OPERATING MANUAL

Gilson Spinning Riffler
SP-230

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1.0 INTRODUCTION:

1.1 Spin Riffling:

- Proven to be the most accurate sampling method available for powders and granular material.
- Eliminates operator error and bias associated with other types of sample dividing.

1.2 Unique Features:

- Up to sixteen accurate divisions for 1L samples to 1/8in (3.2mm) topsize.
- Constructed with a custom-designed touch screen controller/display, minimal moving parts and an outer case designed for easy clean-up and maintenance.
- Rotation speed and vibration level are precisely controlled from a touch screen display.
- Operation is quieter and safer than other spinning rifflers thanks to an isolated motor and cogged-belt drive system and enclosed sample vessel container.
- “Sleep” mode conserves power when the unit is not operating.

1.3 How It Works:

The SP-230 Spinning Riffler’s stainless steel vibratory feeder provides a constant flow of material from the 1L stainless steel hopper. A durable urethane-based resin dividing head sharply separates flowing material into sixteen glass vessels. Standard test tubes with a total volume of 60ml each (50ml recommended volume) are included, or vials with screw-top caps with various volumes are available. The vials enable freshly divided samples to be capped and stored immediately with minimal handling and little chance for outside contamination. Sample vessels are contained within the polycarbonate sample drum during operation. This minimizes exposure of moving parts and contains spillage within the drum. Rotation speed is continuously variable between 0 and 20rpm and the vibration amplitude of the feeder is variable as well. All adjustments are controlled and displayed on the touch screen.

The drive system consists of a unique, digitally controlled stepper motor turning a toothed belt and cogged drive wheel. Speed control is very accurate with no slippage under normal loads. If an accidental overload or blockage occurs, the system will slip to prevent damage to the motor. A separate motor operates each system, one for the vibratory feeder and one for the digitally controlled amplitude. A “sleep” mode conserves power when the unit is not operating.

2.0 UNPACKING & SET-UP:

2.1 Unpacking:

After inspecting the shipment for external damage, immediately unpack the Spinning Riffler and inspect for concealed shipping damage. Report damage immediately to the shipping company. Retain all shipping records and packing materials until proper operation is confirmed.

The Spinning Riffler unit includes a sixteen-port Dividing Head, a set of sixteen Standard Test Tubes with O-Rings, a Sample Drum to contain the sample vessels, and a Holder Plate for positioning the vessels in the drum.

Two types of sample vessels can be used with the Spinning Riffler. Test tubes are standard tubes with open tops and are included with the unit. Vials of different sizes with threaded tops are optionally available to facilitate handling and storage of samples.

2.2 Set-Up:

- The main power switch is in the back of the unit and power is supplied through a standard IEC input receptacle. Insure the power switch is "OFF" and connect the power cord to the IEC input.

> **NOTE:** The Spinning Riffler automatically adjusts to any AC power supply from 85—264V and between 47—63Hz. The power cord supplied is for North American applications.

- Place the Spinning Riffler on a stable, level surface at a convenient working height.
- For Test Tubes, fit the orange O-Rings over the test tubes until they sit below the lip (see Figure 1).

Figure 1

- For threaded Vials, first screw on the threaded caps with openings, then fit the black O-Rings over the tops of the caps so that they sit just below the caps (see Figure 2A). **DO NOT** put the O-Rings on before the caps (see Figure 2B). The solid caps with no openings are used for sealing and storing the samples.

Figure 2A

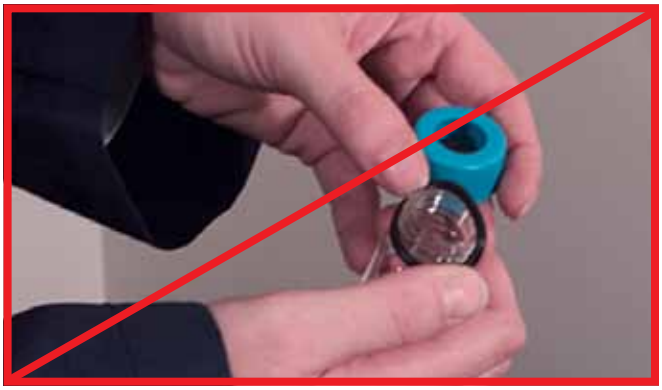

Figure 2B

- Insert the sample vessels into the stainless steel Holder Plate (see Figure 3).

