OPERATING MANUAL

Rice Shaker
SGA-5R & SGA-5RT

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SAFETY INSTRUCTIONS

Whether you are the owner, employer, operator, or maintenance person for this machine, safety is your responsibility. You are responsible for operating and maintaining this equipment in compliance with these instructions and for using common sense. Review and completely understand the operating and safety instructions before using this machine.

WARNING!

This machine operates on electric current. Improper operation could result in electric shock, electrocution, or an explosion!

1. **ALWAYS** make sure the motor and other electrical components are appropriate and properly configured for your intended use and available power source. The Vibro-Deairator is operated by a motor and controls wired for 115V/60Hz. Motors are **NOT** explosion-proof.

2. This device is **NOT** designed or intended for use in moist or wet environments. Electrical shock or damage to the unit may occur if the unit is exposed to excessive moisture.

3. **ALWAYS** check electrical wiring for loose connections and for pinched or frayed wiring.

4. **ALWAYS** use a properly-wired, three-pronged plug, or otherwise ground the machine. Connect the machine to a properly-wired, three-pronged receptacle. Make sure the cord is located where no one will trip or get tangled in it.

5. **ALWAYS** disconnect and lock out power supply before performing maintenance and repairs.

WARNING!

WARNING: **DO NOT** operate the machine without having all covers and case in place.

WARNING: **ALWAYS** level the machine prior to operation.

WARNING: Stop the machine immediately and re-level if excessive vibration or machine movement occurs.

WARNING: **ALWAYS** unplug or disconnect machine from the power source when the unit is not in operation.

WARNING: Keep all parts of your body away from moving parts of the machine while it is operating.

WARNING: **DO NOT** wear loose clothing which might be caught in moving parts of the machine.

WARNING: **ALWAYS** wear safety glasses when operating, maintaining, or repairing this machine.

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1.0 INTRODUCTION:

The SGA-5R Rice Shaker automates sample agitation in specific gravity procedures such as those described for the AASHTO T 209 and ASTM D 2041 “Rice Test”. This frees laboratory personnel for other duties. The unit allows the use of three different types of pycnometers of various sizes; heavy-wall Glass Filter Flasks (Gilson 2L GW-75, and 4L GW-76), Aluminum Pycnometers (Gilson 2,000g SG-16, and 1,500g SG-17), and the Gilson 6,000g SG-15 Plastic Pycnometer.

- GW-75 and GW-76 Glass Filter Flasks require the SGA-8 Adapter Set, consisting of an upper adapter ring and base pad.
- SG-15 Plastic Pycnometer requires the SGA-7 Adapter Set, consisting of a base adapter, and upper adapter with foam ring.
- SG-16 and SG-17 Aluminum Pycnometers DO NOT require adapters.

NOTE: ALWAYS use the correct adapter for the selected pycnometer. Failure to do so can result in injury to the operator and damage to the pycnometer.

NOTE: The SGA-5R has only been tested with the Gilson Pycnometers above. It CANNOT be guaranteed to function properly with pycnometers from other manufacturers.

2.0 UNPACKING & ASSEMBLY:

NOTE: Immediately upon receipt, check the shipping container carefully for apparent damage. If internal or external damage is observed or suspected, contact the freight carrier right away. Gilson cannot be responsible for shipping damage. Save all shipping packaging until assured that the device is operating properly.

The Rice Shaker is shipped in a sturdy cardboard box, packed in moldable foam. The top plate, as well as two threaded height-adjustment rods with installation nuts, plastic and metal clamping knobs threaded on, are enclosed in the same box, but not attached. If the SGA-7 or SGA-8 Adapter Sets were ordered, they will be packaged separately.

Remove the base assembly from the box and place on a dry, sturdy and level surface and connect the power cord. On the rear of the unit is a power entry module with 2 amp fuses. A spare fuse is located in the fuse tray should it be needed.

To install the adjustment rods, remove the nut closest to the end of the rod, insert the rod through the hole in the base plate and use two 9/16in wrenches to tighten the nuts and secure the rod. Repeat for the opposite side.

3.0 SET-UP:

3.1 Glass Filter-Flasks:

Place the rubber base pad between the four rubber bumpers on the agitator base, and then center the flask on the pad. Place the top adapter of the SGA-8 set over the neck of the flask, tilting as required to pass over the tubulation. Slide the top plate over the adjustment rods, and center the adapter between the bumpers (see Figure 1). Position the adapter/plate assembly approximately level and adjust the black plastic knobs until there is a small gap between the plate and the knobs. Drop the metal speed-knobs onto the rods and tighten so that the plate is pushed down slightly and contacts the bottom plastic knobs. Before turning on the Rice Shaker always check that both sets of knobs are secure.

