GILSON COMPANY, INC.

OPERATING MANUAL

Gilson Tapping Sieve Shaker

SS-8R, SS-12R

SS-8R

Rev: 6/2022

PHONE: 800-444-1508
740-548-7298

P.O. Box 200, Lewis Center, Ohio 43035-0200
Email: customerservice@gilsonco.com **Product Web Page:** globalgilson.com

FAX: 800-255-5314
740-548-5314

Gilson Tapping Sieve Shaker

SS-8R & SS-12R Operating Manual

CONTENTS

SAFETY INSTRUCTIONS

Please read these instructions thoroughly to familiarize yourself with the operation of the SS-8R or SS-12R before attempting to run it.

The buyer is responsible for ensuring that users are properly trained, that they are aware of all of the information and instructions in this document, and that they are aware of the potential risks of operating the apparatus. The manufacturer will not be responsible for any damage to people and/or property caused by noncompliance with any instructions in this manual.

NOTE: These instructions are intended only as a guide for general operation of this device and should not be used in place of test protocol. Refer to current ATSM standards for complete and detailed test procedures.

Always ensure the motor and other electrical components are properly configured for your intended use and available power source. The standard Gilson Tapping Sieve Shaker comes with a 1/3hp motor wired for 115V,60Hz. Sieve Shakers can also be ordered with special wirings: 230V,60Hz; 110V,60Hz; and 220V,50Hz. Motors are NOT explosion-proof.

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

Always check electrical wiring for loose connections and for pinched or frayed wiring.

Always disconnect and lock out power supply when the machine is not in use, especially before performing maintenance and repairs.

⚠ **WARNING: This machine operates on an electric current. Improper operation could result in electric shock, electrocution, or an explosion! Motors are NOT explosion-proof!**

⚠ **WARNING:** Do not wear loose clothing that might be caught in the machine and keep all body parts away from moving parts of the machine. ALWAYS wear safety glasses, hearing protection, and other personal protective equipment while operating, maintaining, or repairing this machine.

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

⚠ **WARNING:** DO NOT perform tasks on the machine other than those for which it was designed. Only use the machine in the manner for which it was intended, as described in this instruction manual.

1.0 INTRODUCTION

This manual applies to units with serial number SS-1812 or higher. For older units, request manual for your serial number; or convert to current design by ordering parts numbered 4P through 8P from this manual.

2.0 UNPACKING & SETUP

2.1 Inspection of Shipment

1. The SS-8R and SS-12R weigh approximately 135lb and 162lb, respectively. Use appropriate equipment and manpower to uncrate the Sieve Shaker. Wear safety glasses and work gloves.
2. In most instances, the simplest method of uncrating is to cut the carton away from the machine. Leave the carton intact as much as possible so that it can be used to return the machine if necessary.
3. Lift machine from skids and carton, using appropriate equipment to lift the machine onto a substantial, solid work surface.
4. Lay the Sieve Shaker on its side to install the leveling legs. Turn the legs into the threaded holes in the bottom corners of the outer case. Turn the legs all the way in at this point. Set the Sieve Shaker upright. Level the machine by adjusting the legs until the machine is level and rigid.

   Further leveling will likely be required once the Sieve Shaker is fully assembled and ready for operation. Re-level when you move the Sieve Shaker, when the material in the test sieves does not remain evenly distributed, or when the machine becomes unstable in operation.
5. Mount threaded clamp rods (2R) by placing jam nut ends into the tapped holes in the platform until threads are flush with the platform bottom. Tighten jam nut to platform to hold clamp rods.
6. Remove the round spacers from the knobs by slightly pushing on push buttons and removing the spacers. Holding both push buttons, install lid assembly by placing the knobs upon the clamp rods. Once the lid assembly is in desired location, release the push buttons and the assembly will remain in that position.
7. Place the acorn nuts (1) on the top of the clamp rods (2R) and tighten until secure.
8. Place the Sieve Shaker on a substantial, solid work surface sufficient to provide support for this size machine.
9. Re-level prior to operating.

3.0 OPERATING INSTRUCTIONS

Please read understand all safety and operating instructions for the Gilson Tapping Sieve Shaker before putting it into service.

