

# VWR laboratory equipment

01. VWR SMALL LAB  
EQUIPMENT

02. FIVE-YEAR WARRANTY



# 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



# Table of contents

|                                                                     |                                                                 |                                                          |                                                    |
|---------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------|
| Melting Point Apparatus<br>4-6                                      | Advanced Hotplates, Stirrers,<br>and Hotplate Stirrers<br>52-53 | Vortex Mixers<br>76-87                                   | Connectors & Holders<br>98-101                     |
| Shaker Selection Guide<br>7-10                                      | Standard Hotplates, Stirrers,<br>and Hotplate Stirrers<br>54-55 | Microplate Vortex Mixers<br>76-77                        | Lab-Frames<br>102-105                              |
| Shakers<br>7-47                                                     | Round Top Hotplate Stirrers<br>56-58                            | Heavy-Duty Vortex Mixers<br>78-79                        | Support Stands &<br>Support Plates<br>106-108      |
| Open-Air Shakers<br>11-26                                           | Basic Mini Hotplates, Stirrers,<br>and Hotplate Stirrers<br>59  | Heavy Duty and Microplate<br>Vortex Accessories<br>81-82 | Gas Cylinder Safety Supports<br>109-111            |
| Thermal Shake Touch<br>27-29                                        | Specialty Stirrers<br>60-65                                     | Mini Vortex Mixers<br>81-82                              | Lab Jacks<br>112-113                               |
| Incubating Shakers<br>30-40                                         | Dyla Series<br>66                                               | Mini Vortex Accessories<br>83-84                         | Flow Control<br>114                                |
| Shaker Accessories<br>41-47                                         | Supports<br>66                                                  | Multi-Tube Vortexers<br>85-87                            | Other Quality Products<br>115                      |
| Hotplates/Stirrers<br>Selection Guide<br>48-49                      | Dry Block Heaters<br>67-72                                      | Clamps and Supports<br>88-114                            | VWR® Opti-Flow Forced<br>Ventilation System<br>115 |
| Hotplates/Stirrers<br>48-66                                         | Dry Block Heater Accessories<br>73-75                           | Multi-Purpose Clamps<br>88-92                            | Custom Manufacturing<br>115                        |
| Professional Hotplates, Stirrers,<br>and Hotplate Stirrers<br>50-51 |                                                                 | Specialty Clamps<br>93-98                                |                                                    |



### 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



75840-112

#### 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 data 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.

#### 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.

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                      |
| 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 |



**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 |

**Avantor Services**



Equipment and instrument services

Avantor Services helps you simplify equipment and instrument services, in and around the laboratory.

Our team specializes in providing a quick and targeted response to your needs. We also offer consultative and customized solutions. This enables you to:

- Improve efficiency by keeping your equipment in compliance
- Optimize your budget and maximize your equipment investment

With our network of ISO 9001 / IEC17025 accredited service providers, we can be your single point of contact for all equipment and instrument service needs.

We are focused on helping you in the following areas:

- Calibration
- Qualification and Validation
- Preventive Maintenance
- Certification
- Temperature Mapping
- Warranty Management

Visit [vwr.com/avantorservices](http://vwr.com/avantorservices) for more information.

## 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<br>Separatory Funnel Platform | 11 x 13", 13 x 13", 18 x 18", 18 x 24" Adjustable Platform<br>Separatory Funnel Platform | 11 x 13", 13 x 13", 18 x 18", 18 x 24" Adjustable Platform<br>Separatory Funnel Platform | 11 x 13", 13 x 13", 18 x 18", 18 x 24" Adjustable Platform<br>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<br>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® 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.



**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**

|                                |                                            |
|--------------------------------|--------------------------------------------|
| Speed Range                    | 25 to 500 rpm                              |
| Timer                          | 1 minute to 120 minutes                    |
| 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.         |
|------------------------------|----------------------------|------------------|
| Standard 3500 Orbital Shaker | 120V   5 amps   75 watts   | <b>89032-092</b> |
| Standard 3500 Orbital Shaker | 230V   2.5 amps   75 watts | <b>89032-094</b> |

**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 ±1% of set speed. When set under 100rpm, speed accuracy is ±1rpm.

**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.



89032-096 with optional platform 97003-602

**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), 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                    | 15 to 500 rpm                                          |
| Speed Accuracy                 | above 100 rpm ±1% of set speed<br>below 100 rpm ±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   | <b>89032-096</b> |
| Advanced 3500 Orbital Shaker                                 | 230V   2.5 amps   75 watts | <b>89032-098</b> |
| Advanced 3500 Orbital Shaker with NIST-Traceable Certificate | 120V   5 amps   75 watts   | <b>10027-142</b> |
| Advanced 3500 Orbital Shaker with NIST-Traceable Certificate | 230V   2.5 amps   75 watts | <b>10027-144</b> |



### 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.

**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.

#### Specifications

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



#### 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. Troemner is accredited by NVLAP under Laboratory Code 105013-0 to perform ISO/IEC 17025 calibrations.

| 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 |



### 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.



97007-742 with optional platform 97003-632

**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), 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<br>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 |



89032-100 with optional platform 97003-604

**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.

**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   | <b>89032-100</b> |
| Standard 5000 Orbital Shaker | 230V   2.5 amps   75 watts | <b>89032-102</b> |



## 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.



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

**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), 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.

### Specifications

|                                |                                                                   |
|--------------------------------|-------------------------------------------------------------------|
| Speed Range                    | 20 to 500 rpm                                                     |
| Speed Accuracy                 | above 100 rpm $\pm 1\%$ of set speed<br>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 |

**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 ±1% of set speed. When set under 100rpm, speed accuracy is ±1rpm.

**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.



89032-112

**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.

**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 ±1% of set speed<br>below 100 rpm ±1rpm |
| 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 | <b>89032-108</b> |
| Advanced 10000-2 Orbital Shaker                                 | 120V   5 amps   80 watts | <b>89032-112</b> |
| Advanced 10000-1 Orbital Shaker with NIST-Traceable Certificate | 120V   5 amps   80 watts | <b>10027-150</b> |
| Advanced 10000-2 Orbital Shaker with NIST-Traceable Certificate | 120V   5 amps   80 watts | <b>10027-154</b> |

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 ±1% of set speed. When set under 100rpm, speed accuracy is ±1rpm.

**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.



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

**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.

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 ±1% of set speed<br>below 100 rpm ±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 15000-2 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 15000-2 Orbital Shaker with NIST-Traceable Certificate | 120V   5 amps   80 watts | 10027-162 |



89032-088

**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.

**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<br>±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 with NIST-Traceable Certificate    | 120V   5 amps   25 watts | 10027-116 |
| Mini Shaker 15 with NIST-Traceable Certificate | 120V   5 amps   25 watts | 10027-202 |



### 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.

#### 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.



12620-926

#### 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

|                                |                                      |
|--------------------------------|--------------------------------------|
| 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 4" (43.2 x 27.9 x 10.2 cm) |
| Ship Weight                    | 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.



10127-876

#### 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.

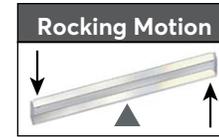
**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**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.



12620-906

**APPLICATIONS:**

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

**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 |



10811-240

**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

**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**

|                                |                                      |
|--------------------------------|--------------------------------------|
| Speed Range                    | 1 to 75 rpm*                         |
| Tilt Angle                     | 0 to 16° *                           |
| Timer                          | 1 minute to 120 minutes              |
| Maximum Weight Capacity        | 5 lbs (2.3 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) | 17 x 11 x 6" (43.2 x 27.9 x 15.2 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.  |
|-----------------------------------|------------------------------|-----------|
| Analog 3-D Waving Platform Shaker | 120V   0.125 amps   15 watts | 10811-240 |
| 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.

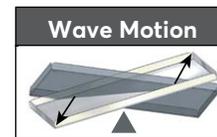
**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**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 |



13500-890

**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.

**Specifications**

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

**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.

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



### 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.



89232-908

**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.

#### 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<br>±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.



89232-904

**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.

#### 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<br>±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<br>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 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"<br>(7.87 x 12.95 cm) | 0.9" (2.3 cm)   | 4.7 x 6.4 x 3.0"<br>(11.9 x 16.3 x 7.6 cm) | <b>89232-912</b> |
| 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"<br>(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"<br>(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"<br>(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"<br>(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"<br>(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"<br>(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"<br>(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"<br>(10.7 x 14.7 x 12.7 cm) | <b>10810-740</b> |
| 15 mL Conical Tubes       | 9            | 0.68" (1.73 cm) | 4.11" (10.44 cm) | 4.2 x 5.8 x 5.0"<br>(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"<br>(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  $\pm 1\text{rpm}$ .

**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  $+5^{\circ}\text{C}$  to  $65^{\circ}\text{C}$ . Easy-to-use controls allow users to adjust temperature in  $1^{\circ}\text{C}$  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.

#### Specifications

|                                 |                                                                      |
|---------------------------------|----------------------------------------------------------------------|
| Temperature Range               | Ambient $+5^{\circ}\text{C}$ to $65^{\circ}\text{C}$                 |
| Temperature Uniformity          | $\pm 0.5^{\circ}\text{C}$ at $37^{\circ}\text{C}$                    |
| Speed Range                     | 15 to 500 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                           | 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 (L x W x H) | 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)                                                     |

| 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 |



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

#### 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  $40^{\circ}\text{C}$  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  $32^{\circ}\text{C}$  ( $59$  to  $90^{\circ}\text{F}$ ), 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 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.

**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.

**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 (L x W x H) | 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 | <b>97009-890</b> |
| Incubating 5000I Orbital Shaker with NIST-Traceable Certificate | 120V   8 amps   800 watts | <b>10027-258</b> |



97009-890



**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.

**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.

**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 ±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 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.

