

# Taber<sup>®</sup> Rotary Platform Abrasion Tester *Model 1700 / 1750*



## Accessory Options

**TABER<sup>®</sup>**  
INDUSTRIES

## TABER WHEEL OPTIONS

The choice of which Genuine Taber abrading wheels to use is best determined by preliminary testing on the material to be investigated. The abrasive action of the testing wheel should reproduce, as nearly as possible, the wear that the material will receive in actual use. It is important to keep in mind that wear is a complex phenomenon that may not be exactly replicated through an accelerated abrasion tests.

Abrading wheels for the Taber Rotary Platform Abraser can be classified as:

**Calibrase®** – A resilient wheel composed of resilient binder and aluminum oxide or silicon carbide abrasive particles.

**Calibrade®** – A non-resilient wheel composed of a vitrified binder and silicon carbide or aluminum oxide abrasive particles.

**Specialty** – Used for special applications.

The wheels are cylindrically shaped, have a diameter of 52.4 mm when new, width of 12.7 mm, and a 16.0 mm diameter axial hole to allow the wheel to be mounted to the flanged holder on the Taber Rotary Platform Abraser pivoted arms.

For both Calibrase and Calibrade wheels, different grades are furnished to meet varying requirements of abrasive action. During testing, the wheel surface gradually wears away exposing new abrasive particles. The minimum usable diameter of Taber abrading wheels is 44.4 mm, which corresponds to the wheel label.

The composition of Genuine Taber abrading wheels has been carefully chosen to reproduce normal service wear. The quality and uniformity of these wheels is maintained by tightly controlled manufacturing and quality assurance processes.

 **NOTE:** Shelf life is dependent on proper storage conditions (temperature 23° C ± 2° C, relative humidity 50% ± 5%). When not in use, store abrading wheels in their original container.

 **NOTE:** The wear life of Calibrase or Calibrade wheels will vary based on the load, surface texture and frictional characteristics of the material tested and frequency of refacing.

 **NOTE:** The abrasive coefficient of the wheels can be altered by oil or other contaminants. Handle only the sides of the wheels.

## Calibrase Wheels



**CS-8 Calibrase (#135177)** – A resilient wheel that offers a extremely mild abrading action, and was designed to operate under loads of 250 or 500 grams. Reface with the S-11 refacing disc.

**CS-10F Calibrase (#125321)** – A resilient wheel that offers a mild abrading action, and was designed to operate under loads of 250 or 500 grams. When used to test materials such as safety glazing materials and transparent plastics, CS-10F wheels must be refaced with the ST-11 refacing stone.

**CS-10 Calibrase (#125320)** – This resilient wheel offers a mild – medium abrading action like that of normal handling, cleaning, and polishing. This wheel has been used to evaluate a variety of materials including organic coatings, plastics, textiles, leather and paper products. Reface with the S-11 refacing disc.

**CS-10P Calibrase (#132684)** – Offers same abrasion rate as CS-10, but engineered so the wheel surface does not load with wear debris when testing paper products. Intended for tests of short duration (e.g. 100 cycles), with refacing after every tenth test (1000 cycles).

**CS-10W Calibrase (#130950)** – This wheel is the same as the CS-10 but white, to eliminate any color transfer from the wheel to the specimen.

**CS-17 Calibrase (#125322)** – The CS-17 typically produces a harsher abrasion compared to the CS-10 wheel. Normally operated using loads of 500 or 1000 grams, this wheel is useful for testing materials such as ceramics, plastics and enamels. Reface with the S-11 refacing disc.

 **NOTE:** Because of possible deterioration, Calibrase wheels should NOT be used after the expiration date printed on the wheel.

## Calibrade Wheels



**H-10 Calibrade** (#125323) – A non-resilient, vitrified wheel designed to evaluate steel and ferrous alloys for resistance to abrasion. It has also been used, to test the effect of hardening and tempering treatment on steel and other ferrous materials. The H-10 Calibrade wheel is normally used with either 500 or 1000 gram loading.

**H-18 Calibrade** (#125324) – Provides a medium coarse abrasive action. It is most often used to evaluate resilient materials such as rubber (non-tacky), woven textile fabrics, coated fabrics, and flexible plastic sheets.