The Gilson Tapping Sieve Shaker efficiently separates most free-flowing materials with particle sizes from No.4 to No.635 (4.75mm to 20µm). Performance on extended size ranges can be determined by experimentation. The test specimen should be large enough to be representative, without overloading any individual test sieve. Overloading may result in incomplete separation or damage to the test sieve cloth. Maximum loading for individual test sieves No.4 and smaller should be about 200g for 8in test sieves and about 450g for 12in test sieves. Test sieves larger than No.4 should be limited to about one particle of material for each available opening.

Gilson's innovation EZ-Clamp System quickly secures sieve stacks of varying heights. This system with integral test sieve cover greatly enhances efficiency when testing multiple samples or using more than one sieve stack.

NOTE: Before conducting a test, confirm that the Sieve Shaker has been setup and leveled properly in accordance with step 4 of Section 2.0. Readjust if necessary.

3.1 Sieve Stack & EZ-Clamp Assembly

- Push the buttons on the knobs. The EZ-Clamp assembly will slide freely up or down the clamping rods. When the buttons are released, the assembly will remain in that position.
- Position the assembly slightly higher than the height of the sieve stack.
- Place the sieve stack on the platform. Push the buttons on the knobs and slide the EZ-Clamp assembly down firmly against the top test sieve.
- Tighten both knobs to securely clamp the sieve stack in place.
- When the test is complete, unscrew the knobs enough to release tension on the stack, then push the buttons and raise the assembly to the desired height to remove the test sieves.

3.2 Timer Setup & Operation

This unit is equipped with an easy-to-operate Gilson interval countdown 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 100–265VAC, 50/60Hz, with up to 20 amps Inductive or Resistive current.

NOTE: The main device controlled by the timer may be restricted to operating on a more limited electrical supply range. Check the device carefully to ensure compatibility with your electrical supply.

Current timer mode is indicated by the four red LEDs on the timer face:

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

(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 arrow to change modes. Press “START”/“STOP” to accept new mode.

To set the run time, press either the up or down arrow. 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 “START”/”STOP”. Once the last digit on the left is entered, the timer is ready to start.

Press “START”/“STOP” to initiate the current run program. Once running, pressing “START”/“STOP” 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.

Perform your test. Time required to complete a test will vary depending upon the physical characteristics of the test material. Most separations will be complete in ten minutes or less. Refer to your test specifications, and be consistent.

Disconnect and lock out power to the Sieve Shaker when it is not in use.

NOTE: The SS-8R and SS-12R Sieve Shakers are equipped with a tapping mechanism which makes a loud noise. If the noise is unacceptable, consider using the SSA-805R Sound Enclosure.

SS-8R and SS-12R are counterbalanced to permit free-standing operation with most common test sieve loadings. With very tall or very short sieve stacks, the units may be unstable and move around during operation. Normally this condition occurs only with sieve stacks exceeding about 20in (508mm) in height. This is equivalent to using more than eight test sieves and pan of 2.125in stacking height. If you need to use tall sieve stacks, and your Sieve Shaker moves around, try re-leveling. If stability is a problem with short sieve stacks, add extra non-functional test sieves below an extended rim pan.

NOTE: Bolting the machine down is not a substitute for leveling. Bolting the shaker down will cause forces from the unbalanced sieve stack to damage the drive mechanism. This damage is not covered by warranty.

When using 8in test sieves on the SS-12R, always use the platform adapter to compensate for the difference in test sieve weights. This adapter can be used with either a regular or an extended rim pan. When the adapter is positioned with larger ID side up, you can use either pan. Invert the adapter for a tighter fit if using only an extended rim pan. Secure the ring to the test sieve platform with the two cap screws provided.

4.0 MAINTENANCE

Before performing maintenance or repairs on the Sieve Shaker, **ALWAYS** read and understand the safety, operating, and maintenance instructions.

Please provide the serial number and model number of the unit when ordering replacement parts.

4.1 Routine Annual Maintenance

- Apply of a few drops of oil to the motor end bearings.
- Inspect the drive belt for wear, tension, and alignment.

