



Gilson Silent Sifter

SS-21 & SS-22



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Safety Instructions

WARNING!

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

1. **ALWAYS** ensure the motor and other electrical components are properly configured.
2. **ALWAYS** check electrical wiring for loose connections and for pinched or frayed wiring.
3. **ALWAYS** use the factory-installed three-pronged plug. Make sure the cord is located where no one will trip or get tangled in it.
4. **ALWAYS** disconnect and lock out power supply before performing maintenance and repairs.

WARNING!

- **DO NOT** operate the machine without having all covers and cabinet in place.
- If excessive noise, vibration or machine movement occurs stop the machine **immediately**.
- The electric motor on this machine has internal thermal protection.
 - If the motor shuts off from overload, the machine may restart by itself after cooling off.
- When the unit is not in operation **ALWAYS** unplug or disconnect from the power source.
- Keep all parts of your body away from moving parts of the machine while operating.
- **ALWAYS** wear safety glasses and recommended hearing protection when operating, maintaining, or repairing this machine.

Introduction:

Gilson has revamped the classic rotary sifter design and added new innovations. This sieving method preferred by many DOT's is now available with Gilson guaranteed quality and reliability.

Gilson's progressive design carries the best features of traditional rotary sifters and added upgrades that all reflect the time devoted to improved design and materials such as:

- Faster conversion between sieve sizes
- Easier set up
- Quieter operation

The completely enclosed design allows safe, dust-free operation. The cabinet is oriented at an angle, and the sieve stack is simply placed inside, resting against the rollers; causing no clamping to be required. The ergonomic knob allows easy rotation of the cabinet between the loading and testing positions. The digital countdown timer with large LED display precisely times operation.

Unpacking & Set-up:

Note: The Gilson Rotary Sifter weighs approximately 215lbs. Use appropriate equipment to uncrate and assemble the Sifter. Wear safety glasses and work gloves.

The Gilson Sifters come with the Steel Support Stand detached. The Sifter Cabinet must be installed on the Support Stand to operate properly. DO NOT attempt to operate the Sifter until properly assembled.

- See figure 1 for components.

1. Remove the two halves of the Steel Support Stand from the box.
 - Each half has a Frame Cross Rail partially bolted to the bottom rail.
2. Parallel to each other, set the Support Stand halves on a sturdy surface. Swing each cross rail out 90° and connect to the opposite bottom rail, securing with the bolts and nuts supplied.
 - Tighten all connections securely!
3. Remove the top half of the pivot post mounts from the Floor Stand and set aside.
4. Using two people, lift the Sifter Cabinet and carefully set it vertically on the frame so both Pivot Posts rest in the "saddle" of the pivot post mounts. Replace the top half of the mounts and secure the bolts.
5. Check that all connections are secure and that the Sifter rotates properly 45° back from vertical to its testing position against the Cabinet Rotation Stops.
6. **Carefully read and understand the rest of these instructions prior to operating the SS-21.**

Note: Gilson Sifters come with a 1/4hp motor wired for 115V/60Hz, and the SS-21F and SS-22F motors are wired for 230V/50Hz. Either must be connected to a properly grounded outlet of minimum 15amp capacity. The motor is NOT explosion-proof.

