
<b>Duty Rating</b>	Intermittent Duty	
<b>Controls</b>	Auto/Standby/On Rocker Switch, LED Displays For Speed/Time, Up/Down Buttons For Set-Point Control Pulse Button	
<b>Dimensions (L x W x H)</b>	7 x 4.4 x 5.3" (17.8 x 11.2 x 13.5 cm)	
<b>Ship Weight</b>	10 lbs (4.5 kg)	

\* Maximum speed will vary depending on accessory used.

## VWR® Vortex Mixer Accessories

### Micro-Tube Holder

Mixes forty-eight (48) 0.25 to 2mL micro-tubes.  
Requires Insert Retainer.

Description	Cat. No.
Micro-Tube Holder (2 pack)	12620-876
Insert Retainer	58816-132



### 9 to 13 mm Tube Holder

Ideal for mixing 5mL culture tubes and micro-vials.  
Requires Insert Retainer.

Description	Cat. No.
9 to 13 mm Tube Holder (2 pack)	58816-138
Insert Retainer	58816-132



### 14 to 19 mm Tube Holder

Ideal for mixing up to eight (8) 15mL centrifuge tubes.  
Requires Insert Retainer.

Description	Cat. No.
14 to 19 mm Tube Holder (2 pack)	58816-140
Insert Retainer	58816-132



### 20 to 25 mm Tube Holder

Ideal for mixing up to eight (8) 50mL centrifuge tubes.  
Requires Insert Retainer.

Description	Cat. No.
20 to 25 mm Tube Holder (2 pack)	58816-142
Insert Retainer	58816-132



### Vessel Harness

Mixes Erlenmeyer flasks and media bottles. Requires Insert Retainer.

Description	Cat. No.
Vessel Harness (2 pack)	58816-136
Insert Retainer	58816-132



### Cup Head

Designed for mixing one tube at a time.

Description	Cat. No.
Cup Head	58816-156



### 3" Rubber Head Cover and 3" Head

Designed for mixing irregular-shaped objects.

Description	Cat. No.
3" (7.6 cm) Rubber Head Cover	58816-154
3" (7.6 cm) Head	58816-152
3" (7.6 cm) Head with Rubber Cover	12620-872



### Micro-Well Plate Holder

Ideal for mixing 96-well plates or deep-well blocks.  
Requires Insert Retainer.

Description	Cat. No.
Micro-Well Plate Holder (2 pack)	12620-878
Insert Retainer	58816-132



### Flat Foam Insert

Ideal for custom applications. Can be cut or drilled to fit your specifications. Requires Insert Retainer.

Description	Cat. No.
Flat Foam Insert (2 pack)	12620-884
Insert Retainer	58816-132



### Ampule Tube Holder

Mixes up to four storage vials and test tubes.

Description	Cat. No.
15 to 17mm Ampule Tube Holder	12620-886
10 to 17mm Ampule Tube Holder	12620-888



### Stainless Steel Microtube Holder

Mixes up to twelve (12) 1.5 to 5mL tubes. Stainless steel construction.

Description	Cat. No.
Microtube Holder	12620-890



### Micro-Tube and Micro-Well Plate Holder Kit

#### Includes:

- 1 Micro-Tube Holder
- 1 Micro-Well Plate Holder
- 1 Insert Retainer

Cat. No.
12620-874



### Tube Holder Kit

#### Includes:

- (1) 9 to 13 mm Tube Holder
- (1) 14 to 19 mm Tube Holder
- (1) 20 to 25 mm Tube Holder
- 1 Flat Foam Insert
- 2 Vessel Harnesses
- 1 Insert Retainer

Cat. No.
58816-130



## VWR® Vortex Mixer Accessories

### Single Tube Holder

Single tube, handsfree mixing. Magnetically attaches to the top of any Vortex Mixer. Accepts tubes from 2.5 to 4.5" (6.4 to 11.4cm) in length. Minimum tube diameter of 0.75" (19mm).

Cat. No.
12620-898



### Adapter for Vortex-Genie® Mixer\*

Adapter plate easily adheres to the Vortex-Genie® Mixer housing so Single Tube Holder (sold separately) can be attached.

Cat. No.
12621-252

\* The Vortex-Genie® Mixer is a registered trademark of Scientific Industries, Inc.



### Single Tube Holder Accessories

#### 0.5mL Micro-Tube Holder

Mixes twenty-four (24) 0.5mL micro-tubes. For use with Single Tube Holder.

Cat. No.
12620-894



#### 1.5 to 2mL Micro-Tube Holder

Mixes eighteen (18) 1.5 to 2mL micro-tubes. For use with Single Tube Holder.

Cat. No.
12620-896



## Grinding Media

### 200-Micron Zirconium Beads Acid-Washed Zirconium Grinding Beads

This high-density bead has enormous grinding energy, resulting in reduced grinding times. Beads have been acid washed to remove contaminants.

**Application:** Suitable for yeast and bacterial spores.

Description	Cat. No.
250 gram bottle	12621-158

### Molecular Biology Grade Zirconium Grinding Beads

Treated to be DNase/RNase-free, these beads are useful for the preparation of samples for molecular biology applications.

**Application:** Preparation of cells for Real-Time PCR.

Description	Cat. No.
250 gram bottle	12621-160

### 400-Micron Silica/Glass Beads Acid-Washed Silica/Glass Beads

Useful for standard applications.

**Application:** Good for disrupting molds and yeast.

Description	Cat. No.
200 gram bottle	12621-152

### Molecular Biology Grade Silica/Glass Beads

Treated to be DNase/RNase-free, these beads are useful for preparing samples for molecular analysis.

**Application:** Molecular applications for disrupting molds and yeast.

Description	Cat. No.
200 gram bottle	12621-154

### Low-Protein Binding Silica/Glass Beads

These treated beads are low-protein binding and useful for homogenizing samples for protein analysis.

**Application:** Disruption of molds/yeasts for high protein recovery.

Description	Cat. No.
200 gram bottle	12621-156

### 800-Micron Silica/Glass Beads Acid-Washed Silica/Glass Beads

Excellent impact energy due to their larger size.

**Application:** Good general grinding media for fungi and spores.

Description	Cat. No.
200 gram bottle	12621-146

### Molecular Biology Grade Silica/Glass Beads

Beads are DNase/RNase-free treated and useful for the preparation of samples for molecular applications and analysis.

**Application:** Useful for disrupting fungi and spores.

Description	Cat. No.
200 gram bottle	12621-148

### Low-Protein Binding Silica/Glass Beads

Beads adsorb less protein than standard beads and are useful when high-protein recovery is necessary.

**Application:** Best choice for preparation of filamentous fungi, spores or pollen that require high protein recovery.

Description	Cat. No.
200 gram bottle	12621-150

## VWR® Standard Multi-Tube Vortexers



- Process up to 50 samples at a time
- Continuous or timed operation
- Includes foam rack for 12 mm tubes

Conveniently angled front panel features rocker switch for run, time, and standby modes.

### Operating Features:

**Microprocessor control:** The variable-speed microprocessor control provides consistent uniform mixing action.

**Adjustment knobs:** Basic speed and time knobs with 1 to 10 dial settings.

### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

### Applications:

Suspensions, high-throughput testing in clinical, environmental, and chemistry labs.

### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro type-plug). Unit is also supplied with a Tray Pad Set for support and one 12mm Test Tube Foam Rack (58816-330). Five-year limited warranty on parts and labor.



58816-115

### Specifications

Speed Range*	1200 to 2400 rpm
Timer	0 to 60 seconds
Orbit	3.6 mm (0.14")
Maximum Weight Capacity	10 lbs (4.5 kg)
Duty Rating	Continuous duty
Tray Dimensions (L x W)	7.25 x 12.25" (18.4 x 31.1 cm)
Overall Dimensions (L x W x H)	9.5 x 15.1 x 16" ( 24.1 x 38.4 x 40.6 cm)
Ship Weight	42 lbs (19.1 kg)

\* Maximum speed will vary depending on load.

Description	Electrical (50/60 Hz)	Cat. No.
Standard Multi-Tube Vortexer	120V   0.8 amps   100 watts	58816-115
Standard Multi-Tube Vortexer	230V   0.4 amps   100 watts	58816-116

## VWR® Advanced Multi-Tube Vortexers



- Process up to 50 samples at a time
- Displays for speed and time
- Pulsing mode

Ideal for applications requiring accuracy and repeatability.

### Operating Features:

**Microprocessor control:** The variable speed microprocessor control provides consistent uniform mixing action.

**LED display:** Touch pad controls with easy-to-read, independent LED displays for speed and time allow operator to view both settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer will display elapsed time or shut off when user-defined time limit reaches zero. Display will show last used settings, even after power has been turned off.

**Pulsing mode:** Programmable pulsing mode allows user to adjust the pulse-on and pulse-off times between 1 and 59 seconds in 1-second intervals. This feature enhances the vortex action by creating a more vigorous mix.

### Operating Conditions:

Unit can be run in conditions from 4 to 40°C (39 to 104°F), 20% to 85% relative humidity, non-condensing.

### Applications:

Suspensions, high-throughput testing in clinical, environmental, and chemistry labs.

### Ordering Information

Unit includes a 92" (234cm) detachable, 3-wire cord and plug (230-volt units are supplied with Euro-type plug). Unit is also supplied with a Tray Pad Set for support and one 12mm Test Tube Foam Rack (58816-330). Five-year limited warranty on parts and labor.

Optional NIST-Traceable Calibration Certificate provided by an ISO/IEC 17025 accredited laboratory. The ISO/IEC 17025 Accredited Calibration Certificate includes multiple data points within the speed range and time function with the associated uncertainties. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.



14005-826

### Specifications

<b>Speed Range*</b>	500 to 2500 rpm
<b>Speed Accuracy</b>	±25 rpm or ±5% of set speed
<b>Timer</b>	1 second to 160 hours
<b>Orbit</b>	3.6 mm (0.14")
<b>Maximum Weight Capacity</b>	10 lbs (4.5 kg)
<b>Duty Rating</b>	Continuous duty
<b>Tray Dimensions (L x W)</b>	7.25 x 12.25" (18.4 x 31.1 cm)
<b>Overall Dimensions (L x W x H)</b>	9.5 x 15.1 x 16" ( 24.1 x 38.4 x 40.6 cm)
<b>Ship Weight</b>	42 lbs (19.1 kg)

\* Maximum speed will vary depending on load.

Description	Electrical (50/60 Hz)	Cat. No.
Advanced Multi-Tube Vortexer	120V   0.8 amps   100 watts	14005-826
Advanced Multi-Tube Vortexer	230V   0.4 amps   100 watts	14005-832
Advanced Multi-Tube Vortexer with NIST-Traceable Certificate	120V   0.8 amps   100 watts	10027-190
Advanced Multi-Tube Vortexer with NIST-Traceable Certificate	230V   0.4 amps   100 watts	10027-192

## VWR® Multi-Tube Vortexer Accessories

### Foam Test Tube Racks



#### VWR® Foam Test Tube Racks

Description	Tube Capacity	Color	Dimensions (L x W x H)	Cat. No.
10 mm Test Tube Foam Rack	50	Gray	5.5 x 9.5 x 2" (14 x 24.1 x 5.1 cm)	58816-308
12 mm Test Tube Foam Rack	50	Blue	5.5 x 9.5 x 2" (14 x 24.1 x 5.1 cm)	58816-330
13 mm Test Tube Foam Rack	50	Yellow	5.5 x 9.5 x 2" (14 x 24.1 x 5.1 cm)	58816-363
16 mm Test Tube Foam Rack (for 15mL centrifuge tubes)	50	Green	5.5 x 9.5 x 2" (14 x 24.1 x 5.1 cm)	58816-396
25 mm Test Tube Foam Rack	28	White	5.5 x 9.5 x 2" (14 x 24.1 x 5.1 cm)	12621-140
29 mm Test Tube Foam Rack (for 50mL centrifuge tubes)	15	Red	5.5 x 9.5 x 2" (14 x 24.1 x 5.1 cm)	12621-142
Replacement Tray Pad Set (upper & lower)	N/A	Gray	7 x 12 x 1" (17.8 x 30.5 x 2.5 cm)	58816-306

### Post Extension Kit

Adds 6" (15.2cm) to the post of the Multi-Tube Vortexer to accommodate tubes up to 10" (25.4cm) tall.

