

## Model 15

### Diamond Wire & Disc Saw

The Model 15 Diamond Wire and Disc Saw is a unique product embracing a wide range of cutting applications. This machine has been designed for the precision slicing and dicing of materials from the most delicate crystals to the hardest ceramics.

#### Uniquely versatile

The Model 15 Saw is a compact, well constructed system designed to provide a single saw solution for a wide range of materials within a laboratory environment. This uniquely versatile and effective saw incorporates interchangeable wire and disc cutting heads, coolant recirculation unit, coolant trough and a quick release cross-slide/clamping vice assembly.

#### Sawing configurations:

The **diamond wire** cutting head produces a cut with minimum surface and sub-surface damage on brittle and delicate specimens. The use of an extremely light load will minimise residual stresses to a negligible level. Kerf loss depends on the diameter of the wire but is typically 0.25mm (0.009").

**Diamond discs** are used for cutting less delicate or harder materials and in applications where sub-surface damage is less critical. This is particularly effective on hard ceramics, opto-electronic materials and the more robust semiconductor materials when greater loads are used. Kerf loss is greater than with the diamond wire (typically 0.5mm / 0.02") but the geometric accuracy of the cut tends to be higher.

**Abrasive discs** are best suited for cutting metals with a hardness up to Moh 8. The discs are made from a flexible resin material, which is impregnated with an abrasive compound, silicon carbide. These discs can be used until the diameter has worn so small they are of no further use.

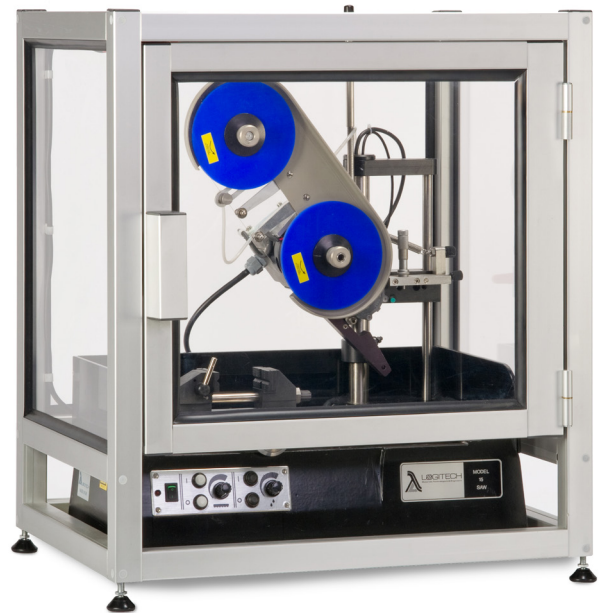
#### Main Features

Adjustable cut-out for automatic operation gives the operator freedom to perform other tasks whilst the specimen is being cut. The depth of cut can be indexed up to 10mm (0.39") using micrometer adjustment with 20 micron divisions and will switch off automatically when the preset position is reached. Variable cutting pressure enables fragile and expensive materials to be cut with confidence and precision. With careful processing, fractures and costly waste can be eliminated.

Variable cutting speed provides the operator with precise control over the speed of the wire or disc. Selection of the correct speed minimises vibration and chatter, ensuring optimum finish and minimal sub-surface damage. Residual stresses and hence the requirement for subsequent processing operations are also reduced.

Adjustable cutting height allows specimens of up to 50mm (1.97") diameter and rectangular sections of 50 x 55mm (1.97x2.16") to be accommodated. The cut-off setting will stop the machine at the correct depth, if required.

The quick wire to disc configuration, less than two minutes, ensures that the saw is used to its full capacity. The wire sawing facility is easily removed from the sawing arm using only one tool and the disc quickly attached.



- *Low surface damage wire cutting*
- *Quick and simple diamond disc cutting*
- *Fast wire-to-disc interchange*
- *Adjustable cut-out for automatic operating*

The Viscous damped sawing arm facility is vitally important during the initial cutting stage. The adjustable damping action gives the wire or disc gradual contact with the sample and ensures that there is no run-off at the beginning of the cut. This also minimises kick back when working with hard material sections, giving a smoother, more accurate cut.

Calibrated cross-slide with vice attached allows serial or incremental cuts to be carried out on samples up to 105mm (4.13") long in increments of 0.1mm (0.004"), useful for semiconductor wafer dicing. The cross slide is anodised to prevent corrosion and a dial gauge option is available to allow more precise indexing if required.

Detachable cross-slide is an invaluable asset when cutting specimens at precise angles. The complete slide/vice assembly can be removed from the machine and the specimen aligned on a microscope. Using the optional goniometer, specimens may be set up using an x-ray camera. The complete assembly is then replaced and the orientation of the specimen is retained. This feature is particularly valuable whenever angular or dimensional reference must be made to an external instrument.

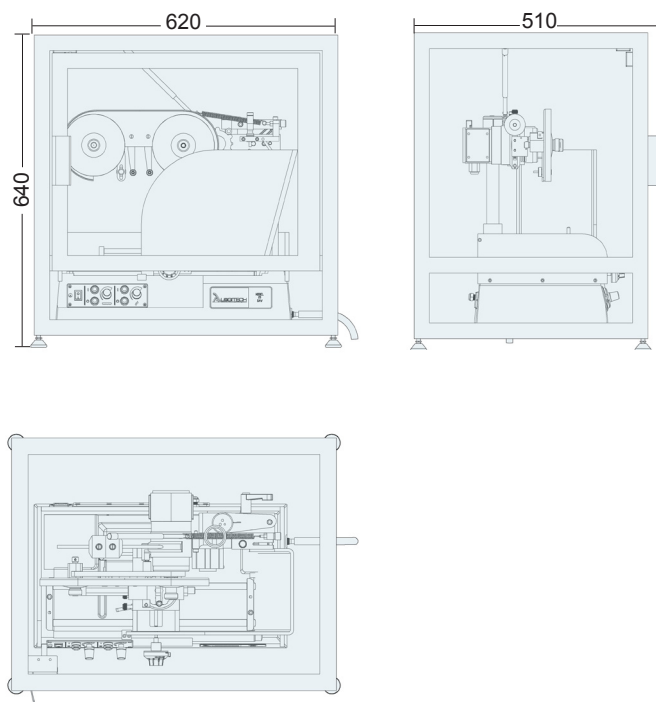
A variable flow integral cooling system enables the most suitable coolant flow rate for each application to be selected.

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#### Technical Specifications

Power Supply	220/240V, 50Hz	110V, 50/60Hz
Motor:	0-180V D.C	
Controller:	Thyristor full wave feedback	
Coolant pump:	12V vane pump	
Cross-slide:	105mm (4.13") cross travel/1 rev of dial - 1mm (0.04") movement	
Depth of cut:	Wire - 50mm (1.97")	
Depth of cut:	Disc - 50mm (1.97") with 150mm (6") disc	
Speed:	Full load - 2000rpm	
Height:	640mm (25.6")	
Depth:	510mm (20.4")	
Width	620mm (24.8")	
Weight:	38kg	



#### 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](http://www.logitech.uk.com)

##### Accessories

Gonimeter  
 Linear Drive Unit  
 Rotary Table  
 Tilt Table  
 Rotary Indexing for Linear Drive  
 Substrate holding fixture  
 Cross slide dial gauge  
 Thin diamond rimmed disc  
 Diamond wire - 0.37mm

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