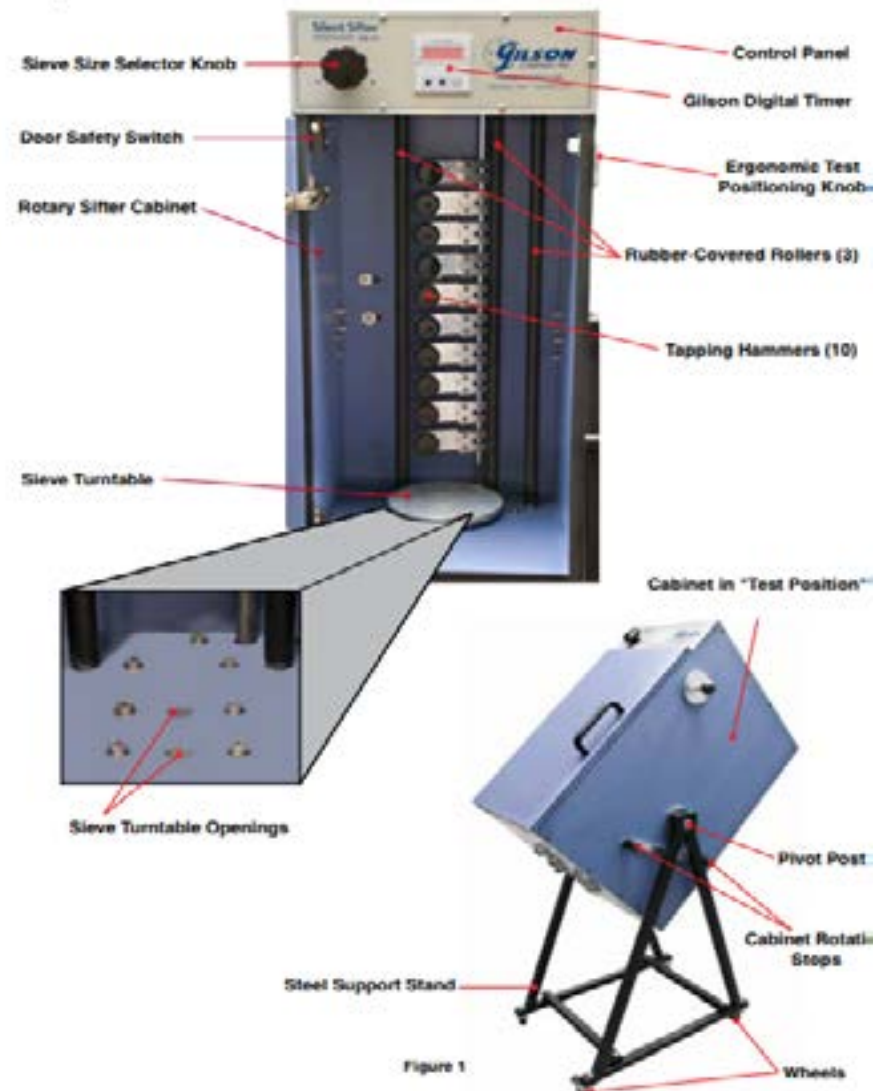
Operating Instructions:

The Gilson Silent Sifter separates most free-flowing materials with particle sizes ranging from No.4-No.200 (4.75mm - 75um). The test specimen should be large enough to be representative, without overloading any individual sieve. Maximum loading for individual sieves No.4 and finer should be no more than 200g for 8in sieve and 450g for 12in sieves. Sieves coarser than No.4 should be limited to about one particle of material for each available opening.

Note: Overloading on one or more sieves may result in incomplete separation, inaccurate results, or damage to the sieve cloth. Larger samples should test as two or more batches.

There are two openings 2in apart in the center of the cabinet bottom. Insert the post of the sieve turntable into the proper opening. The opening front is for 12in or 300mm diameter sieves, and the one toward the back is for 8in or 200mm diameter sieves. Set the sieve size selector knob to the appropriate "12" or "8".

Components:



Continued Operating Instructions:

The sieve stack must include the appropriate receiving pan and a sieve cover. Put together the sieve stack with the pan and finest sieves on the bottom, progressing to the coarsest sieves on top. Deposit the prepared test specimen onto the top sieve, and put the cover on.

Open the cabinet door all the way. Carefully place the entire sieve stack with the sample on the sieve turntable in the Silent Sifter, resting the stack against the rubber-covered rollers in the back of the cabinet. Use the ergonomic knob on the side of the case to tilt the cabinet against the cabinet rotation. Close the cabinet door completely.

- Taller operators may find it more convenient to load the sieve stack with the cabinet already tilted back.

Note: The cabinet must be tilted back against the rotation stops before starting a test cycle. If not tilted back before starting, this may result in incomplete separation or loss of the test result.

Timer Set-Up & Operation:

This unit is equipped with an easy-to-operate count-down timer. The timer has a large 0.6in LED display and four different modes. It is from 10-265 VAC, 50/60Hz, with up to 20 amps Inductive or Resistive current.

Note: The motor controlled by the timer is restricted to operating on a limited electrical supply range. Check carefully to insure compatibility with your electrical supply.

Four red LED time face:

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

H is for hours, M for minutes, and S for second.

Timer Set-Up & Operation Continued:

To adjust the timer mode, press and hold both UP and DOWN keys at the same time until the display shows the mode. Once the mode letters are displayed, press UP and DOWN to change modes. Press START/STOP to accept a new mode.

- The time required to complete a test will vary depending upon the test material. Most separations will be complete in ten minutes or less.