**Specifications**

|                                 |                                                    |
|---------------------------------|----------------------------------------------------|
| Temperature Range               | 15°C below ambient 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 (L x W x H) | 20.6 x 24.8 x 17" (52.3 x 62.9 x 43.18cm)          |
| Overall Dimensions (L x W x H)  | 41.1 x 26.6 x 23.5" (104.4 x 67.5 x 59.6cm)        |
| Ship Weight                     | 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 |



97009-894



**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.

**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.



**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.



12620-942

**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 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 |

### 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.



12620-930



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

**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.

#### 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 Opaque Lid with NIST-Traceable Certificate | 120V   5 amps   400 watts | 10027-132 |

### 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.

#### 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<br>±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)                          |



97027-346

#### 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).

#### 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.

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

**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 micro-tubes, 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.

**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)                         |



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

**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.

**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 73-75 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.

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

## 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 |



### 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    |           |
| 15 mL       | 3            | 17.1 mm   | 44.5 mm    |           |
| 50 mL       | 2            | 29 mm     | 47.6 mm    | 12985-040 |



### 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 |



### 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 |



### 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 |



### 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.

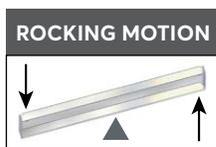
**Speed ramping feature:** Slowly increases speed to desired set point to avoid splashing.

**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.



12620-910

#### 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, 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.

#### 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.

| 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 WAYER

- 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.

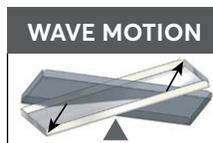
#### SAFETY FEATURES:

**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.



12620-920 with optional 26985-034

**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.

#### 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.

#### 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.

| 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 |

### 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                  | <b>89027-702</b> |
| 13 x 13" (33 x 33 cm) Universal Platform       | Standard/Advanced 3500, Dura-Shaker, Advanced 3750                             | <b>97003-586</b> |
| 18 x 18" (45.7 x 45.7 cm) Universal Platform * | Standard/Advanced 3500, Dura-Shaker, Advanced 3750 **                          | <b>97003-588</b> |
| 18 x 18" (45.7 x 45.7 cm) Universal Platform   | Incubating 5000I/5000IR                                                        | <b>97021-954</b> |
| 18 x 24" (45.7 x 61 cm) Universal Platform *   | Standard/Advanced 3500, Dura-Shaker, Advanced 3750**, Standard/Advanced 5000** | <b>97003-590</b> |
| 24 x 24" (61 x 61 cm) Universal Platform       | Advanced 10000-1 / 10000-2                                                     | <b>97003-592</b> |
| 18 x 30" (45.7 x 76.2 cm) Universal Platform * | Standard/Advanced 5000                                                         | <b>97003-594</b> |
| 24 x 36" (61 x 91.4 cm) Universal Platform     | Advanced 15000-1 / 15000-2                                                     | <b>97003-596</b> |
| Two-Tier Braces (set of 4)                     | Standard/Advanced 3500, Standard/Advanced 5000                                 | <b>97003-646</b> |

\*Two-tier ready  
\*\*Not stackable



### 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**                           | <b>97003-598</b> |
| 18 x 24" (45.7 x 61 cm) Culture Platform *   | Standard/Advanced 3500*, Dura-Shaker, Advanced 3750**, Standard/Advanced 5000** | <b>97003-600</b> |
| Two-Tier Braces (set of 4)                   | Standard/Advanced 3500, Dura-Shaker                                             | <b>97003-646</b> |

\*Two-tier ready  
\*\*Not stackable

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



### 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 | <b>97003-616</b> |
| 13 x 13" (33 x 33 cm) Dedicated Platform / 250 mL Flask Clamp       | 12             | Standard/Advanced 3500, Dura-Shaker, Advanced 3750 | <b>97003-618</b> |
| 13 x 13" (33 x 33 cm) Dedicated Platform / 500 mL Flask Clamp       | 8              | Standard/Advanced 3500, Dura-Shaker, Advanced 3750 | <b>97003-620</b> |
| 13 x 13" (33 x 33 cm) Dedicated Platform / 1 L Flask Clamp          | 4              | Standard/Advanced 3500, Dura-Shaker, Advanced 3750 | <b>97003-622</b> |
| 18 x 18" (45.7 x 45.7 cm) Dedicated Platform / 125 mL Flask Clamp * | 27             | Standard/Advanced 3500, Dura-Shaker, Advanced 3750 | <b>97003-624</b> |
| 18 x 18" (45.7 x 45.7 cm) Dedicated Platform / 250 mL Flask Clamp * | 20             | Standard/Advanced 3500, Dura-Shaker, Advanced 3750 | <b>97003-626</b> |
| 18 x 18" (45.7 x 45.7 cm) Dedicated Platform / 500 mL Flask Clamp * | 13             | Standard/Advanced 3500, Dura-Shaker, Advanced 3750 | <b>97003-628</b> |
| 18 x 18" (45.7 x 45.7 cm) Dedicated Platform / 1 L Flask Clamp      | 9              | Standard/Advanced 3500, Dura-Shaker, Advanced 3750 | <b>97003-630</b> |
| Two-Tier Braces (set of 4)                                          |                | Standard/Advanced 3500, Dura-Shaker                | <b>97003-646</b> |

Stacking of platforms is not recommended for Model 3750



**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                           |           |



**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 |



**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

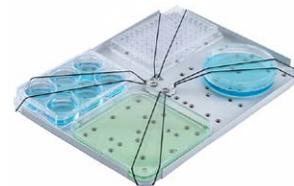
| Description                                           | Bar Size      | Overall Dimensions (L x W x H)             | Used on Shakers          | Cat. No.  |
|-------------------------------------------------------|---------------|--------------------------------------------|--------------------------|-----------|
| 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 |
| 4-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 |



**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 |



### 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 |



### 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 |



### 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

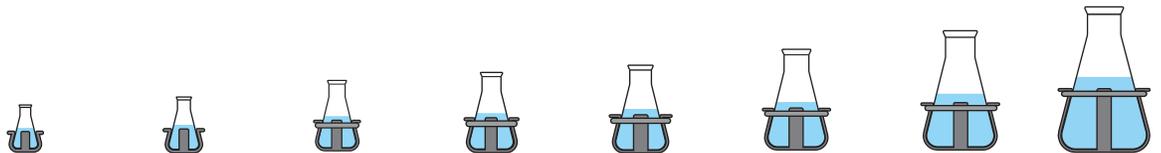
Erlenmeyer Flask Clamps

Media Bottle 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



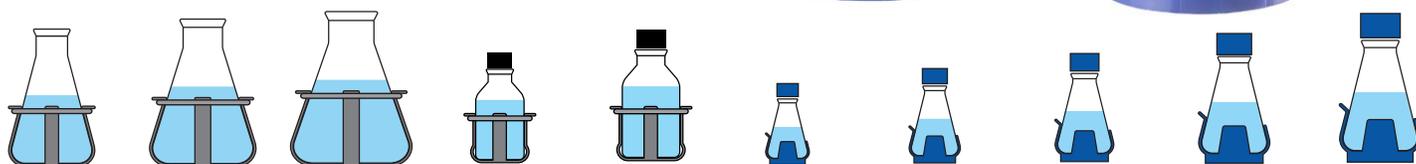
|                                | 10 mL Erlenmeyer Flask Clamp<br>Stainless Steel<br>57018-775 | 25 mL Erlenmeyer Flask Clamp<br>Stainless Steel<br>57018-786 | 50 mL Erlenmeyer Flask Clamp<br>Stainless Steel<br>57018-797 | 125 mL Erlenmeyer Flask Clamp<br>Stainless Steel<br>57018-800 | 250 mL Erlenmeyer Flask Clamp<br>Stainless Steel<br>57018-811 | 500 mL Erlenmeyer Flask Clamp<br>Stainless Steel<br>57018-822 | 1 L Erlenmeyer Flask Clamp<br>Stainless Steel<br>14215-224 | 2 L Erlenmeyer Flask Clamp<br>Stainless Steel<br>14215-226 |
|--------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|
| <b>Tray or Platform</b>        | <b>Number of Flask Clamps per Tray or Platform</b>           |                                                              |                                                              |                                                               |                                                               |                                                               |                                                            |                                                            |
| 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                                                        |
| Dura-Shaker                    | 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                                                          |
| Dura-Shaker                    | 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                                                          |
| Dura-Shaker                    | 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                                                          |
| Dura-Shaker                    | 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.

## 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><br><b>3 L-10789-250</b> | <b>14215-230</b>           | <b>5 L-75804-636</b><br><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>           |

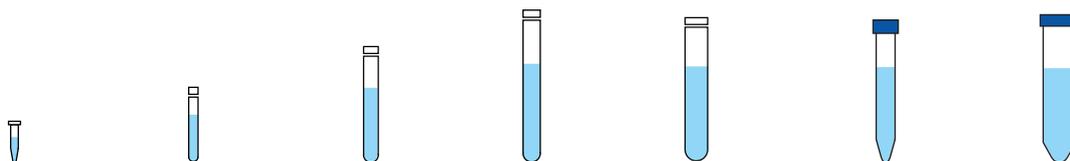
Number of Flask Clamps per Tray or Platform

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

## VWR® Test Tube Racks

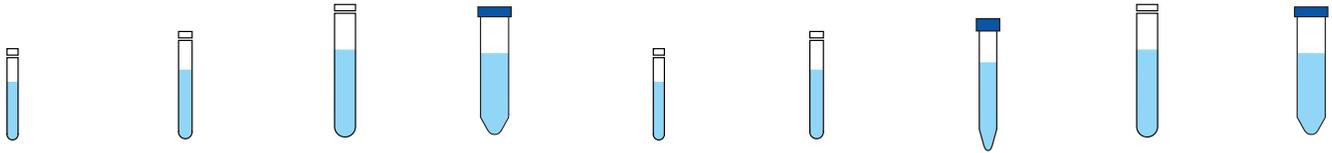
### Test Tube Racks - Full Size, Stationary