  A worn, loose, tight, or misaligned drive belt can affect operation of the Sieve Shaker. The belt should be snug: Neither too tight nor too loose. A snug fit assures longer life, less bearing wear, and quieter operation than a belt which is too tight. A loose drive belt may cause the unit to run too slowly or in spurts. The drive belt should deflect 1/64 of the value of the span of the pulleys. The pulleys should be aligned to avoid excessive edge wear.

  Never force or pry the belt over the pulley flanges. Use steps 1–3 in Section 4.2.
- Every two years or whenever disassembled, grease the thrust bearing (13) and the face of the cam (31). Perform steps 1–7 in Section 4.2 to access these parts.

4.2 Disassembly

1. Disconnect and lock out the power supply.
2. Locate the four cover mounting screws, and remove them. Remove right (timer side) section of the cover.
3. Inside the left cover section, locate two more mounting screws on the cover flanges. Remove these screws and the left section of the cover.
4. Loosen the four motor mounting bolts. Motor will slide toward the left side of the machine, loosening tension on the belt so that you can remove it.
5. Remove the four mounting cap screws (16) from the mounting plate (17), and lift the entire unit out of its case.

6. Unhook the two hammer springs (23).
7. Remove the connecting link nuts (41) and links (40).
8. Remove the hammer post cap screws (25), actuator link screws (36), bumper block cap screws (20), and lock ring (19). Now you can lift the sieve platform with main shaft out of its center housing (15).
9. If you remove the cam shaft hangers (27) for any reason, reassemble exactly as removed. The roller clutch block (33) and one cam shaft hanger (27) contain overrunning clutches which must be installed to allow correct rotation of the cam shaft (29), or serious damage will result.
10. Main bearings have permanent lubrication and are sealed inside the main housing (15). This main housing with bearings and hub should not be disassembled in the field; replace them as a unit if necessary.

5.0 TROUBLESHOOTING

- ***Unit Fails to Operate:***

  Check motor, electrical connections, and timer. Replace or reconnect as necessary. Check drive belt tension; replace belt if worn.

- ***Unit Runs, but Fails to Give Impact Tapping:***

  Remove covers, drive belt, and mounting cap screws (16). Replace or reconnect hammer springs (23) as required.

- ***Unit Operates but is Excessively Noisy:***

  Disassemble through step 4 in Section 4.2. Check resilient faces on bumper block (20) and replace block if necessary.