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

Insure the cabinet is rotated back to its operating angle of 45°, then press START/STOP to start the current run program. When the timer is running, press START/STOP to pause the timer with the current amount of time remaining on screen. When allowed to time-out, the timer will beep and display DONE. Pressing any key will reset the timer and prepare it for the next cycle. Setting and Mode values are automatically saved.

Note: Opening the cabinet door in the middle of a test will shut off all power to the timer and motor. Once the door is closed again the timer will b rest to the original programmed time interval.

Once the test cycle has been completed, open the cabinet door and remove the sieve stack for weight determinations.

Troubleshooting:

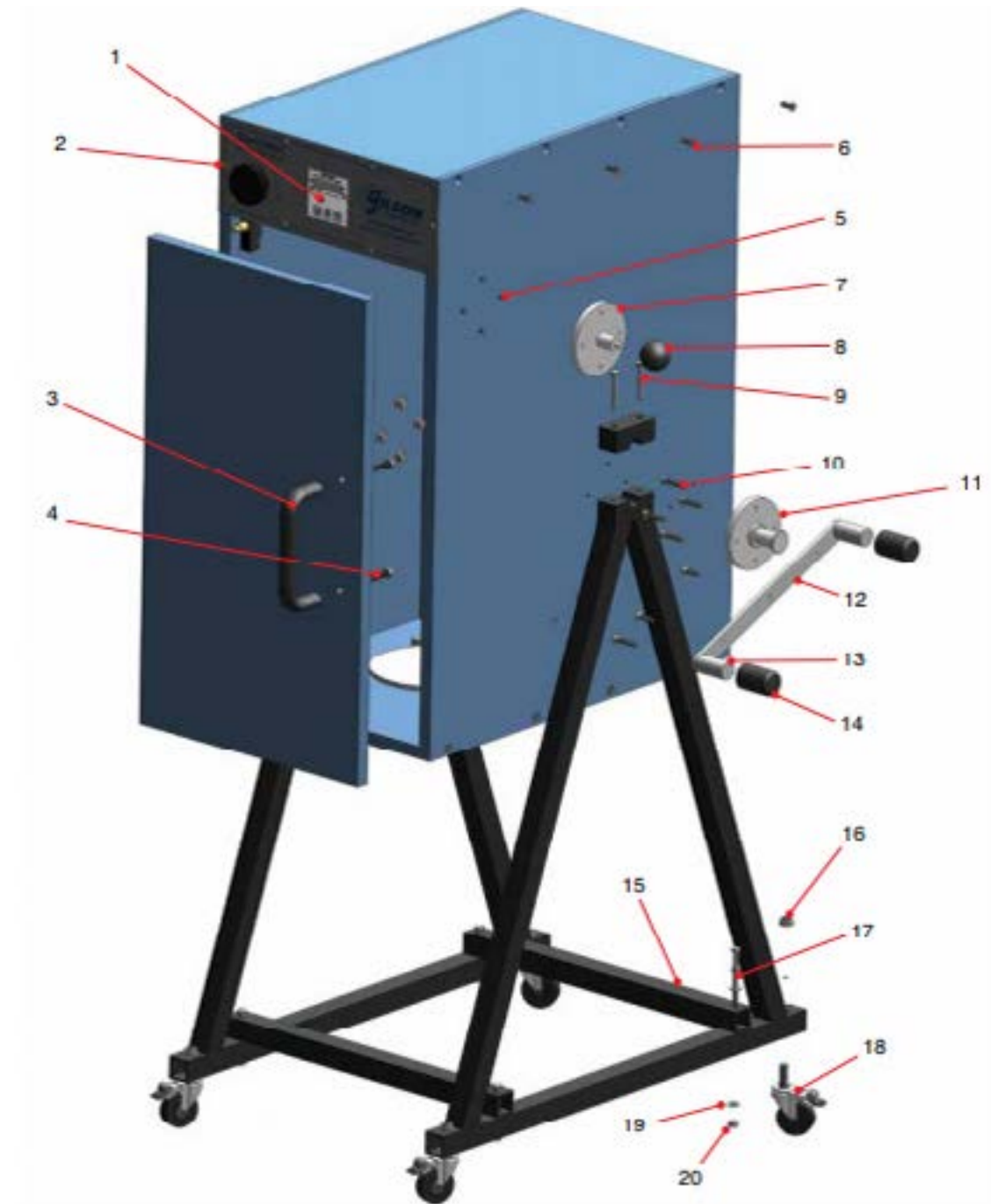
GILSON SILENT SIFTER & SILENT SIFTER® II TROUBLESHOOTING		
Symptoms	Possible Causes	Solutions
No power to display, machine will not operate.	Power disconnected.	Reconnect to power supply.
	Door not closed completely.	Close door completely.
	Faulty door safety switch.	Check connections and/or replace door safety switch.
Display is lit, but motor does not run.	Faulty connections/wiring.	Trace circuits with electrical meter.
	Faulty timer.	Diagnose timer output/connections.
	Faulty motor.	Replace motor.
Display is lit, motor runs, but machine does not operate properly.	Loose or broken drive belt.	Adjust tension or replace belt.
	Pulley(s) loose on shaft(s).	Tighten set screws on shaft bearings.
	Turntable installed in wrong opening.	Install turntable in correct opening.
	Sieve size selection knob not set correctly.	Set selection knob to correct size.
Excessive noise and vibration.	Sieve stack not seated properly.	Seat sieve stack properly.
	Turntable installed in wrong opening.	Install turntable in correct opening.
	Improperly adjusted or broken drive components.	Check belts, pulleys, bearings and rods. Adjust or replace as required.
Excessive loss of specimen fines during testing.	Sieve size selection knob not set correctly.	Set selection knob to correct size.
	Damaged or deformed sieve frames or flanges.	Replace damaged or deformed sieves.
Inconsistent or unexpected test results.	Sieves not seated properly.	Seat sieves properly.
	Damaged/out of specification sieve cloth.	Replace sieve.
	Blinded sieve mesh.	Clean sieve.
	Improper tapper operation.	Adjust or repair tappers.
	Insufficient test time.	Increase test time.

