

PELCO[®]

SEM Specimen Holders

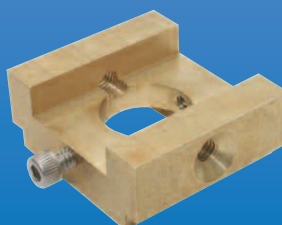
The Modular Concept



Hitachi



JEOL



FEI/Philips



ZEISS/LEO



TED PELLA, INC.
Microscopy Products for Science and Industry

The PELCO® modular SEM specimen holder system offers the most comprehensive and cost effective range of specimen holders available today with full interchangeability between SEM models or brand. If you are using different models of SEMs in one location or your new SEM comes from a different manufacturer, you can continue to use the PELCO® modular SEM specimen holders by adding just the appropriate SEM stage adapter. The PELCO® SEM specimen holders offer capabilities not available from SEM manufacturers or specimen holders supplied with the SEM. New specimen holders are added on a regular base.

Features of the PELCO® modular SEM specimen holder system:

- Full interchangeability between SEM platforms
- Stage adapters for all SEM instrument brands: Hitachi; FEI / Philips; JEOL; ZEISS / LEO; Tescan; Amray; ISI / ABT / Topcon; CamScan; LEICA / Cambridge
- Built-in grounding contacts
- Easy specimen load / unload
- Low profile versions compatible with airlocks
- Single and multiple specimen holders
- Mix, match and upgrade to meet your needs
- All PELCO® modular SEM specimen holders have an M4 threaded connection and are compatible with any Hitachi SEM with an M4 thread stage adapter

Short Button for Dovetail Stage Adapters



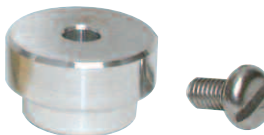
15372 Short Button shown separately and attached to specimen holder (top)

each

The 14mm diameter Short Button is needed to connect small Modular SEM Specimen Holders or Stub Adapters to the Dovetail Stage Adapters (15371 or 15392). It allows easy and quick exchange of Modular SEM Specimen Holders. The Short Button is mounted on the SEM specimen holder and secured on the Dovetail Adapter with a screw against the flat side. Supplied with M4 screw.

15372 Short Button with M4 Screw, each

Extended Button for Dovetail Stage Adapters



The Extended Button can be used to mount all Modular SEM Specimen Holders to the Dovetail Stage Adapters (15371 or 15392) and allows for easy and quick exchange of the

Modular SEM Specimen Holders. Supplied with M4 screw

15372 Short Button with M4 Screw, each

Stub Extensions for T-base and Dovetail Stage Adapters



The Stub Extensions are available in 3 heights (12, 18 and 25mm) and are used on the T-Base and Dovetail Stage Adapters to increase the height of the assembly. Can be used with any of the Modular SEM

Specimen Holders or with Hitachi cylinder stub holders with M4 thread. Short button (15372) is needed when used with the Dovetail Stage Adapters (15371 or 15392).

15373-2 Short Stub Extension, 12mm, each

15365-2 Medium Stub Extension, 18mm, each

15374-2 Long Stub Extension, 25mm, each

T-Base Adapter for Hitachi S-4000, S-4200, S-4300, S-4500, S-4700 and S-3600N SEMs



Specimen exchange T-base adapter incorporates an aluminum body and self-aligning double sided brass thread block to facilitate smooth insertion on the SEM stage and to prevent binding. Can be

used with any of the Modular SEM specimen holders. Includes M4 screw.

15370 T-Base Adapter for Hitachi, each

New Style T-Base Adapter for Hitachi S-4800, SU-70 and SU-6600 FESEMs



Made of vacuum grade aluminum with counterpart for airlock manipulator and locking rod. Can be used with any of the Modular SEM specimen holders. In-

cludes M4 screw.

15370-1 New Style Modular T-Base Adapter for Hitachi S-4800 and SU70, each



15368

Stage Adapter for FEI / Philips SEM / FESEM and DualBeam Systems



15368-2

Made of brass pillar and aluminum base and locking nuts. This particular material choice prevents "binding" of parts in the SEM stage. Available in standard version with standard pillar, base and two locking nuts

and short version with short pillar and two locking nuts. Pillar with M6-fine thread and M4 thread on top. Can be used with any of the of the Modular SEM specimen holders.