- 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 | 16 to 20 mm Test Tube Rack Full Size, Stationary | 21 to 25 mm Test Tube Rack Full Size, Stationary | 50 mL Centrifuge Tube Rack Full Size, Stationary | 13 mm Test Tube Rack Full Size, Pivoting | 16 mm Test Tube Rack Full Size, Pivoting | 20 mm Test Tube Rack Full Size, Pivoting | 25 mm Tube Rack Full Size, Pivoting | 30 mm Tube Rack Full Size, Pivoting |
|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|-------------------------------------|-------------------------------------|
| Tube Capacity = 48                               | Tube Capacity = 33                               | Tube Capacity = 21                               | Tube Capacity = 17                               | Tube Capacity = 90                       | Tube Capacity = 60                       | Tube Capacity = 40                       | Tube Capacity = 24                  | Tube Capacity = 21                  |
| <b>14215-240</b>                                 | <b>14215-242</b>                                 | <b>14215-244</b>                                 | <b>12985-052</b>                                 | <b>97003-636</b>                         | <b>97003-638</b>                         | <b>97003-640</b>                         | <b>97003-642</b>                    | <b>97003-644</b>                    |
| Number of Test Tube Racks per Tray or Platform   |                                                  |                                                  |                                                  |                                          |                                          |                                          |                                     |                                     |
| 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                                              | 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                                   |
| 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                                   |
| 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                                   |
| 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"<br>(37.6 x 25.1 x 10.9 cm) | 14.8 x 9.9 x 4.3"<br>(37.6 x 25.1 x 10.9 cm) |
| Temperature Range<br>Ceramic<br>Aluminum<br>Stainless Steel     | Ambient +5° to 500°C<br>Ambient +5° to 400°C<br>N/A  | Ambient +5° to 500°C<br>Ambient +5° to 400°C<br>N/A | Ambient +5° to 500°C<br>Ambient +5° to 400°C<br>N/A | N/A<br>N/A<br>Ambient +5° to 400°C           | N/A<br>N/A<br>Ambient +5° to 400°C           |
| Temperature Stability<br>Ceramic<br>Aluminum<br>Stainless Steel | ±1%*<br>±1%*<br>N/A                                  | ±3%**<br>±2%**<br>N/A                               | ±3%**<br>±2%**<br>N/A                               | N/A<br>N/A<br>±1%***                         | N/A<br>N/A<br>±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.

## 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"<br>(20.1 x 15.2 x 12.4 cm)          | 17 x 11 x 4"<br>(43.2 x 27.9 x 10.2 cm) | 28.5 x 26.75 x 5.25"<br>(72.4 x 68 x 13.3 cm)           | 17 x 11 x 4"<br>(43.2 x 27.9 x 10.2 cm)    | 17 x 11 x 4"<br>(43.2 x 27.9 x 10.2 cm)                  | 14.8 x 9.9 x 4.3"<br>(37.6 x 25.1 x 10.9 cm)      |
| Temperature Range                   | N/A                                                | N/A                                     | N/A                                                     | N/A                                        | N/A                                                      | N/A                                               |
| Ceramic                             | to 400°C                                           | N/A                                     | N/A                                                     | N/A                                        | N/A                                                      | N/A                                               |
| Aluminum                            | N/A                                                | N/A                                     | N/A                                                     | N/A                                        | N/A                                                      | N/A                                               |
| Stainless Steel                     | N/A                                                | N/A                                     | N/A                                                     | N/A                                        | N/A                                                      | N/A                                               |
| Temperature Stability               | N/A                                                | N/A                                     | N/A                                                     | N/A                                        | N/A                                                      | N/A                                               |
| Ceramic                             | N/A                                                | N/A                                     | N/A                                                     | N/A                                        | N/A                                                      | N/A                                               |
| Aluminum                            | N/A                                                | N/A                                     | N/A                                                     | N/A                                        | N/A                                                      | N/A                                               |
| Stainless Steel                     | 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 62                                | 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

### 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.

### 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).



97042-714



**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 65.



97042-762

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 (H2O)   |                                         |
| 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.  |
|--------------------------------------------------------------------|--------------------|-------------------------------|-----------|
| VWR® Professional Hotplates                                        |                    |                               |           |
| 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   | Aluminum           | 120V   7.9 amps   950 watts   | 10027-024 |
| 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                                 | 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 | Aluminum           | 120V   10.8 amps   1300 watts | 10027-048 |

| Description                                                                | Top Plate Material | Electrical (50/60 Hz)         | Cat. No.  |
|----------------------------------------------------------------------------|--------------------|-------------------------------|-----------|
| VWR® Professional Stirrers                                                 |                    |                               |           |
| 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            | 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 |
| VWR® Professional Hotplate Stirrers                                        |                    |                               |           |
| 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   | Aluminum           | 120V   8.3 amps   1000 watts  | 10027-056 |
| 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 | Aluminum           | 120V   11.2 amps   1345 watts | 10027-064 |
| Hotplate/Stirrer Accessories Temperature Probes                            |                    |                               |           |
| 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 |



97042-646

## 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 66).



97042-602

**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  | <a href="#">97042-578</a> |
| 4 x 4" (10.2 x 10.2 cm) Hotplate           | Ceramic            | 230V                  | 1.5 amps  | 350 watts  | <a href="#">97042-580</a> |
| 4 x 4" (10.2 x 10.2 cm) Hotplate           | Aluminum           | 120V                  | 2.9 amps  | 350 watts  | <a href="#">97042-582</a> |
| 7 x 7" (17.8 x 17.8 cm) Hotplate           | Ceramic            | 120V                  | 7.9 amps  | 950 watts  | <a href="#">97042-618</a> |
| 7 x 7" (17.8 x 17.8 cm) Hotplate           | Aluminum           | 120V                  | 7.9 amps  | 950 watts  | <a href="#">97042-622</a> |
| 7 x 7" (17.8 x 17.8 cm) Hotplate           | Aluminum           | 230V                  | 4.4 amps  | 1000 watts | <a href="#">97042-624</a> |
| 10 x 10" (25.4 x 25.4 cm) Hotplate         | Ceramic            | 120V                  | 10.8 amps | 1300 watts | <a href="#">97042-658</a> |
| 10 x 10" (25.4 x 25.4 cm) Hotplate         | Ceramic            | 230V                  | 6.7 amps  | 1550 watts | <a href="#">97042-660</a> |
| 10 x 10" (25.4 x 25.4 cm) Hotplate         | Aluminum           | 120V                  | 10.8 amps | 1300 watts | <a href="#">97042-662</a> |
| 10 x 10" (25.4 x 25.4 cm) Hotplate         | Aluminum           | 230V                  | 6.7 amps  | 1550 watts | <a href="#">97042-664</a> |
| <b>VWR® Advanced Hotplate Stirrers</b>     |                    |                       |           |            |                           |
| 4 x 4" (10.2 x 10.2 cm) Hotplate Stirrer   | Ceramic            | 120V                  | 3.3 amps  | 400 watts  | <a href="#">97042-602</a> |
| 4 x 4" (10.2 x 10.2 cm) Hotplate Stirrer   | Ceramic            | 230V                  | 1.7 amps  | 400 watts  | <a href="#">97042-604</a> |
| 4 x 4" (10.2 x 10.2 cm) Hotplate Stirrer   | Aluminum           | 120V                  | 3.3 amps  | 400 watts  | <a href="#">97042-606</a> |
| 7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer   | Ceramic            | 120V                  | 8.3 amps  | 1000 watts | <a href="#">97042-642</a> |
| 7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer   | Ceramic            | 230V                  | 4.6 amps  | 1050 watts | <a href="#">97042-644</a> |
| 7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer   | Aluminum           | 120V                  | 8.3 amps  | 1000 watts | <a href="#">97042-646</a> |
| 7 x 7" (17.8 x 17.8 cm) Hotplate Stirrer   | Aluminum           | 230V                  | 4.6 amps  | 1050 watts | <a href="#">97042-648</a> |
| 10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer | Ceramic            | 120V                  | 11.2 amps | 1345 watts | <a href="#">97042-682</a> |
| 10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer | Ceramic            | 230V                  | 7.0 amps  | 1600 watts | <a href="#">97042-684</a> |
| 10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer | Aluminum           | 120V                  | 11.2 amps | 1345 watts | <a href="#">97042-686</a> |
| 10 x 10" (25.4 x 25.4 cm) Hotplate Stirrer | Aluminum           | 230V                  | 7.0 amps  | 1600 watts | <a href="#">97042-688</a> |



97042-638

## 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 66).



97042-594

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 |

**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.

**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)                         |



89171-864

**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.

**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.

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



**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.



89171-860

**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.

**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 66).

**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 FOR 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 |
| 25 mm Tube  | 24           | 25.4 mm   | 41.9 mm    | 89171-910 |

#### UNI-BLOCKS 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 |



#### 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 |

#### SECTIONAL BLOCKS 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 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.



12621-050



12621-054

**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.

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<br>250 to 1400 rpm ±2% |
| Timer (Advanced Series)             | 1 second to 160 hours                       |
| Maximum Capacity (H <sub>2</sub> O) | 25 L                                        |
| Maximum Vessel Diameter             | 10" (25 cm)                                 |
| 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                         | 14.6 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 with NIST-Traceable Certificate | 120V   1.3 amps   75 watts  | 1         | 10027-232 |



12621-058

**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.

**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                        | 100 to 1800 rpm                                     |
| Model 2000                        | 100 to 1650 rpm<br>(increased in 10 rpm increments) |
| Speed Stability                   | ±2%                                                 |
| Timer                             | 1 second to 160 hours                               |
| Maximum Capacity H <sub>2</sub> O |                                                     |
| Model 1000                        | 100 L                                               |
| Model 2000                        | 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"<br>(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    | <a href="#">12621-058</a> |
| Model 1000 Advanced Large-Capacity Stirrer, 100L                                 | 230V   0.5 amps   41 watts | <a href="#">12621-060</a> |
| Model 2000 Advanced Large-Capacity Stirrer, 200L                                 | 120V   1 amp   82 watts    | <a href="#">12621-062</a> |
| Model 2000 Advanced Large-Capacity Stirrer, 200L                                 | 230V   0.5 amps   82 watts | <a href="#">12621-064</a> |
| Model 1000 Advanced Large-Capacity Stirrer, 100L with NIST-Traceable Certificate | 120V   1 amp   41 watts    | <a href="#">10027-236</a> |
| Model 2000 Advanced Large-Capacity Stirrer, 200L with NIST-Traceable Certificate | 120V   1 amp   82 watts    | <a href="#">10027-090</a> |