Figure 3

- Place the Holder Plate with sample vessels into the sample drum. There are four shallow (8mm) and four deep (19mm) notches in the walls of the sample drum. For Test Tubes, the four tabs of the holder plate are placed into the shallow notches (see Figure 4). For Vials, the tabs are placed in the deeper notches (see Figure 5).

Figure 4

Figure 5

- Place the Dividing Head on the Sample Drum, aligning the two pins on the Holder Plate with the two small holes in the bottom of the Dividing Head (see Figure 6).

Figure 6

- Place the Sample Drum Assembly onto the riffler unit by gently tilting the drum under the trough and aligning the bottom of the drum with the hex drive (see Figures 7A, 7B and 7C).

WARNING!

To avoid injury, the motor must be **OFF** while placing or removing the sample drum.

Figure 7A

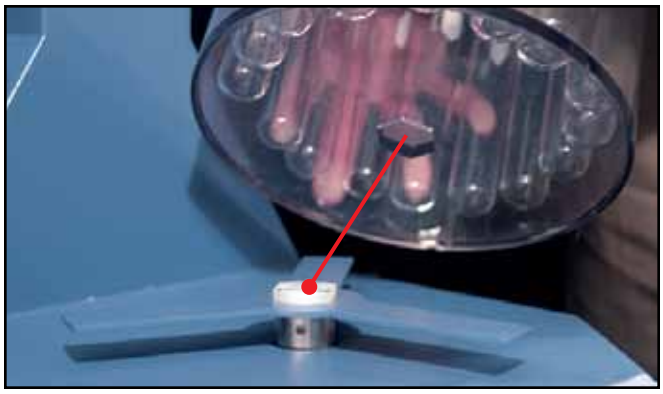

Figure 7B

Figure 7C

- Insert the Hopper into the Hopper Holder as far down as possible and tighten (see Figure 8).

Figure 8

- The handle position of the Hopper Holder is adjustable to avoid contact with the trough. To adjust, pull out on the handle, turn to the desired rest position and release.

- The hinge on the Hopper Holder allows the Hopper to swing back, permitting easy cleaning and maintenance.

Supply voltage is automatically sensed, allowing any AC input from 85—264V and 47—63Hz single phase frequencies with current of 2.5 amps. A power cord is supplied for use with standard North American outlet configurations. Power cords for other configurations are readily available locally. The Spinning Riffler weighs 25lb (11kg) and the dimensions are 13x20.5x23in (330x521x584mm), WxDxH.

3.0 CONTROL & DISPLAY FUNCTIONS:

All operational functions are controlled and adjusted using the touch screen display.

3.1 MAIN Screen:

The MAIN Screen is displayed on power-up. This screen displays the SETUP, INFORMATION, and START buttons (see Figure 9).

Figure 9

3.2 SETUP Screen:

The SETUP button controls and adjusts the rotational speed (RPM) of the sample drum. Adjust the RPM with the PLUS (+) and MINUS (-) buttons (see Figure 10). Once the speed is set, press the MAIN button to return to the MAIN screen. The speed setting will be retained until the main power is shut off.

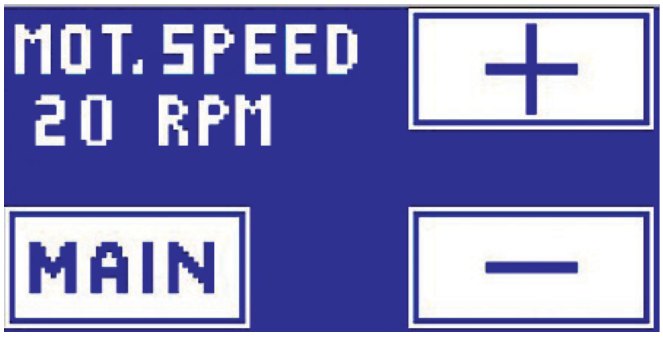

Figure 10

3.3 START Screen:

The START button displays the RUN screen (see Figure 11) and starts the unit. The RUN screen is displayed during operation. Press the PLUS (+) or MINUS (-) buttons to adjust vibration of the feeder trough and hopper. Press the STOP button to stop operation and to return to the MAIN screen. The vibration setting will be retained until power is shut off.