15368 Standard Modular Stage Adapter for FEI/Philips (40mm H) (Standard Pillar, Base and two Locking Nuts), each

15368-2 Short Modular Stage Adapter for FEI/Philips (20mm H) (Short Pillar and two Locking Nuts), each

15368-10 FEI/Philips Stage Adapter Base only, each

15368-20 FEI/Philips Standard Stage Adapter Pillar only, 40mm, each

15368-25 FEI/Philips Short Stage Adapter Pillar only, 20mm, each

15368-30 FEI/Philips Stage Adapter Locking Nut only, each

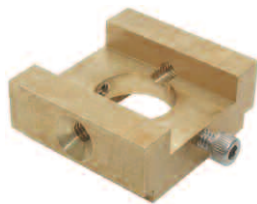


Dovetail Stage Adapter for JEOL SEM

Solid brass Dovetail Stage Adapter can be used on many JEOL SEMs and is compatible with the airlock used on JEOL SEMs. The 14mm hole in the center

is compatible with other JEOL holders. Two Button style adapters are available to connect the Modular SEM specimen holders. The Short Button (15372) is used for the smaller specimen holders only, whereas the Extended Button (15372-10) can be used with all Modular SEM Specimen Holders.

Dovetail Stage Adapter for ZEISS/LEO SEM



The solid brass dovetail for the ZEISS/LEO SEMs is fully compatible with the ZEISS/LEO dovetail used on the stage or stage height adapters. Design is similar to that of the JEOL dovetail adapter. Two button style adapters are available to connect the Modular SEM specimen holders. The

Short Button (15372) is used for the smaller specimen holders only, whereas the Extended Button (15372-10) can be used with all Modular SEM Specimen Holders.

15392 Dovetail adapter for ZEISS/LEO, each

Stage Adapter for AMRAY SEMs



Made of aluminum, 16mm dia x 25mm H with M4 screw. Can be used with any of the Modular SEM Specimen Holders.

15367-10 Stage Adapter for AMRAY, each

Stage Adapter for ISI/ABT/Topcon SEMs



Made of aluminum, 15mm dia x 25mm H with M4 screw. Can also be used on JEOL stage adapters or specimen holders which accommodate the 15mm cylinder stub. Can be used with any of the Modular SEM Specimen Holders.

15367-20 Stage Adapter for ISI/ABT/Topcon SEMs, each

Stage Adapter for CamScan and Tescan SEMs



Made of aluminum, 12.5mm dia x 20mm H with M4 screw. Used with the 12.7mm stage adapter found on the larger stages. Can be used with any of the Modular SEM Specimen Holders.

15367-30 Stage Adapter for Camscan or Tescan, each

Pin Stub Adapter to M4



Low profile and long pin with M4 threads to convert any of the Modular SEM Specimen Holders into a pin stub type holder. Can be used on Cambridge, Leica, CamScan, Tescan, Amray, FEI/Philips and Zeiss/LEO SEMs. This arrangement will add height to the total assembly and is not recommended for larger specimen holders or heavy specimens.

15319 Low Profile Pin Stub Adapter to M4, 9.5mm (.344 in.) pin length, each

15319-2 Long Pin Stub Adapter to M4, 14.75mm (.581 in.) pin length, each

Single Flat Sample Clip Holder



This specimen holder is made of aluminum with spring-loaded clamping and grounding pin. Accommodates a sample thickness up to 3mm. Pin provides minimal surface clamping area and grounding on the imaged surface. Short Button Adapter (15372) is needed when used with the Dovetail Stage Adapters (15371 or 15392). Shown with silicon chip held in place.

15375-2 Single Flat Sample Clip

Holder, each

Triple Flat Sample Clip Holder



This specimen holder is made from aluminum with spring-loaded clamping and grounding pin. Accommodates three samples with thickness up to 3mm. The pins provide minimal surface clamping area and grounding on the imaged surface. Short Button Adapter (15372) is needed when

used with the Dovetail Stage Adapters (15371 or 15392). Shown with silicon chip held in place.

15376-2 Triple Flat Sample Clip Holder, each

Cross Section Holder, 70°



This cross section holder is made of aluminum with spring-loaded brass clamping and grounding clip and holds sample at a 70° angle. Clip width is 6.35mm. Accommodates a sample thickness up to 11mm. The clip provides minimal surface clamping area and grounding on the imaged surface. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392). Shown with specimen.

15377-2 Cross Section Holder, 70°, each

Triple Cross Section Holder, 70°



The triple cross section holder is made of aluminum with spring-loaded brass clamping and grounding clip and holds sample at a 70° angle. Clip width is 6.35mm. Accommodates three samples with a thickness up to 11mm. The clips provide minimal surface clamping area and grounding on the imaged surface. Extended Button (15372-10) is

needed when used with the Dovetail Stage Adapters (15371 or 15392). Shown with silicon chips held in place.