12621-046

## 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.

### 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<br>> 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 (H <sub>2</sub> O) | 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 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 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 |



12621-070

### 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).

#### 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.



12621-080

**Specifications**

|                                       |                                          |
|---------------------------------------|------------------------------------------|
| Speed Range                           | 1 to 150 rpm                             |
| Timer (Advanced Series)               | 1 second to 160 hours                    |
| <b>Top Plate Material</b>             |                                          |
| 4-Position / 10 L                     | Glass-filled nylon                       |
| 1-Position                            | Aluminum                                 |
| <b>TOP PLATE DIMENSIONS (L X W)</b>   |                                          |
| 4-Position / 10 L                     | 12.5 x 11" (31.8 x 27.9 cm)              |
| 1-Position                            | 7 x 7" (17.8 x 17.8 cm)                  |
| <b>OVERALL DIMENSIONS (L X W X H)</b> |                                          |
| 4-Position / 10 L                     | 17 x 11 x 4" (43.2 x 27.9 x 10.2 cm)     |
| 1-Position                            | 11.9 x 8.6 x 3.5" (30.2 x 21.8 x 8.9 cm) |
| <b>SHIP WEIGHT</b>                    |                                          |
| 4-Position / 10 L                     | 14.5 lbs (6.6 kg)                        |
| 1-Position                            | 8.8 lbs (4 kg)                           |

| Description                                                              | Electrical<br>(50/60 Hz)      | Positions | Maximum<br>Capacity<br>(H <sub>2</sub> O) | Maximum<br>Vessel<br>Diameter | Cat. No.         |
|--------------------------------------------------------------------------|-------------------------------|-----------|-------------------------------------------|-------------------------------|------------------|
| <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)                  | <b>12621-070</b> |
| Advanced Slow-Speed Stirrer 4                                            | 120V   0.14 amps   7.2 watts  | 4         | 1 L                                       | 5.1" (13 cm)                  | <b>12621-080</b> |
| Advanced Slow-Speed Stirrer 4                                            | 230V   0.14 amps   14.4 watts | 4         | 1 L                                       | 5.1" (13 cm)                  | <b>12621-082</b> |
| Advanced Slow-Speed Stirrer 10 L                                         | 120V   0.14 amps   7.2 watts  | 1         | 10 L                                      | 9.8" (25 cm)                  | <b>12621-072</b> |
| <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)                  | <b>10027-094</b> |
| Advanced Slow-Speed Stirrer 4                                            | 120V   0.14 amps   7.2 watts  | 4         | 1 L                                       | 5.1" (13 cm)                  | <b>10027-100</b> |
| Advanced Slow-Speed Stirrer 10 L                                         | 120V   0.14 amps   7.2 watts  | 1         | 10 L                                      | 9.8" (25 cm)                  | <b>10027-096</b> |



12620-970

### VWR® DYLA SERIES AND SUBMERSIBLE STIRRER

- 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 66).

### 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)                         |

| 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 |



Support Rod and Clamp Kit includes:



Extension Clamp 3-Prong Swivel Clamp Hook Connector

### VWR® 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.

| Description               | Cat. No.  |
|---------------------------|-----------|
| Support Rod and Clamp Kit | 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 ±0.5°C and uniformity as low as ±0.2°C. Samples are heated to temperature quickly and accurately. Temperature can be adjusted in ±0.1°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.

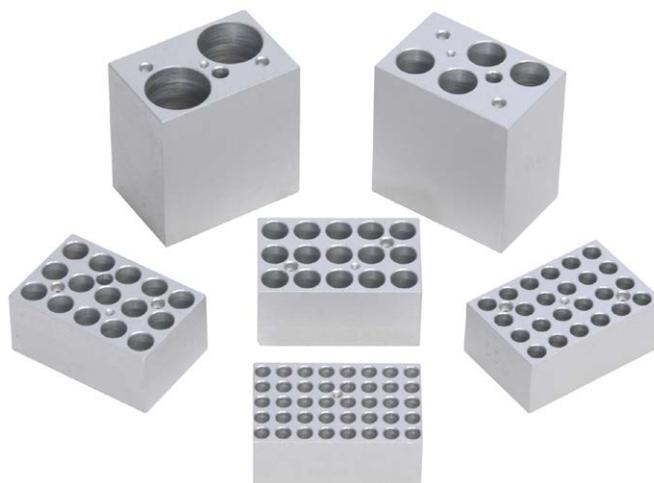
Caution! To avoid possible electrical hazard, do not fill well or block opening with water or other fluids. Unit is designed as a dry bath/incubator.

**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



Accessory blocks see page 68

**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           | ±0.5°C                                |
| Temperature Uniformity         | ±0.2°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 0.440 amps 48 watts | 10153-318 |
| Advanced Mini Dry Block Heater                                 | 230V 0.250 amps 48 watts | 10153-320 |
| Advanced Mini Dry Block Heater with NIST-Traceable Certificate | 120V 0.440 amps 48 watts | 10153-352 |

**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, 0.5mL, 1.5mL, or 2mL 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 ±0.3°C and uniformity as low as ±0.2°C. Samples are heated to temperature quickly and accurately. Temperature can be adjusted in ±0.1°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.

**Specifications**

|                                |                                       |
|--------------------------------|---------------------------------------|
| Temperature Range              | Ambient +5°C to 100°C                 |
| Temperature Accuracy           | ±0.3°C                                |
| Temperature Uniformity         | ±0.2°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)                      |



10153-348

**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.

| 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 0.670 amps 73 watts | <b>10153-348</b> |
| Advanced Mini Dry Block Heater with Heater Lid             | 230V 0.340 amps 73 watts | <b>10153-350</b> |
| Advanced Mini Dry Block Heater with Heater Lid             |                          |                  |
| NIST-Traceable Certificate                                 | 120V 0.670 amps 73 watts | <b>10153-356</b> |

**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"<br>(7.11 x 4.69 x 2.67 cm) | 15.2 mm    | 6.4 mm        | N/A              | <b>10153-360</b> |
| Mini Block for 0.5 mL Tubes | 24           | 2.8 x 1.85 x 1.15"<br>(7.11 x 4.69 x 2.92 cm) | 21 mm      | 7.9 mm        | N/A              | <b>10153-362</b> |
| Mini Block for 1.5 mL Tubes | 15           | 2.8 x 1.85 x 1.3"<br>(7.11 x 4.69 x 3.30 cm)  | 30.5 mm    | 11.1 mm       | Yes              | <b>10153-364</b> |
| Mini Block for 2.0 mL Tubes | 15           | 2.8 x 1.85 x 1.3"<br>(7.11 x 4.69 x 3.30 cm)  | 30.5 mm    | 11.5 mm       | N/A              | <b>10153-366</b> |
| Mini Block for 15 mL Tubes* | 4            | 2.8 x 1.85 x 2.95"<br>(7.11 x 4.69 x 5.59 cm) | 72.4 mm    | 17.1 mm       | Yes              | <b>10153-368</b> |
| Mini Block for 50 mL Tubes* | 2            | 2.8 x 1.85 x 2.95"<br>(7.11 x 4.69 x 5.59 cm) | 72.4 mm    | 30.0 mm       | Yes              | <b>10153-370</b> |

\* 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 73-75).

### 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.



75838-270 with optional block 13259-000 and optional probe kit 11301-112

### 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 73-75).

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.

Continued on next page

continued from previous page

| 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: ±0.1°C | 120-volt units: ±0.1°C             | N/A                                     | 45 minutes            | 1 second to 160 hours |
| 2 Block |                       | 230-volt units: ±0.2°C | 230-volt units: ±0.2°C             | ±0.1°C                                  | 50 minutes            |                       |
| 4 Block |                       |                        |                                    | ±0.2°C                                  | 60 minutes            |                       |
| 6 Block |                       |                        |                                    | ±0.3°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 |





**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 73-75).



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 ±0.1°C with a temperature uniformity as low as ±0.1°C. Samples are heated to temperature quickly and accurately. Temperature is adjusted in 0.1°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°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°C (64 to 91°F), 20% to 80% relative humidity, non-condensing.

**APPLICATIONS:**

Isothermal incubation, enzyme reactions, immunoassays and nucleic acid denaturation.

**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 temperature-probe kit available (see page 70). Modular blocks are sold separately (See pages 73-75).

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°C                               | Uniformity Within the Block @ 37°C             | Uniformity Across Similar Blocks @ 37°C | Heat-Up Time to 100°C | Timer                 |
|---------|-----------------------|------------------------------------------------|------------------------------------------------|-----------------------------------------|-----------------------|-----------------------|
| 2 Block | Ambient +5°C to 100°C | 120-volt units ±0.1°C<br>230-volt units ±0.2°C | 120-volt units ±0.1°C<br>230-volt units ±0.2°C | ±0.1°C<br>±0.2°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   320 watts | 8.7 lbs (3.9 kg) | <b>75838-278</b> |
| 2                                                                      | 13.7 x 7.7 x 7.4" (34.8 x 19.6 x 18.8 cm) | 230V   1.5 amps   320 watts | 8.7 lbs (3.9 kg) | <b>75838-274</b> |
| <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   320 watts | 8.7 lbs (3.9 kg) | <b>75838-280</b> |
| 2                                                                      | 13.7 x 7.7 x 7.4" (34.8 x 19.6 x 18.8 cm) | 230V   1.5 amps   320 watts | 8.7 lbs (3.9 kg) | <b>75838-276</b> |



