



Instruction Manual

1000 Standard Orbital Shaker

Advanced Mini Shaker 15

3500 Standard Orbital Shaker

3500 Advanced Orbital Shaker

3750 Advanced Reciprocating Shaker

5000 Standard Orbital Shaker

5000 Advanced Orbital Shaker

10000 Advanced Orbital Shakers

15000 Advanced Orbital Shakers

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PACKAGE CONTENTS

Orbital or Reciprocating Shaker, Non-skid rubber mat,
92" (234cm) detachable power cord, Instruction manual

INSTALLATION

Upon receiving the VWR Orbital or Reciprocating Shaker, check to ensure that no damage has occurred during shipment. It is important that any damage that occurred in transport is detected at the time of unpacking. If you do find such damage the carrier must be notified immediately. After unpacking, place the shaker on a level bench or table, away from explosive vapors. Ensure that the surface on

which the unit is placed will withstand typical heat produced by the unit and place the unit a minimum of six (6) inches from vertical surfaces. Always place the unit on a sturdy work surface. The Orbital or Reciprocating Shaker is supplied with a power cord that is inserted into the IEC connector on the back of the unit first, then it can be plugged into a properly grounded outlet. The 120V unit plugs into a 120 volt, 50/60 Hz source. The 230V unit plugs into a 230 volt, 50/60 Hz source.

WARRANTY

Manufacturer warrants this product to be free from defects in material and workmanship when used under normal conditions for two (2) years. The Advanced Shaker line has a five (5) year limited warranty on motor and drive mechanism. Register your equipment or instrument online at www.vwrsp.com/warranty for US residents or www.vwrcanlab.com/warranty for Canadian residents. For your reference, make a note of the serial number, date of purchase and supplier here.

Serial No.: _____ Date of Purchase: _____

Supplier: _____

MAINTENANCE & SERVICING

The Orbital or Reciprocating Shaker is built for long, trouble-free, dependable service. No lubrication or other technical user maintenance is required. It needs no user maintenance beyond keeping the surfaces clean. However at least every three (3) months you should:

- Unplug the unit.
- Remove any accumulated dirt from the base and tray.
- Check all accessible items to make sure they are properly tightened.

The unit should be given the care normally required for any electrical appliance. Avoid wetting or unnecessary exposure to fumes. **DO NOT** use a cleaning agent or solvent on the front panel which is abrasive or harmful to plastics, nor one which is flammable. Always ensure the power is disconnected from the unit prior to any cleaning. If the unit ever requires service, contact your VWR representative.

ENVIRONMENTAL CONDITIONS - STANDARD

Operating Conditions: Indoor use only.

* For use in CO₂ environments, incubators, or cold rooms.

Temperature: 0 to 40°C (32 to 104°F)

Humidity: maximum 80% relative humidity, non-condensing

Altitude: 0 to 6,562 ft (2000 M) above sea level

Non-Operating Storage:

Temperature: -20 to 65°C (-4 to 149°F)

Humidity: maximum 80% relative humidity, non-condensing

Installation Category II and Pollution Degree 2

in accordance with IEC 664.

ENVIRONMENTAL CONDITIONS - ADVANCED & RECIPROCATING

Operating Conditions: Indoor use only.

* For use in CO₂ environments, incubators, or cold rooms.

Temperature: -10 to 60°C (14 to 140°F)

Temperature: -10 to 40°C (14 to 104°F) (Model 1000 Advanced)

Humidity: maximum 80% relative humidity, non-condensing

Altitude: 0 to 6,562 ft (2000 M) above sea level

Non-Operating Storage:

Temperature: -20 to 65°C (-4 to 149°F)

Humidity: maximum 80% relative humidity, non-condensing

Installation Category II and Pollution Degree 2 in accordance with IEC 664.

* **Avoid cold starts:** Unit is not designed to start after being in a cold room environment. Bring unit into cold room from a room temperature environment, operate and remove unit from cold room as soon as operation is complete.

INTENDED USE

These Shakers are intended for general laboratory use.

EQUIPMENT DISPOSAL



This equipment must not be disposed of with unsorted waste. It is your responsibility to correctly dispose of the equipment at life-cycle-end by handing it over to an authorized facility for separate collection and recycling. It is also your responsibility to decontaminate the equipment in case of biological, chemical and/or radiological contamination, so as to protect the persons involved in the disposal and recycling of the equipment from health hazards.

For more information about where you can drop off your waste of equipment, please contact your local dealer from whom you originally purchased this equipment. By doing so, you will help to conserve natural and environmental resources and you will ensure that your equipment is recycled in a manner that protects human health.

STANDARDS & REGULATIONS

VWR hereby declares under its sole responsibility that the construction of this product conforms in accordance with the following standards:

Safety standards:

IEC 61010-1 Safety requirements for electrical equipment for measurement, control and laboratory use. Part I: General Requirements. IEC 61010-2-051 Part II: Particular requirements for laboratory equipment for mixing and stirring.

CSA/CAN C22.2 No. 0-M91

CSA/CAN C22.2 No. 61010-1-04

EMC standards:

IEC45501 IEC6100-3-2/3-3

IEC61000-4-5 FCC-B

IEC61000-4-4 IEC61000-4-2

IEC61000-4-3 IEC61000-4-6

IEC61000-4-11 IEC61326-2005

CISPR 11

Associated EU guidelines:

EMC directive 2004/108/EC

LVD directive 2006/95/EC

SAFETY INSTRUCTIONS

Please read the entire instruction manual before operating the Orbital Shaker.



WARNING! DO NOT use the Orbital Shaker in a hazardous atmosphere or with hazardous materials for which the unit was not designed. Also, the user should be aware that the protection provided by the equipment may be impaired if used with accessories not provided or recommended by the manufacturer, or used in a manner not specified by the manufacturer.

Always operate unit on a level surface for best performance and maximum safety.

DO NOT lift the unit by the tray.



CAUTION! To avoid electrical shock, completely cut off power to the unit by disconnecting the power cord from the unit or unplug from the wall outlet. Disconnect unit from the power supply prior to maintenance and servicing.

Spills should be removed promptly. **DO NOT** immerse the unit for cleaning.

DO NOT operate the unit if it shows signs of electrical or mechanical damage.



Earth Ground - Protective Conductor Terminal



Alternating Current



Pinch Point - Keep fingers clear during operation.