15379-2 Triple Cross Section Holder, 70°, each

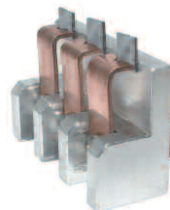
Cross Section Holder, 90°



This cross section holder is made of aluminum with spring-loaded brass clamping and grounding clip and holds sample at a 90° angle. Clip width is 6.35mm. Accommodates a sample thickness up to 11mm. The clip provides minimal surface clamping area and grounding on the imaged surface. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392).

15378-2 Cross Section Holder, 90°, each

Triple Cross Section Holder, 90°

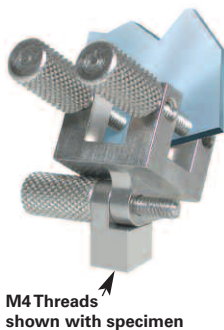


The triple cross section holder is made of aluminum with spring-loaded brass clamping and grounding clip and holds sample at a 90° angle. Clip width is 6.35mm. Accommodates a sample thickness up to 11mm. The clips provide minimal surface clamping area and grounding on the imaged surface. Extended Button (15372-10) is needed when

used with the Dovetail Stage Adapters (15371 or 15392). Shown with silicon chips.

15380-2 Triple Cross Section Holder, 90°, each

Cross Section Holder



This specimen holder holds thin or flat samples up to 6.35mm (1/4"). Adjustable angle from 0-180°.

Made of non-magnetic stainless steel. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392). Overall height is 30mm (1.2") from the pivot point. The clamping part is a 16mm (0.62") cube w/o thumb screws.

15325-4 Cross Section Holder, M4, each

Adjustable Profile Holder

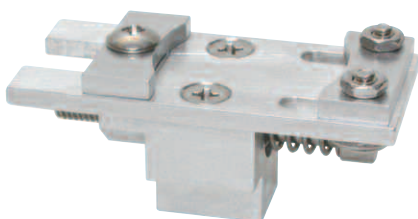


Designed to adjust the exact viewing angle for cross section made from wafers or other thin specimens up to a thickness

of 3.2mm (1/8"). Angle adjustment range 0-90°. Made of aluminum with stainless steel allen screw. Allen wrench included. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392).

15356-4 Adjustable Profile Holder, each

Adjustable Spring-Loaded Vise Clamp

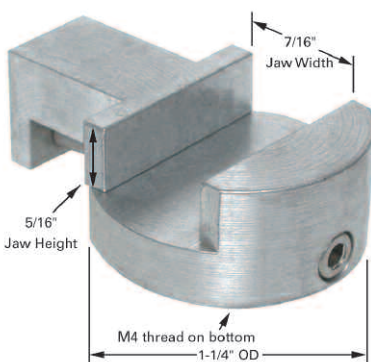


The adjustable spring-loaded vise clamp holds various sizes and shapes of specimens. Vise clamps between 10 - 25mm. Made of vacuum grade aluminum and stainless steel. Vise size is 45 x

20mm. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392).

15384-2 Adjustable Spring-Loaded Vise Clamp, each

Micro Vise Holder



Holds a variety of specimens. The maximum gap is 11mm (7/16"). The jaws are 25.4mm (1") wide. Made of aluminum with stainless steel screw. Allen wrench included. Extended button (15372-10) is needed when used with the Dovetail stage adapters (15371 or 15392).

15340-4 Micro Vise Holder, M4

Thin Specimen Split Mount Holder



Simple but effective design to hold wafers and thin samples up to 3.2mm (1/8). 15mm dia x 10mm H. Made of aluminum with stainless steel allen screws. Allen wrench included. Extended Button (15372-10) is needed when

used with the Dovetail Stage Adapters (15371 or 15392).

15335-4 Thin Specimen Split Mount Holder, each

Single Pin Stub Holders



For holding and viewing SEM mounts with the standard 3.2mm pin. Made of aluminum, includes a pin locking screw. Four different heights are available: 10, 25, 38 and 55mm. Short Button Adapter (15372) is needed when used with the Dovetail stage adapters (15371 or 15392).