#### VWR® Post Extension Kit

Description	Cat. No.
Post Extension Kit	14216-210

### VWRCATALYST Lean Business Process Consulting

The VWRCATALYST team of Lean Six Sigma-trained Business Process Consultants can help you move faster, control costs, and drive quality. Our process has evolved from decades of collaboration with the scientific community, and has proven to optimize laboratory and production processes, such as procurement, inventory management, scientific research support, and more. View our library of Success Stories today at [vwr.com/vwrcatalyst](http://vwr.com/vwrcatalyst). (Not available in Canada.)



## VWR® Cryogenic Homogenizing System

- Handheld homogenizer with mortars and pestles
- Increases sample throughput
- System helps preserve sample integrity

VWR® Cryogenic Homogenizing System combines the ease and speed of a handheld homogenizer and a liquid nitrogen cooled sample to homogenize your sample faster and more efficiently. The cordless, motorized 3.6-volt unit's speed is slower than a typical homogenizer to prevent sample splattering and generation of airborne particles. Compact and versatile design allows homogenizer to be held with a pistol grip.

The mortar and pestle are constructed of a durable porcelain/zirconium composite. The rugged pestle has a stainless steel shaft with a hex bit for quick connection to the motor. Mortar and pestle can be decontaminated between samples by autoclaving, dry heat, or by exposing to a commercial decontaminating solution. The cryogenic cooler is a valuable tool for chilling, processing, and transporting samples.

### Applications:

Suspensions, high-throughput testing in clinical, environmental, molecular biology, and chemistry labs.

### Ordering Information

Units include motor unit, tray with six mortar and pestles, cryogenic cooler with mesh-covered sample reservoir and adsorbent material. Five-year limited warranty on parts and labor.



### Specifications

Speed Range	200 rpm
Sample Size:	< 500 mg (100 mg optimal)
<b>Dimensions, Overall (W x D x H)</b>	
(Homogenizer)	6 x 2 x 5.5" (15.2 x 5 x 14 cm)
(Cryo Cooler)	11 x 9 x 11.5" (27.9 x 22.9 x 29.2 cm)
(Tray)	5.5 x 5 x 1.2" (13.9 x 12.7 x 3.0 cm)
Shipping Weight	11 lbs (5.0 kg)

Description	Electrical (50/60 Hz)	Cat. No.
Cryogenic Homogenizing System	120V   1 amps   4 watts	12621-188

### Replacement Accessories

Description	Cat. No.
Tray with Six Replacement Mortar and Pestles	12621-194

## VWR® High Throughput Homogenizer

- Ability to process small quantities
- Eliminates cross contamination
- Rapid sample processing

The VWR® High Throughput Homogenizer is specifically designed for high-throughput sample processing in a microplate/vial-set format or any 4x5x2.5" matrix to produce effective homogenization of tissue samples. Homogenizer produces a reciprocal motion that is optimized for grinding difficult samples. Easy-to-load tray securely locks microplate or sample holder in place. The high-speed linear motion of the homogenizer allows for rapid sample processing; in most cases two minutes or less. Analog controls.

Homogenized samples can be subsequently handled manually or in an automated system. The High Throughput Homogenizer is suitable for the isolation of protein, DNA, RNA, viruses, and other biological components released during homogenization.

Animal tissue, seeds, tubers, leaf punches, soil and sediment samples, insects, and microbial cultures can all be effectively homogenized in a 96-well or vial-set format. The unit is also useful for pulverizing dry samples for chemical analysis and solubility studies.

### Operating Conditions:

Units can be run in conditions from 5 to 40°C (41 to 104°F), 20% to 85% relative humidity, non-condensing.

### Ordering Information

Unit includes a 92" (234cm), 3-wire cord and plug. Five-year limited warranty on parts and labor.

### Grinding Accessories

Grinding vial sets combine the benefits of the microplate format and the size of vials to provide a tool for higher throughput sample-grinding. Vials are available in either polycarbonate or polyethylene materials. The polyethylene vial set is offered in a twenty-four 4mL-vial size. The polycarbonate vial set is offered in two sizes: twenty-four 4mL-vial size and five 15mL-vial size. The 4mL-vial size is conveniently packaged as a set or in bulk.

Grinding balls are used with deep-well plates and vial sets to bead-beat plant tissues, seeds, and animal tissues. These grinding balls are made of 440C stainless steel which allows them to be retrieved with a magnet while making them resistant to tarnishing. Grinding balls are treated to remove residual oils and contaminants prior to packaging.

### Recommended Applications:

3/8" Good for homogenizing seeds and larger samples of animal tissue in 4mL vials.

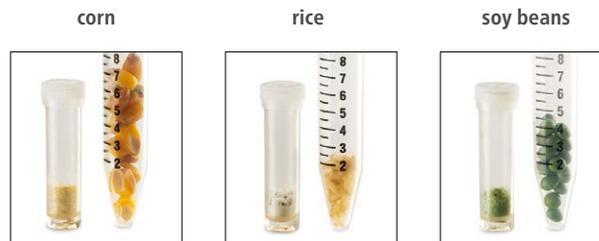
7/16" Suitable for larger grinding jobs, such as pooled seeds, in 15mL vials.

5/32" Use with deep-well plates for leaf punches or animal tissue of 50mg or less.

When homogenization is complete, grinding balls can be removed with optional 24-Pin Magnet.



12621-164



### Specifications

Speed Range	0 to 1600 rpm
Timer	1 to 10 minutes
Maximum Capacity	1 deep-well plate, 4 stacked standard-well plates, or 1 vial set; 300 gram maximum
Reciprocal Stroke	1.2" (3.1 cm)
Dimensions, Overall (L x W x H)	17.5 x 15 x 14.2" (44.5 x 38.1 x 36.1 cm)
Shipping Weight	75 lbs (34.1 kg)

Description	Electrical (50/60 Hz)	Cat. No.
High Throughput Homogenizer	120V   6.3 amps   450 watts	12621-164

### Replacement Accessories

Description	Lid	Cat. No.
Bulk 4 mL Polyethylene Vials, case of 240	Unlined	97007-682
Bulk 4 mL Polyethylene Vials, case of 240	Lined	97007-698
Bulk 4 mL Polycarbonate Vials, case of 240	Unlined	97007-680
Bulk 4 mL Polycarbonate Vials, case of 240	Lined	97007-696
3/8" Stainless Steel Grinding Balls, pack of 1000	N/A	97007-690
5/32" Stainless Steel Grinding Balls, pack of 5000	N/A	97007-688



12621-170

## VWR® High Throughput Homogenizer Accessories

### 24-Well 4 mL Vial Sets, polyethylene

Plastic case with foam rack holds twenty-four (24) 4mL polyethylene vials. Each vial includes one 3/8" (1cm) stainless steel grinding ball and threaded lid. Lid is available unlined or with lining for added secure closure. Sold as a case of 10 sets (240 vials).

Description	Lid	Cat. No.
24-Well 4 mL Vial Set, Polyethylene	Unlined	12621-170
24-Well 4 mL Vial Set, Polyethylene	Lined	97007-694



12621-168

### 24-Well 4 mL Vial Sets, polycarbonate

Plastic case with foam rack holds twenty-four (24) 4mL polycarbonate vials. Each vial includes one 3/8" (1cm) stainless steel grinding ball and threaded lid. Lid is available unlined or with lining for added secure closure. Sold as a case of 10 sets (240 vials).

Description	Lid	Cat. No.
24-Well 4 mL Vial Set, Polycarbonate	Unlined	12621-168
24-Well 4 mL Vial Set, Polycarbonate	Lined	97007-692



12621-172

### 5-Well 15 mL Vial Set, polycarbonate

Plastic case with foam rack holds five (5) 15mL polycarbonate vials for larger samples. Each vial includes two, 7/16" (1.1cm) stainless steel grinding balls and threaded lid. Sold as a case of 10 sets (50 vials).

Description	Lid	Cat. No.
5-Well 15mL Vial Set, Polycarbonate	Unlined	12621-172



12621-177

12621-175

### 24-Pin Magnet and Magnet Stand/Ball Separator

The 24-Pin Magnet can be used to remove grinding balls before samples are added to the vials and then, with the use of the Magnet Stand/Ball Separator, used to align and drop grinding balls into vials. Each 2" (5.1cm) pin is capped with a strong neodymium rare-earth magnet. The pins of this magnet can also be used to remove smaller grinding balls from 96-well plates.

Description	Cat. No.
24-Pin Magnet	12621-175
Magnet Stand/Ball Separator	12621-177



97077-686

### Magnet Pipette Tips

Magnet Pipette Tips are a simple, cost-effective solution for removing stainless steel grinding balls from 96-well plates and grinding vials. The tips are made to fit most 0-200µl pipettes and work with steel and 440C stainless steel balls.

Description	Cat. No.
Magnet Pipette Tips, pack of 12	97007-684

### Ball Dropper/Bead Dispenser

Ball Dropper/Bead Dispenser can be used to add 5/32" stainless steel balls to deep-well plates, and to dispense small grinding beads into empty micro-well plates. Includes ball dropper, reservoir tray, grinding bead swipe-card, and plastic retaining sheet.

Description	Cat. No.
Ball Dropper/Bead Dispenser	97007-686

## VWR® Talon® Clamps

The unique design of these clamps, rods, supports, connectors, and accessories conceivably offers one of the most extensive selections in the industry. With a variety of sizes, materials, hardware, and designs, there is always an option to accommodate any application.

- Clamps firmly grip lab apparatus
- Ergonomic designs
- Durable, heavy-duty parts
- Built to last

The following are many options to consider when choosing the right clamp to suit your needs:

### Material:

A majority of the VWR clamps are made of nickel-plated zinc which possess a high-tensile strength paired with an economical price. The VWR stainless steel clamp line is an option that offers higher chemical resistance and durability. Aluminum is another material that is used in some of the products to offer a greater strength with a lighter weight.

### Configuration:

Multi-purpose extension clamps allow placement of apparatus at various distances from a lab-frame. They are constructed with round extension arms, which allow the clamps to be rotated 360°. Attachment to lab-frames and other apparatus is easily accomplished with a variety of holders that are purchased separately. See Connectors & Holders section of this catalog (pages 97-99). Other clamps such as the swivel, fixed position, and some of the specialty clamps have a built-in holder for attaching to lab-frames or other apparatus at a closer distance to the support.

### Prong Type:

Two-prong clamps are ideal for holding straight-sided apparatus such as burets, thermometers, beakers, and flask necks. Three-prong clamps are more versatile and have the added capability of holding irregularly shaped objects. Clamps are supplied with both non-slip vinyl sleeves and, for temperatures above 100°C, fiberglass covers.

### Prong Adjustment:

Single-adjust clamps are great for applications where limited jaw adjustment is required. One prong or "finger" is adjusted using a wing nut while the other prong remains stationary. Dual-adjust clamps offer a greater flexibility because both prongs are adjustable over a wider range. Thumbscrews are utilized for easier prong adjustment.

### HOLDERS and Connectors:

A variety of holders and connectors are available to secure apparatus specific to the different angles, diameters, and weights in your application, allowing you to customize as needed.

### Lab-Frames:

VWR offers a complete choice of standard and custom frames and rods. Corrosion resistant frames and rods are available in aluminum, fiberglass, and stainless steel. Individual rods are available in standard lengths from 1.61 to 96" (41 to 2438mm). Standard lab-frame sets are available in five sizes. Combined with VWR accessories, these frames and rods can be adjusted to fit any need. Custom lab-frame designs are available to meet your exacting requirements.

Depend on VWR for your custom mounting and sizing needs. Simply contact VWR® for personal design and fabrication assistance.



## VWR® Talon® Multi-Purpose Clamps

### VWR® Talon® Heavy-Duty Clamps

- Large grip-adjustment range
- Single or dual adjust
- Available in three sizes; small, medium, and large
- Nickel-plated zinc

VWR® patented multi-purpose Talon® Heavy-Duty Clamps feature an innovative closed-yoke construction that minimizes contamination and corrosion of internal components. The unique design enables secure gripping and positioning with added strength and durability.

Available in both single- and dual-prong adjustment, prongs open gradually to maximize grip size without binding. Both designs feature precise pressure regulation when gripping glassware surfaces to reduce the chance of breakage. Talon® Clamps are constructed with extension rods for easy attachment to lab-frames and other apparatus. Supplied with non-slip vinyl sleeves and, for temperatures above 100°C, fiberglass covers.

The prong height of the Talon® Heavy-Duty Clamps make them ideal for use in holding and securing glassware with precision ground-glass joints. The chart below details which Talon® Clamps are recommended depending on joint size.

**NOTE:** An additional holder must be purchased in order to attach clamps to frames or other apparatus.

See the Connectors & Holders section of this catalog, pages 97-99.