SPECIFICATIONS

STANDARD 1000 & MINI SHAKER 15

| | |
|----------------------------------------|-----------------------------------------------------------------|
| Overall dimensions LxWxH | 11x17x4" (27.9x43.2x10.2cm) |
| Tray dimensions LxW | 8.75x11.75" (22.2x29.8cm) |
| Electrical | 120 volts, 5 amps, 25 watts 230 volts, 2.5 amps, 25 watts |
| Fuses | 5mm x 20mm, 5 amp quick acting |
| Speed Range | 40 to 300rpm |
| Speed Accuracy (Mini Shaker 15) | |
| Above 100rpm | ±2% of set speed |
| Below 100rpm | ±2rpm |
| Orbit | 0.6" (15mm) |
| Capacity | 8 lbs (3.6kg) |
| Controls | See page 6 (Mini Shaker 15) See page 5 (Standard 1000) |
| Ship Weight | 25lbs (11.3kg) |

MODEL 3500

| | |
|----------------------------------|-----------------------------------------------------------------------|
| Overall dimensions LxWxH | 16.25x14x5.75" (41.3x35.6x14.6cm) |
| Tray dimensions LxW | 13x11" (33x22.2cm) |
| Electrical | 120 volts, 5 amps, 75 watts 230 volts, 2.5 amps, 75 watts |
| Fuses | 5mm x 20mm, 5 amp quick acting |
| Speed Range | 15 to 500rpm (Advanced) 25 to 500rpm (Standard) |
| Speed Accuracy (Advanced) | |
| Above 100rpm | ±1% of set speed |
| Below 100rpm | ±1rpm |
| Orbit | 0.75" (19mm) |
| Capacity | ~35 lbs (16kg) @ 75rpm ~5 lbs (2.3kg) @ 500rpm |
| Timer | 1 second to 160 hours (Advanced) 1 to 120 minutes (Standard) |
| Controls | See page 6 (Advanced) See page 5 (Standard) |
| Ship Weight | 49lbs (22.2kg) |

MODEL 3750

| | |
|---------------------------------|--------------------------------------------------------------|
| Overall dimensions LxWxH | 16.25x14x5.75" (41.3x35.6x14.6cm) |
| Tray dimensions LxW | 13x11" (33x22.2cm) |
| Electrical | 120 volts, 5 amps, 40 watts 120 volts, 2.5 amps, 40 watts |
| Fuses | 5mm x 20mm, 5 amp quick acting |
| Speed Range | 20 to 300rpm |
| Speed Accuracy | |
| Above 100rpm | ±1% of set speed |
| Below 100rpm | ±1rpm |
| Orbit | 0.75" (19mm) Total Travel |
| Capacity | ~15 lbs @ 300rpm |
| Timer | 1 second to 160 hours |
| Controls | See page 6 |
| Ship Weight | 49lbs (22.2kg) |

MODEL 5000

| | |
|----------------------------------|--------------------------------------------------------------|
| Overall dimensions LxWxH | 23.6x26.7x6.0" (59.9x67.8x15.2cm) |
| Tray dimensions LxW | 18x24" (45.7x70cm) |
| Electrical | 120 volts, 5 amps, 75 watts 120 volts, 2.5 amps, 75 watts |
| Fuses | 5mm x 20mm, 5 amp quick acting |
| Speed Range (Advanced) | 20 to 500rpm |
| (Standard) | 25 to 500rpm |
| Speed Accuracy (Advanced) | |
| Above 100rpm | ±1% of set speed |
| Below 100rpm | ±1rpm |
| Orbit | 1" (25.4mm) |
| Capacity | ~50 lbs @ 125rpm ~10 lbs @ 500rpm |
| Timer (Advanced) | 1 second to 160 hours |
| (Standard) | 1 to 120 minutes |
| Controls (Advanced) | See page 6 |
| (Standard) | See page 5 |
| Ship Weight | 109lbs (49.4kg) |

MODEL 10000

| | |
|---------------------------------|--------------------------------------------------------------|
| Overall dimensions LxWxH | 28.25x26.7x7.0" (71.8x67.8x17.8cm) |
| Tray dimensions LxW | 24x24" (70x70cm) |
| Electrical | 120 volts, 5 amps, 80 watts 120 volts, 2.5 amps, 80 watts |
| Fuses | 5mm x 20mm, 5 amp quick acting |
| Speed Range | 10000-1 = 15 to 500rpm 10000-2 = 15 to 300rpm |
| Speed Accuracy | |
| Above 100rpm | ±1% of set speed |
| Below 100rpm | ±1rpm |
| Orbit | 15000-1 = 1" (25.4mm) 15000-2 = 2" (50.8mm) |
| Capacity | ~100 lbs @ 100rpm ~40 lbs @ 300rpm |
| Timer | 1 second to 160 hours |
| Controls | See page 6 |
| Ship Weight | 200lbs (90.7kg) |

MODEL 15000

| | |
|---------------------------------|--------------------------------------------------------------|
| Overall dimensions LxWxH | 28.25x36x7.0" (71.8x67.8x17.8cm) |
| Tray dimensions LxW | 24x36" (70x91.4cm) |
| Electrical | 120 volts, 5 amps, 80 watts 120 volts, 2.5 amps, 80 watts |
| Fuses | 5mm x 20mm, 5 amp quick acting |
| Speed Range | 15000-1 = 15 to 350rpm 15000-2 = 15 to 300rpm |
| Speed Accuracy | |
| Above 100rpm | ±1% of set speed |
| Below 100rpm | ±1rpm |
| Orbit | 15000-1 = 1" (25.4mm) 15000-2 = 2" (50.8mm) |
| Capacity | ~150 lbs @ 100rpm ~40 lbs @ 300rpm |
| Timer | 1 second to 160 hours |
| Controls | See page 6 |
| Ship Weight | 230lbs (104.3kg) |

OPERATING INSTRUCTIONS - STANDARD ORBITAL SHAKER

The Standard Orbital Shaker is used for general laboratory shaking needs.

Model 1000

1. Getting ready:



- The speed knob should be at their extreme counter-clockwise position or at the #1 on the dial.
- Make sure the rocker switch is in the standby position.
- Plug the cord into a properly grounded outlet.

2. Setting speed:



- To run push rocker to the on position. Set speed knob to desired setting and adjust if necessary. Unit will run until you move the rocker switch to the off position. The microprocessor speed control slowly ramps to set speed to avoid splashing.

3. Turning unit off:

- To stop shaking function, turn the speed knob to the extreme counter-clockwise position and push the rocker switch to the standby position. The shaker should be kept in the standby position when not in use. To completely cut off power to the unit, disconnect the power cord from the unit or unplug from the wall outlet.