15363-1 Single Pin Stub Holder 15 x 10mm H, each

15387-2 Single Pin Stub Holder 16 x 25mm H, each

15361 Single Pin Stub Holder 16 x 38mm H, each

15364 Single Pin Stub Holder 15 x 55mm H, each

Multi Holders for 4/6/8/12 Pin Stubs



Accommodates up to 4, 6, 8, or 12 standard 12.7mm (1/2") pin stubs with 3.2mm (1/8") pin. Made of aluminum with stainless steel set screws. Allen wrench included. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392). Diameter of Holders are ø32; ø42, ø50 and ø62mm.

15310-4 Multi Holder for 4 Pin Stubs, each

15411 Multi Holder for 6 Pin Stubs, each

15413 Multi Holder for 8 Pin Stubs, each

Metallographic Mount Holders



Specimen holders for $\frac{7}{8}$ ", 1", 1- $\frac{1}{4}$ ", 1- $\frac{1}{2}$ " and 2" (22, 25, 32, 38, 50mm) metallographic mounts. Made of aluminum with stainless steel allen screw. Allen wrench included. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392).

- 15402** Metallographic Mount Holder, $\frac{7}{8}$ " or 22mm, each
- 15403** Metallographic Mount Holder, 1" or 25mm, each
- 15404** Metallographic Mount Holder, 1- $\frac{1}{4}$ " or 32mm, each
- 15405** Metallographic Mount Holder, 1- $\frac{1}{2}$ " or 38mm, each
- 15403** Metallographic Mount Holder, 2" or 51mm, each

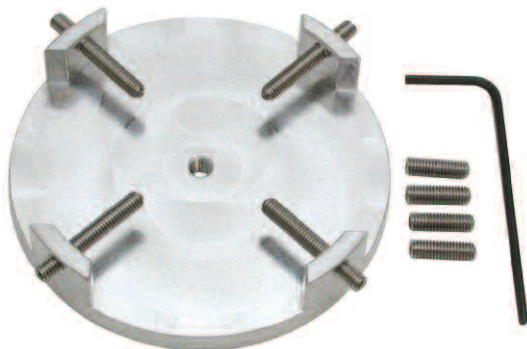
Bulk Specimen Holder



The bulk specimen holder holds irregular and round specimens up to a diameter of 32mm (1- $\frac{1}{4}$ "). Made of aluminum with two sets of stainless steel allen screws. Allen wrench included. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392).

- 15308-4** Metallographic Mount Holder, 1" or 25mm, each

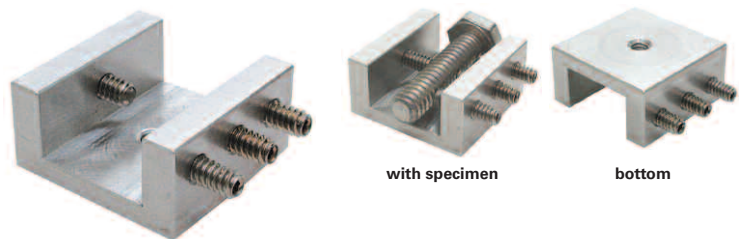
Large Bulk Specimen Holder



The large bulk specimen holder holds larger irregular and round specimens up to a diameter of 51mm (2"). Made of aluminum with two sets of stainless steel allen screws. Allen wrench included. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392).

- 15423** Large Bulk Specimen Holder, M4, each

Straight Bulk Specimen Holder



Versatile specimen holder to clamp irregular or long shaped specimens. Opening is 15.9W x 25.4L x 9.5mm D ($\frac{5}{8}$ " x 1" x $\frac{3}{8}$ "). Made of aluminum with stainless steel allen screws. Allen wrench included. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392).

- 15320-4** Straight Bulk Specimen Holder, M4, each

Multipurpose Specimen Holder



Accepts up to 25.4mm (1") diameter specimens. The slotted design also allows for clamping elongated or rod shaped specimens. Made of aluminum with stainless steel allen screw. Allen wrench included. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392).

- 15305-4** Multi Purpose Specimen Holder, M4, each

45°/90° Combination Holder



Combined specimen holder for 90° cross sections of wafers or thin samples up to 6.35mm ($\frac{1}{4}$ ") and a pin stub at 45°. Made of aluminum with stainless steel set screws. Allen wrench included. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392).

- 15358-4** 45° / 90° Combination Holder, M4, each

Multi Holder for 5 JEOL Stubs



Holds up to five 9.5mm JEOL cylinder mounts. Made of aluminum with stainless steel set screws. Allen wrench included. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392).

