VWR®

Instruction Manual
Digital High Speed Microplate Shaker

Table of Contents

Package Contents

Microplate Shaker
92” (234cm) detachable power cord
Instruction Manual

Warranty

Manufacturer warrants this product to be free from defects in material and workmanship when used under normal conditions for five (5) years. Register your equipment or instrument online at: www.vwrsp.com/warranty for US residents and 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:_____

Installation

1. Important: Choose the space on your bench where the VWR High Speed Microplate Shaker will stay. Because of the amount of energy dissipated, the unit is held onto your lab bench with 12 rubber feet (suction cups). The unit is VERY difficult to remove from work surface and should be done with caution. Use paper under the feet to keep them from attaching to the bench while determining the final location. When final location is determined, remove the paper.
2. Be sure the power switch is in the off position.
3. The VWR High Speed Microplate Shaker comes with a connector plug 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.
4. Your VWR High Speed Microplate Shaker is ready for use.

Maintenance & Servicing

The VWR High Speed Microplate 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. The unit should be given the care normally required for any electrical appliance. Avoid wetting or unnecessary exposure to fumes. Spills should be removed promptly. 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

Operating Conditions: Indoor use only.

Temperature:	4 to 40°C (39.2 to 104°F)
Humidity:	20% to 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:	20% to 80% relative humidity, non-condensing

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

Safety Instructions

Please read the entire instruction manual before operating the unit.

WARNING! DO NOT use the UNIT 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 High Speed Microplate Shaker 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

Standards & Regulations

Henry Troemner LLC hereby declares under it's 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.

UL Std. No. 61010-1
CSA/CAN C22.2

EMC standards:

EN61326-1 Class A	EN61000-3-2
EN61000-4-5	EN61000-3-3
EN61000-4-4	EN61000-4-2
EN61000-4-3	EN61000-4-11
EN61000-4-6	EN61000-4-8

Associated EU guidelines:
EMC directive 2004/108/EC
LVD directive 2006/95/EC
RoHS directive 2015/863/EU

Consignes de Sécurité

Veuillez lire la totalité du manuel d'instruction avant d'utiliser le dispositif.

AVERTISSEMENT ! N'utilisez pas le DISPOSITIF dans une atmosphère dangereuse ou avec des matériaux dangereux pour lesquels l'emploi du dispositif n'a pas été prévu. L'utilisateur doit en outre toujours être conscient du fait que la protection fournie par le fabricant peut être désactivée si le dispositif est utilisé avec des accessoires non fournis ni recommandés par le fabricant ou s'il est utilisé de manière non stipulée par le fabricant.

Utilisez toujours le dispositif sur une surface à niveau pour optimiser non seulement la performance mais la sécurité.

Ne soulevez pas le Micro Plate Shaker Haute Vitesse par le plateau.

PRUDENCE ! Pour éviter tout choc électrique, coupez le courant vers le dispositif en débranchant le cordon d'alimentation du dispositif ou de la prise murale. Débranchez le dispositif de l'alimentation avant d'effectuer toute opération de maintenance ou de réparation.

Nettoyez immédiatement tout liquide renversé.

N'immergez pas le dispositif pour le nettoyer.

N'utilisez pas le dispositif s'il y a des signes de dommages électriques ou mécaniques.

Mise à la terre - Borne du conducteur de protection

Courant alternatif

Normes et Réglementations

Par la présente, VWR International déclare sur l'honneur que les produits sont conformes aux exigences des directives et des normes suivantes.

Directives européennes directive:

Directive d'EMC	2004/108/EEC
Directive LVD	2006/95/EC
Directive ROHS	2015/863/EU
Directive WEEE	2002/96/EC

Normes de sécurité :

IEC 61010-1	Conditions de sécurité des composants électriques pour la mesure, le contrôle et l'utilisation en laboratoire. Partie : I Règles générales.
IEC 61010-2-051	Partie II : Règles particulières du matériel de laboratoire pour mélange et brassage.

UL 61010-1

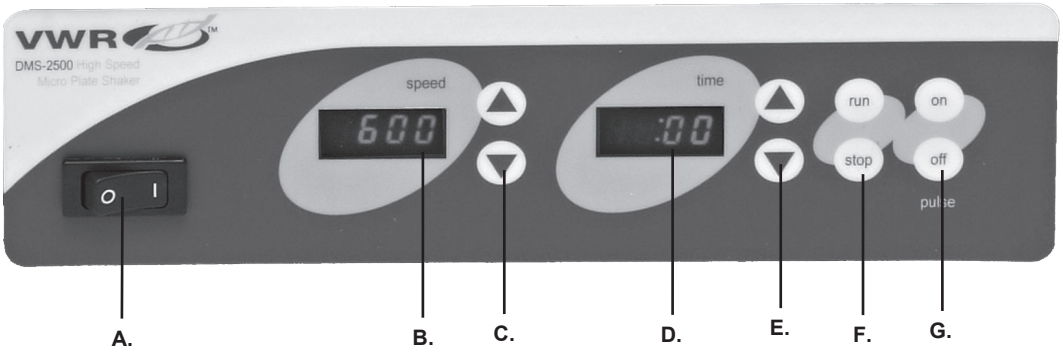
CSA/CAN C22.2

Normes d'EMC :