**H-22 Calibrade** (#125325) – The H-22 wheel produces a coarse abrasion. It has been used to test rubber, linoleum, leather, deep pile fabrics (such as automobile floor coverings) and concrete.

**H-38 Calibrade** (#125326) – A non-resilient, vitrified abrading wheel comprised of fine abrasive particles. Designed to operate with 250 or 500 gram loads, the principal use of this wheel is to test woven and non-woven fabrics. Must be refaced using the Taber Wheel Refacer and multi-point diamond tool.

 **NOTE:** Calibrade wheels are diamond trued at the factory and can be used continuously without further refacing until the abrading surfaces show indications of becoming worn out of round, crowned or clogged. When refacing is required, a wheel refacer must be used.

 **NOTE:** Calibrade wheels do not have an expiration period.

## Specialty Wheels



**CS-0 Rubber** (#125344) – Resilient wheel that contains no abrasive particles. Adhesive sandpaper strips can be adhered to the periphery of the CS-0 wheel to evaluate the abrasion resistance of materials such as high-pressure decorative laminates or porcelain ceramics. The CS-0 wheel has also been used by itself when a very mild abrasive action is required; or for wet tests such as determining the relative abrasion of dental pastes, cleaning powders, or similar compounds.

**CS-5 Felt** (#125319) – Manufactured from a dense wool felt. Designed to be tested at 250 or 500 gram loads, its principal use is in testing textile fabrics when the service wear requires one fibrous material to rub against another.

**CS-24 Aluminum** (#132720) – Manufactured from 6061 aluminum. This wheel set has been used to evaluate the abrasive action of a material by measuring the mass loss of the wheel.

**S-32 Rubber** – Same as CS-0

**S-35 Tungsten Carbide** (#125345) – Manufactured out of tungsten carbide, the periphery of the S-35 consists of sharp helical teeth (1 mm pitch x 45° spiral pitch angle). The teeth combine both a cutting and tearing action, which provides a very severe abrasion.

 **WARNING:** S-35 wheels are intended for use only on resilient materials such as rubber, linoleum, and leather. Use on other materials may cause damage to the teeth.

**S-39 Leather-Clad** (#125529) – This wheel includes a leather strip that has been adhered to exterior of a brass hub and is used in conjunction with the Grit Feeder to conduct three-body abrasion tests.

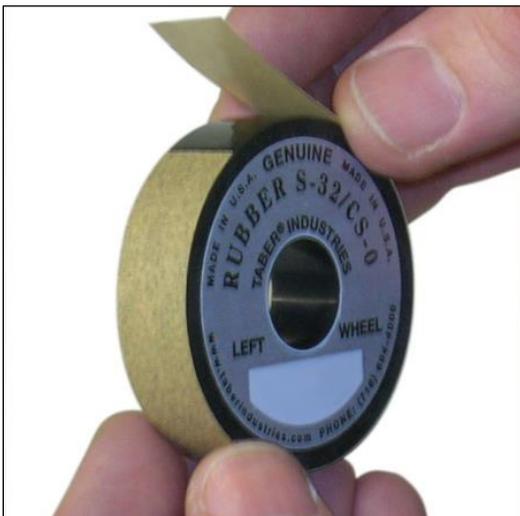
**Custom Formulations** – To inquire about custom wheel formulations, please contact Taber Industries.

## Miscellaneous Abrasives

**S-33 Sandpaper Strips** (#121124-1A for 100 pack or #132495 for 500 pack) – A 12.7 mm x 165 mm strip of 360 FEPA closed coat sandpaper that includes a pressure sensitive adhesive to affix the strip to the periphery of CS-0 (S-32) resilient wheels. To maintain the rate of abrasion, the sandpaper strips must be changed after a defined number of test cycles (typically 200).



**S-42 Sandpaper Strips** (#125564A for 100 pack or #132403A for 500 pack) – A 12.7 mm x 165 mm strip of 180 ANSI-CAMI open coat sandpaper that includes a pressure sensitive adhesive to affix the strip to the periphery of CS-0 (S-32) resilient wheels. To maintain the rate of abrasion, the sandpaper strips must be changed after a defined number of test cycles (typically 200).