- 15315-4** Multi Specimen Holder for JEOL Stubs, M4, each

JEOL or ISI/ABT/Topcon mounts to Hitachi M4 mount



Small cylinder mount adapter accommodates JEOL or ISI/ABT/Topcon cylinder mounts up to 15mm diameter. Enables the use of $\varnothing 9.5$ and $\varnothing 12.2$ mm JEOL or $\varnothing 15$ mm ISI/ABT/Topcon cylinder mounts on Hitachi M4. Made from aluminum with stainless steel screw, Allen wrench included.

15401 S-4 Mount adapter to Hitachi M4, each

SEMClip™ Cylinder Mounts

The SEMClip™ mounts can be used to hold flat thin samples with a thickness of 2mm. Made of aluminum with copper spring clips. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392). Some images below show mounts holding silicon chips.



16324-10 SEMClip™, 15 x 6mm x M4 Cylinder Mount, 1 clip, each

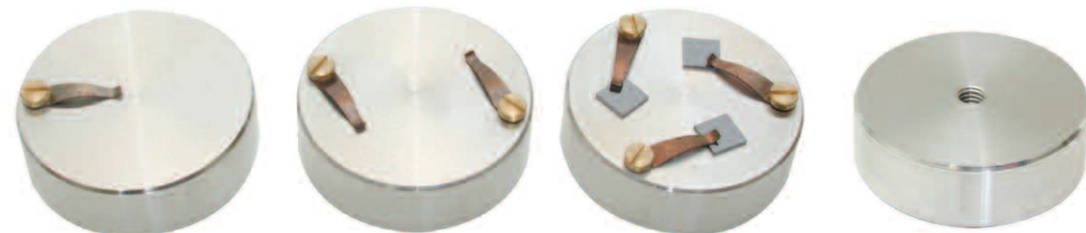


16327-10 SEMClip™, 25 x 6mm x M4 Cylinder Mount, 1 clip, each

16327-20 SEMClip™, 25 x 6mm x M4 Cylinder Mount, 2 clips, each

16327-30 SEMClip™, 25 x 6mm x M4 Cylinder Mount, 3 clips, each

back view



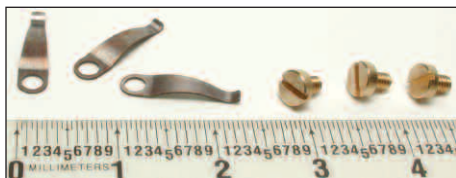
back view

16326-10 SEMClip™, 32 x 10mm x M4 Cylinder Mount, 1 clip, each

16326-20 SEMClip™, 32 x 10mm x M4 Cylinder Mount, 2 clips, each

16326-30 SEMClip™, 32 x 10mm x M4 Cylinder Mount, 3 clips, each

SEMClip™ Replacement Clips and Screws



16399 SEMClip™, Clips, pkg/10

16326-20 SEMClip™, Screws, Brass, M2x3, pkg/10

Flat Sample Mounts, 63mm and 100mm



Large flat mounting with 63mm and 100mm diameter area for large sample or for mounting multiple samples with conductive adhesive. Made of aluminum. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392).