OPERATING TIPS

Centering your sample and even weight distribution on the tray helps with balance and stability.

The shaker will automatically restart after a power interruption.

Models 3500 and 5000



Standard Orbital Shaker with optional platform and flask clamps

1. Getting ready:

- The speed and time knobs have a built in on-off switch at their extreme counter-clockwise position. Turn both knobs to the off position.
- Make sure the rocker switch is in the standby position.
- Plug the cord into a properly grounded outlet.

2. Setting speed:

- To run in continuous mode, push rocker to the run position. Set speed knob to desired setting and adjust if necessary. Unit will run until you move the rocker switch to the standby position. The microprocessor speed control slowly ramps to set speed to avoid splashing.

3. Setting time:

- To run in timed mode, set timer and the speed knob to the desired settings. Press the rocker switch to the time position and release. The shaker will now run for the set time. b. To exit the timed mode turn the time knob to the extreme counter-clockwise position.

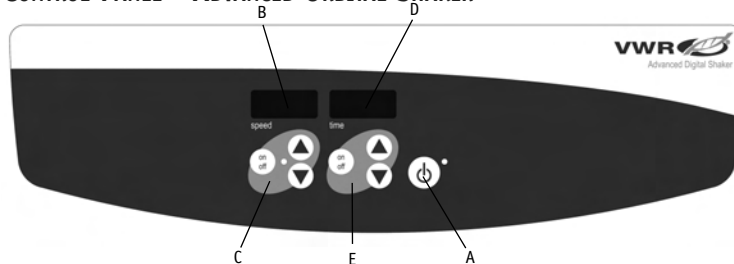
4. Turning unit off:

- To stop shaking function, turn the speed knob to the extreme counter clockwise position and push the rocker switch to the standby position. The shaker should be kept in the standby position when not in use. To completely cut off power to the unit, disconnect the power cord from the unit or unplug from the wall outlet.

OPERATING TIPS

Centering your sample and even weight distribution on the tray helps with balance and stability. As a safety feature, a built-in program will shut power off to the motor if the tray is prevented from rotating, or the unit is overloaded beyond its recommended weight capacity. To reset the unit, press the rocker switch to standby and then press the rocker switch to the on position. The shaker will automatically restart after a power interruption. Built-in memory maintains the last used speed and time settings during a power interruption.

CONTROL PANEL - ADVANCED ORBITAL SHAKER



The front panel of the Advanced Orbital Shaker contains all the controls and displays needed to operate the unit.

A. Standby button/standby indicator light: The standby indicator light will illuminate when the unit is plugged in. The unit will be in standby mode. Press the standby button to start the speed and time functions. The standby indicator light will shut off. Press the standby button again and the unit will once again be in standby mode.

B. Speed display: Displays the speed of the shaker.

C. Up/down arrows: For setpoint control. On/off button starts/stops shaking function.

D. Time display: Displays accumulated time (continuous mode) or how much time is remaining (timed mode). The display range is from 0 to 9,999 minutes in one (1) second increments. The display will indicate minutes and seconds until the timer reaches 99 minutes and 59 seconds (99:59), then the display will automatically display minutes up to 9,999.

E. Up/down arrows for setpoint control. On/off button starts/stops the timer function.

OPERATING INSTRUCTIONS - ADVANCED ORBITAL SHAKER

The Advanced Orbital Shaker has been designed for the speed and time functions to work independently of one another. The speed can be reset without resetting the timer and the timer can be stopped and started without interrupting the shaking function.

1. Getting ready:

- a. Plug the cord into a properly grounded outlet. The standby indicator light will illuminate, verifying power to the shaker.
- b. Press the standby button to move the unit from standby mode. The standby indicator light will turn off and the speed and time displays will illuminate, displaying the previously used settings.

2. Setting speed:

- a. Press the up/down arrow below the speed display until you reach the desired speed. When you release the button, the display will blink off and then on indicating the new set speed has been accepted.
- b. Press the on/off button to start the shaking function. The indicator light below the speed display will illuminate and blink until the setpoint is reached. Once the setpoint is reached the light will stop blinking and remain lit until shaking has ceased. The microprocessor controlled ramping feature slowly increases speed until the setpoint is reached which helps to avoid splashing, and provides excellent low end control.
- c. Speed adjustments can be made without interrupting shaking by using the up/down arrows below the speed display. After the change has been made and you release the button, the display will blink off and then on indicating the new set speed has been accepted.
- d. To stop the shaking function press the on/off button below the speed display. The speed indicator light will turn off.

3. **Setting time to zero (0:00) and continuous mode:** Accumulated time.
 - a. Press and hold the on/off button below the time display. After three (3) seconds, the display will indicate the previous set time.
 - b. Simultaneously press both the up and the down arrows, the display will indicate zero (0:00). The unit time is now set to zero (0:00) minutes. Alternately, you can use the up/down arrows to get to zero (0:00).
 - c. Press the on/off button below the time display. The display will indicate accumulated time. The up/down arrows will become inactive. To stop timer, press the on/off button again.
IMPORTANT: This will **NOT** interrupt the shaking function. Press the on/off button below the speed display to interrupt the shaking function.
 - d. To reset, press and hold the on/off button below the time display. After three (3) seconds the display will indicate the previous set time, which was zero (0:00).

4. Setting timed mode: Programmed time.

- a. Press the up/down arrows below the time display until you reach the desired time.
- b. Start this function by pressing the on/off button below the time display. The unit will run for the selected time, the up/down arrows will become inactive while the timer is running. The unit will stop shaking when time display reaches zero (0:00). Four (4) audible beeps will indicate the count down function is complete. The time display will default back to the set time. To repeat for the same time, simply depress the on/off button again.
- c. To interrupt an automatic timing cycle before it is completed, press the on/off button below the time display. The display will flash off and on to indicate the time function is on "hold".
IMPORTANT: This will **NOT** interrupt the shaking function. Press the on/off button below the speed display to interrupt the shaking function. Restart the timer by pressing the on/off button below the

time display. Unit will continue counting down to zero (0:00). When the display reaches zero (0:00), you will hear the four (4) audible beeps that indicate the count down function is complete and the shaking function will cease.

5. Turning unit off:

- a. To turn the unit off, press the standby button. The speed and time displays will be blank, the standby indicator light will illuminate. The Orbital Shaker should be kept in standby mode when not in use. To completely cut off power to the unit, disconnect the power cord from the unit or unplug from the wall outlet.