Replacement vinyl and fiberglass sleeves are available, page 96.

#### Single-Adjust Clamps



21572-805



21572-803



21572-801

#### Dual-Adjust Clamps



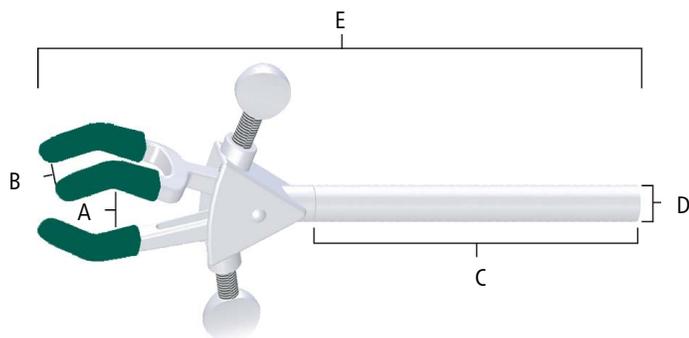
21572-800



21572-802



21572-804



Clamp	Joint Size (mm)
Small Dual Adjust	10/30, 12/30, 14/20, 19/22, 24/40, 29/42, 34/45
Medium Dual Adjust	14/40, 19/38
Large Dual Adjust	45/50

Size	(A) Min. to Max. Grip Size	(B) Prong Width	(C) Arm Length	(D) Arm Dia.	(E) Overall Length	Cat. No.
<b>VWR® 3-Prong Single-Adjust Clamps</b>						
Small	0 to 23 mm (0 to 0.91")	6 mm (0.24")	102 mm (4")	8 mm (0.32")	162 mm (6.38")	21572-805
Medium	0 to 50 mm (0 to 1.97")	19 mm (0.75")	127 mm (5")	11 mm (0.43")	229 mm (9.02")	21572-803
Large	0 to 72 mm (0 to 2.83")	29 mm (1.14")	127 mm (5")	11 mm (0.43")	260 mm (10.24")	21572-801
<b>VWR® 3-Prong Dual-Adjust Clamps</b>						
Small	0 to 32 mm (0 to 1.26")	6 mm (0.24")	102 mm (4")	8 mm (0.32")	152 mm (5.98")	21572-804
Medium	0 to 70 mm (0 to 2.76")	19 mm (0.75")	127 mm (5")	11 mm (0.43")	222 mm (8.74")	21572-802
Large	0 to 103 mm (0 to 4.06")	29 mm (1.14")	127 mm (5")	11 mm (0.43")	260 mm (10.24")	21572-800

## VWR® Talon® Multi-Purpose Clamps

### VWR® Heavy-Duty Tapered Clamps

Heavy-Duty, 4-prong, dual-adjust tapered clamps are designed to hold large vessels with ground-glass joint necks. Clamps are constructed with extension rods for easy attachment to lab-frames and other apparatus. Nickel-plated zinc construction.

**NOTE:** An additional holder must be purchased in order to attach clamps to frames or other apparatus.

See the Connectors & Holders section of this catalog, pages 97-99.



Size	Joint Size	Prong Width	Arm Length	Arm Dia.	Overall Length	Cat. No.
Small	24/40 mm	16 mm (0.63")	229 mm (9.02")	13 mm (0.51")	356 mm (14")	28641-018
Large	34/45 mm	19 mm (0.75")	229 mm (9.02")	13 mm (0.51")	381 mm (15")	28641-020

### VWR® Stainless Steel Multi-Purpose Clamps

- Stainless steel, electro-polished finish
- Large dual-adjustment range
- Available in three sizes: small, medium, and large

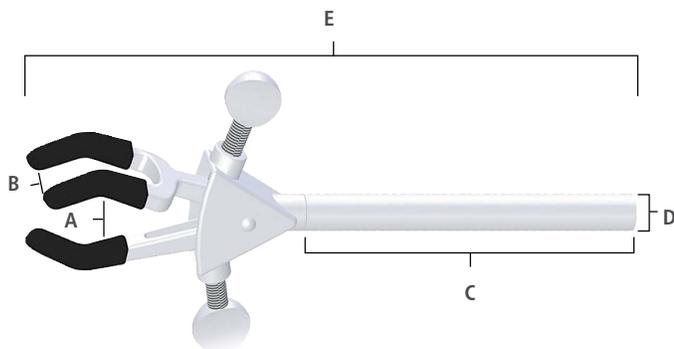
These durable, multi-purpose clamps are made entirely of stainless steel with an electro-polished finish and offer excellent chemical resistance and overall strength. The versatile 3-prong design secures various lab apparatus such as jointed glassware, columns, flasks, and tubes. Dual-prong adjustments offer a wide range of motion. Long stainless steel extension arm offers easy

positioning and depth adjustment. Autoclavable. Supplied with non-slip vinyl sleeves and, for temperatures above 100°C, fiberglass covers.

**NOTE:** An additional holder must be purchased in order to attach clamps to frames or other apparatus.

See the Connectors & Holders section of this catalog, pages 97-99.

Replacement vinyl and fiberglass sleeves are available, page 96.



Size	(A) Min. to Max. Grip Size	(B) Prong Width	(C) Arm Length	(D) Arm Dia.	(E) Overall Length	Cat. No.
Small	0 to 48mm (0 to 1.9")	13mm (0.51")	102mm (4")	10mm (0.39")	172mm (6.77")	12621-240
Medium	0 to 69mm (0 to 2.72")	19mm (0.75")	127mm (5")	13mm (0.51")	229mm (9.02")	12621-238
Large	0 to 102mm (0 to 4")	29mm (1.14")	127mm (5")	13mm (0.51")	273mm (10.75")	12621-236

## VWR® Talon® Multi-Purpose Clamps

### VWR® 3-Prong Multi-Purpose Clamps

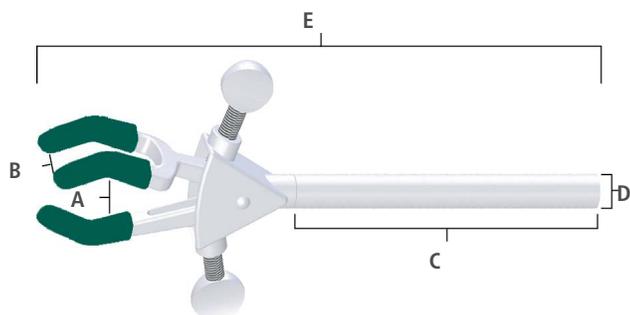
- Large grip-adjustment range
- 3-prong construction
- Single or dual adjust
- Nickel-plated zinc

Designed to securely hold every type of laboratory glassware and apparatus. Long, seamless nickel-plated brass tubing attaches clamp head securely and offers easy positioning in the deepest fume hoods. Clamps are constructed with round extension arms, which allow the clamps to be rotated 360°. Extension arms also allow placement of apparatus at various distances from lab-frames without compromising the integrity of your experiment. Supplied with non-slip vinyl sleeves and, for temperatures above 100°C, fiberglass covers.

**NOTE:** An additional holder must be purchased in order to attach clamps to frames or other apparatus.

See the Connectors & Holders section of this catalog, pages 97-99.

Replacement vinyl and fiberglass sleeves are available, page 96.



### 3-Prong Single-Adjust Clamps



21570-125

21570-126

21570-127

### 3-Prong Dual-Adjust Clamps



21570-200

21570-302

21570-404

Size	(A) Min. to Max. Grip Size	(B) Prong Width	(C) Arm Length	(D) Arm Dia.	(E) Overall Length	Cat. No.
<b>VWR® 3-Prong Single-Adjust Clamps</b>						
Small	0 to 39 mm (0 to 1.54")	11 mm (0.43")	102 mm (4")	8 mm (0.32")	160 mm (6.3")	21570-125
Medium	0 to 71 mm (0 to 2.8")	19 mm (0.75")	127 mm (5")	11 mm (0.43")	218 mm (8.58")	21570-126
Large	0 to 108 mm (0 to 4.25")	29 mm (1.14")	127 mm (5")	11 mm (0.43")	248 mm (9.76")	21570-127
<b>VWR® 3-Prong Dual-Adjust Clamps</b>						
Small	0 to 46 mm (0 to 1.81")	11 mm (0.43")	102 mm (4")	8 mm (0.32")	168 mm (6.61")	21570-200
Medium	0 to 69 mm (0 to 2.72")	19 mm (0.75")	127 mm (5")	11 mm (0.43")	229 mm (9.02")	21570-302
Medium (extended)	0 to 69 mm (0 to 2.72")	19 mm (0.75")	305 mm (12")	13 mm (0.5")	406 mm (16")	97035-502
Large	0 to 105 mm (0 to 4.13")	29 mm (1.14")	127 mm (5")	11 mm (0.43")	273 mm (10.75")	21570-404
Large (extended)	0 to 105 mm (0 to 4.13")	29 mm (1.14")	305 mm (12")	13 mm (0.5")	451 mm (17.76")	97035-504

## VWR® Talon® Multi-Purpose Clamps

### 2-Prong Multi-Purpose Clamps

- Stainless steel electro-polished finish or nickel-plated zinc
- Large grip-adjustment range
- 2-prong construction
- Single or dual adjust

Designed to securely hold laboratory glassware and apparatus. Extension arm attaches clamp head securely and offers easy positioning in the deepest fume hoods. Clamps are constructed with round extension arms, which allow the clamps to be rotated 360°. Extension arms also allow placement of apparatus at various distances from lab-frames without compromising the integrity of your experiment. Stainless steel clamps are electro-polished and made entirely of stainless steel. They offer exceptional chemical resistance and are autoclavable. Nickel-plated zinc offers a clamp with a high-tensile strength at an economical price. Supplied with non-slip vinyl sleeves and, for temperatures above 100°C, fiberglass covers.

**NOTE:** An additional holder must be purchased in order to attach clamps to frames or other apparatus.

See the Connectors & Holders section of this catalog, pages 97-99.

Replacement vinyl and fiberglass sleeves are available, page 96.

### 2-Prong Single-Adjust Clamps



21570-007

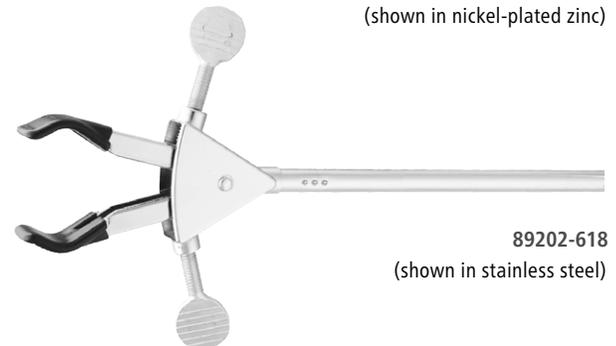


21570-109

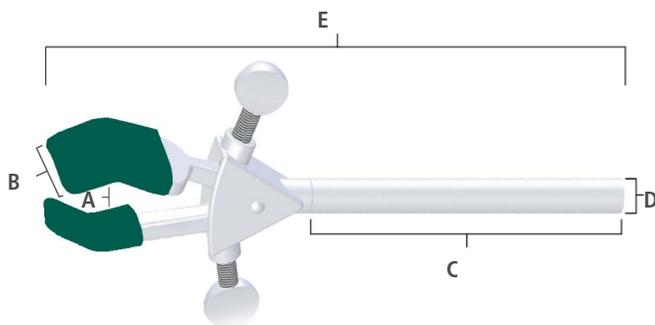
### 2-Prong Dual-Adjust Clamps



21570-115  
(shown in nickel-plated zinc)



89202-618  
(shown in stainless steel)



Material	Size	(A) Min. to Max. Grip Size	(B) Prong Width	(C) Arm Length	(D) Arm Dia.	(E) Overall Length	Cat. No.
<b>VWR® 2-Prong Single-Adjust Clamps</b>							
Nickel-Plated Zinc	Medium	0 to 78 mm (0 to 3.07")	23 mm (0.91")	127 mm (5")	11 mm (0.43")	216 mm (8.5")	21570-007
Nickel-Plated Zinc	Large	0 to 92 mm (0 to 3.62")	23 mm (0.91")	127 mm (5")	11 mm (0.43")	229 mm (9.02")	21570-109
<b>VWR® 2-Prong Dual-Adjust Clamps</b>							
Stainless Steel	Medium	0 to 75 mm (0 to 2.95")	23 mm (0.91")	127 mm (5")	11 mm (0.43")	229 mm (9.02")	89202-612
Nickel-Plated Zinc	Medium	0 to 75 mm (0 to 2.95")	23 mm (0.91")	127 mm (5")	11 mm (0.43")	229 mm (9.02")	21570-115
Stainless Steel	Large	0 to 95 mm (0 to 3.74")	23 mm (0.91")	127 mm (5")	11 mm (0.43")	248 mm (9.76")	89202-618
Nickel-Plated Zinc	Large	0 to 95 mm (0 to 3.74")	23 mm (0.91")	127 mm (5")	11 mm (0.43")	248 mm (9.76")	21570-120

## VWR® Talon® Specialty Clamps

### VWR® Swivel Clamps

Used to hold apparatus near the lab-frame. Unlike extension clamps, the swivel clamps have an integral holder for attaching to a lab-frame or other apparatus. Built-in holder grips rods up to 19mm (0.75") in diameter and is adjustable for forward or reverse-facing adjustment screws. Shaft wing-nut allows the holding angle of the swivel clamp to adjust through 360° of rotation and can be locked in place once desired position is achieved. Stainless steel electro-polished finish or nickel-plated construction. Supplied with non-slip vinyl sleeves and, for temperatures above 100°C, fiberglass covers.