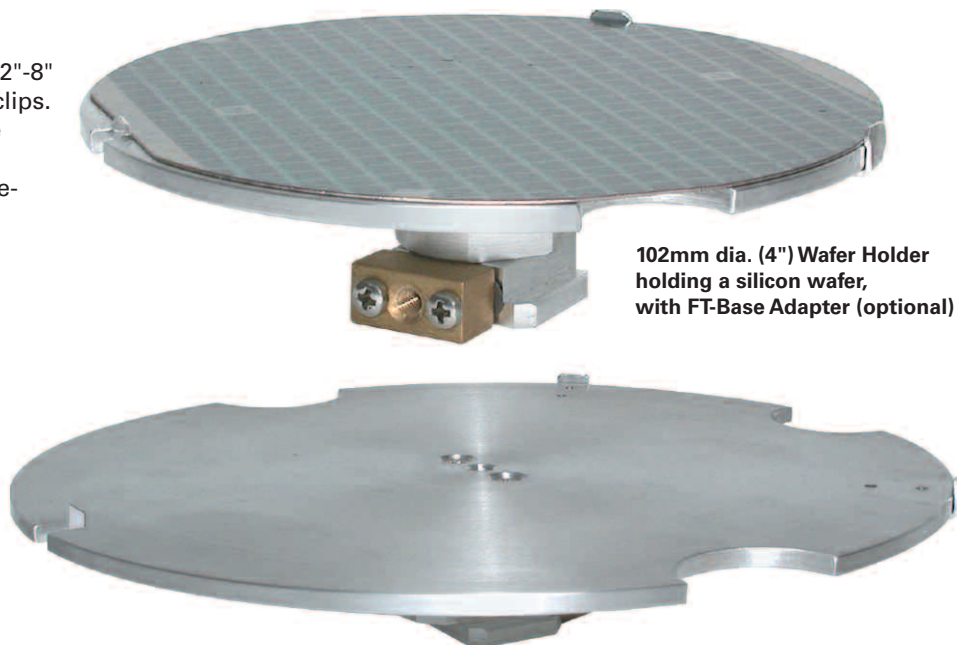
16114-4 Large 63mm Sample Mount, each

16116-4 Large 100mm Sample Mount, each

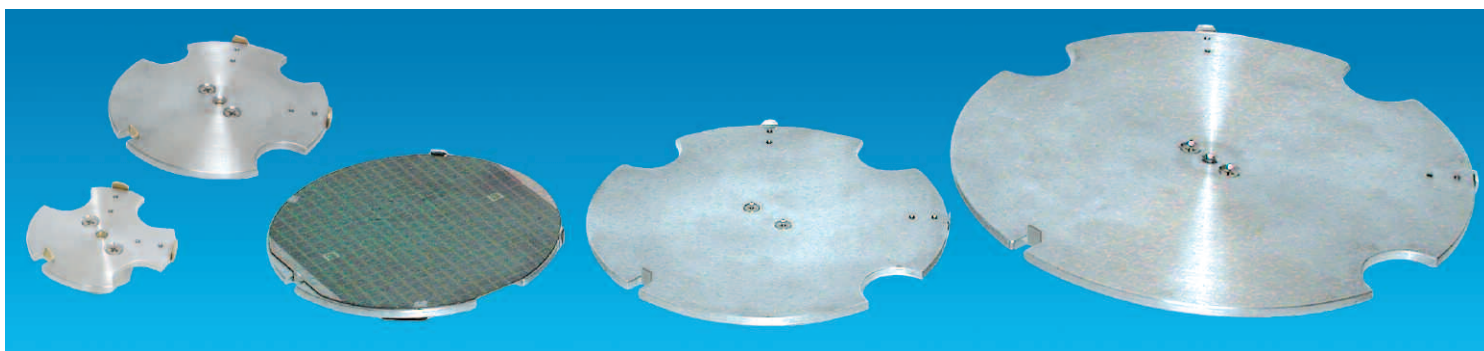
Wafer Holders

Six wafer holders for diameters varying from 2"-8" are available. Made of aluminum with brass clips. Each wafer holder has two fixed clips and one spring loaded clip to secure the wafer on the holder. Cut-outs are provided for easy wafer removal. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392).

125mm dia. (5") Wafer Holder with FT-Base Adapter (optional)



102mm dia. (4") Wafer Holder holding a silicon wafer, with FT-Base Adapter (optional)



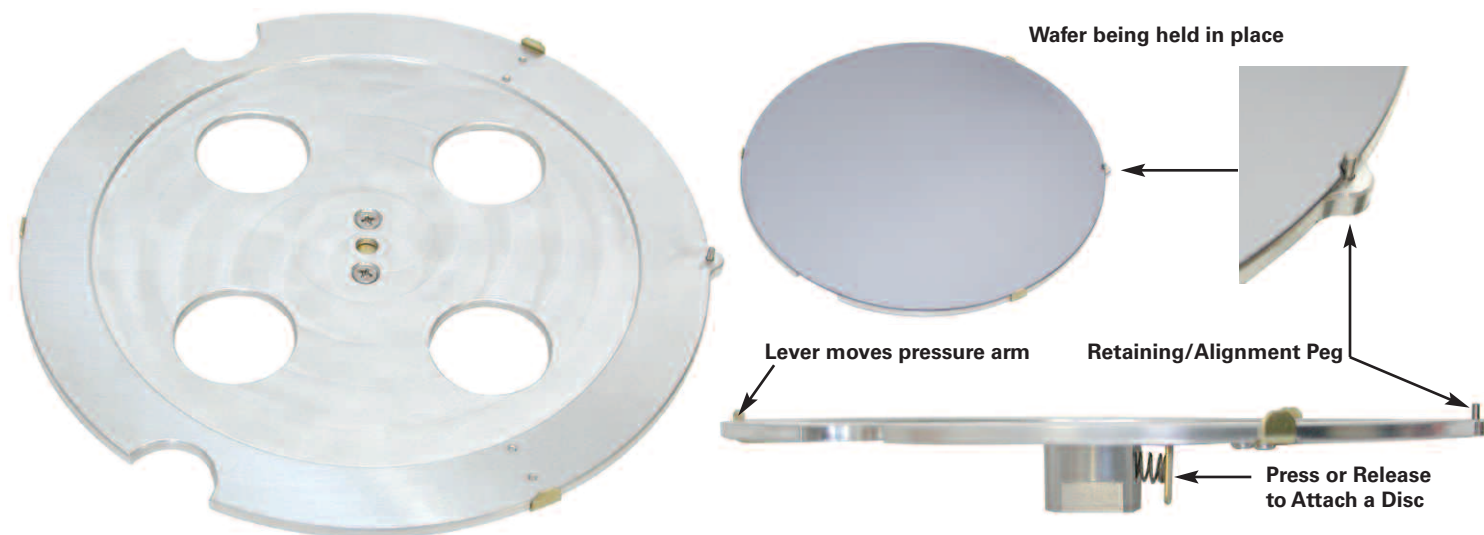
Six diameters available: 51mm (2"); 76mm (3"); 102mm (4") shown holding a silicon wafer; 127mm dia. (5"); 152mm dia. (6") [not shown]; and 206mm dia. (8").