## SPECIMEN PLATE OPTIONS

**Steel (S-16)** (#125563) – Uniformly blanked from #20 gauge sheet steel and dull finished for good adhesion of the coating to the metal. The size is 100 mm<sup>1</sup> square with rounded corners and a 6.5 mm center hole.



 **NOTE:** Before applying the coating, S-16 plates must be thoroughly cleansed of dirt, grease or other contaminants. Use of a solvent degreaser or other solvent cleaner capable of dissolving and removing oil and grease is suggested.

**Wood (S-17)** (#132088-1) – Produced from grade A1, 6.35 mm thick birch plywood. Sanded on both sides, the size is 100 mm<sup>1</sup> square with a 6.35 mm center hole.



**Aluminum (S-18)** (#132086) – Manufactured from #18 gauge 5052 aluminum. The size is 100 mm<sup>1</sup> square with rounded corners and a 6.5 mm center hole.



<sup>1</sup> Actual dimension is 4 inch

**Glass (S-31)** (#125561) – Quality plate glass, approximately 100 mm<sup>1</sup> square by 3.2 mm thick with a 6.5 mm center hole.



**Zinc (S-34)** (#125562) – Rolled zinc sheet, having a thickness of approximately 0.8 mm. Used to verify the abrasion rate of sandpaper strips such as S-42. The size is 100 mm<sup>1</sup> square with a 6.5 mm center hole. Also available with 13.5 mm center hole, for use with the Arm Height Extension Kit (#134767).



 **NOTE:** The S-34 zinc plate should not be used for more than 10 calibrations per side.

**Acrylic (S-38)** (#121257) – Cell cast polymethyl-methacrylate plates, also referred to as PMMA or acrylic, used to standardize S-41 abrasive for Grit Feeder. Each S-38 plate is 100 mm<sup>1</sup> square, by approximately 1.5 mm thick with a 6.5 mm center hole.



**AS4000S** (#135541) – Polycarbonate with hard-coating polysiloxane type AS4000S (AS4000 type coating adjusted to flow coating of large sheets), as referenced in ISO 15082. Each AS4000S plate is 100 mm<sup>1</sup> square, 3 mm thick and has a 6.5 mm center hole.



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## **SPECIMEN MOUNTING OPTIONS**

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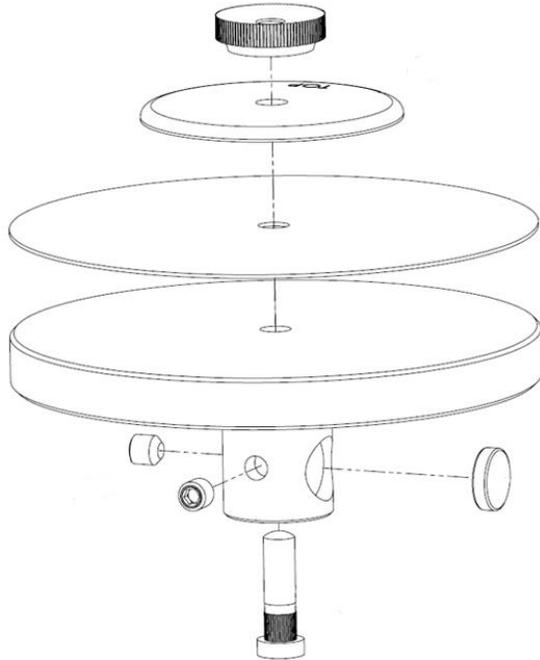
The Taber Abraser Model 1700 and 1750 is supplied with the standard specimen holder (SH-125) and hold-down ring (SH-101). This set-up is sufficient for most rigid or flexible test specimens.

To expand the versatility of the Taber Abraser, mounting options and interchangeable specimen holders are available to evaluate materials not easily tested with the standard configuration. All specimen holders are engineered for easy removal.