NOTE: Pycnometers must be secured but NOT over-tightened. Over-tightening can damage the pycnometer or result in loss of action.

3.2 Aluminum Pycnometers:

Place the pycnometer directly on the agitator base between the rubber bumpers. Slide the top plate over the adjustment rods, and position the rubber bumpers around the pycnometer (see Figure 2). Adjust the black plastic knobs until there is a small gap between the plate and the knobs. Drop the metal speed-knobs onto the rods and tighten so that the plate is pushed down slightly and contacts the bottom plastic knobs. Before turning on the Rice Shaker always check that both sets of knobs are secure.

NOTE: Pycnometers need to be secured but NOT over-tightened. Over-tightening can damage the pycnometer or result in loss of action.

3.3 SG-15 Plastic Pycnometer:

Place the adapter ring of the SGA-7 Adapter Set between the four rubber bumpers on the agitator base, then position the SGA-15 on the ring. The upper adapter of the SGA-7 is placed with the foam side down on top of the pycnometer. Slide the top plate over the adjustment rods and position the adapter between the four adapters (see Figure 3). Adjust the plastic threaded knobs until there is a small gap between the plate and the knobs. Drop the metal speed-knobs onto the rods and tighten so that the plate is pushed down slightly and contacts the threaded knobs. Before turning on the Rice Shaker, always check that both sets of knobs are secure.

NOTE: Pycnometers must be secured but NOT over-tightened. Over-tightening can damage the pycnometer or result in loss of action.

4.0 OPERATING INSTRUCTIONS:

NOTE: If the Rice Shaker is started with the vibration control set to LOW, the vibrator may start slowly, or not at all. If this occurs, rotate the knob counter-clockwise to a higher setting, then reduce the setting once the vibrator is running.

Rotate the vibration control knob on the right counter-clockwise to its <OFF> position. Push the mode switch on the left to <Manual Mode> (see Figure 4). Turn the amplitude knob clockwise to turn on vibration.

NOTE: When switched to ON, the amplitude control goes immediately to MAXIMUM. Continue adjusting clockwise to minimum.

Due to varying pycnometer and sample weights, the operator must determine the minimum time and vibration level necessary to dislodge entrapped air without degrading the sample.

NOTE: Excessive vibratory action will degrade the sample particles by abrasion.

Start the test by moving the mode switch to the <TIMED> position and pressing the <START/STOP> button on the timer (see below for timer set-up). The unit will run to the set-time and stop. The timer need not be reset unless a different run time is required.

This unit is equipped with an easy-to-operate Gilson interval count-down timer. The timer has a large 0.6in LED display and will operate in four different modes. It is powered by line voltage and will work on power supplies from 100—265 VAC, 50/60Hz, with up to 20 amps Inductive or Resistive current.

NOTE: Operation of the vibratory motor for the SGA-5R is limited to 115V/60Hz AC. For 230V/50Hz operation, the TR-200 Step-Down Transformer or equivalent must be used.

Current timer mode is indicated by the four red LED's on the timer face (see Figure 4).

A = MMSS (99min:59sec x 1 second)
B = HHMM (99hr:59min x 1 minute)
C = SSSS (9999sec x 1 second)
D = MMMM (9999min x 1 minute)

H is for hours, M for minutes, and S for seconds. To adjust the timer mode, press and hold both the <UP> and <DOWN> arrow keys at the same time until the display shows the mode. Once the mode letters are displayed, press the <UP> or <DOWN> key to change modes. Press the <START> key to accept new mode.

To set the run time, press either the <UP> or <DOWN> arrow key. The first digit on the right hand side will flash in half-second intervals. Press either arrow key to adjust to the desired value. To enter the displayed digit and move to the next, press the <START/STOP> key. Once the last digit on the left is entered, the timer is ready to start.

Press the <START/STOP> key to initiate the run program. Once running, pressing the <START/STOP> key again will pause the timer with the current amount of time remaining on screen. When allowed to time-out, the timer beeps and displays DONE. Press any key to continue. Setting and Mode values are saved automatically and restored on power-up.