- 15390** Wafer Holder for 51mm dia. (2"), each
- 15369** Wafer Holder for 76mm dia. (3"), each
- 15389** Wafer Holder for 102mm dia. (4")

- 15381** Wafer Holder for 127mm dia. (5"), each
- 15382** Wafer Holder for 152mm dia. (6"), each
- 15383** Wafer Holder for 206mm dia. (8"), each

Wafer Holders for Notch Style Wafers

Wafer holders for notch style wafers in 4" and 6" are available. Made of aluminum with brass clips. Each wafer holder has two fixed clips, a notch pin and a spring loaded clip opposite the notch pin to secure the wafer on the holder. Extended Button (15372-10) is needed when used with the Dovetail Stage Adapters (15371 or 15392).



- 15393** Wafer Holder for notch style wafers, 100mm / 4", each
- 15391** Wafer Holder for notch style wafers, 150mm / 6", each

The PELCO® Modular SEM Specimen Holder Concept Explained

The PELCO® Modular SEM Specimen Holders consists of a selection of stage adapters for most commercially available SEMs, an extensive range of interchangeable SEM Specimen Holders and adapter buttons for some of the SEM stage adapters.

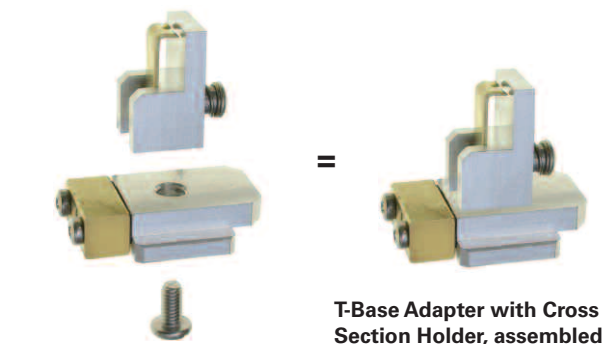
All Stage Adapters use either an M4 screw (supplied) or M4 thread to attach the SEM specimen holders. All SEM specimen holders have M4 thread in the bottom of the holders. The Modular SEM Specimen Holders will fit directly on the Hitachi style stage with M4 thread.

Only the Dovetail style Stage Adapters for JEOL and Zeiss/LEO need either a Short Button or an Extended Button to attach the Modular SEM Specimen Holder to the Stage Adapter.

Below are examples of how to connect the Stage Adapters to the Modular SEM specimen holders.

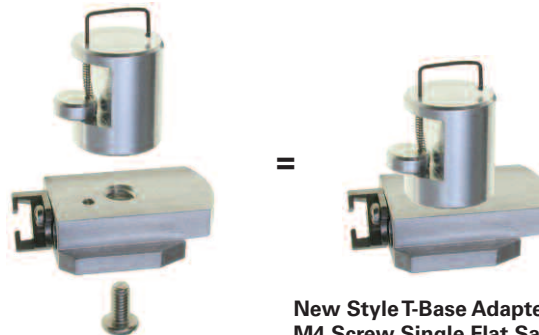
Hitachi T-Base Stage adapter 15370 uses an M4 screw to attach the Modular SEM specimen holders. No additional adapter is needed.