**NOTE:** Replacement vinyl and fiberglass sleeves are available, page 96.



89202-622  
(shown in stainless steel)

21573-504  
(shown in nickel-plated zinc)

Material	Description	Size	Min. to Max. Grip Size	Prong Width	Overall Length	Cat. No.
Stainless Steel	2-Prong Single Adjust	Medium	0 to 76 mm (0 to 3")	23 mm (0.91")	163 mm (6.42")	89202-624
Nickel-Plated Zinc	2-Prong Single Adjust	Medium	0 to 76 mm (0 to 3")	23 mm (0.91")	163 mm (6.42")	21573-504
Nickel-Plated Zinc	2-Prong Single Adjust	Large	0 to 95 mm (0 to 3.74")	23 mm (0.91")	180 mm (7.09")	21573-606
Stainless Steel	3-Prong Dual Adjust	Medium	0 to 69 mm (0 to 2.72")	20 mm (0.79")	178 mm (7.01")	89202-622
Nickel-Plated Zinc	3-Prong Dual Adjust	Medium	0 to 69 mm (0 to 2.72")	20 mm (0.79")	178 mm (7.01")	21573-708

### VWR® Fixed-Position Clamps

Used to hold apparatus near the lab-frame where no adjustment is required after set-up. Built-in holder grips rods up to 19mm (0.75") in diameter. Fixed-position clamps have an integral holder but can be rotated after attachment to a lab-frame or other apparatus. Available in 2-prong or 3-prong. Stainless steel electro-polished finish or nickel-plated zinc construction. Supplied with non-slip vinyl sleeves and, for temperatures above 100°C, fiberglass covers.

**NOTE:** Replacement vinyl and fiberglass sleeves are available, page 96.



89202-630  
(shown in stainless steel)

21573-266  
(shown in nickel-plated zinc)

Material	Description	Size	Min. to Max. Grip Size	Prong Width	Overall Length	Cat. No.
Stainless Steel	2-Prong Single Adjust	Medium	0 to 77 mm (0 to 3.03")	23 mm (0.91")	133 mm (5.24")	89202-632
Nickel-Plated Zinc	2-Prong Single Adjust	Medium	0 to 77 mm (0 to 3.03")	23 mm (0.91")	133 mm (5.24")	21573-266
Stainless Steel	3-Prong Dual Adjust	Medium	0 to 69 mm (0 to 2.72")	20 mm (0.79")	146 mm (5.75")	89202-630
Nickel-Plated Zinc	3-Prong Dual Adjust	Medium	0 to 69 mm (0 to 2.72")	20 mm (0.79")	146 mm (5.75")	21573-265

### VWR® Double-Jaw Utility Clamp

Swivels 360° and locks securely in desired position. These 2-prong clamps have a medium and a large clamp on each end. Nickel-plated zinc construction. Supplied with non-slip vinyl sleeves and, for temperatures above 100°C, fiberglass covers.

**NOTE:** Replacement vinyl and fiberglass sleeves are available, page 96.

Description	Min. to Max. Grip Size	Prong Width	Overall Length	Cat. No.
Medium 2-Prong	0 to 76mm (0 to 3")	23mm (0.91")	222mm (8.74")	21573-800
Large 2-Prong	0 to 95mm (0 to 3.74")			



21573-800



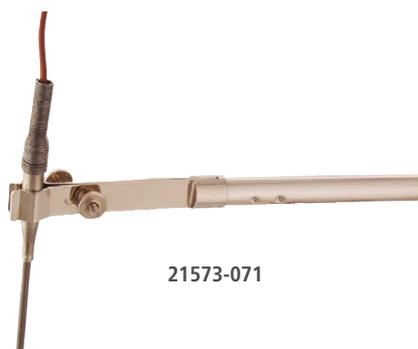
21573-060

## VWR® Talon® Specialty Clamps

### VWR® Thermometer Swivel Clamp

Holds glass tubes and thermometers 114mm (4.49") from support rod. Clamp features safety adjust spring plate jaws that adjust to any angle with locking wing-nut. Built-in holder grips rods up to 19mm (0.75") in diameter. Lightweight, rust, and corrosion-resistant. Nickel-plated construction.

Min. to Max. Grip Size	Overall Length	Cat. No.
6 to 8 mm (0.24 to 0.32")	159 mm (6.26")	21573-060



21573-071

### VWR® Thermometer / Thermocouple Extension Clamp

Lightweight clamp holds glass tubing / thermometers or thermocouples up to 178mm (7") from support rod. Tightening wing-nut applies tension to the nickel-plated jaws.

**NOTE:** An additional holder must be purchased in order to attach clamps to frames or other apparatus. See the Connectors & Holders section of this catalog, pages 97-99.

Min. to Max. Grip Size	Ext Arm Length	Arm Dia.	Overall Length	Cat. No.
6 to 12 mm (0.24 to 0.47")	127 mm (5")	11 mm (0.43")	210 mm (8.27")	21573-071



21573-154

### VWR® Wall Clamp

Ideal for securing fermentation tubes, burets or other small objects to walls where no frames are available. Integral self-tapping screw secures clamp to wall. Nickel-plated construction.

Min. to Max. Grip Size	Overall Length	Cat. No.
5 to 10 mm (0.2 to 0.39")	80 mm (3.15")	21573-154

21573-129



### VWR® Water-Bath Clamps

Holds a variety of apparatus, including glass tubes and thermometers onto glass water-bath walls. Built-in holder grips walls of varying thickness, up to 9mm (0.35"). Knurled thumbscrew tightens jaws to hold objects firmly. Nickel-plated zinc construction. Large water-bath clamp is supplied with non-slip vinyl sleeves, and for temperatures above 100°C, fiberglass covers.

**NOTE:** Replacement vinyl and fiberglass sleeves are available, page 96.

21573-151



Size	Min. to Max. Grip Size	Prong Width	Overall Length	Cat. No.
Small	5 to 10 mm (0.2 to 0.39")	N/A	89 mm (3.5")	21573-129
Large	0 to 46 mm (0 to 1.81")	11 mm (0.43")	117 mm (4.61")	21573-151

## VWR® Talon® Specialty Clamps

For the items listed below an additional holder must be purchased in order to attach clamps to frames or other apparatus. See the Connectors & Holders section of this catalog, pages 97-99.



89202-620  
(shown in stainless steel)

### VWR® Chain Clamps

Holds large round- or irregular-shaped objects firmly yet gently to lab-frames and rods. Quick and secure slip-on chain connection with large, easy-to-turn adjusting knob. Extension arm allows user to vary distance from the frame. Available as stainless steel clamp constructed entirely of stainless steel with electro-polished finish or nickel-plated zinc clamp with strong, chromed-brass chain.

Size	Min. to Max. Dia.	Ext. Arm Length	Arm Dia.	Overall Length	Cat. No.
Small	35 to 170 mm (1.38 to 6.69")	127 mm (5")	13 mm (0.51")	188 mm (7.4")	21573-275
Large-5	35 to 280 mm (1.38 to 11.02")	127 mm (5")	13 mm (0.51")	206 mm (8.11")	21572-729
Large-12	35 to 280 mm (1.38 to 11.02")	305 mm (12")	13 mm (0.51")	384 mm (15.12")	97035-506
<b>Stainless Steel</b>					
Large-5	35 to 280 mm (1.38 to 11.02")	127 mm (5")	13 mm (0.51")	206 mm (8.11")	89202-620

### VWR® Column Clamps

These sturdy, easily adjusted, multi-purpose clamps are ideal for holding large cylindrical glassware and similar objects. A large, flat thumbscrew/worm-drive permits maximum tightening or removal in minimum time. Clamp is constructed of corrosion-resistant stainless steel. Ideal for chromatography columns.



21572-137

Size	Min. to Max. Dia.	Ext. Arm Length	Arm Dia.	Overall Length	Cat. No.
Small	65 to 89 mm (2.56 to 3.5")	211 mm (8.31")	11 mm (0.43")	282 mm (11.1")	21572-104
Medium	91 to 114 mm (3.58 to 4.49")	211 mm (8.31")	11 mm (0.43")	315 mm (12.4")	21572-137
Large	64 to 140 mm (2.52 to 5.51")	211 mm (8.31")	11 mm (0.43")	338 mm (13.31")	21572-160
X-Large	92 to 165 mm (3.62 to 6.5")	211 mm (8.31")	11 mm (0.43")	368 mm (14.49")	21572-192



21572-002

### VWR® Nester Extension Clamp

Securely holds large or small glass distillation-columns and odd-shaped glassware. Constructed of stainless steel with strong, chromed-brass band and chain.

Min. to Max. Dia.	Ext. Arm Length	Arm Dia.	Overall Length	Cat. No.
50 to 102 mm (1.97 to 4")	152 mm (5.98")	10 mm (0.39")	262 mm (10.32")	21572-002



97019-056

### VWR® PVC-Coated Open Extension Rings

Ideal for supporting funnels, round bottom flasks, reaction vessels, and other apparatus that requires lower support. Opening in PVC-coated aluminum ring allows for easy removal of sample container. PVC coating protects glassware. Long extension arm permits depth adjustment of the open ring from the lab-frame or ring stand.

Ring Dia.	Ext. Arm Length	Arm Dia.	Overall Length	Cat. No.
76 mm (3")	254 mm (10")	9 mm (0.35")	328 mm (12.91")	97019-054
102 mm (4")	305 mm (12")	9 mm (0.35")	404 mm (15.91")	97019-056
127 mm (5")	305 mm (12")	11 mm (0.43")	427 mm (16.81")	97019-058



28641-014

### VWR® Open Rings

Lightweight rings mount funnels, boiling flasks, and other irregular-shaped objects to lab-frames. Open ring section allows items to pass in and out of support area easily, reducing risk of breakage. Aluminum construction.

Ring Dia.	Ext. Arm Length	Arm Dia.	Overall Length	Cat. No.
76 mm (3")	58 mm (2.28")	9 mm (0.35")	132 mm (5.2")	28641-010
102 mm (4")	58 mm (2.28")	9 mm (0.35")	158 mm (6.22")	28641-012
127 mm (5")	61 mm (2.4")	11 mm (0.43")	183 mm (7.2")	28641-014

## VWR® Talon® Specialty Clamps

### VWR® Buret Holders

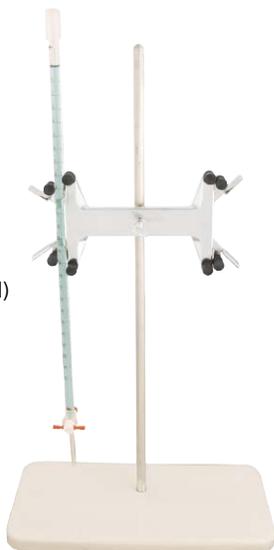
Stainless steel electro-polished finish or nickel-plated zinc. Double-Buret Clamp holds any size buret from micro to 100mL capacity. Simply compress the scissor-like mechanism, insert buret and gently release to grip. Numbers and graduation on buret remain easy to read. For height adjustments, recompress mechanism and slide buret up or down and gently release. Clamp unit attaches to optional standard support rod with built-in reinforced hook connector. Adjusting nut faces forward for easy use. Stainless steel or aluminum support rod attaches to optional porcelain base.