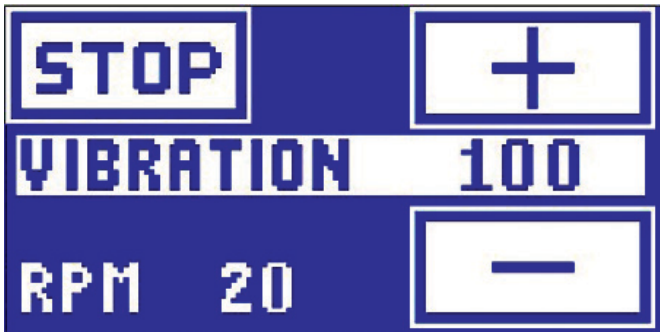

Figure 11

3.4 INFO Screen:

The INFO screen displays Gilson Company's phone number and website address (see Figure 12). Press the MORE key for Gilson Company's address and press the MAIN key to return to the MAIN screen (see Figure 13).

Figure 12

Figure 13

4.0 OPERATING INSTRUCTIONS:

4.1 Establishing Sequences:

For each type of material, a sequence should be established that most effectively divides the particular material type. For example, some materials with high densities or sensitivities to static electricity and moisture may need a different vibration amplitude or rotation speed than materials that have low densities and low sensitivity to static electricity or moisture. This assures the highest degree of accuracy and repeatability from the Spinning Riffler.

4.2 Dividing a Sample:

1. Prepare the material and determine the amount of divisions needed. If fewer than sixteen divisions are required, some sample vessels may simply be omitted from the Sample Drum Assembly. The Sample Drum will collect any material that falls into empty slots.

2. Adjust the Hopper so the opening is seated against the Trough.

3. Prepare the Sample Drum Assembly as described in Section 2.2 and add the sample to the Hopper.

4. Adjust the Hopper for a very narrow gap between the Hopper and the Trough.

5. Turn the unit on and set the rotational speed of the Sample Drum through the SETUP screen.

6. Set the vibration of the feeder through the START screen. Once the vibration is on, slowly increase the gap between the Hopper and the Trough until the desired flow of the material is met. The feeder vibration can be adjusted while in operation. Press the STOP button when the division is complete.

7. When the Hopper is completely empty, the hinged bracket allows it to swing back out of the way for easy cleaning of the Trough.

5.0 MAINTENANCE:

The exterior of the Spinning Riffler may be wiped off with a damp cloth. This unit is **NOT** rated for wash down or exposure to high level of moisture. Glass sample vessels can be washed with solvents if necessary. **DO NOT** wash polycarbonate sample drum with solvents due to possible degradation and breakage.

Complex diagnosis and repairs should be performed by the factory. Contact Gilson's technical staff to make arrangements. See Section 6.0 for replacement parts.

6.0 ACCESSORIES & REPLACEMENT PARTS:

GILSON SPINNING RIFFLER	
Description	**Model**
Gilson Spinning Riffler, 85-264V, 47-63Hz	SP-230
Accessories	
Standard Test Tube, qty. 12	SPA-260
60ml, Clear Sample Vials with Screw Caps, qty. 12	SPA-261
40ml, Clear Sample Vials with Screw Caps, qty. 12	SPA-267
40ml, Amber Sample Vials with Screw Caps, qty. 12	SPA-268
20ml, Clear Sample Vials with Screw Caps, qty. 12	SPA-265
20ml, Amber Sample Vials with Screw Caps, qty. 12	SPA-266
Sample Vessel Holder Plate	SPA-262
Sample Drum	SPA-263
Dividing Head	SPA-264

SPA-262

SPA-260

SPA-261

SPA-267

SPA-268

SPA-264