New style Hitachi T-base stage adapter 15370-1 uses an M4 screw to attach the Modular SEM specimen holders. No additional adapter is needed.



T-Base Adapter 15370 with M4 Screw and 15378-2 Cross Section Holder, 90 degrees

T-Base Adapter with Cross Section Holder, assembled



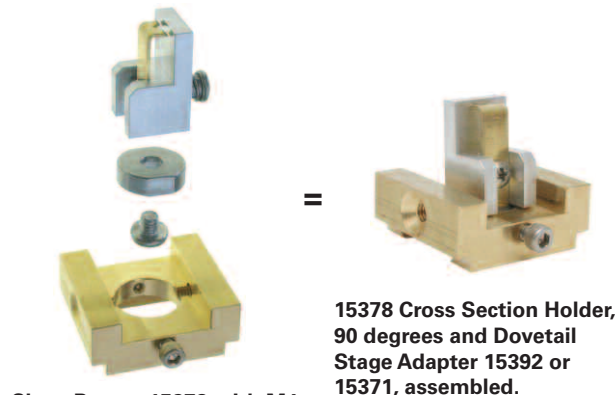
New Style T-Base Adapter 15370-1 with M4 Screw and 15375 Single Flat Sample

New Style T-Base Adapter with M4 Screw Single Flat Sample Clip Holder, assembled.

JEOL or ZEISS/LEO Dovetail Stage Adapter 15392 or 15371 needs either the Short Button or the Extended Button. The Short Button is for the smaller Modular SEM specimen holders to reduce the height. The Extended Button is needed for the larger Modular SEM Specimen Holders

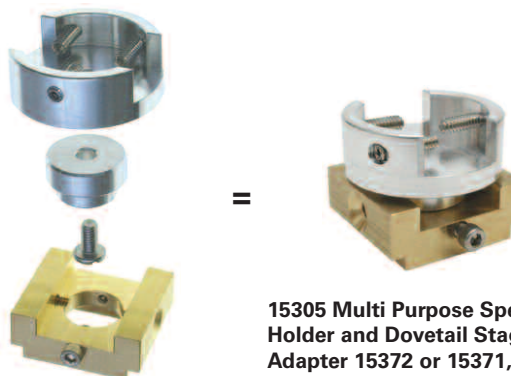
Hitachi T-Base Stage adapter 15370 uses an M4 screw to attach the Modular SEM specimen holders. No additional adapter is needed.

New style Hitachi T-base stage adapter 15370-1 uses an M4 screw to attach the Modular SEM specimen holders. No additional adapter is needed.



Short Button 15372 with M4 Screw used to attach 15378 Cross Section Holder, 90 degrees to Dovetail Stage Adapter 15392 or 15371

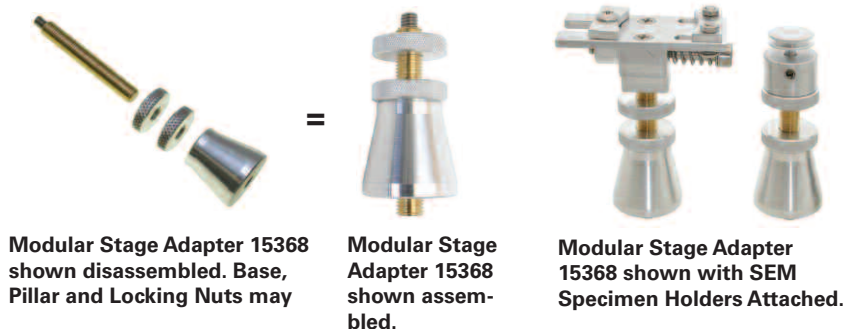
15378 Cross Section Holder, 90 degrees and Dovetail Stage Adapter 15392 or 15371, assembled.



Extended Button 15372-10 with M4 Screw used to attach 15305 Multi Purpose Specimen Holder to Dovetail Stage Adapter 15372 or 15371

15305 Multi Purpose Specimen Holder and Dovetail Stage Adapter 15372 or 15371, assembled.

FEI/Philips stage adapters 15368 and 15368-2 have an M4 thread and fit directly into any of the Modular SEM specimen holders. No additional adapters needed.



Modular Stage Adapter 15368 shown disassembled. Base, Pillar and Locking Nuts may

Modular Stage Adapter 15368 shown assembled.

Modular Stage Adapter 15368 shown with SEM Specimen Holders Attached.

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