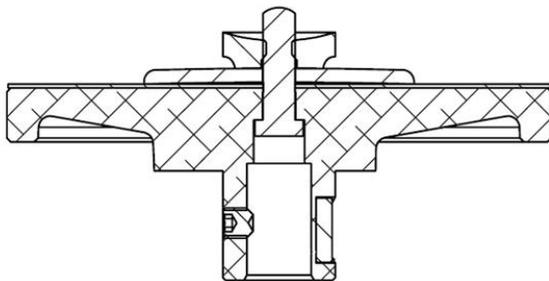


## Specimen Holder (SH-125)

The SH-125 specimen holder (#135665) is supplied with the Taber Abraser and will accommodate most rigid or flexible materials less than 6.5 mm thick. A 108 mm diameter S-19 rubber pad (#121016) is provided to ensure a non-slip surface. To secure rigid materials, use the clamp plate (#121150) and nut (#120979). When testing flexible materials, the hold-down ring is recommended.



Exploded view of Model SH-125



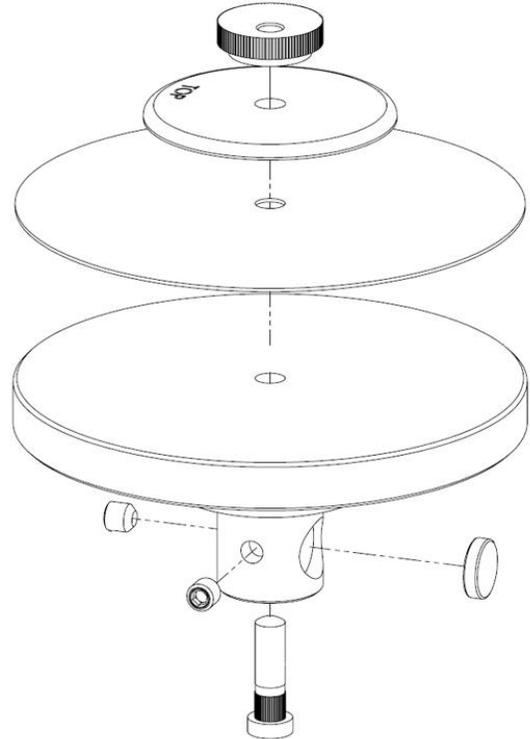
Cross section view of Model SH-125

**NOTE:** When testing flexible specimens, a 125 mm diameter specimen is required so the hold-down ring will grip the overlapped material. If a mounting card is used, the specimen should be approximately 108 mm in diameter. Any excess material that overhangs the specimen holder should be trimmed to prevent damage to the Abraser caused by rubbing.

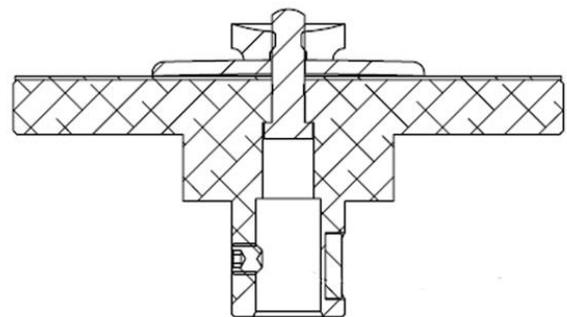
**NOTE:** Model SH-125 and SH-101 are supplied with Taber Abraser Model 1700 and 1750.

## Specimen Holder – Tall (SH-12)

Model SH-12 Tall specimen holder (#135920) is similar to SH-125 specimen holder, but provides a 15 mm thick holder versus the SH-125 specimen holder which is 9 mm. This helps to prevent excess material overhanging the holder when testing flexible specimens. The S-19 rubber pad (#121016) is provided along with the clamp plate (#121150) and nut (#120979). When testing flexible materials, the hold-down ring is recommended.