- ***Unit is Unstable; Shakes or Walks Too Much:***

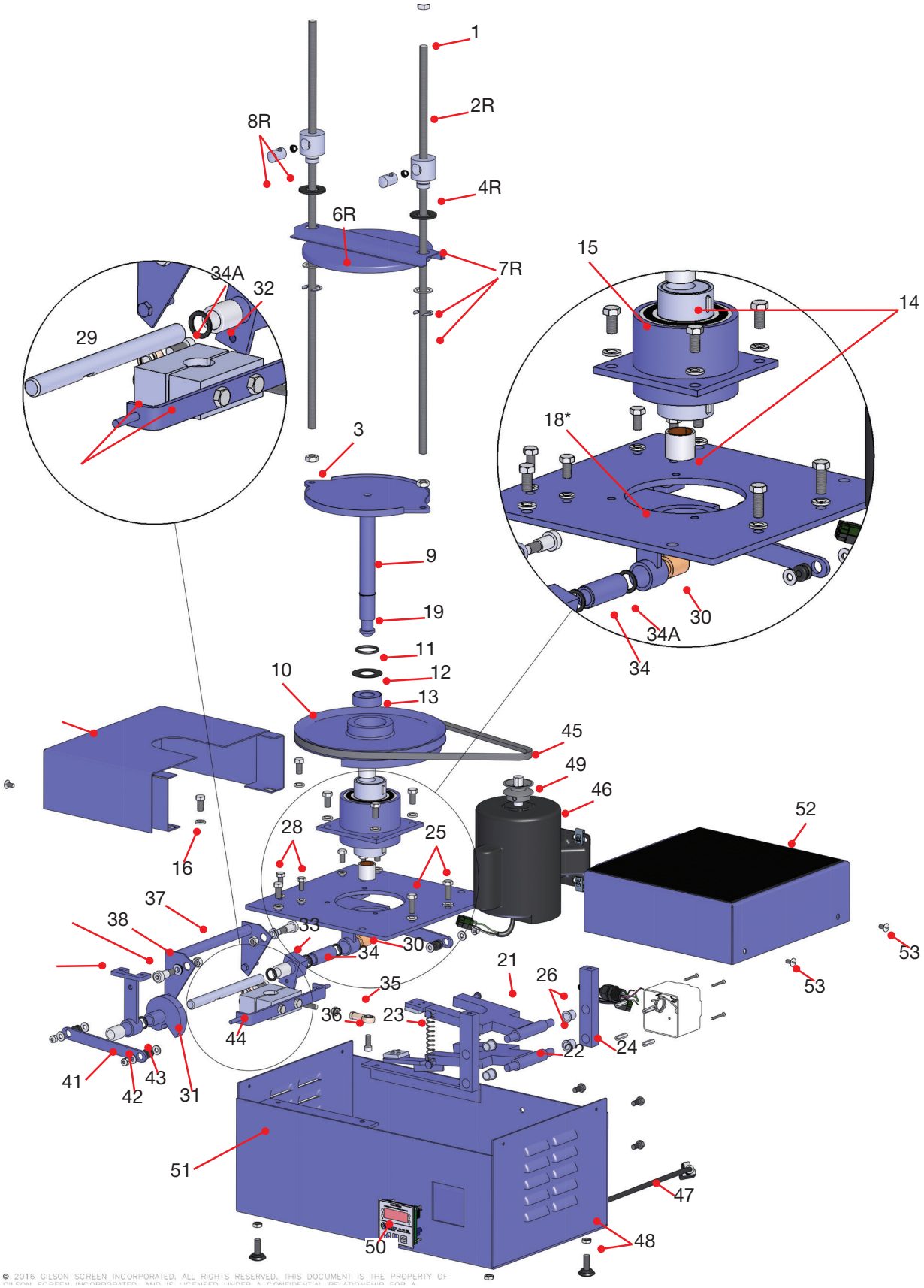
  a. Readjust level using the leveling legs, and lock with lock nuts.
  b. For SS-12R, be sure that weighted platform adapter is used when using 8in test sieves.
  c. Loosen and re-clamp the sieve stack.
  d. Check sieve stack height. If over 20in, see Section 3.0.

6.0 TECHNICAL SUPPORT

Contact Gilson Technical Support for assistance with applications, operation, maintenance, or repair.

- **Telephone:** 800-444-1508
- **Email:** techsupport@gilsonco.com
- **Web:** globalgilson.com