**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 73-75).



75838-286 with optional blocks 13259-000 and 13259-130

**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 73-75).



75838-318 with optional 13259-000

| 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:<br>Ambient +5°C to 100°C | 120-volt units ±1.0°C<br>230-volt units ±1.5°C | 120-volt units: ±0.1°C<br>230-volt units: ±0.2°C | N/A                                     | 45 minutes            |
| 2 Block | High Range:<br>75°C to 150°C        | 120-volt units ±1.5°C<br>230-volt units ±2.0°C |                                                  | ±0.1°C                                  | 50 minutes            |
| 4 Block |                                     | 120-volt units ±2.0°C<br>230-volt units ±2.5°C |                                                  | ±0.2°C                                  | 70 minutes            |
| 6 Block |                                     | 120-volt units ±2.0°C<br>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   100 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   100 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   1.8 amps   190 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   190 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   2.7 amps   290 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   270 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   360 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   2.0 amps   420 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 2/4/6-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                  | Well Dia. | No. of Wells | Well Dia. | Well Depth | Cat. No.  |
|------------------------------|-----------|--------------|-----------|------------|-----------|
|                              | 6 mm      | 6            | 8.3 mm    | 48.4 mm    | 13259-242 |
|                              | 12/13 mm  | 5            | 13.8 mm   | 48.4 mm    |           |
| Test Tube Combination:       | 25 mm     | 3            | 26.2 mm   | 48.4 mm    |           |
|                              | 1.5 mL    | 4            | 11.1 mm   | 39.1 mm    | 12985-040 |
| Centrifuge Tube Combination: | 15 mL     | 3            | 17.1 mm   | 44.5 mm    |           |
|                              | 50 mL     | 2            | 29 mm     | 47.6 mm    |           |
|                              | 0.5 mL    | 6            | 7.9 mm    | 27.6 mm    | 12985-042 |
| Micro-Tube Combination:      | 1.5 mL    | 10           | 11.5 mm   | 39.1 mm    |           |
|                              | 2 mL      | 5            | 11.5 mm   | 38.1 mm    |           |



### 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 |



### 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 |



### 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 |
| 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*                 | 13259-272 |
| Stainless Steel Shot* | 13259-274 |

\*Capacity per Sand Bath

### LOW-TEMPERATURE COVERS

Plexiglass cover 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"<br>(16.5 x 16.5 x 4.1 cm)  | 13259-301 |
| 4-Block Cover | 8.5 x 8.5 x 1.6"<br>(21.6 x 21.6 x 4.1 cm)  | 13259-303 |
| 6-Block Cover | 12.5 x 8.5 x 1.6"<br>(31.8 x 21.6 x 4.1 cm) | 13259-304 |





89399-880

## 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.

### Specifications

|                        |                                           |              |
|------------------------|-------------------------------------------|--------------|
| Speed Range            | On Mode:                                  | 300-2500 rpm |
|                        | Touch Mode:                               | 300-3500 rpm |
| Orbit                  | 3.5 mm (0.13")                            |              |
| Controls               | Analog                                    |              |
| Capacity               | 2 microplates                             |              |
| Duty Rating            | Continuous duty                           |              |
| Dimensions (L x W x H) | 10.5 x 5.4 x 4.5" (26.7 x 13.7 x 11.4 cm) |              |
| Ship Weight            | 12 lbs (5.4 kg)                           |              |

| Description           | Electrical (50/60 Hz)       | Cat. No.         |
|-----------------------|-----------------------------|------------------|
| Standard Vortex Mixer | 120V   0.25 amps   30 watts | <b>89399-880</b> |



### 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 | <b>89399-884</b> |
| Advanced Vortex Mixer                                                        | 230V   0.13 amps   30 watts | <b>89399-886</b> |
| <b>VWR® Advanced Microplate Vortex Mixer with NIST-Traceable Certificate</b> |                             |                  |
| Advanced Vortex Mixer                                                        | 120V   0.25 amps   30 watts | <b>10027-198</b> |



97043-562 with optional insert 97043-590

**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.

|                               |                                        |              |
|-------------------------------|----------------------------------------|--------------|
| <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 |



97043-564 with optional microplate holders 97043-582 and 97043-580

### 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.

|                               |                                                                                                    |              |
|-------------------------------|----------------------------------------------------------------------------------------------------|--------------|
| <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 |

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 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 |

**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.



10153-834



10153-838



**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.

|                               |                                        |          |
|-------------------------------|----------------------------------------|----------|
| <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.

| Description              | Electrical (50/60 Hz)       | Cat. No.  |
|--------------------------|-----------------------------|-----------|
| Fixed Speed Vortex Mixer | 120V   1.2 amps   135 watts | 10153-834 |
| Fixed Speed Vortex Mixer | 230V   0.6 amps   135 watts | 10153-836 |

**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.

|                               |                                                                    |                 |
|-------------------------------|--------------------------------------------------------------------|-----------------|
| <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.

| Description         | Electrical (50/60 Hz)       | Cat. No.  |
|---------------------|-----------------------------|-----------|
| Analog Vortex Mixer | 120V   1.2 amps   135 watts | 10153-838 |
| Analog Vortex Mixer | 230V   0.6 amps   135 watts | 10153-840 |



10153-842

**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.

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 |
| Timer                  | 1 second to 160 hours                                                                             |                 |
| Orbit                  | 4.9 mm (0.194")                                                                                   |                 |
| Duty Rating            | Intermittent Duty                                                                                 |                 |
| Controls               | Auto/Standby/On Rocker Switch, LED Displays For Speed/Time, Up/Down Buttons For Set-Point Control |                 |
| Dimensions (L x W x H) | 7 x 4.4 x 5.3" (17.8 x 11.2 x 13.5 cm)                                                            |                 |
| Ship Weight            | 10 lbs (4.5 kg)                                                                                   |                 |

\* Maximum speed will vary depending on accessory used.

| Description                                                      | Electrical (50/60 Hz)       | Cat. No.         |
|------------------------------------------------------------------|-----------------------------|------------------|
| <b>VWR® Digital Vortex Mixer</b>                                 |                             |                  |
| Digital Vortex Mixer                                             | 120V   1.2 amps   135 watts | <b>10153-842</b> |
| Digital Vortex Mixer                                             | 230V   0.6 amps   135 watts | <b>10153-810</b> |
| <b>VWR® Digital Vortex Mixer with NIST-Traceable Certificate</b> |                             |                  |
| Digital Vortex Mixer                                             | 120V   1.2 amps   135 watts | <b>10153-816</b> |



10153-812

**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.

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 |
| Timer                  | 1 second to 160 hours                                                                                          |                 |
| Orbit                  | 2.5 mm (0.098")                                                                                                |                 |
| Duty Rating            | Intermittent Duty                                                                                              |                 |
| Controls               | Auto/Standby/On Rocker Switch, LED Displays For Speed/Time, Up/Down Buttons For Set-Point Control Pulse Button |                 |
| Dimensions (L x W x H) | 7 x 4.4 x 5.3" (17.8 x 11.2 x 13.5 cm)                                                                         |                 |
| Ship Weight            | 10 lbs (4.5 kg)                                                                                                |                 |

\* Maximum speed will vary depending on accessory used.

| Description                                                      | Electrical (50/60 Hz)       | Cat. No.         |
|------------------------------------------------------------------|-----------------------------|------------------|
| <b>VWR® Pulsing Vortex Mixer</b>                                 |                             |                  |
| Pulsing Vortex Mixer                                             | 120V   1.2 amps   135 watts | <b>10153-812</b> |
| Pulsing Vortex Mixer                                             | 230V   0.6 amps   135 watts | <b>10153-814</b> |
| <b>VWR® Pulsing Vortex Mixer with NIST-Traceable Certificate</b> |                             |                  |
| Pulsing Vortex Mixer                                             | 120V   1.2 amps   135 watts | <b>10153-820</b> |

## 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

| Description                         | Cat. No.  |
|-------------------------------------|-----------|
| Microtube and Microplate Holder Kit | 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

| Description     | Cat. No.  |
|-----------------|-----------|
| Tube Holder Kit | 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).

| Description        | Cat. No.  |
|--------------------|-----------|
| Single Tube Holder | 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.



| Description                    | Cat. No.  |
|--------------------------------|-----------|
| Adapter for Single Tube Holder | 12621-252 |

\* The Vortex-Genie® Mixer is a registered trademark of Scientific Industries, Inc.

### 0.5ML MICRO-TUBE HOLDER

Mixes twenty-four (24) 0.5mL micro-tubes. For use with Single Tube Holder.

| Description                                                              | Cat. No.  |
|--------------------------------------------------------------------------|-----------|
| Microtube Adapter for Single Tube Holder, Holds Twenty-Four 0.5 mL Tubes | 12620-894 |



### 1.5 TO 2ML MICRO-TUBE HOLDER

Mixes eighteen (18) 1.5 to 2mL micro-tubes. For use with Single Tube Holder.

| Description                                                              | Cat. No.  |
|--------------------------------------------------------------------------|-----------|
| Microtube Adapter for Single Tube Holder, Holds Twenty-Four 0.5 mL Tubes | 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 |

### 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 |

### 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 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 |

### 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 |

### 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

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 |

### 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 |



58816-115

**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.

**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 |



14005-826 with 12621-142

**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.

**Specifications**

|                                |                                           |
|--------------------------------|-------------------------------------------|
| Speed Range*                   | 500 to 2500 rpm                           |
| Speed Accuracy                 | ±25 rpm or ±5% of set speed               |
| Timer                          | 1 second to 160 hours                     |
| 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.  |
|--------------------------------------------------------------|-----------------------------|-----------|
| 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 |



## VWR® Multi-Tube Vortexer accessories

### 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) | <a href="#">58816-308</a> |
| 12 mm Test Tube Foam Rack                             | 50            | Blue   | 5.5 x 9.5 x 2" (14 x 24.1 x 5.1 cm) | <a href="#">58816-330</a> |
| 13 mm Test Tube Foam Rack                             | 50            | Yellow | 5.5 x 9.5 x 2" (14 x 24.1 x 5.1 cm) | <a href="#">58816-363</a> |
| 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) | <a href="#">58816-396</a> |
| 25 mm Test Tube Foam Rack                             | 28            | White  | 5.5 x 9.5 x 2" (14 x 24.1 x 5.1 cm) | <a href="#">12621-140</a> |
| 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) | <a href="#">12621-142</a> |
| Replacement Tray Pad Set (upper & lower)              | N/A           | Gray   | 7 x 12 x 1" (17.8 x 30.5 x 2.5 cm)  | <a href="#">58816-306</a> |

### VWR® POST EXTENSION KIT

Adds 6" (15.2cm) to the post of the Multi-Tube Vortexer to accommodate tubes up to 10" (25.4cm) tall.

| Description        | Cat. No.                  |
|--------------------|---------------------------|
| Post Extension Kit | <a href="#">14216-210</a> |



### 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 98-101). 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.