OPERATING TIPS

Centering your sample and even weight distribution on the tray helps with balance and stability. As a safety feature, a built-in program will shut power off to the motor if the tray is prevented from rotating, or the unit is overloaded beyond its recommended weight capacity. The shaker will automatically restart after a power interruption. Built-in memory maintains the last used speed and time settings during a power interruption.

LOAD SENSING FUNCTION

The Advanced Orbital Shakers Models 3500 and up, are equipped with a load sensing function that can be activated by the user. This function provides protection against improper positioning of load and maximum load being exceeded. When activated, the unit will automatically sense improper load conditions and slow to a safe running speed, then display that speed followed by E04 on the speed display. The unit will also beep three (3) times every 60 seconds until the error is reset by pressing the speed on/off button. To activate the load sensing function use the following steps:

1. Place the unit in standby mode.
2. Press and hold the speed on/off button and press the standby button. The unit will beep two (2) times, confirming the function is enabled.
3. To restore normal operation, remove AC power to the unit for ten (10) seconds and then restore power. If the E04 error occurs be sure the load is within the maximum specification and properly balanced (centered on tray) and/or reduce sample size/speed before restarting the unit. If the E04 occurs due to acceptable sample vibration or another vibration source, the load sensing function can be disabled as described above.

ADDITIONAL LOAD SENSING FEATURE

The Advanced Orbital Shaker Models 3750 and up, are equipped with an additional overload protection feature that lets the user know when the unit's set speed is higher than the achievable speed of the unit. The unit speed display will show an E7. The unit will also beep three (3) times every 60 seconds until the error is reset by pressing the speed on/off button.

To disable this feature perform the following steps:

1. Place the unit in standby mode by pressing the standby button.
2. Press and hold the speed up button and the standby button. The unit will beep two (2) times, confirming the function is disabled.
3. To restore unit to normal operation, remove AC power to unit (unplug power cord from wall outlet) for ten (10) seconds and restart.

BEEPER PREFERENCE

To silence beeper operation (except for error codes), with the unit in standby mode, press and hold the time on/off button and press the standby button. To restore normal beeper operation, remove AC power to unit for ten (10) seconds and then restore.

CALIBRATION PROCEDURE (Advanced Orbital Shakers Models 3500 and up)

This procedure is used to self calibrate the Advanced Orbital Shakers Models 3500 and up. The tray should be free of any samples, vessels, and accessories prior to calibrating.

1. Turn unit on. Speed and time displays will be illuminated.
2. Press and hold the standby button and momentarily press the speed on/off button. The speed display should read "CAL".
3. The unit will run for approximately one (1) minute and automatically calibrate.

RS-232 SERIAL PORT (Advanced Orbital Shakers Models 3500 and up)

RS-232 serial port provides two-way communications for data logging and unit control. If you need additional details, please contact your VWR representative or visit vwr.com.

TECHNICAL SERVICE

For information or technical assistance contact your local VWR representative or visit vwr.com.

TROUBLE SHOOTING - ADVANCED ORBITAL SHAKER

During operation, any rattling or ticking sounds may indicate a loose screw on the tray, a tray attachment or an accessory. All accessories should be sufficiently tightened in place before starting the unit.

Error Code

E04

Cause

Improper positioning of load, maximum load exceeded.

See 'Load Sensing Function' (page 8). If the E04 error persists, switch the unit off and contact your VWR representative for repairs.

Error Code

E03

Cause

Mechanical obstruction drive system failure.

Remove mechanical obstruction. If the E03 error persists, the reason may be drive system failure and should **NOT** be addressed by the end user. Switch the unit off and contact your VWR representative for repairs.

(Available on Model 3750 and up)

Error Code

E07

Cause

Unable to reach set speed.

Set speed is higher than actual achievable speed E07 can be addressed by the user. Reduce the speed setting or weight. Press Standby to clear error. This function can be disabled by following the instructions listed under "Additional Load Sensing Feature"

Error Code

E08

Cause

Electronics Error.

The E08 error should not be addressed by the end user. Switch the unit off and contact your VWR representative for repairs.

REPLACEMENT PARTS - STANDARD 1000 & ADVANCED MINI SHAKER 15

DESCRIPTION

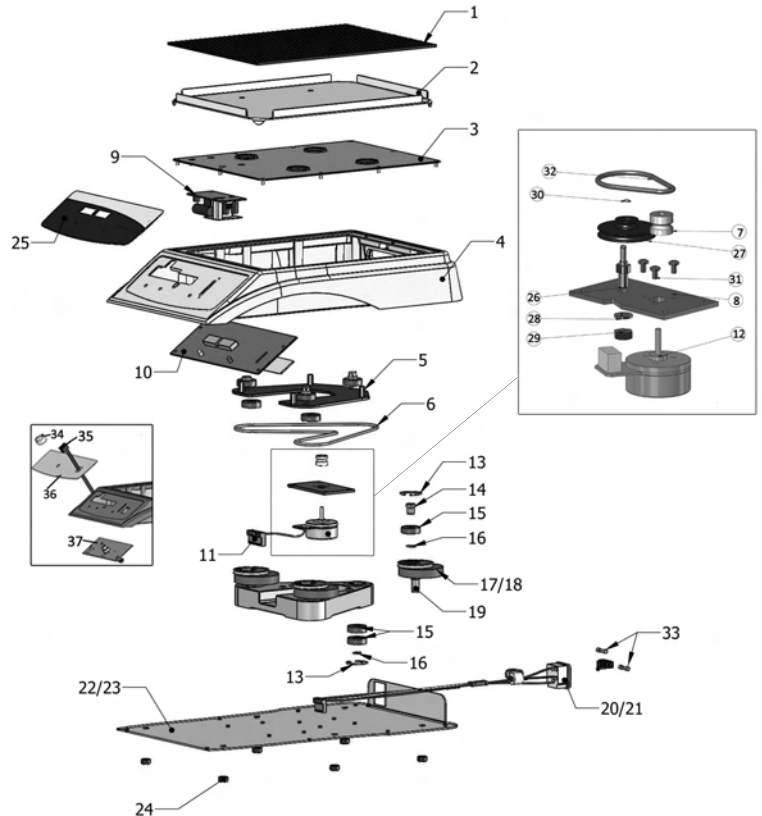
1. Rubber Mat
2. Tray (STD)
Tray (ADV)
3. Top Plate
4. Housing
5. Shaker Plate
6. Belt
7. Motor Pulley
8. Motor Plate
9. Power Supply
10. PC Board
11. Motor Connection Cable
12. Motor
13. Snap ring internal
14. Idler Stud
15. Bearing
16. Snap ring external
17. Eccentric counter weight
18. Eccentric pulley
19. Eccentric shaft
20. Wire assembly, 120V
21. Wire assembly, 230V
22. Base plate, 120V
23. Base plate, 230V
24. Foot
25. Front Panel Membrane Switch
26. Idler Shaft
27. Pulley Speed Reduction
28. Washer, .25" Split Lock
29. 1/4-20 Hex Nut
30. Snap Ring, External .156 Dia
31. Screw
32. Belt Speed reduction
33. Fuse

