

## PELCO Precision Low Speed Saw

### AG75000



The PELCO® Precision Low Speed Saw is a compact, multipurpose, precision saw designed to cut a wide variety of materials with minimal subsurface damage. Its low speed makes it possible to cut fragile materials that would otherwise fracture as well as soft materials that would load the diamond wheel on a higher speed saw. A variety of sample holders are available, providing a means for mounting any shape of sample, while multi-axis goniometer adaptability simplifies cutting oriented crystals.

### Operation

A sample is mounted to a sample holder and attached to the arm. An appropriate load is applied by adjusting the counterbalancing weight, and the automatic stop switch is set to define the end of the cut. The sample is positioned in any starting position relative to the diamond blade and then a micrometer is used for precise sample positioning. With the diamond blade rotating slowly and coolant in the reservoir, the arm is gently lowered until the sample touches the diamond blade. Cutting will continue until the automatic cutoff switch is triggered.

## Cutting Blades

The PELCO Precision Low Speed Saw is designed to cut with diamond, cBN and abrasive blades. Diamond blades are used for most applications while cBN blades are primarily used for cutting ferrous based materials. Abrasive blades ( $\text{Al}_2\text{O}_3$ , SiC) can be used for cutting both ferrous and nonferrous materials and have also been used for dry cutting of superconductor materials

## Features

- ◆ The belt drive system eliminates gear breakage which is common with less reliable fiber gear driven designs.
- ◆ The coolant reservoir is lowered and easily removed by opening an access door located on the front panel.
- ◆ Both coarse and fine sample position adjustments allow rapid and accurate sample positioning.
- ◆ The polyethylene coolant reservoir enables the use of both water soluble and oil-based coolants.
- ◆ Automatic termination of the cutting process is controlled by an electromechanical down stop which minimises supervision.
- ◆ The cutting arm pivots on a set of precision bearings rather than on the micrometer shaft which ensures accurate and repeatable sample positioning.
- ◆ The PELCO® Precision Low Speed Saw utilises a high torque 1/15 HP DC motor to provide sufficient power for difficult materials.
- ◆ Automatic overload protection shuts down the motor if the blade binds while cutting.
- ◆ A wide variety of sample holders allow mounting of virtually any shape of sample.

## Specifications

- ◆ Dimensions: Length 33cm (13") x Width 33cm (13") x Height 23cm (9")
- ◆ Universal Power: 100-240 VAC, 50/60 Hz
- ◆ Speed: 50-300 RPM
- ◆ Blade Sizes: 3" or 4", with a 0.5" arbor
- ◆ Maximum Cut Depth: 1.25"
- ◆ ETL and CE certified

## Accessories



### **AG75001 Single-Axis Goniometer**

The Single-Axis Goniometer has a graduated scale with a  $0.2^\circ$  vernier and can be rotated  $360^\circ$ . This rotational capability makes it ideal for precisely slicing single crystals. The sample is mounted to a block using a low melting point wax and the block is subsequently clamped into the PELCO® Precision Low Speed Saw. Wax mounting of the sample ensures that the cut piece will remain attached to the holder and will not be damaged due to falling after being cut.



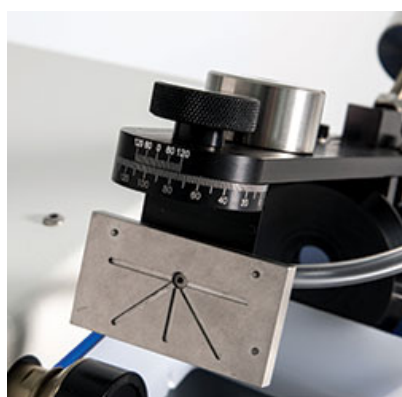
### **AG75005 2-Axis Goniometer**

The 2-Axis Goniometer is used for orienting and cutting single crystals. With the sample mounted to the goniometer, the vertical axis can be rotated  $\pm 50^\circ$  from the  $0.2^\circ$  vernier on the arm.



### **AG75003 Double Clamp Sample Holder**

The Double Clamp Sample Holder is designed to clamp both ends of a round or rectangular rod while cutting between the two clamped positions. The Double Clamp Sample Holder can also be used as a single clamp holder to hold encapsulated metallurgical samples up to 1.25" in diameter.



### **AG75004 Petrographic Vacuum Sample Holder**

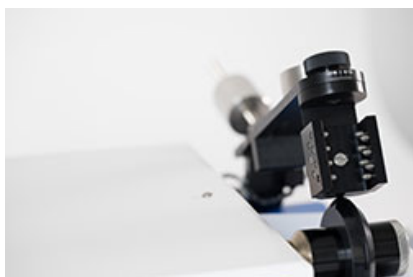
The Petrographic Vacuum Sample Holder is designed to use a vacuum to hold a 2.5 x 5.0cm (1 x 2") glass slide, onto which petrographic or other samples are mounted, while making saw cuts parallel to the glass slide. The glass slide is held against a stainless steel support plate with vacuum and is placed firmly against three locating pins to maintain its position.

## Accessories (continued)



### **AG75006 Vice Sample Holder**

The Vice Sample Holder is designed to hold flat, round and irregularly shaped samples without the need for mounting wax. The entire vise can rotate 360° in the horizontal plane. An extended v-notch jaw enables the mounting of cylindrical samples up to 1.25" in diameter including encapsulated metallurgical samples.



### **AG75019 Freeform Sample Holder, "Bone Chuck"**

The "Bone Chuck" allows you to hold the sample utilising a series of ten independently adjustable mounting screws. These mounting screws make it possible to hold irregularly shaped specimens and rotate them 360° in a horizontal plane. The Bone Chuck attaches to the standard work arm in place of the standard sample holders.

## Optional Accessories

Additional accessories available include Aluminium and Graphite sample mounting blocks (for use with Single-axis Goniometer), blade spacers of various thicknesses, and blade supports of different diameters. It is recommended that the largest blade support (e.g. minimum blade exposure) possible be used for a given sample diameter. This will increase precision and help prevent damage to the blade. The 2.43" diameter blades supports are supplied with the saw. Several different widths of blade spacer are also available, allowing mounting of multiple blades or increasing the range of blade offset. the 0.75" Blade Spacers are supplied as standard. The blade position is controlled with a metric micrometer. An inch micrometer assembly is also available as an additional accessory.