5.0 PARTS DIAGRAMS:

5.1 Figure 1: Glass Filter-Flask

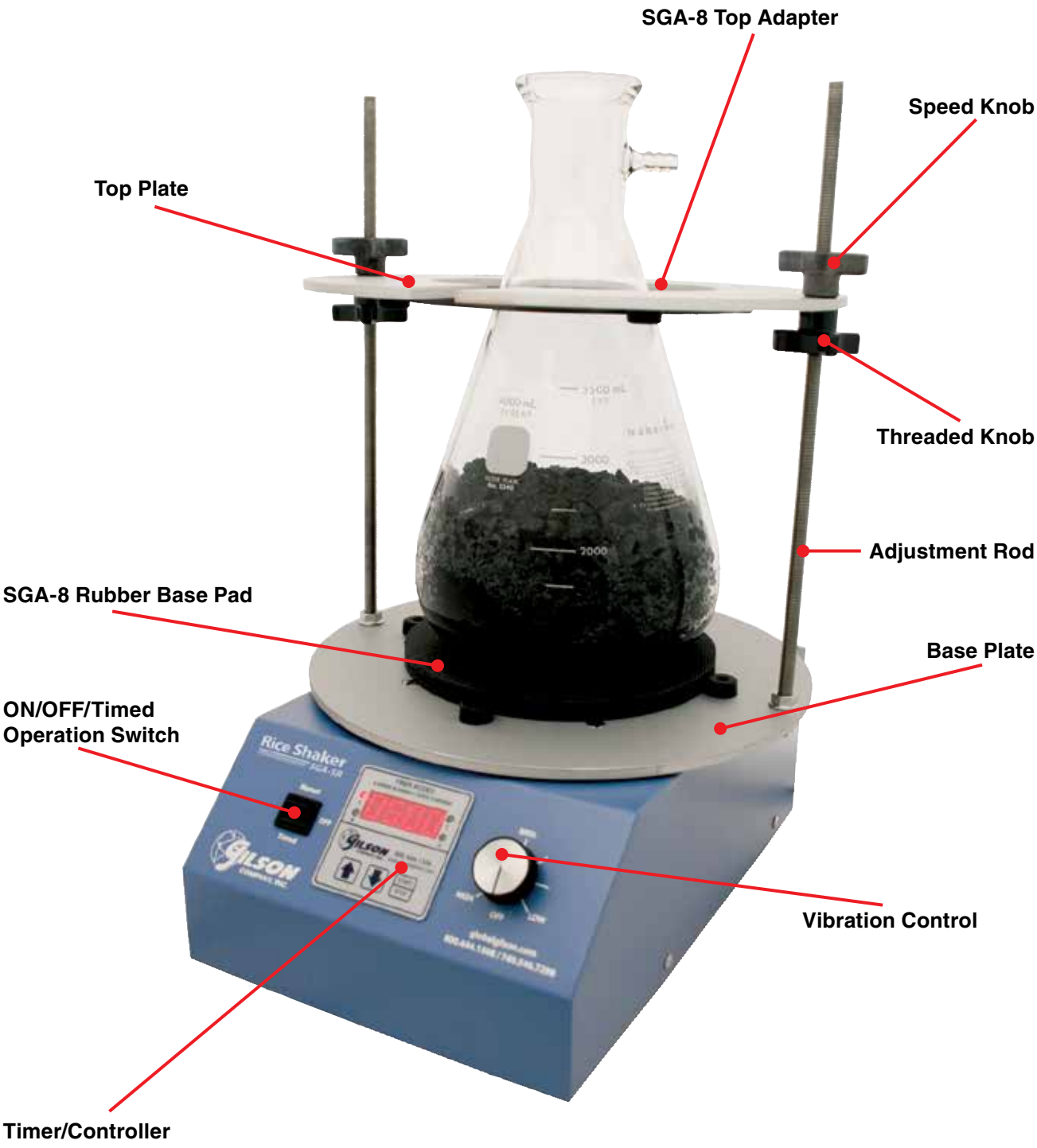

Figure 1

Using GW-75 or GW-76 Glass Filter Flasks

5.2 Figure 2: Aluminum Pycnometer

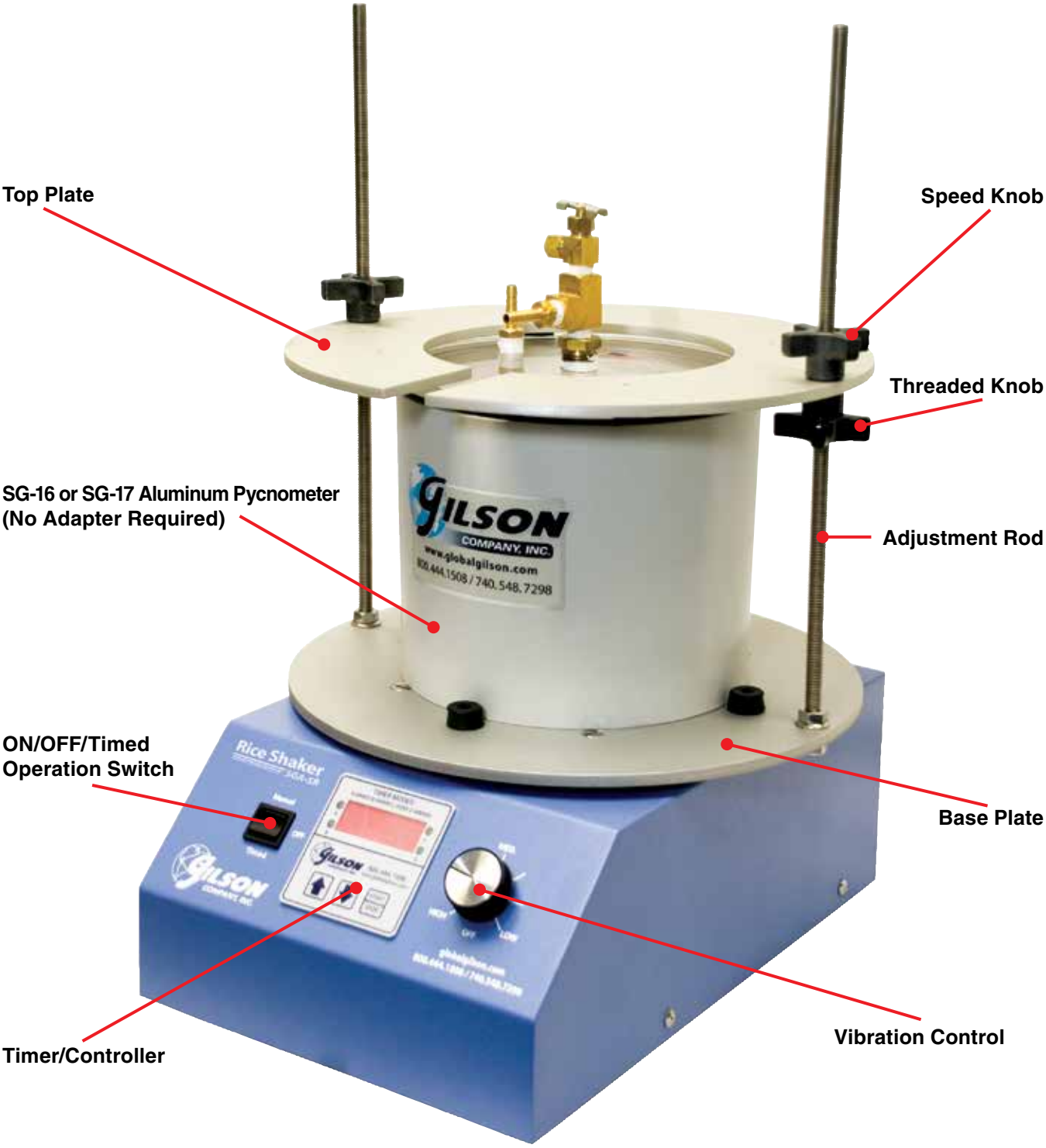

Figure 2

Using SG-16 or SG-17 Aluminum Pycnometer

5.3 Figure 3: Plastic Pycnometer

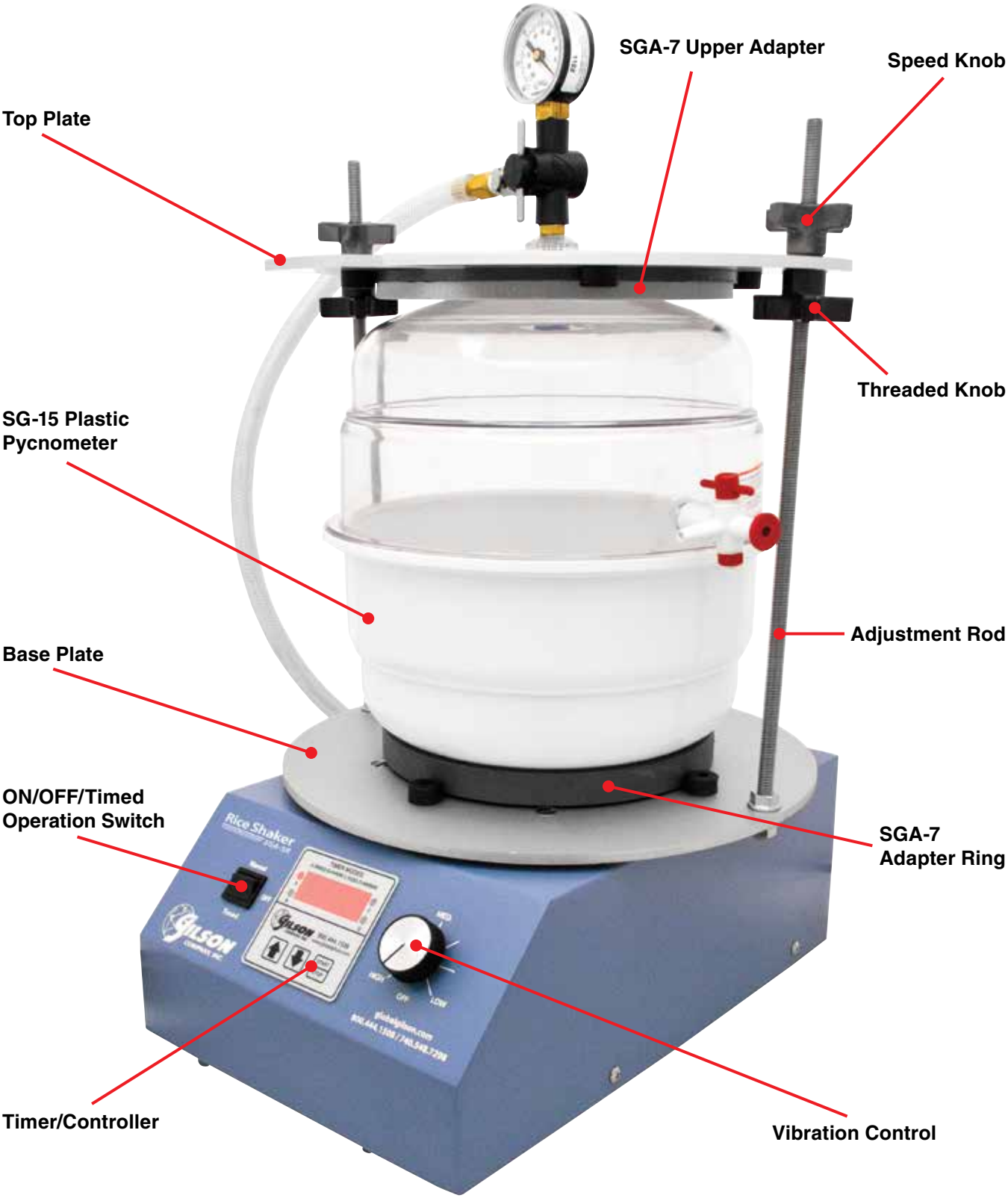

Figure 3

Using SG-15 Plastic Pycnometer

5.4 Figure 4: Timer Face

Figure 4

Gilson Interval Countdown Timer

6.0 ADDITIONAL INFORMATION:

RICE SHAKER
ASTM D 2041; AASHTO T 209

- **Consistent, repeatable agitation for Asphalt Rice Test and other specific gravity determinations.**
- **Variable vibration control allows for setting optimum agitation.**