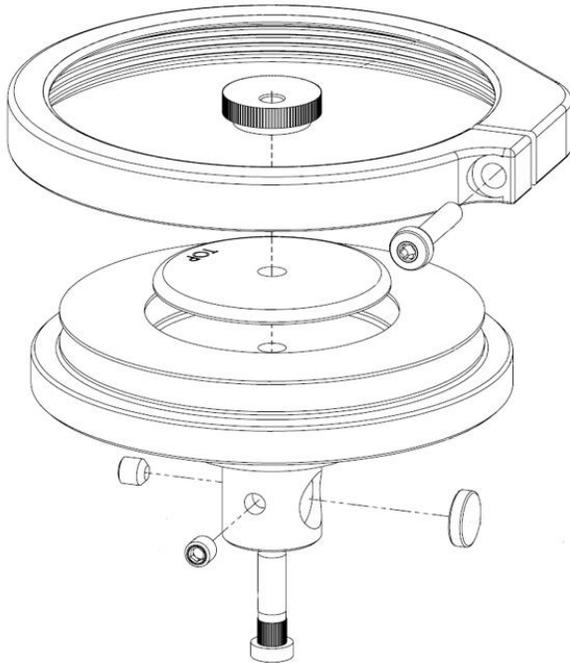
Exploded view of Model SH-12



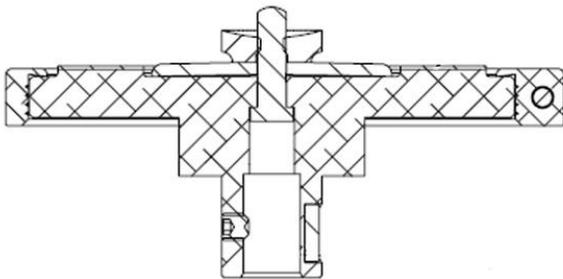
Cross section view of Model SH-12

## Specimen Holder – Textile (SH-15)

The SH-15 Textile specimen holder (#135559) includes a raised wear track which has a rubber pad adhered to the surface. This gives textile and other flexible specimen's additional tension when the SH-101 hold-down ring (#135664) is drawn down over the edge of the holder and the clamp plate (#121150) is tightened in the center recess with the nut (#120979).



Exploded view of Model SH-15

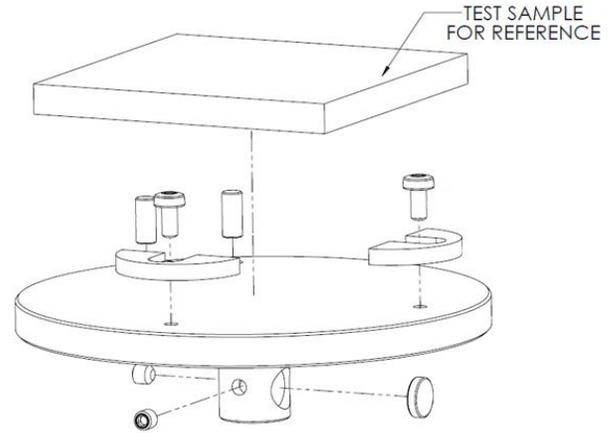


Cross section view of Model SH-15

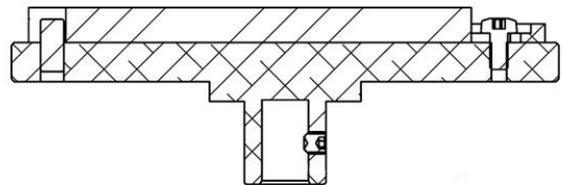
-  **NOTE:** Requires a 135 mm diameter specimen with a 6.35 mm center hole.
-  **NOTE:** For proper mounting, place the specimen on the holder and draw it taut with the hold-down ring. Tighten the ring, and then secure the clamp plate.
-  **NOTE:** This holder is not recommended for use with rigid specimens or with mounting cards.

## Specimen Holder – Drive Pin Type (SH-19)

The SH-19 Drive Pin specimen holder (#135558) is intended for rigid, square specimens that do not have a center-mounting hole. One corner of the specimen is placed in between two pins, while two adjustable clamps on the opposite side prevent the specimen from shifting during the test.



Exploded view of Model SH-19

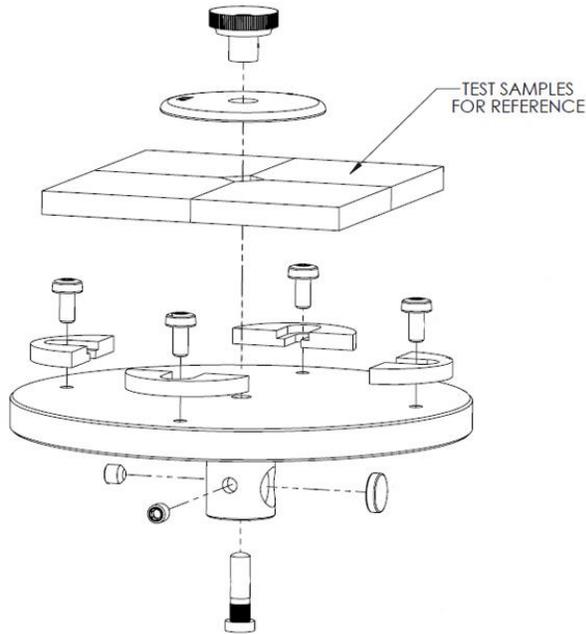


Cross section view of Model SH-19 (with specimen)