STANDARD ONLY

34. Knob
35. Switch Assembly
36. Overlay
37. PC Board

PART NUMBER

- 480016-00
- 280760-00
- 580050-00
- 280758-00
- 280302-00
- 280759-00
- 280757-00
- 280756-00
- 280720-00
- 380762-00
- 380806-00
- 380765-00
- 380763-00
- 180040-00
- 280752-00
- 180059-00
- 180039-00
- 280754-00
- 280755-00
- 280753-00
- 380760-00
- 380767-00
- 280328-00
- 280329-00
- 530052-00
- 380704-00
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- 172007-00
- 180081-00
- 180037-00
- 280722-00
- 380238-00



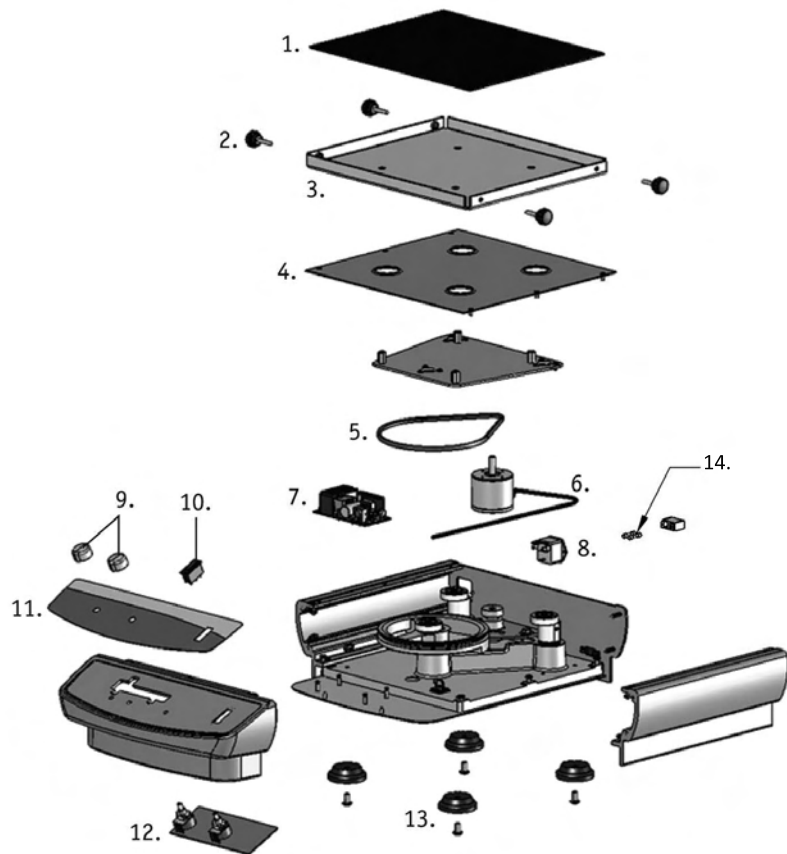
REPLACEMENT PARTS - STANDARD 3500

DESCRIPTION

1. Rubber mat
2. Thumbscrew
3. Tray
4. Top plate
5. V-belt
6. Motor
7. Power supply
8. IEC power inlet, 120V
IEC power inlet, 230V
9. Knob
10. Rocker switch
11. Front panel
12. Control circuit board
13. Feet
14. Fuse

PART NUMBER

| | | |
|------------------------------------|-------|-----------|
| Detachable 92" (234cm) power cord: | 120V | 330100-00 |
| | EURO | 330101-00 |
| | UK | 330102-00 |
| | SWISS | 330103-00 |



REPLACEMENT PARTS - ADVANCED 3500

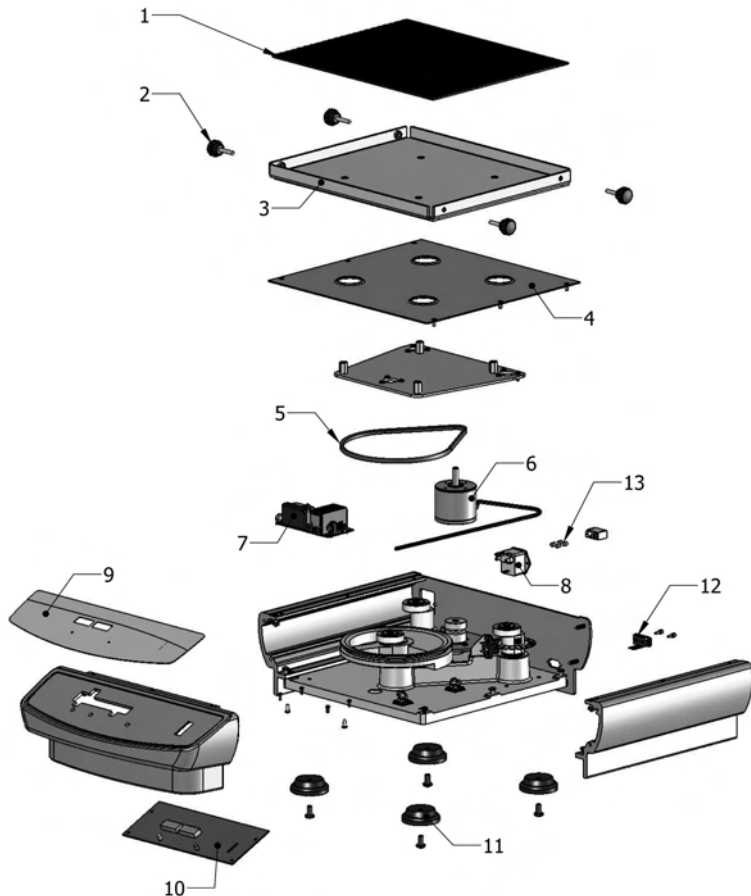
DESCRIPTION

1. Rubber mat
2. Thumbscrew
3. Tray
4. Top plate
5. V-belt
6. Motor
7. Power supply
8. IEC power inlet, 120V
IEC power inlet, 230V
9. Front panel
10. Control circuit board
11. Feet
12. Cable, RS 232, 25"
13. Fuse