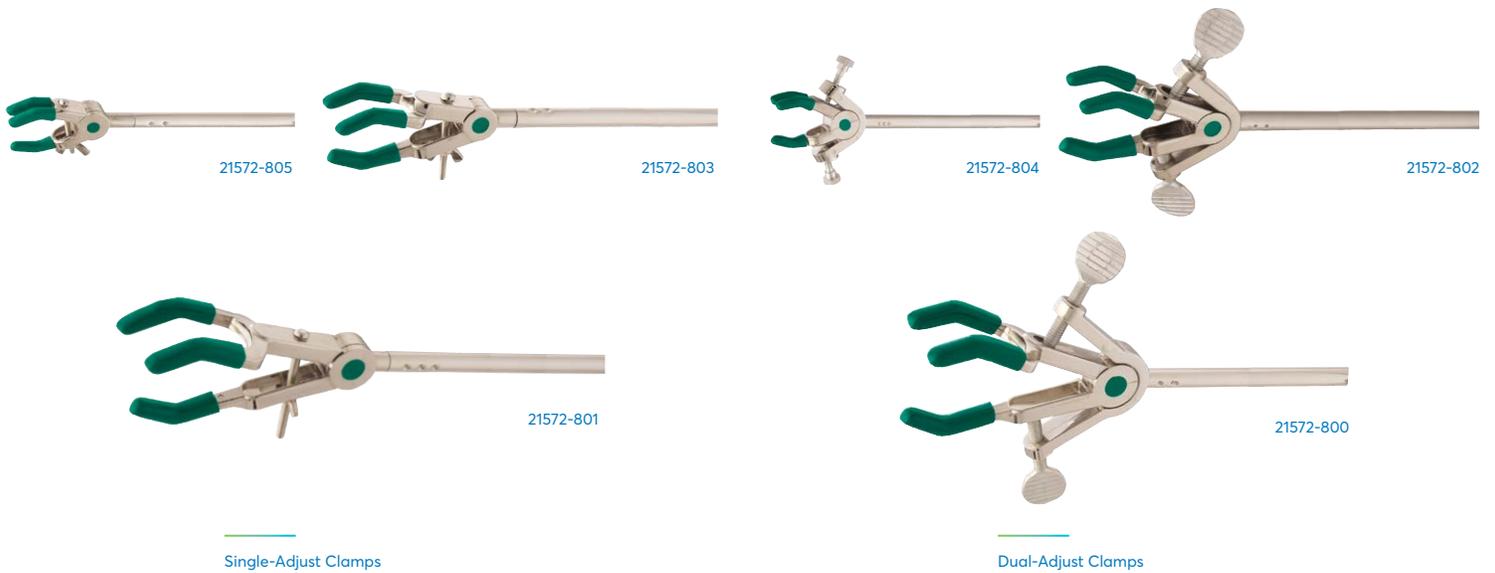
#### HOLDERS AND CONNECTORS:

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® 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.

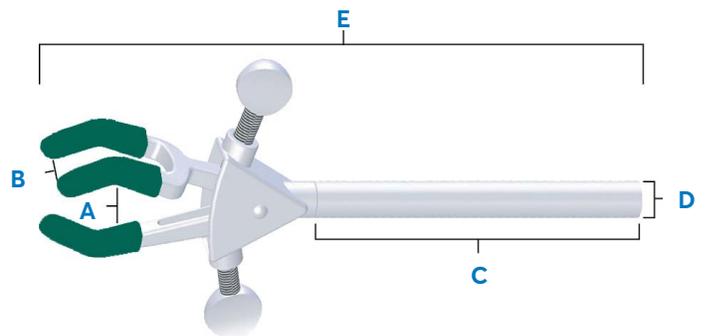
The prong height of the Talon® Heavy-Duty Clamps make them ideal for use in holding and securing glassware with precision ground-glass joints. The chart below details which Talon® Clamps are recommended depending on joint size.

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 98-101.

Replacement vinyl and fiberglass sleeves are available, page 98.

| 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")     | <b>21572-805</b> |
| Medium                                   | 0 to 50 mm (0 to 1.97")    | 19 mm (0.75")   | 127 mm (5")    | 11 mm (0.43") | 229 mm (9.02")     | <b>21572-803</b> |
| Large                                    | 0 to 72 mm (0 to 2.83")    | 29 mm (1.14")   | 127 mm (5")    | 11 mm (0.43") | 260 mm (10.24")    | <b>21572-801</b> |
| <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")     | <b>21572-804</b> |
| Medium                                   | 0 to 70 mm (0 to 2.76")    | 19 mm (0.75")   | 127 mm (5")    | 11 mm (0.43") | 222 mm (8.74")     | <b>21572-802</b> |
| Large                                    | 0 to 103 mm (0 to 4.06")   | 29 mm (1.14")   | 127 mm (5")    | 11 mm (0.43") | 260 mm (10.24")    | <b>21572-800</b> |

## 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 98-101.



28641-018



28641-020

| 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 98-101.

Replacement vinyl and fiberglass sleeves are available, page 98.



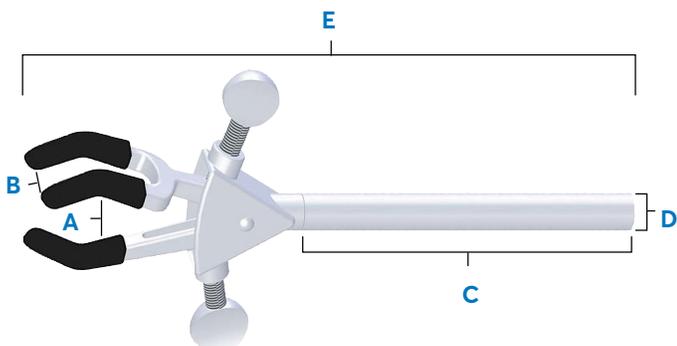
12621-236



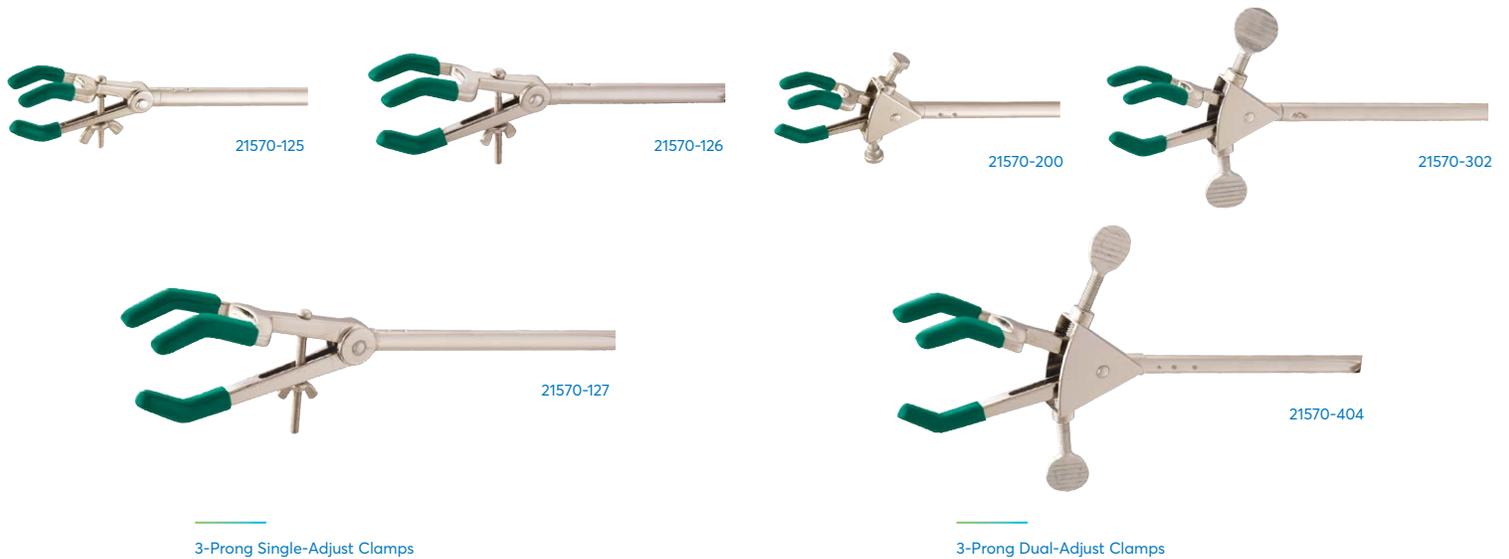
12621-238



12621-240



| 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® 3-PRONG MULTI-PURPOSE CLAMPS**

- Large grip-adjustment range
- 3-prong construction
- Single or dual adjust
- Nickel-plated zinc

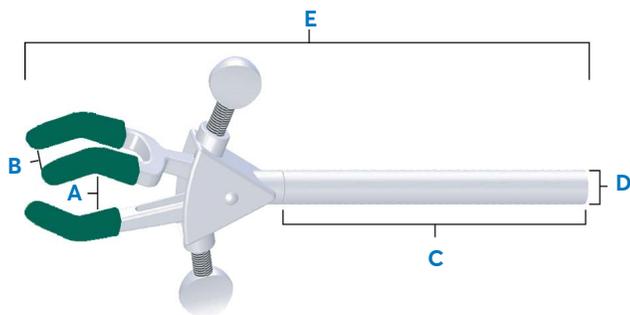
Designed to securely hold every type of laboratory glassware and apparatus. Long, seamless nickle-plated brass tubing attaches clamp head securely and offers easy positioning in the deepest fume hoods. Clamps are constructed with round extension arms, which allow the clamps to be rotated 360°. Extension 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 98-101.