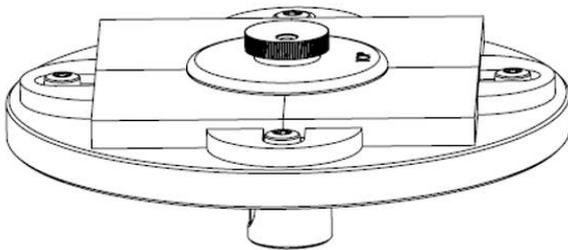
-  **NOTE:** An example where this holder may be useful is for glass or ceramic tile, which may be difficult to drill a center hole.

## Specimen Holder – Sliding Mount (SH-26)

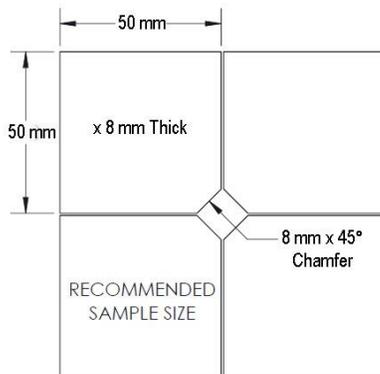
With four adjustable mounts, the SH-26 Sliding Mount specimen holder (#135864) is designed to test four 50 mm square, rigid specimens. Modified clamp plate (#132728) and extension nut (#121224-1) are included.



Exploded view of Model SH-26 (with specimens)



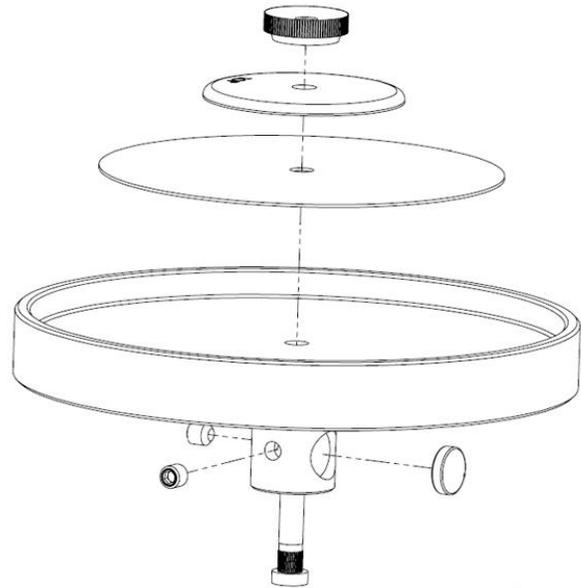
Assembled view of Model SH-26 (with specimens)



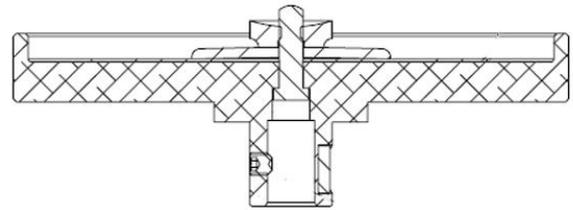
**NOTE:** To accommodate the threaded center post, one corner of each specimen must be trimmed.

## Specimen Holder – Rimmed (SH-75)

The SH-75 Rimmed specimen holder (#135557) is used for wet testing materials to determine the effect of absorbed and / or surface moisture on abrasion resistance. A 7.6 mm raised rim retains a small amount of liquid and a rubber pad prevents specimens from slipping during the test.