PART NUMBER

1. Rubber mat
480004-00
2. Thumbscrew
580001-00
3. Tray
280700-00
4. Top plate
280703-00
5. V-belt
580000-00
6. Motor
280633-00
7. Power supply
380623-00
8. IEC power inlet, 120V
IEC power inlet, 230V
380506-00
380237-00
9. Front panel
380803-00
10. Control circuit board
380806-00
11. Feet
580002-00
12. Cable, RS 232, 25"
345152-00
13. Fuse
380238-00

- Detachable 92" (234cm) power cord:
- | | |
|-------|-----------|
| 120V | 330100-00 |
| EURO | 330101-00 |
| UK | 330102-00 |
| SWISS | 330103-00 |



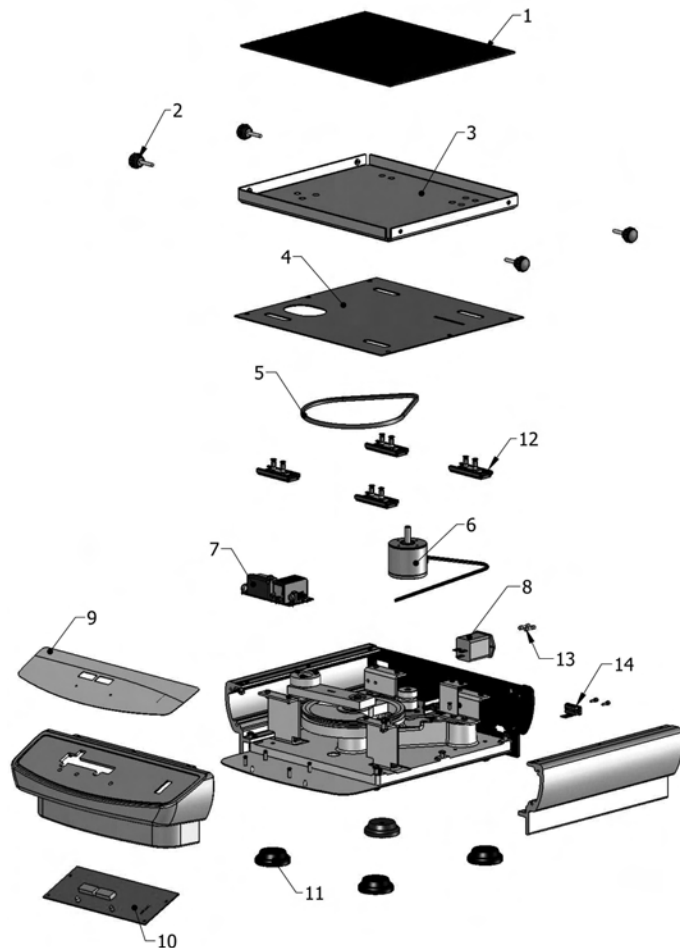
REPLACEMENT PARTS - ADVANCED 3750

DESCRIPTION

1. Rubber mat
2. Thumbscrew
3. Tray
4. Top plate
5. V-belt
6. Motor
7. Power supply
8. IEC power inlet, 120V
IEC power inlet, 230V
9. Front panel
10. Control circuit board
11. Feet
12. Slides
13. Fuse
14. Cable, RS 232, 25"

PART NUMBER

- | | | |
|------------------------------------|-------|-----------|
| Detachable 92" (234cm) power cord: | 120V | 330100-00 |
| | EURO | 330101-00 |
| | UK | 330102-00 |
| | SWISS | 330103-00 |



REPLACEMENT PARTS - STANDARD & ADVANCED 5000

DESCRIPTION

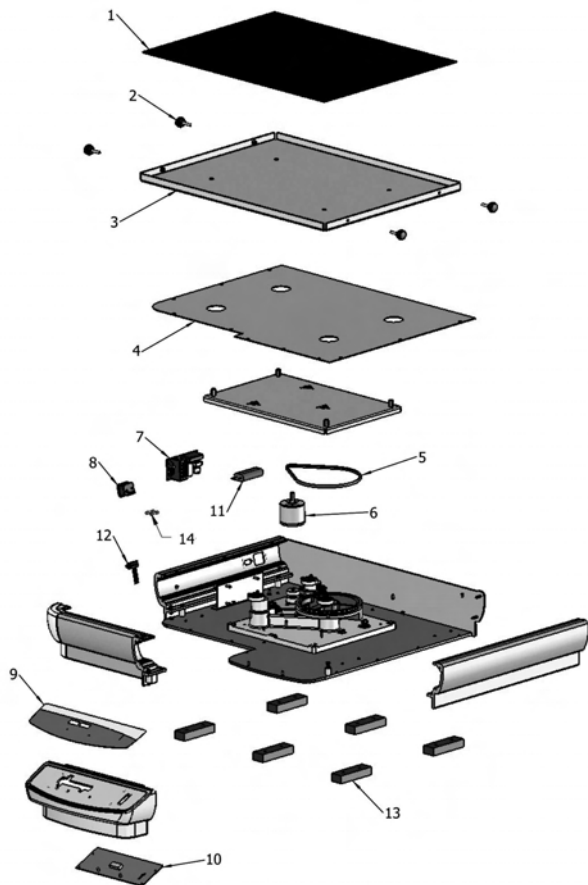
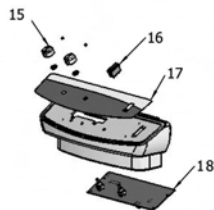
1. Rubber mat
2. Thumbscrew
3. Tray
4. Top plate
5. V-belt
6. Motor
7. Power supply, 24V
8. Power entry module
9. Advanced digital membrane switch
10. Display circuit board
11. Line filter
12. Cable, RS-232, 33"
13. Feet
14. Fuse

STANDARD ONLY

15. Knob
16. Rocker switch
17. Front panel
18. Control circuit board

PART NUMBER

- 280809-00
- 580001-00
- 280804-00
- 280806-00
- 580000-00
- 280633-00
- 380623-00
- 386122-00
- 380803-00
- 380813-00
- 387022-00
- 345153-00
- 580017-00
- 380238-00
- 287010-00
- 349025-00
- 380807-00
- 380812-00