Specifications:

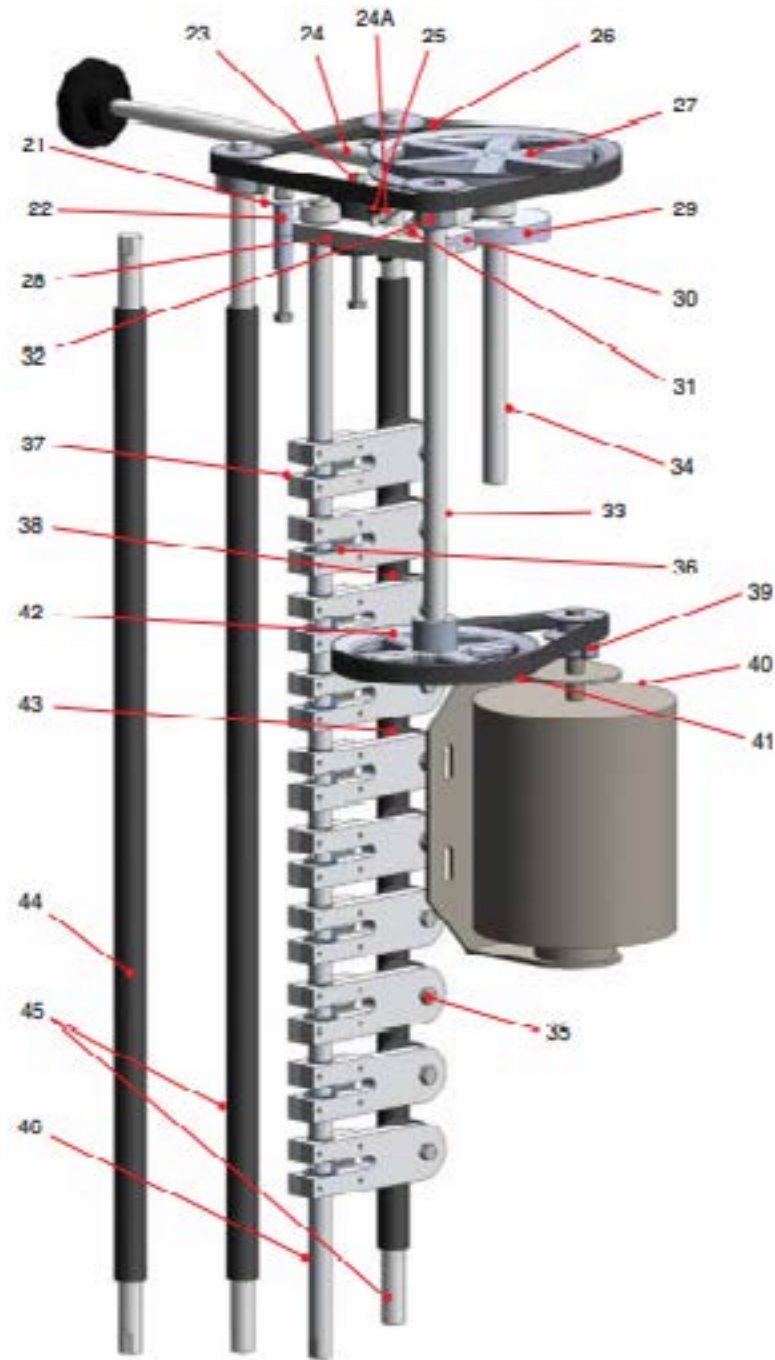
- **Particle Size Range:** No.4 -No.200 (4.75mm-75um) Nominal (Extended ranges, depending on material type).
- **Sieve Capacity:** 8in or 200 diameter
 - 10 Full-Height
 - 20 Half-Height12 in or 30mm
 - 6 Full-Height
 - 10 Intermediate-Height
 - 13 Half--Height
- **Controller:** Gilson Count-Down Timer, 99 min: 59 sec x 1sec (Maximum 99hr: 59min x 1min)
- **Motor:** 1/4hp, 175rpm, Continuous Duty
- **Power Requirements:** 115V/60Hz AC
- **Dimensions:** 19x24x58in (483x10x1473mm)
- **Weight:** 195lbs (88kg)
- **Ship Weight:** 215lb (98kg)