Exploded view of Model SH-75

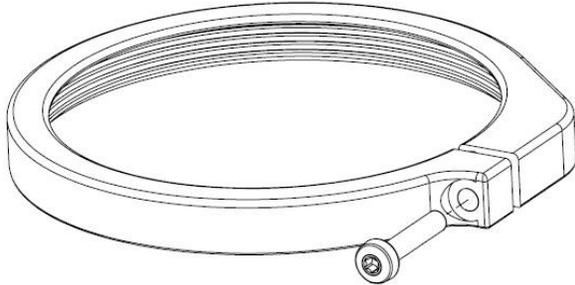


Cross section view of Model SH-75

- NOTE:** To prevent splash over on the instrument, use only a sufficient amount of liquid to cover the specimen.
- NOTE:** Specimens may be up to 140mm diameter.
- NOTE:** The vacuum is not used when conducting wet tests.

## Hold-Down Ring (SH-101 & SH-102)

The standard hold-down ring is Model SH-101 (#135664), also referred to as hold-down ring “A”. This ring has a 108 mm I.D. and includes ridges that grip flexible materials up to 0.80 mm thick. Model SH-102 (#135466) or hold-down ring “B” is a similar design but has a 110 mm I.D. to accommodate flexible materials up to 1.60 mm thick.



Exploded view of Model SH-101

**NOTE:** Model SH-101 is also referred to as clamp ring “A” and Model SH-102 as clamp ring “B”.

## Specimen Clamp Plate (SH-23)

When testing carpeting and other compressible materials, a smaller diameter clamp plate is available to prevent crushing of the specimen fibers near the wear path. Model SH-23 (#125590) offers a 31.75 mm diameter versus the standard clamp plate diameter of 53.35 mm.

## Extension Nut (S-21)

To secure specimens that are 6.5 mm to 12.7 mm in thickness, the S-21 Extension Nut (#121224) can be used. A 9.6 mm center hole must be drilled into the specimen to accommodate the longer shoulder.



**NOTE:** For specimens that exceed 12.7 mm thickness, use the Arm Height Extension Kit (see pg. 10).

## Mounting Cards (S-36 and S-36-1)

Coated on one side with pressure sensitive adhesive, these 108 mm cards are designed to hold textile and other flexible test specimens tightly to the mounting surface and prevent wrinkling during testing. A test record form is printed on the backside of the card for permanent record. Mounting cards are available as S-36 square (#125560) or S-36-1 round (#129270).



## Mounting Sheets (S-37 and S-37-1)

Coated on both sides with pressure sensitive adhesive, these 108 mm sheets are overlaid with protective paper that is peeled off just prior to use. Thinner than the S-36 and S-36-1, mounting sheets are used to provide a non-slip attachment of the specimen to the surface of the turntable and are especially useful for materials difficult to drill a center hole (such as stone or ceramics). A test record form is printed on both sides enabling them to be used as a mounting card. Mounting sheets are available as S-37 square (#125558) or S-37-1 round (#129271).



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## ACCESSORY INSTRUMENTS

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### Sample Cutter 5000

The Model 5000 Sample Cutter (#985000) is a bench top instrument designed to cut a 108 mm diameter specimen and punch a 6.35 mm center hole. A 'dove-tail' rear support prevents tipping during operation and a shielded punch shaft and knife retraction system protects the operator from the cutting tools. The punch lever is ergonomically designed to evenly transfer force through the spring-loaded punch. This instrument utilizes an industrial razor blade (#128530) to prepare flexible materials for testing on the Taber Rotary Platform Abraser. Examples include: paper, cardboard, rubber, leather, vinyl, carpet, textiles, metal foils, and flexible plastics.



### Wheel Refacer 350

The Model 350 Wheel Refacer (#980350) precision dresses the working surfaces of Genuine Taber Calibrade abrading wheels for the Taber Abraser. This compact instrument can also be used to true out of round wheels and to correct 'crowning' conditions on both Calibrase and Calibrade wheels.

A refacing diamond tool (#120947) is mounted in an adjustable holder, which is supported on a shielded traverse slide. Abrading wheels are mounted on a flanged extension of the motor shaft and are enclosed by a hinged cover for safety during the refacing operation. By moving the diamond point tool across the wheel faces, the wheel surfaces can be refreshed. During operation, the vacuum unit hose is disconnected from the Abraser and inserted

in the Wheel Refacer to draw off the abrasive cuttings.