Support Rod (Dia. x L): 13 x 578 mm (0.51 x 22.76")

Porcelain Base (L x W x H): 178 x 330 x 25 mm (7 x 13 x 1")

Buret Clamp (L x W): 108 x 173 mm (4.25 x 6.8")

89202-636  
(shown in  
stainless steel)



Description	Cat. No.
<b>Aluminum</b>	
Double-Buret Clamp (only)	17683-258
Support Stand with Rod	17683-054
Double-Buret Clamp & Support Stand with Rod (complete)	17683-000
<b>Stainless Steel</b>	
Double-Buret Clamp (only)	89202-626
Support Rod (only)	89202-638
Support stand with Rod	89202-634
Double-Buret Clamp & Support Stand with Rod (complete)	89202-636

36393-030  
flask not included



### VWR® Kettle Clamps

Holds flask and cover together firmly. Three insulated spring-activated clamping arms. Stainless steel springs. For use on reaction kettles.

Flask Size	Inside Dia.	Cat. No.
500 mL, 1000 mL	125 mm (4.92")	36393-030
2000 mL, 3000 mL, 4000 mL	142 mm (5.59")	36393-051

Electrode holder  
not included  
21573-152



### VWR® Electrode Support Clamp

Permits suspension of electrodes over beaker for potentiometric titrations. Holds any electrode clamp at desired level. Built-in nickel-plated zinc holder grips rods up to 19mm (0.75") in diameter.

Overall Length	Cat. No.
178 mm (7")	21573-152

21573-153



### VWR® Suspension Clamp

Holds thermometers, potash bulbs or drying tubes 114mm (4.49") from support rod. Machine tapered, nickel-plated brass hook won't bend, rust, or corrode. Built-in holder grips rods up to 19mm (0.75") in diameter.

Overall Length	Cat. No.
137 mm (5.39")	21573-153

21573-038



### VWR® Support Clamp

Supports electrolysis apparatus, glass rods or tubing at any angle. Arms are nickel-plated brass with vinyl coating. Easily supports cylindrical objects up to 19mm (0.75") in diameter. Built-in holder grips rods up to 19mm (0.75") in diameter.

Overall Length	Prong Width	Cat. No.
152 mm (5.99")	25 mm (1")	21573-038

2-Prong Clamp Head



3-Prong Clamp Head



Spring Clamp Head



## VWR® Talon® Specialty Clamps

VWR® Ultra Flex Support Systems have unique flexible arms that are extremely versatile and can be placed in virtually any position or angle. Ultra Flex comes in three different systems: base plate, lab-frame connector, and bench clamp. Each system includes a 2-Prong Clamp Head, 3-Prong Clamp Head, Spring Clamp Head, nickel-plated flex arm in 305mm (12") or 457mm (18") length, and utility wrench. 2-prong and 3-prong clamp heads also supplied with non-slip vinyl sleeves and, for temperatures above 100°C, fiberglass covers.

<b>Arm Length:</b>	Ultra Flex 12:	305 mm (12")
	Ultra Flex 18:	457 mm (18")
<b>Arm Diameter:</b>		13 mm (0.51")
<b>Max. Grip Size:</b>	2-Prong Clamp Head:	75 mm (2.95")
	3-Prong Clamp Head:	69 mm (2.72")
	Spring Clamp Head:	13 mm (0.51")



12621-210

### VWR® Ultra Flex Support System with Base Plate

- Stable base plate
- All-metal construction

VWR® Ultra Flex Support System with Base Plate is designed with a stable, painted steel base plate with chemical-resistant black finish that fits easily on benchtops or in fume hoods. Base plate measures 127 x 127 x 12.7mm (5 x 5 x 0.5").

Description	Cat. No.
Ultra Flex 12 with Base Plate	12621-208
Ultra Flex 18 with Base Plate	12621-210



12621-216

### VWR® Ultra Flex Support System with Lab-Frame Connector

- Cast alloy lab-frame connector
- Mounts to lab-frames or support stands

VWR® Ultra Flex Support System with Lab-Frame Connector securely attaches to support stands, lab-frames, or any support rod up to 19mm (0.75") in diameter. Ideal for use in fume hoods. Lab-frame connector is made of cast alloy.

Description	Cat. No.
Ultra Flex 12 with Lab-Frame Connector	12621-216
Ultra Flex 18 with Lab-Frame Connector	12621-218



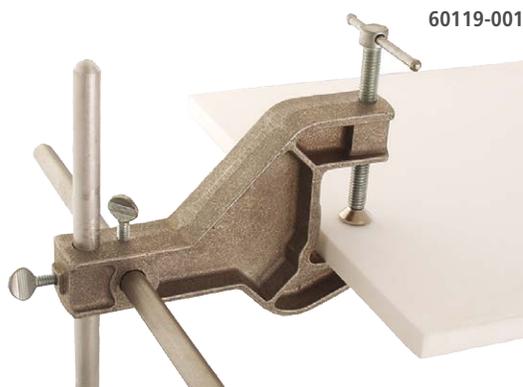
12621-214

### VWR® Ultra Flex Support System with Bench Clamp

- Aluminum bench clamp
- Easily attaches to most lab benches

VWR® Ultra Flex Support System with Bench Clamp easily attaches to the side of your lab bench or counter top, which helps utilize more space in your lab. Bench clamp is aluminum.

Description	Cat. No.
Ultra Flex 12 with Bench Clamp	12621-212
Ultra Flex 18 with Bench Clamp	12621-214
<b>Replacement Parts</b>	
2-Prong Clamp Head	12621-224
3-Prong Clamp Head	12621-226
Spring Clamp Head	12621-228
12" Flex Arm	12621-220
18" Flex Arm	12621-222
Base Plate	12621-230
Lab-Frame Connector	12621-234
Bench Clamp	12621-232



60119-001

## VWR® Talon® Specialty Clamps & Clamp Accessories

### VWR® Bench Clamp

Aluminum bracket with arm fastens quickly and firmly to any convenient shelf. Accepts 13mm (0.51") rods vertically and horizontally, to which ordinary rings and clamps attach, leaving bench surface clear for apparatus.

Clamp Opening	Depth of Grip	Overall Length	Cat. No.
1.7" (43 mm)	2" (51 mm)	7.75" (197 mm)	60119-001



### VWR® Replacement Sleeves

Sleeves are easily removed for cleaning or replacement. Both vinyl and fiberglass sleeves are available. Fiberglass sleeves are recommended for all applications above 100°C (212°F).

Clamp Size	Green Vinyl Sleeve Cat. No.	Fiberglass Sleeve Cat. No.
Medium 2-Prong (2 pack)	21572-900	21572-901
Small 3-Prong (3 pack)	21572-904	21572-905
Medium 3-Prong (3 pack)	21572-906	21572-907
Large 3-Prong (3 pack)	21572-908	



14217-750

### VWR® Thumbscrew Knob

Thumbscrew-tightening knob features a 32mm (1.25") slot in the center of a nylon disc that will accept thumbscrews supplied with the Multi-Purpose Clamps, excluding the stainless steel version. Makes tightening of clamps easier on the hands and wrists.

Overall Diameter	Thumbscrew Slot	Cat. No.
64 mm (2.5")	32 mm (1.25")	14217-750

## VWR® Talon® Connectors & Holders



89202-610  
(shown in stainless steel)



21572-501  
(shown in nickel-plated zinc)

### VWR® Regular Holder

Stainless Steel electro-polished finish or nickel-plated zinc construction. Ideal for holding clamps to lab-frames. Use wherever clamping at 90° is required.

Material	Min. to Max. Grip Size	Cat. No.
Stainless Steel	0 to 18 mm (0 to 0.71")	89202-610
Nickel-Plated Zinc	0 to 18 mm (0 to 0.71")	21572-501



12621-250  
(shown in stainless steel)



21572-556  
(shown in aluminum)

### VWR® Jumbo Holder

Stainless steel electro-polished finish or aluminum construction. Ideal for holding clamps to lab-frames or ring stands.

Material	Min. to Max. Grip Size	Cat. No.
Stainless Steel	0 to 21 mm (0 to 0.83")	12621-250
Aluminum	0 to 21 mm (0 to 0.83")	21572-556



14216-208

### VWR® Heavy-Duty Holder

For mounting stirrers and other apparatus. Clamp is constructed of strong aluminum alloy, fitted with over-sized knobs for very secure positioning. Rods supported on 102mm (4") long surface to avoid vibration and wobble.

Material	Min. to Max. Grip Size	Cat. No.
Aluminum	6 to 24 mm (0.24 to 0.95")	14216-208



89202-628  
(shown in stainless steel)



21572-603  
(shown in nickel-plated zinc)

### VWR® Swivel Holder

Two rod holders with center-swivel capacity allow tilting of clamps at any angle in parallel planes. Outside adjustment screw allows close proximity between items being held. Stainless Steel electro-polished finish or nickel-plated zinc construction.

Material	Min. to Max. Grip Size	Cat. No.
Stainless Steel	0 to 19 mm (0 to 0.75")	89202-628
Nickel-Plated Zinc	0 to 19 mm (0 to 0.75")	21572-603



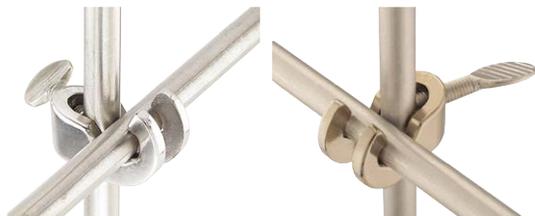
21572-658

### VWR® All-Position Clamp Holder

Surpasses standard holding capabilities. The all-position clamp holder permits adjustment at any angle in any plane. Holders are set at 90° to each other, connected by a 90° connector, allowing 360° rotation. Nickel-plated zinc construction.

Material	Min. to Max. Grip Size	Cat. No.
Nickel-Plated Zinc	0 to 19 mm (0 to 0.75")	21572-658

## VWR® Talon® Connectors & Holders



12985-062

(shown in stainless steel)

60079-166

(shown in nickel-plated zinc)

### VWR® Hook Connector

Stainless steel electro-polished finish or nickel-plated zinc construction. Simple, versatile, and easy-to-use. Hook connectors allow one-handed assembly of two components with one adjustment screw.

Material	Min. to Max. Grip Size	Cat. No.
Stainless Steel	0 to 13 mm (0 to 0.51")	12985-062
Nickel-Plated Zinc	0 to 13 mm (0 to 0.51")	60079-166



60079-100

### VWR® End-to-End Connector

Extend the length of lab-frame rods. Strong aluminum alloy connector permits end-to-end joining of rods. Precision boring of connector ensures perfect alignment of rods. Corrosion resistant. Comes with two set-screws.

Material	Min. to Max. Grip Size	Cat. No.
Aluminum	0 to 13 mm (0 to 0.51")	60079-100



89202-616

(shown in stainless steel)

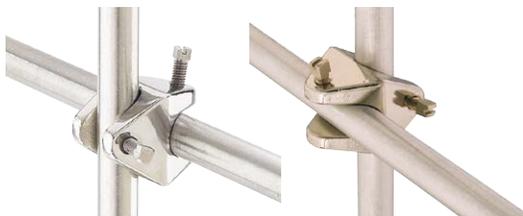
60079-010

(shown in nickel-plated zinc)

### VWR® Rod-End Connector

Holds rods firmly at 90°. Use when semi-permanent installations are required. Comes with two set-screws and is precision bored for close fit. Stainless steel electro-polished finish or nickel-plated zinc construction.

Material	Min. to Max. Rod Size	Cat. No.
Stainless Steel	0 to 13 mm (0 to 0.51")	89202-616
Nickel-Plated Zinc	0 to 13 mm (0 to 0.51")	60079-010



12621-246

(shown in stainless steel)

60097-056

(shown in nickel-plated zinc)

### VWR® S-Connector

Stainless steel electro-polished finish or nickel-plated zinc construction. Clamp is ideal for constructing lab-frames or other supports requiring the connection of two perpendicular rods. Clamp connects two 13mm (0.51") rods at a 90° angle and features separate adjustment screws for each rod location.

Material	Min. to Max. Grip Size	Cat. No.
Stainless Steel	0 to 13 mm (0 to 0.51")	12621-246
Nickel-Plated Zinc	0 to 13 mm (0 to 0.51")	60097-056



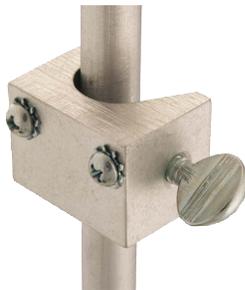
60097-055

### VWR® Frame Connector (pack of 12)

Improved contour delivers simplicity and strength. Angled adjustment screws allow easy set-up and prevents misalignment. Smooth, rounded surfaces are easy-to-clean. Small size maximizes lab-frame space. Bright dipped-aluminum finish sealed with silicon for maximum protection against corrosion.