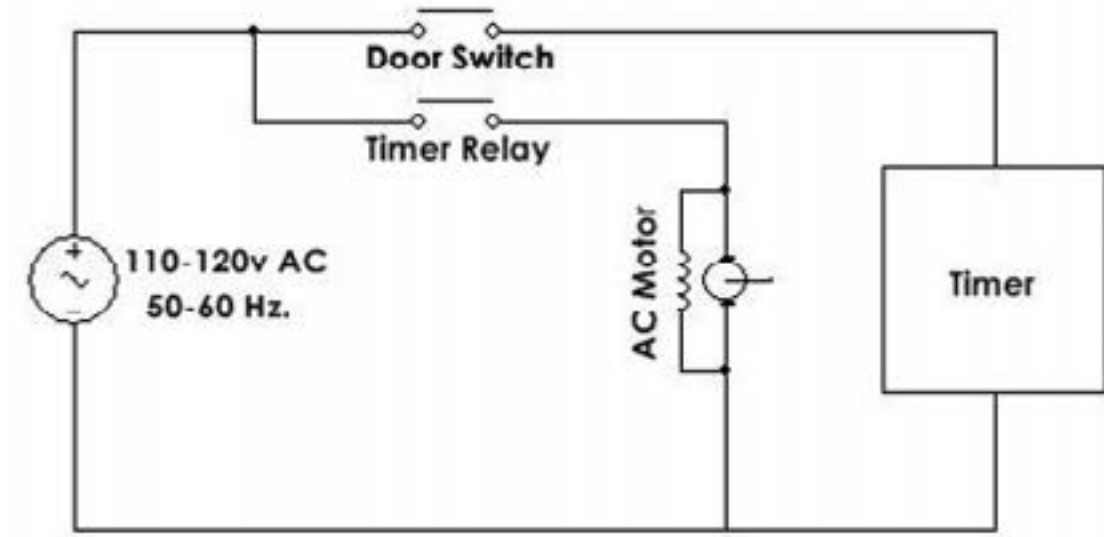
External Parts Diagram:



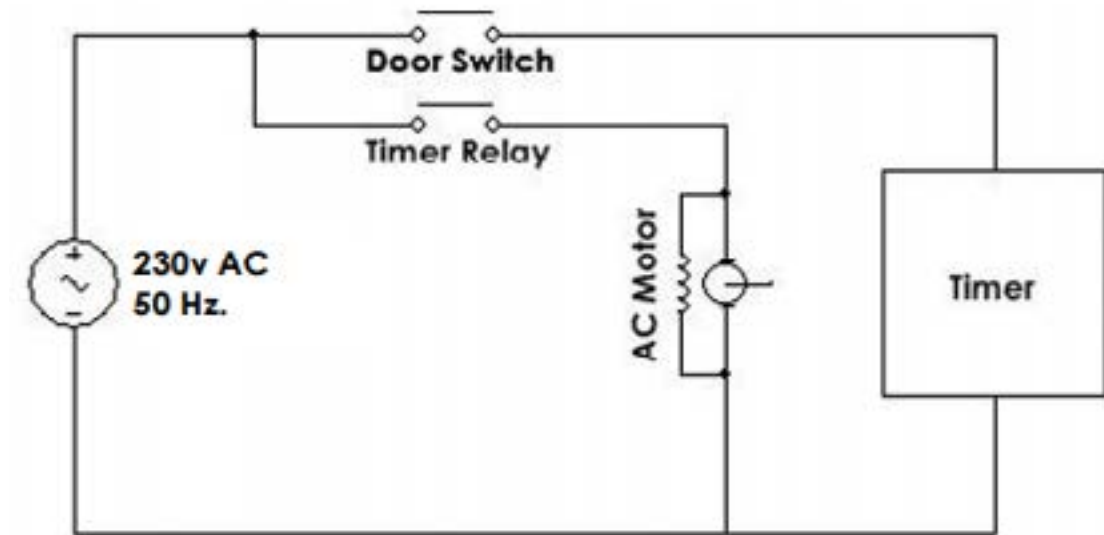
Internal Parts Diagram:



Electrical Schematic:



Electrical Schematic



Test Sieve & Screen Tray Verification & Services:

The new specification affects all test sieves, screen trays, and wire cloth, and changes the way the mesh openings are evaluated by looking at the statistical distribution of aperture sizes, rather than just the average opening sizes. The new system allows compatibility with ISO 565 and 3310-1 requirements. These are three grades, or classes of ASTM or ISO test sieves available:

- Compliance Test Sieves
- Inspections Test Sieves
- Calibration Test Sieves

1. **Compliance Test Sieves:** are manufactured with wire cloth that has been inspected and measured in roll or sheet quantities prior to being cut and mounted in the individual sieve frames. The design for Compliance sieves are for applications where a basic, reliable degree of accuracy and repeatability are sufficient.
 - Each Compliance sieve is supplied with a certificate of manufacturing compliance, no statistical documentation is given.
2. **Inspection Test Sieves:** have a specified number of openings measured in each sieve after the cloth is mounted in the frame. Inspection Sieves are a good choice in applications where it is critical to have accuracy and repeatability.
 - Each Inspection Sieve consists of a Compliance Sieve with added Inspection Sieve Verification service.
3. **Calibration Test Sieves:** have about twice as many openings measured as Inspection Sieves. The high number of openings measured on each sieve increases the confidence level to 99,73%. Calibration Sieves should be used in applications where a very high degree of accuracy is required.
 - Each Calibration Sieve consists of a compliance sieve with added Calibration Sieve Verification service.

New Gilson Test Sieves are guaranteed to meet the requirements of ASTM or ISO for the Compliance, Inspection or Calibration grades as ordered.

Master-Matched Sieves: are ASTM 8in diameter stainless woven-wire sieves from No.8 (2.36mm) to No.325 (45 um) that have been measured and shown to closely match a set of master sieves. Master-Matched Sieves from Gilson are always matched to the same master set, assuring that one sieve is very close to another. Each sieve is performance tested to insure it yields $\pm 2\%$ by weight of the value of the master sieve.



Accessories:

Clean-N-Stor: Are handy, time-saving devices for emptying, cleaning and weighing functions associated with sieving operations.

Sieve Storage Racks: Is designed for wall-mounted storage of 8in diameter sieves. Sieves are held on edge in eleven individual 3in wide compartments, each holding one full-height or two half-height sieves.

Small Fine Sieve Cleaning Brush: 100% soft China bristles in round 3/4in ferrule that are tapered for use with fine mesh sieves. Also handy for 3in diameter or Precision Electroformed sieves.

Fine Sieve Cleaning Brush: Perfect for cleaning No. 16 and finer sieves. They have soft bristle, nickeled steel ferrule, lacquered wood handle, 1-1/4in diameter and 5-3/4in long.

Coarse Sieve Cleaning Brush: An 8-1/2in curved plastic handle with 1-1/2in x 1-3/4in of slanted brass wire bristles - perfect for No. 30 and coarser wire cloth in round sieves.

