AWS1

Abrasive Wire Saw

The AWS1 Abrasive Wire Saw allows fragile or difficult materials to be cut or wafered without fear of the samples being damaged. Designed for use in photonics, semiconductor, opto-electronics and geological applications, the AWS1 uses fine lapping and cutting technology to perform cuts with minimal material loss and minimal sample damage.

- *High cut quality with minimal material damage*
- *Variable cutting force & wire speed*
- *Accepts samples up to 102mm (4")*
- *Simple, safe sample mounting*

Applications

The AWS1 is equally suited to slicing semiconductor and opto-electronics materials, such as Gallium Arsenide, Silicon or Lithium Niobate, as it is to cutting fragile optical crystals with very little kerf loss. When working with materials of limited integrity, such as Mercury Cadmium Telluride, the saw can produce slices of less than half the thickness of those produced using some annular saws. The accuracy and control offered by the AWS1 means that expensive materials, such as Cadmium Zinc Telluride or YAG laser rods, can be cut more economically than in alternative sawing methods. However, its use is not restricted to these areas and the saw can also be used for cutting geological samples, fossils, teeth, bones, archeological specimens and a range of other materials.

Description

The AWS1 is a compact, bench-top saw featuring variable wire speed and variable cutting load, with abrasive being supplied to the wire from a cylinder on the top of the unit. With the correct process parameters, this results in samples with a smooth lapped surface which requires less subsequent processing than those cut on other types of saw. A perspex hood covers the cutting area and protects from both debris and abrasive spray.The saw will slice samples up to 102mm (4") in diameter with a maximum boule/sample length of 102mm (4").

Sample movement is a major feature of the AWS1, as the specimen can be cut at a range of angles, to the saw's adjustable **angled cross-slide.** The sample can be moved forward and back, with a **digital readout** showing the sample position to a resolution of 10µm.

The saw allows excellent access to the sample, cross-slide and wire control mechanism. Ensuring you can easily position the sample prior to cutting or make any positional alterations without any hindrance. The "jog" facilities provided enables you to move the drum in either direction at slow speed, thereby facilitating the set-up procedure.

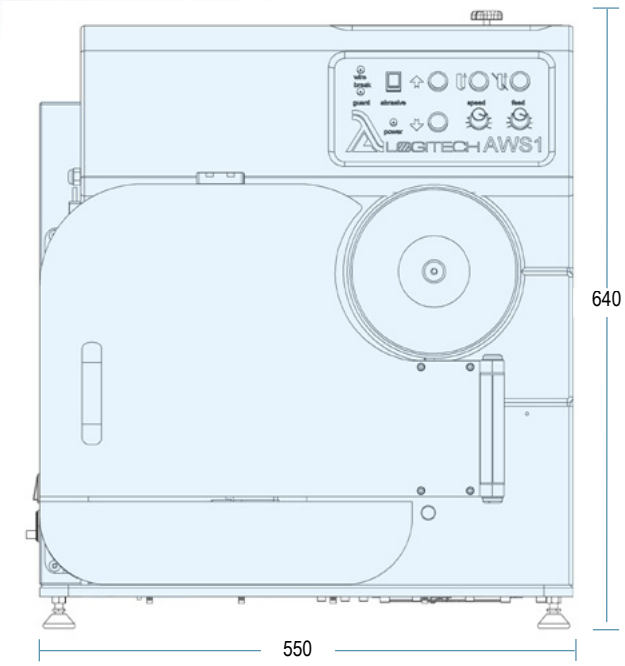
The unit's unique sample feed system, enables you to vary the cutting load in the range 0 to 100gms, using a sensitive servo mechanism which continuously measures the cutting load applied to the sample. Thus optimising the cutting force for the material.

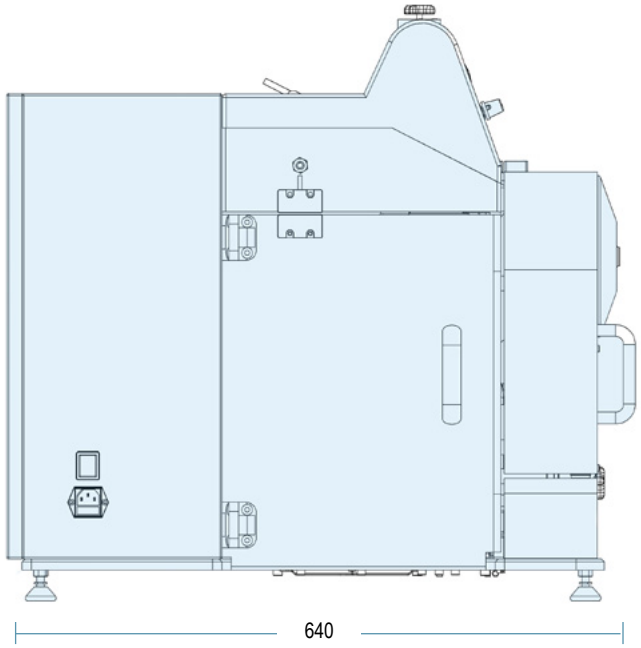
Altering the drum speed regulates the speed at which the wire cuts across the sample. The speed control on the front panel allows settings of between 0 and 400rpm. Once the drum has used the full length of cutting wire (100 feet or 30.48m) it will automatically reverse direction.

The AWS1's simple set-up procedure and user friendly control panel minimises operator involvement. Little supervision is required once the fine lapping and cutting process has begun.

The abrasive is fed on to the cutting wire by the integral autofeed system. A rotating cylinder, with a capacity of up to 1.5 litres, feeds abrasive down a removable abrasive chute and two adjustable guide wires. This allows you to set the exact position where the abrasive should be distributed. The combined action of the cutting wire and abrasive particles moving over the sample results in the slice/wafer being cut with a fine lapped finish.

User safety and convenience are paramount. A hood safety interlock prevents the drive motor from starting whilst the hood is open. During the cutting cycle, the hood can be opened to allow wire alignment alterations. In the unlikely event that the cutting wire should snap, the unit will instantly switch itself off, thereby minimising user and sample risk. Should the mains fail an internal braking system will prevent the drum from turning, preventing damage to the sample.





Technical Specifications:

Power Supply	220/240V, 50-60Hz
Main Drive Motor	0.18 kW
Height	640mm approx
Width	550mm approx
Depth	640mm approx
Net Weight	36kg approx
Gross weight (packed)	46kg approx
Cutting wire	30.48m (100ft) length
	Diameter 0.37mm

Accessories, Components & Consumables

A comprehensive range of accessories, components and consumables are available to support these systems, enabling optimum results and longevity of the machines. A selection of supporting products can be found below. For a more comprehensive listing or to order consumables online please go to www.logitech.uk.com

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