Material	Min. to Max. Grip Size	Cat. No.
Aluminum	0 to 13mm (0 to 0.51")	60097-055

## VWR® Talon® Connectors & Holders



60079-103

### VWR® Universal Stirrer Mounting Bracket

Use to mount stirrers and other devices to lab-frames. Aluminum mounting bracket with attachment screws.

Max. Weight Mounted	Min. to Max. Grip	Cat. No.
2.27 kg (5 lbs)	0 to 20 mm (0 to 0.78")	60079-103



60079-053

### VWR® Multi-Rod Connector

Maximum adjustment capability within one connector. Two adjustment rods fit into the oval hole in the connector, preventing turning when tightened. Side and front 13mm (0.51") holes allow creation of a variety of configurations. Nickel-plated zinc construction.

Min. to Max. Rod Size	Cat. No.
0 to 13 mm (0 to 0.51")	60079-053



60079-108

### VWR® Wrench

Special adjusting wrench for use with lab-frame items with set screws.

Length	Cat. No.
79 mm (3.11")	60079-108



60079-012

### VWR® Channel Connector

Special connector fastens lab-frame rod to steel 41mm (1.61") channels. Loosen the connector and slide up or down for easy adjustment of rod position.

Dimensions	Cat. No.
33 x 40 mm (1.3 x 1.58")	60079-012



60079-107

### VWR® Horizontal Mounting Bars with Coupler

Threaded end for direct installation into channels. Comes with spring coupler for use in steel 41mm (1.61") channels. Locking nut included. Use with steel channel frames.

Bar Length	Cat. No.
51 mm (2")	60079-104
152 mm (6")	60079-106
203 mm (8")	60079-107

## VWR® Talon® Lab-Frames

### VWR® Frame Rods

Everything you need to customize a lab-frame to your laboratory space. Quality construction throughout. Frame rods are available in many lengths and materials.

#### Aluminum

Centerless ground for a precise fit. These hard aluminum rods provide a smooth fit with lab-frames. Corrosion resistant with chamfered ends for easy location.

aluminum



#### Fiberglass

Strong and resilient fiberglass rods will not corrode or rust. Structurally strong and resilient to clamp compression scars.

fiberglass



#### Stainless Steel

Heavy-duty, top-of-the-line rods provide maximum strength and durability. Constructed of 303 stainless steel.

stainless steel



Rod Diameter	Rod Length	Aluminum Cat. No.	Fiberglass Cat. No.	Stainless Steel Cat. No.
0.51" (13 mm)	1.61" (41 mm)	60079-325	-	60079-530
0.51" (13 mm)	2" (51 mm)	60079-326	60079-519	60079-531
0.51" (13 mm)	6" (152 mm)	60079-348	60079-520	60079-532
0.51" (13 mm)	12" (305 mm)	60079-360	60079-521	60079-533
0.51" (13 mm)	18" (457 mm)	60079-381	60079-522	60079-534
0.51" (13 mm)	24" (610 mm)	60079-406	60079-523	60079-535
0.51" (13 mm)	36" (914 mm)	60079-428	60079-524	60079-536
0.51" (13 mm)	48" (1219 mm)	60079-440	60079-526	60079-537
0.51" (13 mm)	60" (1524 mm)	60079-461	60079-527	60079-538
0.51" (13 mm)	72" (1829 mm)	60079-483	60079-528	60079-539
0.51" (13 mm)	96" (2438 mm)	60079-508	60079-525	60079-540

### VWR® Lab-Frame Foot

Stainless steel electro-polished finish or nickel-plated zinc construction. Strong, durable lab-frame foot is designed for mounting lab-frames permanently to benchtops, fume hoods, walls, and floors. Spilled fluids roll right off the smooth body contour, minimizing contamination and easing clean-ups. Features a set screw and includes three 19mm (0.75") mounting screws.

Material	Min. to Max. Grip Size	Dimensions (Dia. x H)	Cat. No.
Stainless Steel	0 to 0.51" (0 to 13 mm)	2.3 x 1.25" (58 x 32 mm)	12621-248
Nickel-Plated Zinc	0 to 0.51" (0 to 13 mm)	2.3 x 1.25" (58 x 32 mm)	60079-257



## VWR Technical Product Support

VWR Technical Product Support is your one source for all VWR product technical questions. Consisting of experienced scientists with backgrounds in your area of research, the team is committed to providing you with real-time response and proven industry solutions. For assistance, email us at [TechnicalProductSupportNA@vwr.com](mailto:TechnicalProductSupportNA@vwr.com) or call us at 1.888.897.5463.



## VWR® Talon® Lab-Frames

### VWR® Lab-Frame Kits

VWR® offers the widest choice of standard frames available, plus the accessories to custom-fit any laboratory with the right frame for the job. Standard Lab-Frame sets are available in five sizes. Options of traditional centerless ground aluminum, non-corroding fiberglass, or tough stainless steel rods are available. Nickel-plated zinc connectors and lab-frame feet are standard with all kits.



### VWR® Small Lab-Frame

Vertical mounting, great for glassware set-ups in small laboratories or where space is limited. Frame measures 24 x 24" (610 x 610mm). Base is 18" (457mm) wide for stability. Base may be permanently mounted to benchtop with screws (included).

Components:		
	(8)	2" (51 mm) rods
	(2)	18" (457 mm) rods
	(8)	24" (610 mm) rods
	(18)	S-Connectors
	(4)	Rod-End Connectors
	(4)	Lab-Frame Feet

Frame Dimensions	Base Dimensions	Aluminum Cat. No.	Fiberglass Cat. No.	Stainless Steel Cat. No.
24 x 24" (610 x 610 mm)	18" (457 mm) wide	60075-008	60079-542	60079-552



### VWR® Medium Lab-Frame

Horizontal or vertical mounting, convenient for distillation or general set-up. Frame measures 24 x 48" (610 x 1219mm). Base is 18" (457mm) wide for stability.

Components:		
	(8)	2" (51 mm) rods
	(2)	18" (457 mm) rods
	(7)	24" (610 mm) rods
	(4)	48" (1219 mm) rods
	(35)	S-Connectors
	(4)	Rod-End Connectors
	(4)	Lab-Frame Feet

Frame Dimensions	Base Dimensions	Aluminum Cat. No.	Fiberglass Cat. No.	Stainless Steel Cat. No.
24 x 48" (610 x 1219 mm)	18" (457 mm) wide	60075-009	60079-544	60079-554



### VWR® Large Lab-Frame

This 48 x 48" (1219 x 1219mm) frame is ideal for complex glassware setups. Base is 18" (457mm) wide for stability.

Components:		
	(10)	2" (51 mm) rods
	(3)	18" (457 mm) rods
	(2)	36" (914 mm) rods
	(10)	48" (1219 mm) rods
	(38)	S-Connectors
	(4)	Rod-End Connectors
	(6)	Lab-Frame Feet

Frame Dimensions	Base Dimensions	Aluminum Cat. No.	Fiberglass Cat. No.	Stainless Steel Cat. No.
48 x 48" (1219 x 1219 mm)	18" (457 mm) wide	60077-003	60079-546	60079-556

VWR® Talon® Lab-Frames



VWR® Extra-Large Lab-Frame

Versatile, adaptable Extra-Large Lab-Frame measures 48 x 72" (1219 x 1829mm) and may be used either horizontally or vertically.

Components:		
	(6)	2" (51 mm) rods
	(6)	12" (305 mm) rods
	(2)	24" (610 mm) rods
	(7)	48" (1219 mm) rods
	(5)	72" (1829 mm) rods
	(45)	S-Connectors
	(4)	Rod-End Connectors
	(8)	Lab-Frame Feet

Frame Dimensions	Aluminum Cat. No.	Fiberglass Cat. No.	Stainless Steel Cat. No.
48 x 72" (1219 x 1829 mm)	60078-006	60079-548	60079-558



VWR® Heavy-Duty Lab-Frame

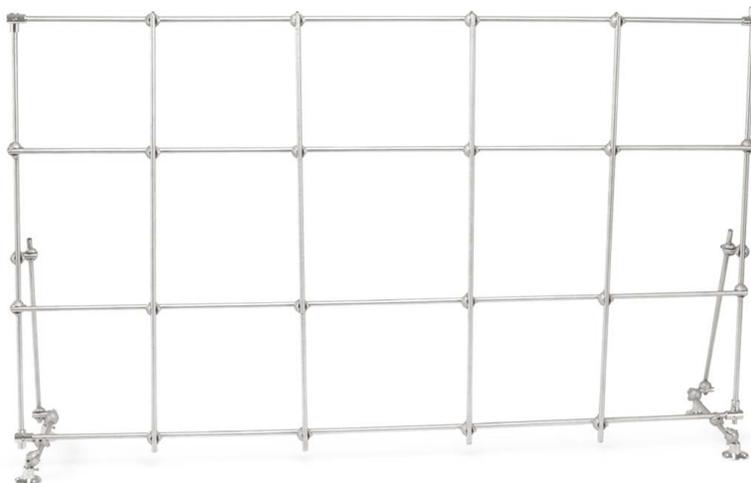
Floor-mounted or free-standing unit is specifically designed for heavy-duty work such as pilot plant setups. Outside frame is constructed of a strong, but lightweight steel channel. **Interior lattice uses a horizontal channel connector:** one end accommodates the rod, the other end fits into the channel and locks tightly with a bolt. Loosen the bolt and the connector slides easily along the channel track for simple lattice adjustment. Entire apparatus is supported on sturdy, counter-weighted cast iron feet, which may be bolted to the floor for added stability required in top-heavy installations.

Components:		
	(5)	48" (1219 mm) rods
	(3)	72" (1829 mm) rods
	(15)	S-Connectors
	(16)	Channel Connectors
	(24)	Clamping Nuts
	(2)	21.7" (551mm) cast iron feet
	(1)	Frame Kit
	(1)	Wrench

Frame Dimensions	Overall Dimensions	Aluminum Cat. No.	Fiberglass Cat. No.	Stainless Steel Cat. No.
48 x 72" (1219 x 1829 mm)	75 x 72" (1905 x 1829 mm)	60078-008	-	-

## VWR® Fume Hood Kits

Choose from four kits specifically designed to fit within laboratory fume hoods. All components are constructed of stainless steel with the exception of the Frame Connectors, which are made of aluminum with a silicon finish.



### 4' (1.22 m) Fume Hood Kit

<b>Components:</b>	(8)	2" (51 mm) rods
	(2)	12" (305 mm) rods
	(2)	18" (457 mm) rods
	(4)	36" (914 mm) rods
	(4)	38" (965 mm) rods
	(30)	Frame Connectors
	(4)	Rod-End Connectors
	(4)	Lab-Frame Feet
<b>Cat. No.</b>	<b>14224-400</b>	

Frame: 36 x 38" (914 x 965 mm)  
Base: 12" (305 mm) wide

### 5' (1.52 m) Fume Hood Kit

<b>Components:</b>	(8)	2" (51 mm) rods
	(2)	12" (305 mm) rods
	(2)	18" (457 mm) rods
	(5)	36" (914 mm) rods
	(4)	50" (1270 mm) rods
	(34)	Frame Connectors
	(4)	Rod-End Connectors
	(4)	Lab-Frame Feet
<b>Cat. No.</b>	<b>14224-402</b>	

Frame: 36 x 50" (914 x 1270 mm)  
Base: 12" (305 mm) wide

### 6' (1.83 m) Fume Hood Kit

<b>Components:</b>	(8)	2" (51 mm) rods
	(2)	12" (305 mm) rods
	(2)	18" (457 mm) rods
	(6)	36" (914 mm) rods
	(4)	62" (1575 mm) rods
	(38)	Frame Connectors
	(4)	Rod-End Connectors
	(4)	Lab-Frame Feet
<b>Cat. No.</b>	<b>14224-404</b>	

Frame: 36 x 62" (914 x 1575 mm)  
Base: 12" (305 mm) wide

### 8' (2.44 m) Fume Hood Kit

<b>Components:</b>	(10)	2" (51 mm) rods
	(3)	12" (305 mm) rods
	(2)	18" (457 mm) rods
	(8)	36" (914 mm) rods
	(4)	86" (2184 mm) rods
	(45)	Frame Connectors
	(4)	Rod-End Connectors
	(6)	Lab-Frame Feet
<b>Cat. No.</b>	<b>14224-406</b>	

Frame: 36 x 86" (914 x 2184 mm)  
Base: 12" (305 mm) wide

## VWR® Talon® Support Stands

### VWR® Support Stands

Support Stands are made entirely of 303 stainless steel. They have a durable base that can accommodate vessels up to 18" (457mm) in diameter within the curve. The base area is 17.75" (451mm) across x 10.5" (267mm) deep overall. The stainless steel support rod is 0.63" (16mm) in diameter and is screwed to the support base. Two additional threaded holes in the base legs accommodate rods, enabling the stand to support two mixers. The curved shape of the base should be turned from the mixing apparatus when the two outside rods are in use. This balances the weight, preventing the base from tipping.