EN 61326-1	EN 61000-4-4
IEC 61000-3-2	EN 61000-4-5
EN 61000-3-3	EN 61000-4-6
EN 61000-4-2	EN 61000-4-8
EN 61000-4-3	EN 61000-4-11

Specifications - High Speed Microplate Shaker

Overall dimensions (L x W x H):	15.5 x 12 x 12.8” (39.4 x 30.5 x 32.5cm)
Tray dimensions (L x W): 12.25 x 11”	(31.1 x 27.9cm)
Electrical (50/60 Hz):	120 V - 1 amps, 120 watts 230 V - 1 amp, 120 watts
Fuses:	5mm x 20mm, 250V 5 amp quick acting (2 required)
Speed range:	600 to 2500rpm
Timer:	1 second to 160 hrs
Orbit:	.014” (3.6mm)
Controls:	See page 5
Ship weight:	50lbs (22.7kg)
Capacity:	7 lbs (3.2kg) 48 microplates in stacks up to 5” high



Control Panel - High Speed Microplate Shaker

The front panel of the High Speed Microplate Shaker contains all the switches, controls and displays needed to operate the unit.

A. On/off rocker switch: Turns main power on/off.

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

C. Up/down arrows for set-point control.

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 set-point control.

F. Run/stop buttons: Activates shaking.

G. Pulse on/off buttons: Activates pulse mode.

1. Flip up the four quick release latches which will release top tray from the 4 posts. DO NOT USE without both top and bottom tray foam in place.
2. Your Digital High Speed Microplate Shaker is designed to hold up to 7 pounds, which will accommodate deepwell blocks or stacked microplates up to 5" high.

   To avoid excessive noise and potential block damage, well blocks should always have space between them and should never touch each other.
3. Sample containers should be placed on bottom tray foam insert and centered on the tray to achieve optimal performance.
4. To place top tray on unit, place the short side to the front engaging the 4 posts. When top tray is lined up, press down on the center of the tray and engage by pushing the quick release latches down into the locked position. Repeat for all corners. When top plate is locked in place, tighten the knobs on the four adjustment blocks. The High Speed Micro Plate Shaker is ready to operate. When changing samples, disengage the four quick release latches to remove the top tray. Do not loosen the knobs on the adjustment blocks. Loosen and move the four adjustment blocks only when the sample heights have changed.
5. Turn the Power on by depressing the left side of the rocker switch on the bottom left side of the control panel. LED displays for Speed and Timer will light.
6. Set speed by pressing the up/down arrows to the right of the speed display until you reach the desired speed. Adjust Time using the up/down arrows to the right of the timer display. Press the run button. The unit will run for the programmed time. Timer LED will display time remaining.
7. To run in the un-timed mode, set the time to zero (0) using the up/down arrows to the right of the timer display. Press the run button and the unit will run until you press the stop button. Timer LED will display accumulated time.
8. To run in pulse mode unit must not be running. Press the "ON" button above the word "PULSE". To stop the pulse feature press the "OFF" button above the word "PULSE". Pulse mode is factory programmed for 2 seconds on 1 second off. The pulse "ON" and pulse "OFF" times can be adjusted between 1 and 59 seconds in 1 second intervals.

The Pulse time can be reprogrammed by following the directions below.

Pulse "ON" time

a. Turn power off
b. Turn power on while holding pulse "ON" button. The LED display for "SPEED" shows current pulse on time.
c. Change the pulse on time using the up/ down arrows to the right of the "SPEED" display.
d. When the power is turned off, the value on the display is stored as the new pulse on time.

Pulse "OFF" time

a. Turn power off
b. Turn power on while holding pulse "OFF" button. The LED display for "TIMER" shows current pulse off time.
c. Change the pulse off time using the up/down arrows to the right of the "TIMER" display.
d. When the power is turned off, the value on the display is stored as the new pulse off time.

Replacement Parts

DESCRIPTION		PART NUMBER
Top Tray		80862913
Bottom Tray		80854112
Motor		30787856
Front Panel Membrane Switch		80857290
Top Cover Motor		80854101
Power Entry Module, 120V		80856486
Power Entry Module, 230V		80856477
Transformer, 230V		80856547
Processor Board		80856287
Feet		80857281
Rocker Switch		80856442
Knob		80857286
Tray Pad Set		80862912
Detachable 92” (234cm) Power Cord: 120V	80856139	
	Euro	12120761
	UK	12120312
	Swiss	80856142

Manufactured by:

TROEMNER LLC

201 Wolf Drive • PO Box 87 • Thorofare, NJ 08086-0087
Phone: 856-686-1600 • Fax: 856-686-1601 • E-mail: troemner@troemner.com

www.troemner.com