### Quiet Cabinet

The typical sound level of the Taber Abraser and its vacuum system can reach 78dB. Utilizing sound deadening materials, the Quiet Cabinet reduces the audible level 2½ times (20% reduction in decibels) resulting in a level that is comparable to a standard office environment.

The upper cabinet features a hinged Plexiglas™ viewing window to monitor testing while a detachable front permits easy transfer of the Abraser into or out of the cabinet. The lower cabinet holds the vacuum unit and includes a built-in exhaust system (either 115V/60Hz or 230V/ 50Hz) to provide proper air circulation. Constructed of laminated particleboard, the cabinet includes a high-pressure laminate outer shell for added durability. The Quiet Cabinet is available as a complete unit (#128372 for 115V/60Hz or #129497 for 230V/50Hz), or the top and bottom may be purchased separately.



### Grit Feeder Attachment 355

The Model 355 Grit Feeder (#980355) is used in conjunction with the Model 1700/1750 Taber Abraser to evaluate three-body abrasion caused by the destructive action of fine, hard particles. Positioned over the Taber Abraser, the Grit Feeder is a freestanding instrument that deposits abrasive grit particles uniformly and continuously onto the specimen surface. As the specimen holder rotates, the loose grit passes under a pair of leather-clad wheels. The resulting rolling action of the particles serves as the abradant and contributes to the physical breakdown of the material. A special front orifice vacuum nozzle removes grit particles and debris after passing under both wheels. The operation of the grit feeder is controlled through the Taber Abraser, ensuring that the turntable, grit distribution and vacuum suction are actuated at the same time.



### Scuffing Head Attachment

The Model SH-300 Scuffing Head Attachment is used to evaluate damage caused by the scraping action by one of three special scuffing heads held at a 110° angle relative to the specimen surface. Model SH-300 (#135647) includes the scuffing head attachment with 1 lb. and 2 lb. auxiliary weights. Three scuffing head configurations are sold separately. Referenced in SAE J365, scuffing head type “A” (#135636) is similar to the flat blade of a screwdriver, and is approximately 8 mm wide. Type “B” (#135637) has a knife edge that is approximately 4 mm wide. Type “C” (#135638) has a radius edge that is approximately 8 mm wide.

Used in place of the abrasive wheels, the Scuffing Head Attachment is mounted on the left abraser arm wheel collet and includes a stop to prevent rotation of the scuffing head. The abraser is operated in the normal fashion, however the vacuum system is not utilized. This kit is typically

used on materials such as vinyl, leather, textiles, non-woven materials, plastics and painted products.



### Arm Height Extension Kit

The Model 1700-40 Arm Height Extension Kit (#135880) was engineered to accommodate specimens that exceed the recommended thickness (up to 40mm). This kit raises the position of the abraser arms and allows for the correct alignment and positioning of the abrasive wheels. An extension post is threaded to the turntable and by using the appropriate combination of turntable shims the proper arm position relative to the specimen. Kits include the height extension plate, stud extender (#132694), nut (#132702), clamp plate (#135623-1), modified S-19 rubber pad (#121016-1) and a set of 6 shims (#132696).



## Counterweight Kit

The Counterweight Arm Kit (#135369) reduces the total load applied to the specimen. The counterweight arms mount to the Model 1700/1750 Abraser arms and reduce the load by 50g. A counterweight set (#135937) is included with the kit to achieve a 125g load per arm. Two other optional counterweight sets are offered to obtain a load of 150g (#135927) or 175g (135928) per arm.



## Calibration Verification Kit

Instrument verification can be performed using the Calibration Verification Kit (#132030). This cost effective method enables the operator to verify if an instrument is in calibration or in need of repair. Procedures described in the kit allow the verification of proper abraser arm alignment (longitudinal and transverse alignment), wheel tracking and wear pattern, bearing integrity and vacuum suction force. Other inspections include vacuum pick-up nozzle wear, table flatness, turntable speed and accessory weights.



 **NOTE:** This kit is NOT intended as a substitution for regular instrument calibration.

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## CONTACT INFORMATION

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Accessories are available for the Taber Rotary Platform Abraser Model 1700 / 1750 from Taber Industries or an authorized distributor. For more information, contact:

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