7.0 PARTS DIAGRAM



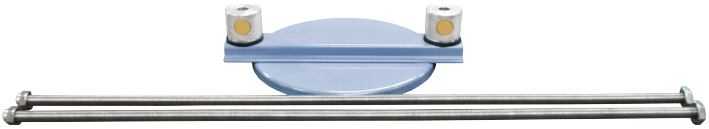
SS-8R & SS-12R

8.0 REPLACEMENT PARTS

Item No.	Description	No. Req.	Part Number
EZ-CLAMP SIEVE CLAMPING PARTS			
1	Clamp Rod Acorn Nut	2	RPSS-8RKEY1
2	EZ-Clamp Rod	2	RPSS-12RKEY2R
3	Clamp Rod Nut	2	RPSS-12RKEY3
4	EZ-Clamp Knob	2	RPSS-8RKEY4R
6	EZ-Clamp Compression Test Sieve Cover for SS-8R	1	RPSS-8RKEY6R
6	EZ-Clamp Compression Test Sieve Cover for SS-12R	1	RPSS-12RKEY6R
7	EZ-Clamp Washers and Retaining Ring	2	RPSS-8RKEY7R
8	EZ-Clamp Push Button and Spring	2	RPSS-8RKEY8R
OLD STYLE CLAMPING PARTS, SN 5499 AND LOWER			
N/A	Clamp Center Knob with Screw and Washers	1	RPSS-12RKEY5P
N/A	Clamp End Knob with Washers and Loose Cap	2	RPSS-12RKEY7P
N/A	Clamp Bar Tube For SS-8R	1	RPSS-8RKEY4P
N/A	Clamp Bar Tube for SS-12R	1	RPSS-12RKEY4P
N/A	Clamp Bar End Block	2	RPSS-12RKEY8P
N/A	Clamp Rod	2	RPSS-12RKEY2
N/A	Compression Test Sieve Cover for SS-8R	1	RPSS-8RKEY6P
N/A	Compression Test Sieve Cover for SS-12R	1	RPSS-12RKEY6P
EZ-CLAMP UPGRADE KITS			
	EZ-Clamp Upgrade for SS-8R	-	SSA-807
	EZ-Clamp Upgrade for SS-12R	-	SSA-809
MAIN SHAFT PARTS			
9	Sieve Platform with Main Shaft for SS-8R	1	RPSS-8RKEY9
9	Sieve Platform with Main Shaft for SS-12R	1	RPSS-12RKEY9
10	Drive Pulley, Counterweight, Key, Setscrew for SS-8R	1	RPSS-8RKEY10
10	Drive pulley, Counterweight, Key, Setscrew for SS-12R	1	RPSS-12RKEY10
11	Neoprene Sponge Washer	1	RPSS-8RKEY11
12	Anti-friction Washer	1	RPSS-8RKEY12
13	Thrust Bearing	1	RPSS-12RKEY13
14	Nonmetallic Bushings	2	RPSS-12RKEY14
15	Main Housing, Bearing, and Hub	1	RPSS-12RKEY15
16	Mounting Cap Screw and Lock Washer	8	RPSS-12RKEY16
17	Mounting Plate	1	RPSS-8RKEY17
18	Lower Counterweight, Key, Set-screws for SS-8R	1	RPSS-8RKEY18
18	Lower Counterweight, Key, Set-screws for SS-12R	1	RPSS-12RKEY18
19	Lock Ring	1	RPSS-8RKEY19
20	Bumper Block, Cap Screws (2), Lock Washers (2)	1	RPSS-12RKEY20

Item No.	Description	No. Req.	Part Number
HAMMER ASSEMBLY PARTS			
21	Upper Hammer	1	RPSS-12RKEY21
22	Lower Hammer	1	RPSS-12RKEY22
23	Hammer Spring	2	RPSS-12RKEY23
24	Hammer Post	2	RPSS-12RKEY24
25	Hammer Post Cap Screw and Washer	2	RPSS-12RKEY25
26	Hammer Post Nonmetallic Bushing	4	RPSS-12RKEY26
CAM SHAFT ASSEMBLY PARTS			
27	Cam Shaft Hanger	2	RPSS-8RKEY27
28	Hanger Cap Screw and Lock Washer	4	RPSS-12RKEY28
29	Cam Shaft	1	RPSS-8RKEY29
30	Cam Shaft Hanger Bushing	1	RPSS-12RKEY30
31	Cam	1	RPSS-12RKEY31
32	Roller Clutch	2	RPSS-12RKEY32
33	Roller Clutch Block	1	RPSS-12RKEY33
34	Cam Shaft Spacer	1	RPSS-12RKEY34
34A	Cam Shaft Nylon Washer	4	RPSS-12RKEY34A
35	Actuator Link with Rod Ends (2) and Nuts (2)	1	RPSS-12RKEY35
36	Actuator Link Screw	2	RPSS-12RKEY36
37	Stabilizer Rocker Bracket	1	RPSS-8RKEY37
38	Stabilizer Rocker Bracket Nylon Bushing	2	RPSS-12RKEY38
39	Stabilizer Rocker Bracket Bolt and Nut	2	RPSS-12RKEY39
40	Connecting Link	2	RPSS-12RKEY40
41	Connecting Link Nut	4	RPSS-12RKEY41
42	Connecting Link Washer	4	RPSS-8RKEY42
43	Connecting Link Rubber Bushing	4	RPSS-12RKEY43
44	Stabilizer Arm	1	RPSS-12RKEY44
OUTER CASE PARTS			
48	Leveling Leg, Lock Nut	4	RPSS-12ROCP6
51	Outer Case	1	RPSS-12R-OCP-1
52	Left and Right Case Cover for SS-8R	1	RPSS-8ROCP2
52	Left and Right Case Cover for SS-12R	1	RPSS-12ROCP3
53	Cover Mount Screw	4	RPSS-CMS
ELECTRIC & DRIVING PARTS			
46	Motor 115V,60Hz	1	RPSS-8REDP1
46	Motor 230V,50Hz	1	RPSS-MOTOR 230/50
47	Motor Cord, Grommet, and Plug (Specify Serial Number)	1	RPSS-12R-M CORD
N/A	Motor Mounting Bolt, Flat Washer, Lock Washer	1	RPSS-MMBW
49	Motor Pulley 60Hz	1	RPSS-PULLEY/60HZ
49	Motor Pulley 50Hz	1	RPSS-PULLEY/50HZ
45	Drive Belt	1	RPSS-12REDP7
50	Timer (Serial Numbers 3315 and Newer)	1	RP-Timer-ART