Replacement vinyl and fiberglass sleeves are available, page 98.



| 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



21570-007



21570-109

2-Prong Single-Adjust Clamps



21570-115 (shown in nickel-plated zinc)



89202-618 (shown in stainless steel)

2-Prong Dual-Adjust Clamps

### 2-PRONG MULTI-PURPOSE CLAMPS

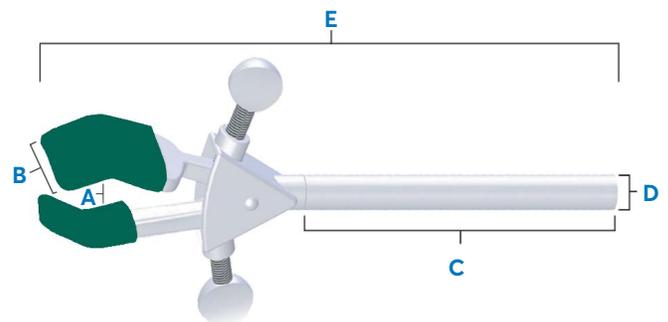
- Stainless steel electro-polished finish or nickel-plated zinc
- Large grip-adjustment range
- 2-prong construction
- Single or dual adjust

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 98-101.

Replacement vinyl and fiberglass sleeves are available, page 98.



| 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")      | <b>21570-007</b> |
| 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")     | <b>21570-109</b> |
| <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")     | <b>89202-612</b> |
| 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")     | <b>21570-115</b> |
| 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")     | <b>89202-618</b> |
| 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")     | <b>21570-120</b> |

## 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 98.



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 98.



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 98.



21573-800

| Description    | Min. to Max. Grip Size | Prong Width  | Overall Length | Cat. No.  |
|----------------|------------------------|--------------|----------------|-----------|
| Medium 2-Prong | 0 to 76mm (0 to 3")    |              |                |           |
| Large 2-Prong  | 0 to 95mm (0 to 3.74") | 23mm (0.91") | 222mm (8.74")  | 21573-800 |



### 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.

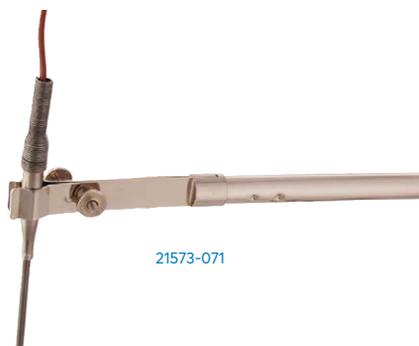
| Min. to Max. Grip Size    | Overall Length | Cat. No.  |
|---------------------------|----------------|-----------|
| 6 to 8 mm (0.24 to 0.32") | 159 mm (6.26") | 21573-060 |



### 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 |



### 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 98-101.

| 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 |



### 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 98.

| 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 98-101.



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 |



21572-137

### 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.

| 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

89202-636  
(shown in stainless steel)



36393-030  
flask not included



### 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")

| 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 |

#### 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 |



#### 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 |



2-Prong Clamp Head



3-Prong Clamp Head



Spring Clamp Head



12621-216

### 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 |

### 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

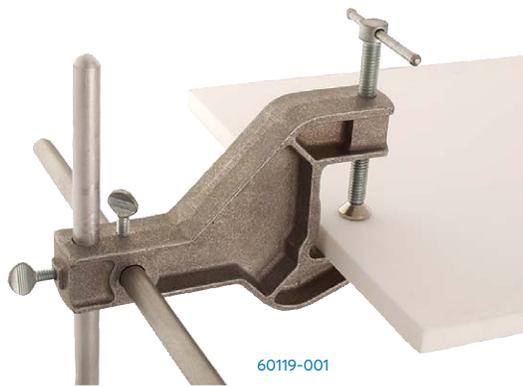
### VWR® ULTRA FLEX SUPPORT SYSTEM WITH BENCH CLAMP

- 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 |

| Replacement Parts   |           |
|---------------------|-----------|
| 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 |



## 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                   | -                          |

## VWR® Talon® Connectors & Holders



89202-610  
(shown in stainless steel)



21572-501  
(shown in nickel-plated zinc)



12621-250  
(shown in stainless steel)



21572-556  
(shown in aluminum)

### 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 |

### 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



21572-658

**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 |

**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 |



89202-628  
(shown in stainless steel)



21572-603  
(shown in nickel-plated zinc)



12985-062  
(shown in stainless steel)



60079-166  
(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 |

**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 |

## VWR® Talon Connectors & Holders



60079-100



12621-246  
(shown in stainless steel)



60097-056  
(shown in nickel-plated zinc)

### 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 |

### 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 |



89202-616  
(shown in stainless steel)



60079-010  
(shown in nickel-plated zinc)



60097-055

### 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 |

### 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 |



60079-053



60079-012

**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 |

**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 |



60079-108



60079-107

**VWR® WRENCH**

Special adjusting wrench for use with lab-frame items with set screws.

| Length       | Cat. No.  |
|--------------|-----------|
| 79 mm (3.1") | 60079-108 |

**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® 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 or tough stainless steel rods are available. Nickel-plated zinc connectors and lab-frame feet are standard with all kits.

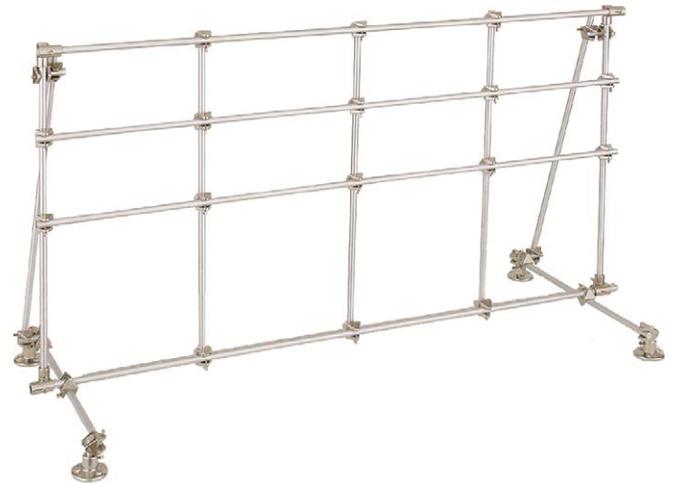


### VWR® SMALL LAB-FRAME

Vertical mounting, great for glassware set-ups in small laboratories or where space is limited. Base is 18" wide for stability, and 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     |

| Description     | Frame Dimensions        | Base Dimensions   | Cat. No.  |
|-----------------|-------------------------|-------------------|-----------|
| Aluminum        | 24 x 24" (610 x 610 mm) | 18" (457 mm) Wide | 60075-008 |
| Stainless Steel | 24 x 24" (610 x 610 mm) | 18" (457 mm) Wide | 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" 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     |

| Description     | Frame Dimensions         | Base Dimensions   | Cat. No.  |
|-----------------|--------------------------|-------------------|-----------|
| Aluminum        | 24 x 48" (610 x 1219 mm) | 18" (457 mm) Wide | 60075-009 |
| Stainless Steel | 24 x 48" (610 x 1219 mm) | 18" (457 mm) Wide | 60079-554 |



**VWR® LARGE LAB-FRAME**

This frame is ideal for complex glassware setups. Base is 18" wide for stability.

|                    |                             |
|--------------------|-----------------------------|
| <b>Components:</b> | <b>(10) 2" (51 mm) Rods</b> |
|                    | (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 |                             |

| Description     | Frame Dimensions          | Base Dimensions   | Cat. No.         |
|-----------------|---------------------------|-------------------|------------------|
| Aluminum        | 48 x 48" (1219 x 1219 mm) | 18" (457 mm) Wide | <b>60077-003</b> |
| Stainless Steel | 48 x 48" (1219 x 1219 mm) | 18" (457 mm) Wide | <b>60079-556</b> |



**VWR® EXTRA LARGE LAB-FRAME**

Extra-large lab frames offer the greatest versatility for your most demanding setups. Can be horizontally or vertically mounted.

|                    |                            |
|--------------------|----------------------------|
| <b>Components:</b> | <b>(6) 2" (51 mm) Rods</b> |
|                    | (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         |

| Description     | Frame Dimensions          | Base Dimensions   | Cat. No.         |
|-----------------|---------------------------|-------------------|------------------|
| Aluminum        | 48 x 72" (1219 x 1830 mm) | 18" (457 mm) Wide | <b>60078-006</b> |
| Stainless Steel | 48 x 72" (1219 x 1830 mm) | 18" (457 mm) Wide | <b>60079-558</b> |



60078-008



12621-248  
(shown in stainless steel)

**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.

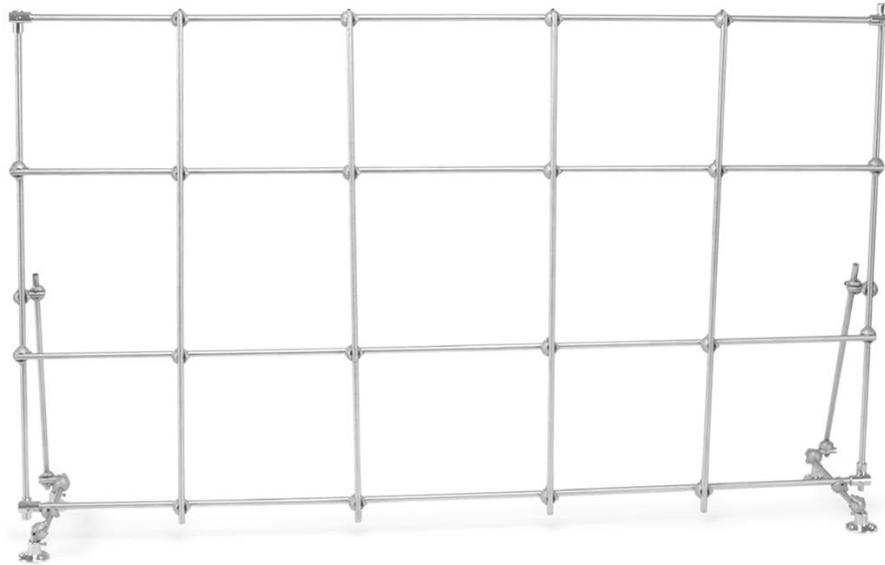
**VWR® LAB-FRAME FOOT**

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.