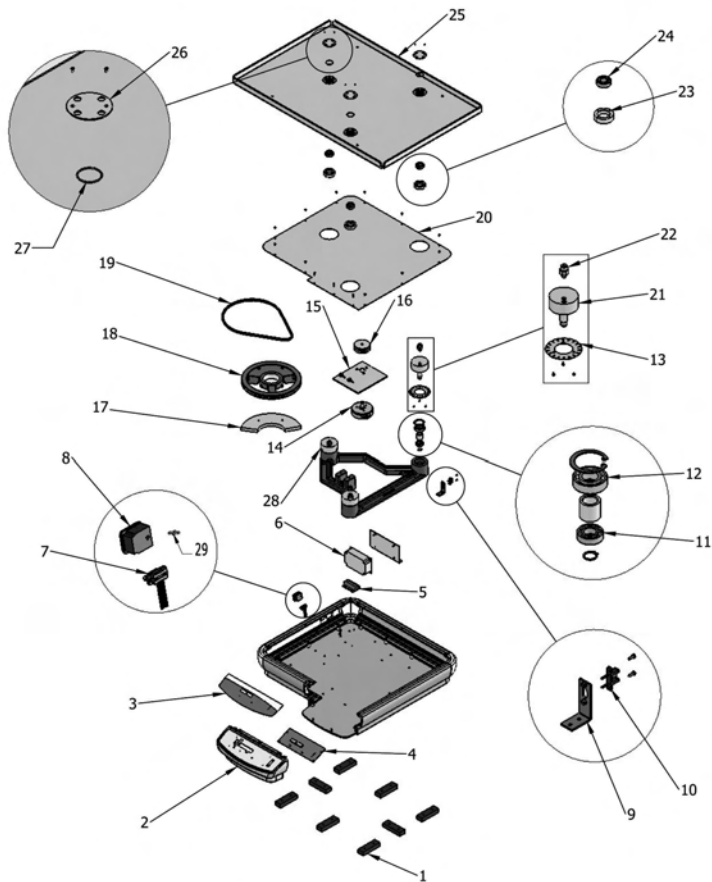


REPLACEMENT PARTS - ADVANCED 10000 - 150000

DESCRIPTION

PART NUMBER

| | |
|-------------------------------------|-----------|
| 1. Feet | 580017-00 |
| 2. Front bezel | 280501-00 |
| 3. Advanced digital membrane switch | 380803-00 |
| 4. Display circuit board | 380813-00 |
| 5. Line filter | 387022-00 |
| 6. Power supply, | 386331-00 |
| 7. Cable, RS-232, 33" | 345153-00 |
| 8. Power entry module | 386122-00 |
| 9. Photosensor mounting bracket | 280820-00 |
| 10. Photosensor | 380636-00 |
| 11. Bearing 6000-ZZ, large | 130111-00 |
| 12. Bearing, ball 6004-ZZ | 130108-00 |
| 13. Encoder disk | 280818-00 |
| 14. Motor | 386332-00 |
| 15. Motor mounting plate | 280817-00 |
| 16. Pulley 3.75:1 | 280819-00 |
| 17. Counter weight | 280094-00 |
| 18. Counter pulley | 280083-00 |
| 19. V-belt | 580018-00 |
| 20. Top plate | 280816-00 |
| 21. Drive/idler shaft | 280815-00 |
| 22. Eccentric shaft insert | 480013-00 |
| 23. Bearing holder | 445026-00 |
| 24. Bearing, 1623DS | 145027-00 |
| 25. Tray - Model 15K | 280813-00 |
| Mat - Model 15K | 480015-00 |
| Tray - Model 10K | 280812-00 |
| Mat - Model 10K | 480014-00 |
| 26. Bearing cap | 280087-00 |
| 27. O-ring | 180006-00 |
| 28. Drive/idler shaft | 280814-00 |
| 29. Fuse | 380238-00 |



PLATFORM USAGE CHART

| PLATFORM SIZE | PLATFORM TYPE | PART NUMBER | USED ON SHAKER MODEL NUMBERS |
|---------------|---------------|-------------|----------------------------------------|
| 11 x 13" | Universal | 89027-702 | Model 3500, Model 3750 |
| 13 x 13" | Universal | 97003-586 | Model 3500, Model 3750 |
| 18 x 18"* | Universal | 97003-588 | Model 3500, Model 3750** |
| 18 x 24"* | Universal | 97003-590 | Model 3500, Model 3750**, Model 5000** |
| 18 x 30"* | Universal | 97003-594 | Model 5000 |
| 24 x 24" | Universal | 97003-592 | Model 10000 |
| 24 x 36" | Universal | 97003-596 | Model 15000 |

* TWO TIER READY

| DEDICATED PLATFORM SIZE | DEDICATED PLATFORMS WITH PVC FLASK CLAMP CAPACITIES | PART NUMBER | USED ON SHAKER MODEL NUMBERS |
|-------------------------|-----------------------------------------------------|-------------|------------------------------|
| 13 x 13" (125mL) | 16 x 125mL | 97003-616 | Model 3500, Model 3750 |
| 13 x 13" (250mL) | 12 x 250mL | 97003-618 | Model 3500, Model 3750 |
| 13 x 13" (500mL) | 8 x 500mL | 97003-620 | Model 3500, Model 3750 |
| 13 x 13" (1L) | 4 x 1L | 97003-622 | Model 3500, Model 3750 |
| 18 x 18" (125mL)* | 27 x 125mL | 97003-624 | Model 3500, Model 3750 ** |
| 18 x 18" (250mL)* | 20 x 250mL | 97003-626 | Model 3500, Model 3750 ** |
| 18 x 18" (500mL)* | 13 x 500mL | 97003-628 | Model 3500, Model 3750 ** |
| 18 x 18" (1L)* | 9 x 1L | 97003-630 | Model 3500, Model 3750 ** |
| Tier Braces | | 97003-646 | |

* TWO TIER READY

| PLATFORM SIZE | PLATFORM TYPE | PART NUMBER | USED ON SHAKER MODEL NUMBERS |
|---------------|----------------------------|-------------|----------------------------------------|
| 18 x 18"* | Culture Platform | 97003-598 | Model 3500, Model 3750** |
| 18 x 24"* | Culture Platform | 97003-600 | Model 3500, Model 3750**, Model 5000** |
| 18 x 18" | Adjustable Platform | 97003-602 | Model 3500 |
| 18 x 24" | Adjustable Platform | 97003-604 | Model 5000 |
| 30 x 18" | Large Vessel Carrier | 97003-606 | Model 5000 |
| 24 x 24" | Large Vessel Carrier | 97003-608 | Model 10000 |
| 24 x 36" | Large Vessel Carrier | 97003-610 | Model 15000 |
| 18 x 18" | Separatory Funnel Platform | 97003-632 | Model 3500, Model 3750 |