- **Automatic operation minimizes operator error and frees technician from hand agitation.**

Gilson's full-feature Rice Shaker is designed for consistent shaking of Asphalt Rice Test vacuum pycnometers while freeing the lab technician. It is a useful deaeration device for specific gravity tests of fine aggregates (ASTM C 128) and soils (ASTM D 854), for sample preconditioning per ASTM D 4867 and AASHTO T 283. Built-in 0—99 min., 59 sec. digital timer has 0.25 second accuracy, vibration speed control, and a three position switch for manual or timed operation—all front panel mounted for easy use. Speed control allows setting of agitation to avoid stripping of asphalt. The SGA-5R comes with fitted top and bottom plates for exact fit with SG-16A or SG-17 pycnometers. Order SGA-7 Adapter Set for use with SG-15 Pycnometer. Use SGA-8 Adapter Set with GW-75 or GW-76 filter Flasks, SG-500 Volumetric Flasks, SG-24 LeChatelier Flask, or SG-2 mason jar Pycnometer. Inquire for fitting other containers. Special SGA-5RT has modified vibration characteristics to meet the requirements of Texas DOT.

Special "speed knobs" quickly secure the pycnometer. After a few loosening turns, they tilt and slide for fast removal. The steel case has rubber feet; no mounting is required. Overall Dimensions: 13x14x19in (330x356x483mm), WxDxH. Est. Ship Wt.: 20lb (9kg).

RICE SHAKER	
Description	**Model**
Rice Shaker, 115V, 50/60Hz	SGA-5R
Rice Shaker, Texas Model	SGA-5RT
Accessories	
Adapter Sets for SG-15	SGA-7
Adapter Sets for GW-75 or GW-76	SGA-8