| 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                       |

| 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 ) | <b>12621-248</b> |
| Nickel-Plated Zinc | 0 to 0.51" (0 to 13 mm) | 2.3 x 1.25" (58 x 32 mm ) | <b>60079-257</b> |

| Frame Dimensions          | Overall Dimensions        | Cat. No.         |
|---------------------------|---------------------------|------------------|
| 48 x 72" (1219 x 1829 mm) | 75 x 72" (1905 x 1829 mm) | <b>60078-008</b> |



**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



Support Stand



Heavy-Duty Support Stand

## 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 |

### 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 |

### 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.



12985-074



aluminum

### 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 |



12985-076

### VWR® TRIPOD BASE SUPPORT STAND, CAST IRON

| Description        | Overall Footprint Diameter | Cat. No.  |
|--------------------|----------------------------|-----------|
| Tripod Base (only) | 14.75" (375 mm)            | 12985-076 |



12985-078

### 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 |

### VWR® ALUMINUM SUPPORT RODS

| Description   | Diameter      | Cat. No.  |
|---------------|---------------|-----------|
| 1.61" (41 mm) | 0.51" (13 mm) | 60079-325 |
| 6" (152 mm)   | 0.51" (13 mm) | 60079-348 |
| 12" (305 mm)  | 0.51" (13 mm) | 60079-360 |
| 18" (457 mm)  | 0.51" (13 mm) | 60079-381 |
| 24" (610 mm)  | 0.51" (13 mm) | 60079-406 |
| 36" (914 mm)  | 0.51" (13 mm) | 60079-428 |
| 48" (1219 mm) | 0.51" (13 mm) | 60079-440 |
| 60" (1524 mm) | 0.51" (13 mm) | 60079-461 |
| 72" (1829 mm) | 0.51" (13 mm) | 60079-483 |
| 96" (2438 mm) | 0.51" (13 mm) | 60079-508 |



stainless steel

### VWR® STAINLESS STEEL SUPPORT RODS

| Description   | Diameter      | Cat. No.  |
|---------------|---------------|-----------|
| 1.61" (41 mm) | 0.51" (13 mm) | 60079-530 |
| 6" (152 mm)   | 0.51" (13 mm) | 60079-532 |
| 12" (305 mm)  | 0.51" (13 mm) | 60079-533 |
| 18" (457 mm)  | 0.51" (13 mm) | 60079-534 |
| 24" (610 mm)  | 0.51" (13 mm) | 60079-535 |
| 36" (914 mm)  | 0.51" (13 mm) | 60079-536 |
| 48" (1219 mm) | 0.51" (13 mm) | 60079-537 |
| 72" (1829 mm) | 0.51" (13 mm) | 60079-539 |
| 96" (2438 mm) | 0.51" (13 mm) | 60079-540 |

## VWR® Talon® Support Plates



60079-000



11301-126

**VWR® ROUND SUPPORT PLATE**

Aluminum plate supports beakers, mantles and Petri dishes. Fits standard lab-frames using VWR® connectors or holders, shown on pages 98-101.

| 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.



safety message strap



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.

| 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) | <b>60142-003</b> |
| 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) | <b>97035-528</b> |

### 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)

| 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) | <b>60142-006</b> |
| 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) | <b>97035-530</b> |

### 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) | <b>97035-532</b> |



## VWR® Gas Cylinder Safety Supports



safety message strap



safety message strap



### 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.

| 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)

| 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 |

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"<br>(438 x 438 x 273 mm) | 7 to 10" (178 x 254 mm) | 60140-998 |

**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 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 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 |



12620-904



14217-532

12620-902

**OPTIONAL ACCESSORY**

## 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.

### 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.

|                               |                                      |
|-------------------------------|--------------------------------------|
| 17" Support Rod Kit includes: | (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 |



14233-372



14233-360

14233-364



14217-532

14233-232

14233-532



**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.

**VWR® 17" SUPPORT ROD KIT**

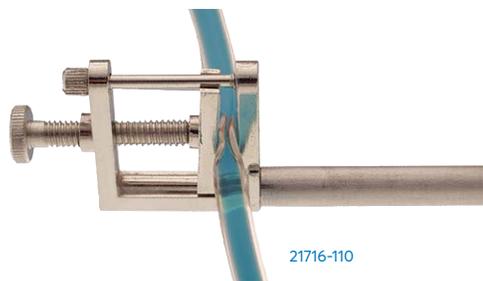
Ideal for creating an adjustable support stand for mounting various items such as thermometer clamps, temperature probes, flask and column clamps. This kit allows you to mount a 17" (432mm) threaded vertical support rod to the upper deck of a 6x6", 8x8", 10x10", 12x12", or 16x16" Support Jack by screwing the rod into the pre-drilled hole.

|                                      |                                     |
|--------------------------------------|-------------------------------------|
| <b>17" Support Rod Kit includes:</b> | (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 |



21716-110



89202-614



21716-102



21704-908



21716-114



21573-155



21573-655



21573-650

## 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).

### 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 98-101.

| 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 |

### 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 11 mm (0 to 0.43") | 48 mm (1.89") | 21573-650 |

### VARIABLE FLOW PINCHCOCK

For precise flow adjustment and duplication of flow rates.

| Min. to Max. Grip       | Clamp Height  | Cat. No.  |
|-------------------------|---------------|-----------|
| 0 to 12 mm (0 to 0.47") | 47 mm (1.85") | 21573-155 |

### HEAVY-DUTY PINCHCOCK

Equipped with heavy-duty spring for tough jobs. Ensures complete closure.

| Min. to Max. Grip       | Clamp Height  | Cat. No.  |
|-------------------------|---------------|-----------|
| 0 to 13 mm (0 to 0.51") | 47 mm (1.85") | 21573-655 |



50809-022



50809-020

**VWR® INOCULATING TURNTABLES**

Hand-operated turntables produce almost concentric circles of bacterial colonies that are evenly distributed across Petri dishes.

The 76mm 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.

| Description     | Dimensions (Dia. x H)      | Cat. No.         |
|-----------------|----------------------------|------------------|
| Small Turntable | 4.49 x 3.03" (114 x 77 mm) | <b>50809-022</b> |
| Large Turntable | 5.91 x 1.26" (150 x 32 mm) | <b>50809-020</b> |



15153-821

**VWR® SLIDE STAINING RACK**

Constructed of stainless steel, rack resists corrosion under normal use. Adjustable to fit trays or sinks up to 533mm inside.

| Description         | Dimensions (L x W)         | Cat. No.         |
|---------------------|----------------------------|------------------|
| Slide Staining Rack | 23.74 x 3.5" (603 x 89 mm) | <b>15153-821</b> |

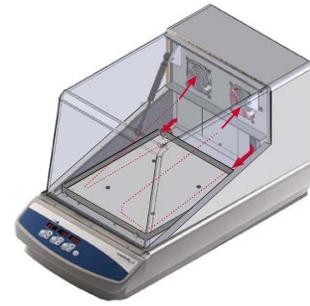


28641-001

**VWR® AIR EJECTOR NICKEL-PLATED**

Rapid air removal evacuates 1 liter of air to 711mm (28") of vacuum in 30 seconds. Works with compressed-air sources to 60 psi.

| Description | Length         | Cat. No.         |
|-------------|----------------|------------------|
| Air Ejector | 5.51" (140 mm) | <b>28641-001</b> |



**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 30-32).

**Custom Manufacturing & Engineering**

Any product you see in this catalog can be customized to meet your specific needs. Not only can we customize standard products, we can combine technologies from several products to meet your specific application.

We demonstrate excellence in all areas of the manufacturing process from design, engineering, skilled workforce, capacity, quality assurance, and post management customer service including:

- Engineering team with electronics, mechanical and graphic design experience.
- 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.
- Management with Six Sigma Certification.
- Responsiveness to customers needs.

If there is a single factor that defines our competitive advantage, it is the commitment and ability to respond to our customers' specific needs. Our sophisticated engineering and manufacturing capabilities allow us to address a broad range of product objectives: designing entire product lines, introducing new products and technologies, and enhancing existing products.

**Proven Technologies**

We have worked with industry leaders to design solutions for production and research needs across the pharmaceutical and life science industries. This experience is apparent in every product we engineer. We offer cost-effective solutions to meet your customized needs.

Personalized Project Managers will work with you throughout the entire process. All custom designed products have state-of-the-art materials and are manufactured in a CE/UL audited facility.

Listed are proven technologies that can be modified, enhanced or incorporated as-is into custom products:

- Heating control
- Mechanical motion systems
- 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

Custom capabilities in design, engineering and manufacturing can give you a distinct competitive advantage. Tell us your goals and objectives. Get us involved early in the process. Let us be part of the solution and accelerate your time to discovery.

For more information on VWR's custom manufacturing capabilities, call 1 800 932 5000 or contact your VWR sales representative.

# Setting science in motion to create a better world

From breakthrough discovery to agile delivery, we offer an extensive portfolio of mission-critical products, services, and solutions. We are a trusted global partner to customers in the life sciences, advanced technologies, and applied materials industries.



VWR, part of Avantor provides an integrated, seamless purchasing experience optimized for your success.

Learn how the new Avantor is moving forward at [avantorsciences.com](http://avantorsciences.com)



800 932 5000 | [VWR.COM](http://VWR.COM)

Prices, product, and/or services details are current when published and subject to change without notice. | Certain products or services may be limited by federal, state, provincial, or local regulations. | VWR, part of Avantor, makes no claims or warranties concerning sustainable/green products. Any claims concerning sustainable/green products are the sole claims of the manufacturer and not those of VWR International, LLC and/or Avantor, Inc. or affiliates. All prices are in US dollars unless otherwise noted. Offers valid in US and Canada, void where prohibited by law or company policy, while supplies last. | Trademarks are owned by Avantor, Inc. or its affiliates, unless otherwise noted. | Visit [vwr.com](http://vwr.com) to view our privacy policy, trademark owners, and additional disclaimers. © 2019 Avantor, Inc. All rights reserved.