* Two Tier Ready

** PLATFORM STACKING IS NOT AVAILABLE ON MODEL 3750 AND MODEL 5000

FLASK CLAMP PLATFORM CAPACITY

Stainless Steel Erlenmeyer Flask Clamps

| PLATFORM SIZE | PART NUMBER | 10mL | 25mL | 50mL | 125mL | 250mL | 500mL | 1L | 2L | 2.8L | 4L | 6L |
|---------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | 57018-775 | 57018-786 | 57018-797 | 57018-800 | 57018-811 | 57018-822 | 14215-224 | 14215-226 | 14215-228 | 14215-230 | 14215-232 |
| 11x13 | 89027-702 | 60 | 25 | 13 | 10 | 9 | 7 | 4 | N/A | N/A | N/A | N/A |
| 13x13 | 97003-586 | 60 | 30 | 15 | 12 | 12 | 8 | 4 | 3 | 1 | 1 | 1 |
| 18x18 | 97003-588 | 113 | 64 | 32 | 20 | 20 | 13 | 8 | 5 | 2 | 4 | 2 |
| 18x24 | 97003-590 | 158 | 88 | 44 | 28 | 28 | 20 | 12 | 6 | 3 | 4 | 3 |
| 18x30 | 97003-594 | 203 | 112 | 56 | 36 | 36 | 26 | 15 | 8 | 3 | 6 | 4 |
| 24x24 | 97003-592 | 221 | 121 | 61 | 41 | 41 | 25 | 16 | 9 | 5 | 5 | 5 |

Stainless Steel Media Bottle Clamps

| PLATFORM SIZE | PART NUMBER | 500mL | 1L |
|---------------|-------------|-----------|-----------|
| | | 14215-236 | 14215-238 |
| 11x13 | 89027-702 | 5 | 2 |
| 13x13 | 97003-586 | 6 | 5 |
| 18x18 | 97003-588 | 16 | 10 |
| 18x24 | 97003-590 | 20 | 13 |
| 18x30 | 97003-594 | 28 | 18 |
| 24x24 | 97003-592 | 25 | 18 |
| 24x36 | 97003-596 | 40 | 30 |

PVC Erlenmeyer Flask Clamps

| PLATFORM SIZE | PART NUMBER | 125mL | 250mL | 500mL | 1L | 2L |
|---------------|-------------|-----------|-----------|-----------|-----------|-----------|
| | | 97003-576 | 97003-578 | 97003-580 | 97003-582 | 97003-584 |
| 11x13 | 89027-702 | 10 | 8 | 5 | 2 | N/A |
| 13x13 | 97003-586 | 12 | 10 | 6 | 4 | 3 |
| 18x18 | 97003-588 | 20 | 18 | 12 | 8 | 4 |
| 18x24 | 97003-590 | 28 | 25 | 16 | 10 | 6 |
| 18x30 | 97003-594 | 36 | 33 | 20 | 14 | 8 |
| 24x24 | 97003-592 | 41 | 35 | 24 | 13 | 9 |
| 24x36 | 97003-596 | 61 | 55 | 38 | 22 | 13 |

Microplate Clamp

| PLATFORM SIZE | PART NUMBER | MICROPLATE CLAMP |
|---------------|-------------|------------------|
| | | 97003-634 |
| 11x13 | 89027-702 | 4 |
| 13x13 | 97003-586 | 6 |
| 18x18 | 97003-588 | 12 |
| 18x24 | 97003-590 | 18 |
| 18x30 | 97003-594 | 21 |
| 24x24 | 97003-592 | 24 |
| 24x36 | 97003-596 | 36 |

TEST TUBE RACK PLATFORM CAPACITY

| Half Size Stationary | | 1.5 to 2mL Microtube Rack capacity = 70 12620-952 | 10 to 13mm Test Tube Rack capacity = 63 12620-956 | 14 to 16 mm Test Tube Rack capacity = 48 12620-958 | 18 to 20 mm Test Tube Rack capacity = 35 12620-960 | 22 to 25 mm Test Tube Rack capacity = 24 12620-962 | 15mL Centrifuge Test Tube Rack capacity = 35 11301-134 | 50mL Centrifuge Test Tube Rack capacity = 12 11301-136 |
|----------------------|-------------|------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|
| PLATFORM SIZE | PART NUMBER | | | | | | | |
| 11x13 | 89027-702 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 13x13 | 97003-586 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 18x18 | 97003-588 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 18x24 | 97003-590 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| 18x30 | 97003-594 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| 24x24 | 97003-592 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| 24x36 | 97003-596 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |

| Full Size Stationary | | 10 to 14mm Test Tube Rack capacity = 48 14215-240 | 16 to 20mm Test Tube Rack capacity = 33 14215-242 | 21 to 25mm Test Tube Rack capacity = 21 14215-244 | 50mL Centrifuge Test Tube Rack capacity = 17 12985-052 |
|----------------------|-------------|------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|-----------------------------------------------------------------|
| PLATFORM SIZE | PART NUMBER | | | | |
| 11x13 | 89027-702 | N/A | N/A | N/A | N/A |
| 13x13 | 97003-586 | N/A | N/A | N/A | N/A |
| 18x18 | 97003-588 | 3 | 3 | 3 | 3 |
| 18x24 | 97003-590 | 5 | 5 | 5 | 5 |
| 18x30 | 97003-594 | 6 | 6 | 6 | 6 |
| 24x24 | 97003-592 | 7 | 7 | 7 | 7 |
| 24x36 | 97003-596 | 5 | 5 | 5 | 5 |

| Full Size Pivoting | | 13mm Test Tube Rack capacity = 90 97003-636 | 16mm Test Tube Rack capacity = 60 97003-638 | 20mm Test Tube Rack capacity = 40 97003-640 | 25mm Test Tube Rack capacity = 24 97003-642 | 30mm Test Tube Rack capacity = 21 97003-644 |
|--------------------|-------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|
| PLATFORM SIZE | PART NUMBER | | | | | |
| 11x13 | 89027-702 | 1 | 1 | 1 | 1 | 1 |
| 13x13 | 97003-586 | 2 | 2 | 2 | 2 | 2 |
| 18x18 | 97003-588 | 2 | 2 | 2 | 2 | 2 |
| 18x24 | 97003-590 | 3 | 3 | 3 | 3 | 3 |
| 18x30 | 97003-594 | 4 | 4 | 4 | 4 | 4 |
| 24x24 | 97003-592 | 4 | 4 | 4 | 4 | 4 |
| 24x36 | 97003-596 | 6 | 6 | 6 | 6 | 6 |

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