9.0 ACCESSORIES

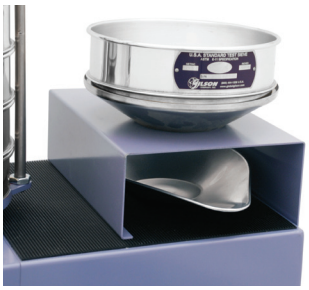


SSA-807

SSA-809 shown on SS-12R with Test Sieves

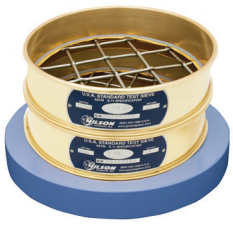
SSA-805R shown with SS-12R & Test Sieves

ACCESSORIES	
Description	**Model**
EZ-Clamp Upgrade Kit replaces the original clamping assemblies on older Gilson Tapping Sieve Shakers. Knurled knobs with push-button release slide freely up and down the clamp rods for smooth, easy clamping. Once in position, a quick twist tightly secures the sieve stack. When the test is complete, push the EZ-Clamp button and raise just enough to remove the stack. Upon release of the button, the clamps stay in place, ready for the next test. EZ-Clamp kits include free-sliding push-button knobs, an integral sieve cover, and new clamp rods. EZ-Clamp Upgrade Kit for SS-8R EZ-Clamp Upgrade Kit for SS-12R	 SSA-807 SSA-809
Gilson Sound Enclosure controls noise and dust associated with SS-8R and SS-12R Sieve Shakers and other lab equipment. Sturdy painted steel case with full-width hinged doors is lined with 1in (25.4mm) of sound-attenuating foam. **Product Dimensions:** 31x19x46in (787x482x1,168mm), WxDxH.	SSA-805R
Clean-N-Stor accessories are handy, time-saving devices for emptying, cleaning, and weighing functions associated with sieving operations. Inverting an 8in or 200mm test sieve on the stainless steel funnel allows quick emptying and cleaning of contents into a receiving scoop or pan. A sieve stack can also be stored on top of the funnel. A scoop and soft-bristle cleaning brush are included with all models. The SSA-801 attaches to the top of the SS-8R case. SSA-802 is a stand-alone model that can be positioned directly over an electronic balance, so sieve fractions can be weighed as the test sieve is being cleaned. OBA-15R is an adjustable-height Clean-N-Stor version designed to fit over taller balances. Clean-N-Stor Attachment for SS-8R Stand-Alone Clean-N-Stor Adjustable-Height Clean-N-Stor	 SSA-801 SSA-802 OBA-15R
Platform Adapters permit smaller diameter test sieves to be used in SS-8R and SS-12R Gilson Tapping Sieve Shakers. Each adapter is designed to compensate for weight differences as well as frame diameter. SSA-810 and SSA-811 fit either sieve shaker, and must be used in conjunction with the included adapter when using with the SS-12R. The SSA-812 for 10in (254mm) test sieves is for use with the SS-12R only. Platform Adapter for 3in (76.2mm) Test Sieves Platform Adapter for 6in (152.4mm) Test Sieves Platform Adapter for 10in (254mm) Test Sieves	 SSA-810 SSA-811 SSA-812



SSA-801 shown with Test Sieves on SS-8R

SSA-802 shown with Test Sieve



SSA-811 shown with Test Sieves