Description	Cat. No.
Support Stand with 23" (584 mm) Rod	14010-002
Support Stand with 28" (711 mm) Rod	58958-459
Support Stand with 36" (914 mm) Rod	14010-004
Support Stand with 40" (1016 mm) Rod	97035-508
Support Stand with 48" (1219 mm) Rod	14010-008
Support Stand with 60" (1524 mm) Rod	14010-010

### VWR® Support Stand Stabilizer Knobs

Support Stand Stabilizer Knobs can be added to the two additional threaded holes in the base legs to secure the stand to a benchtop.

Description	Cat. No.
Support Stand Stabilizer Knobs (2 per pack)	58958-462



Support Stand

### VWR® Heavy-Duty Support Stands

Heavy-Duty Support Stands have a four-point cast iron base with stainless steel support rod. They are designed to accommodate vessels up to 12" (30.5cm) in diameter to sit close to the support rod. They have rubber cushions on each of the four corners. The base area is 16.5" (41.9cm) across x 12" (30.5cm) deep overall. They are ideal for Heavy-Duty Mixers.

Description	Cat. No.
Heavy-Duty Support Stand with 18" (457 mm) Rod	60100-105
Heavy-Duty Support Stand with 23" (584 mm) Rod	97035-510
Heavy-Duty Support Stand with 28" (711 mm) Rod	97035-512
Heavy-Duty Support Stand with 36" (914 mm) Rod	97035-514
Heavy-Duty Support Stand with 40" (1016 mm) Rod	97035-516
Heavy-Duty Support Stand with 48" (1219 mm) Rod	97035-518
Heavy-Duty Support Stand with 60" (1524 mm) Rod	97035-520



Heavy-Duty Support Stand

### VWR® Replacement Support Rods

Description	Diameter	Cat. No.
18" (457 mm) Stainless Steel Rod	0.63" (16 mm)	97039-966
23" (584 mm) Stainless Steel Rod	0.63" (16 mm)	97035-522
28" (711 mm) Stainless Steel Rod	0.63" (16 mm)	97035-524
36" (914 mm) Stainless Steel Rod	0.63" (16 mm)	97039-968
40" (1016 mm) Stainless Steel Rod	0.63" (16 mm)	97035-526
48" (1219 mm) Stainless Steel Rod	0.63" (16 mm)	97039-970
60" (1524 mm) Stainless Steel Rod	0.63" (16 mm)	97039-972

## VWR® Talon® Support Stands

Cast iron support stand bases are constructed with black enamel finish for chemical resistance and durability. All bases feature a built-in support rod holder with locking knob that accepts a 0.51" (13mm) diameter support rod. U-shaped base features three built-in support rod holders and accommodates vessels up to 5" (127mm) in diameter.

\* Support rods are not included.

### VWR® Rectangular Base Support Stand, Cast Iron

Description	Dimensions	Cat. No.
Rectangular Base (only)	4 x 6" (102 x 152 mm)	12985-068
Rectangular Base (only)	5 x 8" (127 x 203 mm)	12985-070
Rectangular Base (only)	6 x 9" (152 x 229 mm)	12985-072
Rectangular Base (only)	8 x 10" (203 x 254 mm)	12985-074



12985-074

### VWR® Tripod Base Support Stand, Cast Iron

Description	Overall Footprint Diameter	Cat. No.
Tripod Base (only)	14.75" (375 mm)	12985-076



12985-076

### VWR® U-Shaped Base Support Stand, Cast Iron

Description	Dimensions	Cat. No.
U-Shaped Base (only)	7 x 7" (178 x 178 mm)	12985-078



12985-078

### VWR® Aluminum Support Rods

Description	Diameter	Cat. No.
12" (305 mm) Aluminum Rod	0.51" (13 mm)	60079-360
18" (457 mm) Aluminum Rod	0.51" (13 mm)	60079-381
24" (610 mm) Aluminum Rod	0.51" (13 mm)	60079-406
36" (914 mm) Aluminum Rod	0.51" (13 mm)	60079-428

aluminum



### VWR® Stainless Steel Support Rods

Description	Diameter	Cat. No.
12" (305 mm) Stainless Steel Rod	0.51" (13 mm)	60079-533
18" (457 mm) Stainless Steel Rod	0.51" (13 mm)	60079-534
24" (610 mm) Stainless Steel Rod	0.51" (13 mm)	60079-535
36" (914 mm) Stainless Steel Rod	0.51" (13 mm)	60079-536

stainless steel



## VWR® Talon® Support Plates

### VWR® Round Support Plate

Aluminum plate supports beakers, mantles and Petri dishes. Fits standard lab-frames using VWR® connectors or holders, shown on pages 97-99.

Plate Diameter	Distance from Rod	Cat. No.
6" (152 mm)	2.6" (66 mm)	60079-000



### VWR® Support Plates

Designed to hold hotplates, stirrers, hotplate stirrers, and other apparatus to lab-frames or ring stands. Aluminum construction offers strength and durability. Support plates include a non-skid rubber mat and a built-in holder that grips rods up to 0.75" (19mm) in diameter.

Size	Plate Dimensions	Distance from Rod	Cat. No.
Small	9.5 x 6.5" (241 x 165 mm)	1.9" (48 mm)	11301-124
Medium	12.75 x 9" (324 x 229 mm)	1.9" (48 mm)	11301-126
Large	15.75 x 12" (400 x 305 mm)	1.9" (48 mm)	11301-128



## VWR® Gas Cylinder Safety Supports

### VWR® Cylinder Bench Clamps

Rugged cast aluminum clamps safely secure gas cylinders to benches, tables or other flat surfaces up to 2.5" (64mm) thick. The 1" (25mm) wide, 54" (1372mm) long nylon strap features a nickel-plated, non-slip spring catch and buckle for easy adjustment around cylinders from 4 to 14" (102 to 356mm) in diameter. Models 711 and 716 available with or without a "Secure Cylinder" safety message strap.

#### VWR® Model 711 Bench Clamp

This bench clamp has a large tightening handle for mounting to any flat surface up to 2.5" (64mm) thick. A nylon pad prevents damage to the bench or table surface. Two tapered mounting screw holes are provided for permanent attachment to bench-top.



safety message strap

Description	Dimensions L x W x H (closed)	Cylinder Diameter	Cat. No.
Model 711 Bench Clamp with Strap	3.25 x 5.25 x 6.5" (83 x 133 x 165 mm)	4 to 14" (102 to 356 mm)	60142-003
Model 711 Bench Clamp with Safety Message Strap	3.25 x 5.25 x 6.5" (83 x 133 x 165 mm)	4 to 14" (102 to 356 mm)	97035-528



#### VWR® Model 716 Bench Clamp

This bench clamp is similar to Model 711, but includes a sturdy safety chain for extra security. Chain measures 49" (124.5cm)



safety message strap

Description	Dimensions L x W x H (closed)	Cylinder Diameter	Cat. No.
Model 716 Bench Clamp with Strap & Chain	3.25 x 5.25 x 6.5" (83 x 133 x 165 mm)	4 to 14" (102 to 356 mm)	60142-006
Model 716 Bench Clamp with Safety Message Strap & Chain	3.25 x 5.25 x 6.5" (83 x 133 x 165 mm)	4 to 14" (102 to 356 mm)	97035-530



#### VWR® Model 712 Heavy-Duty Bench Clamp

This bench clamp has two screw clamps to tighten for extra-firm mounting to any flat surface up to 1.75" (45mm) thick with a 1.25" (32mm) overhang. Especially convenient for temporary storage situations. Rugged cast aluminum bench clamp features a 1" (25mm) wide, 54" (1372mm) long nylon strap with nickel-plated, non-slip spring catch buckle to hold cylinders from 4 to 14" (102 to 356mm) in diameter. This clamp is not available with a safety message strap.

Description	Dimensions L x W x H (closed)	Cylinder Diameter	Cat. No.
Model 712 Heavy-Duty Bench Clamp with Strap	3.25 x 6 x 4.5" (83 x 152 x 114 mm)	4 to 14" (102 to 356 mm)	97035-532



## VWR® Gas Cylinder Safety Supports

### VWR® Cylinder Wall Brackets

#### VWR® Model 715 Wall Bracket

Cylinder wall-mount brackets are constructed of cast aluminum and contoured to allow cylinders to fit firmly along the support edge. Recessed screw holes at each side of the bracket allow for easy wall mounting. Features a 1" (25mm) wide, 54" (1372mm) long nylon strap with nickel-plated, non-slip spring catch and buckle for fast, easy adjustment. Available with or without a "Secure Cylinder" safety message strap. For cylinders from 4 to 14" (102 to 356mm) in diameter.



safety message strap



Description	Dimensions L x W x H	Cylinder Diameter	Cat. No.
Model 715 Wall Bracket with Strap	1.88 x 8.13 x 4.63" (48 x 206 x 118 mm)	4 to 14" (102 to 356 mm)	60141-124
Model 715 Wall Bracket with Safety Message Strap	1.88 x 8.13 x 4.63" (48 x 206 x 118 mm)	4 to 14" (102 to 356 mm)	97035-534

#### VWR® Model 717 Wall Bracket

This wall bracket is similar to Model 715, but includes a sturdy safety chain for extra security. Chain measures 49" (124.5cm)



safety message strap



Description	Dimensions L x W x H	Cylinder Diameter	Cat. No.
Model 717 Wall Bracket with Strap & Chain	1.88 x 8.13 x 4.63" (48 x 206 x 118 mm)	4 to 14" (102 to 356 mm)	60141-126
Model 717 Wall Bracket with Safety Message Strap & Chain	1.88 x 8.13 x 4.63" (48 x 206 x 118 mm)	4 to 14" (102 to 356 mm)	97035-536

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## VWR® Cylinder Stands



### VWR® Model 701 PVC-Coated Stand

The PVC-coated stand has a flat bottom support so it can't "ride up" on the cylinder. Includes an adjustable 1" (25mm) wide, 54" (1372mm) long nylon strap with nickel-plated, non-slip spring catch and buckle for fast, easy adjustment to keep the cylinder safely in place against upper support bar. Lower support bar stops cylinder shift. The PVC coating prevents marring of the cylinder surface. This clamp is not available with a safety message strap.

Description	Dimensions L x W x H	Cylinder Diameter	Cat. No.
Model 701 PVC-Coated Stand	17.25 x 17.25 x 10.75" (438 x 438 x 273 mm)	7 to 10" (178 x 254 mm)	60140-998



### VWR® Model 703 Stand

This cast aluminum stand hinges open and has four thumbscrews to tightly grip cylinders from 8 to 9" (203 to 229mm) in diameter.

Description	Dimensions (Dia. x H)	Cylinder Diameter	Cat. No.
Model 703 Stand	18.25 x 6" (464 x 152 mm)	8 to 9" (203 x 229 mm)	97035-538



### VWR® Model 704 Adjustable Stand

Heavy-duty, cast aluminum stand with adjustable "L" brackets hold cylinders from 6 to 9.25" (152 to 235mm) in diameter. Hinges open for installation without lifting the cylinder or disturbing connections. Prevents accidental tipping. Hinges open for easy, no-lifting installation.

Description	Dimensions (Dia. x H)	Cylinder Diameter	Cat. No.
Model 704 Adjustable Stand	18.5 x 7.5" (470 x 191 mm)	6 to 9.25" (152 x 235 mm)	97035-540



### VWR® Model 713 Portable Stand

This cast iron portable cylinder stand offers a sturdy cylinder stand and a convenient cylinder dolly all-in-one. This cylinder stand is designed in two interlocking halves and can be installed without lifting the tank. Built-in rubber wheels for easy mobility. Three thumbscrews tightly grip cylinder.

Description	Dimensions (Dia. x H)	Cylinder Diameter	Cat. No.
Model 713 Portable Stand	15.5 x 3" (394 x 76mm)	7 to 9.25" (178 x 235mm)	60141-000

## VWR® Lab Jacks

### VWR® Aluminum Support Jacks

- Exceptional stability and durability
- Aluminum construction
- Three convenient sizes

VWR® Aluminum Support Jacks provide stable height adjustment for various items in the lab such as flasks, baths, and small equipment. Top and bottom decks are constructed of anodized aluminum. Internal supports and drive screws are constructed of stainless steel. Oversized sure-grip adjustment knobs provide smooth and accurate height adjustment. Lab-Lifts accept optional Support Rod Kit which mounts to the upper deck.

Deck Size	Min. to Max. Height	Max Load*	Cat. No.
4 x 4" (102 x 102 mm)	2.5 to 5" (64 to 127 mm)	66 lbs (29.94 kg)	12620-900
6 x 6" (152 x 152 mm)	3 to 9.75" (76 to 248 mm)	132 lbs (59.87 kg)	12620-902
8 x 8" (203 x 203 mm)	3 to 9.75" (76 to 248 mm)	176 lbs (79.83 kg)	12620-904
10 x 10" (254 x 254 mm)	3.5 to 13" (89 to 330 mm)	186 lbs (84.37 kg)	10027-578

\* Maximum load rating represents static weight only. Static weight is the amount a unit can hold, not lift.



12620-904

### Optional Accessory

#### VWR® 17" Support Rod Kit

Ideal for creating an adjustable support stand for mounting various items such as thermometer clamps, temperature probes, flask and column clamps. This kit allows you to mount a 17" (432mm) threaded vertical support rod to the upper deck of a 6x6", 8x8", or 10x10" Support Jack by screwing the rod into the pre-drilled hole.

<b>17" Support Rod Kit includes:</b>	(1) 17" (432 mm) stainless steel rod
	(1) jam nut
	(1) flat washer

Description	Rod Diameter	Cat. No.
17" Support Rod Kit	0.51" (13 mm)	14217-532

14217-532



12620-902

## VWR® Heavy-Duty Support Jack

- Stainless steel construction
- Seven convenient sizes to choose from
- Autoclavable and chemical resistant

These Heavy-Duty Stainless Steel Support Jacks are ultra-stable lifting platforms with exceptional strength and durability. Constructed of stainless steel, Support Jacks are designed for use in extreme environments and high-load applications. Equipped with over-sized, sure-grip adjustment knobs that provide extra leverage for easy height adjustments. Durable construction allows lifts to be autoclaved or chemically cleaned. Ideal for use in fume hoods or benchtops and holds a variety of items such as glassware, hotplates, baths, and magnetic stirrers.

Deck Size	Min. to Max. Height	Max. Load*	Cat. No.
3 x 3" (76 x 76 mm)	2.5 to 5" (64 to 127 mm)	100 lbs (45.36 kg)	14233-360
4 x 4" (102 x 102 mm)	2.5 to 5" (64 to 127 mm)	100 lbs (45.36 kg)	14233-362
6 x 6" (152 x 152 mm)	3 to 9.75" (76 to 248 mm)	133 lbs (60.33 kg)	14233-364
8 x 8" (203 x 203 mm)	3 to 9.75" (76 to 248 mm)	227 lbs (102.97 kg)	14233-366
10 x 10" (254 x 254 mm)	3.5 to 13" (89 to 330 mm)	247 lbs (112.04 kg)	14233-368
12 x 12" (305 x 305 mm)	4 to 19.5" (102 to 495 mm)	100 lbs (45.36 kg)	14233-370
16 x 16" (406 x 406 mm)	4 to 19.5" (102 to 495 mm)	100 lbs (45.36 kg)	14233-372

\* Maximum load rating represents static weight only. Static weight is the amount a unit can hold, not lift.



## Optional Accessories

### VWR® 17" Support Rod Kit

Ideal for creating an adjustable support stand for mounting various items such as thermometer clamps, temperature probes, flask and column clamps. This kit allows you to mount a 17" (432mm) threaded vertical support rod to the upper deck of a 6x6", 8x8", 10x10", 12x12", or 16x16" Support Jack by screwing the rod into the pre-drilled hole.

17" Support Rod Kit includes:	(1) 17" (432mm) stainless steel rod
	(1) jam nut
	(1) flat washer

### Ratchet Tool

Designed to add extra leverage to your 12x12" or 16x16" Support Jack. This recommended Ratchet Tool easily attaches to the actuating rod to allow easy, accurate adjustments.

Description	Rod Diameter	Cat. No.
17" Support Rod Kit	0.51" (13 mm)	14217-532
Ratchet Tool	-	14233-232



## VWR® Talon® Flow Control

VWR® flow control devices offer selection and quality. They are finely machined to deliver accurate regulation or interruption of fluid flow. Every flow control device resists corrosion and rust. Hosecocks offer easy one-hand operation. Convex bearing surfaces and rounded edges protect tubing. Pinchcocks are designed to quickly start and stop flow and provide complete closure without damaging tubing. Operated with a simple squeeze. Nickel-plated construction (unless otherwise noted).

89202-614



21716-102



21704-908



### Regular Hosecock

Adjustment screw with oversized head for accurate regulation. Built-in side lugs for foot mounting. Tubing retainer screw.

#### Stainless Steel

Min. to Max. Grip	Dimensions (W x H - open)	Cat. No.
0 to 17 mm (0 to 0.67")	37 x 62 mm (1.46 x 2.44")	89202-614

#### Nickel-Plated Zinc

Min. to Max. Grip	Dimensions (W x H - open)	Cat. No.
0 to 17mm (0 to 0.67")	37 x 62mm (1.46 x 2.44")	21716-102

### Heavy-Duty Hosecock

Large hand-wheel for ease of flow adjustment. Unique design offers unparalleled control. Works well with heavy-cut nylon braided tubing.

Min. to Max. Grip	Dimensions (W x H - open)	Cat. No.
0 to 29 mm (0 to 1.14")	57 x 106 mm (2.24 x 4.17")	21704-908

### Hosecock Extension Clamp

Similar to regular hosecock but with 145mm ( 5.7") bottom-mounted extension rod for attachment to frames/rods. **NOTE:** an additional holder must be purchased in order to attach clamps to frames or other apparatus. See the Connectors & Holders section, pages 97-99.

Min. to Max. Grip	Arm Length	Arm Diameter	Overall Length	Cat. No.
0 to 17 mm (0 to 0.67")	145 mm (5.71")	8 mm (0.32")	175 mm (6.89")	21716-110



21716-110

21716-114



21573-155



### Hosecock Foot

Add this option to 21716-102 for bench or table mounting. Includes two mounting screws.

Diameter	Cat. No.
Complete Hosecock with Foot	21716-114

### Regular Pinchcock

For routine stop/start flow operation.

Min. to Max. Grip	Clamp Height	Cat. No.
0 to 12 mm (0 to 0.47")	47 mm (1.85")	21573-155

### Variable Flow Pinchcock

For precise flow adjustment and duplication of flow rates.

Min. to Max. Grip	Clamp Height	Cat. No.
0 to 13 mm (0 to 0.51")	47 mm (1.85")	21573-655

### Heavy-Duty Pinchcock

Equipped with heavy-duty spring for tough jobs. Ensures complete closure.

Min. to Max. Grip	Clamp Height	Cat. No.
0 to 11 mm (0 to 0.43")	48 mm (1.89")	21573-650



21573-655



21573-650

## Other Quality VWR Products

### VWR® Inoculating Turntables

VWR® hand-operated inoculating turntables produce almost concentric circles of bacterial colonies that are evenly distributed across Petri dishes. Cast iron turntables are coated with gray baked-acrylic enamel.

The 76mm (3") high, small turntable accommodates 100mm Petri dishes. It has a tripod base to bring work approximately to eye level. It has a center disk covered with non-skid rubber lining.

The large turntable accommodates 100mm or 150mm Petri dishes. It has a height of only 32mm (1.26"), ideal for steadying a forearm on the work surface while plating. The large turntable contains two circular sections. The top section has a raised gripper lip as well as a recessed center disk covered with non-skid rubber lining.



Description	Dimensions (Dia. x H)	Cat. No.
Small Turntable	4.49 x 3.03" (114 x 77 mm)	50809-022
Large Turntable	5.91 x 1.26" (150 x 32 mm)	50809-020

### VWR® Slide Staining Rack

Constructed of stainless steel, the VWR® Slide Staining Rack will resist corrosion under normal use. Adjustable to fit trays or sinks up to 533mm (21") inside.



Description	Dimensions (L x W)	Cat. No.
Slide Staining Rack	23.74 x 3.5" (603 x 89 mm)	15153-821

### VWR® Air Ejector

Rapid air removal evacuates 1 liter of air to 711mm (28") of vacuum in 30 seconds. Works with compressed-air sources to 60 psi. Nickel-plated construction.



Description	Length	Cat. No.
Air Ejector	5.51" (140 mm)	28641-001

## VWR® Protection Apparel

The competitively priced VWR Protection Apparel portfolio has been engineered to meet the demands of cleanrooms, critical environments, manufacturing facilities, research and clinical labs, and other specialized environments.

Our complete head-to-toe collection of single-use apparel offers comfort, durability, and the freedom to choose appropriate levels of protection for your environment's specific needs. Go to [vwr.com](http://vwr.com) for more information.



## VWR® Microplate Stability Chamber

The Microplate Stability Chamber is a tool proven to reduce the variation often experienced in cell-based assays in standard or CO<sub>2</sub> incubators. Traditional incubators often create heterogeneous environments for cell growth and biochemical assays due to frequent door openings and “hot spots” within the incubator. This chamber eliminates this problem by using the incubator heat and atmosphere to create a homogeneous micro-environment for microwell plates. High humidity within the chamber eliminates evaporation from the plates that causes the edge effect. The thick aluminum shelf distributes heat evenly to the plates thus creating excellent temperature uniformity. Variation in cell-based assays has been reduced by as much as 50% using the Microplate Stability Chamber. The chamber includes a fan driven by the appropriate power adapter.

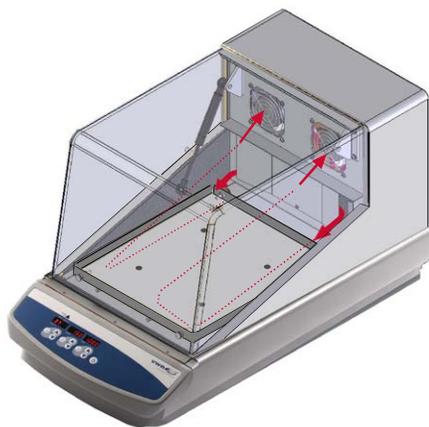
**Overall dimensions (L x W x H):** 16 x 14 x 3.1" (40.6 x 35.6 x 7.9 cm)

**Tray Dimensions (L x W x H):** 13.75 x 11.2 x 0.75" (34.9 x 28.4 x 1.9 cm)

### Microplate Stability Tray

The shelf used in the Microplate Stability Chamber can improve temperature uniformity of microwell plates in incubators. The anodized aluminum shelf holds six plates. One included with unit.

Description	Cat. No.
Microplate Stability Chamber, 120V (50/60 Hz)	12621-182
Microplate Tray	12621-186



## VWR® Patented Opti-Flow Forced Ventilation System

### Patented Opti-Flow Forced Ventilation System\*

Fan(s) draw air from the chamber and baffles deflect air around the sides of the chamber. This prevents the flow of air directly on samples delivering exceptional temperature uniformity and stability.

This feature can be found on the VWR® Incubating 3500 Orbital Shaker, Incubating 5000I Orbital Shaker, and Incubating/Refrigerating 5000IR Orbital Shaker (see pages 29-31).

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- ISO 9000 registered quality system to assure high reliability in both design and manufacturing processes.
- Experienced regulatory processes in getting dozens of products approved by UL, CSA, CE, and TUV.
- Manufacturing operation is UL- and CSA-approved and is "surprise" audited every 3 months according to regulatory standards.
- Turning, milling, assembly, as well as sourcing capabilities to produce or procure components at a competitive cost.
- Calibration system is ISO/IEC 17025 compliant.
- Six highly trained staff metrologists who understand measurement technology and key attributes required to make accurate and repeatable measurements.
- State-of-the-art facility including a modern machine shop, cellular assembly area, and the world's most environmentally stable calibration laboratories.
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- Digital and analog speed-control systems
- In-house knowledge as well as a vast network of suppliers who can support your design and manufacturing efforts
- Experience with a variety of materials

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