

AbrasiMatic™ 300

Abrasive Cutter



AbrasiMatic™ 300 Abrasive Cutter

The AbrasiMatic 300 Abrasive Cutter is a bench-top cutter featuring manual cutting action in 3 directions or automated cutting in 1 direction. This gives the user the maximum versatility to section a wide variety of sample materials, sizes and geometries. It is engineered with innovative capabilities to be used in both production support and laboratory environments. The AbrasiMatic 300 now includes an accompanying digital display to track X-axis travel improving precision, consistency and repeatability in serial sectioning applications.



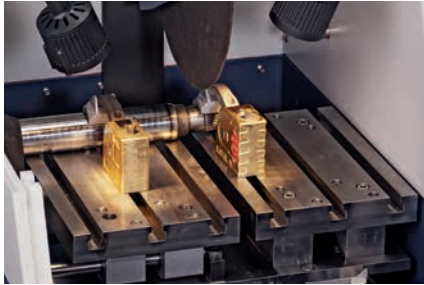
At a Glance

- Superior cutting torque powers through difficult cuts
- Accepts up to 12 in [305mm] cut-off wheels
- Ability to section up to 4.375in [110mm] diameter
- Brake stop allows for rapid sample access
- Large viewing window and lighting provides excellent visibility
- An innovative basket catches parts after sectioning
- Wash down hose allows for quick cleaning
- Both automatic and manual cutting modes available
- Serial cutting with optional, movable X-table

AbrasiMatic™ 300 - Designed for You

Construction

The durable cast aluminum base has a stain and chip resistant finish for easy cleaning and long lasting, “like new” appearance. The cutting area is separated from the electrical area for total isolation. Two corrosion resistant stainless steel T-slot vise table beds accept any standard vises (*order separately*) with 12mm T-nuts. The metal construction hood is secured in a raised position with two gas springs which



Side ports accommodate extra-long samples.

maintain an open position during non-motor operation. Two large drain outlets with screen allow the choice of discharge plumbing either in the back or below the machine. Two coolant nozzles are mounted in the wheel guard to ensure a consistent burn-free cut. Six rubber feet reduce any vibration transfer to the bench-top.



Parts tray catches small samples for easy retrieval.

Sectioning Options

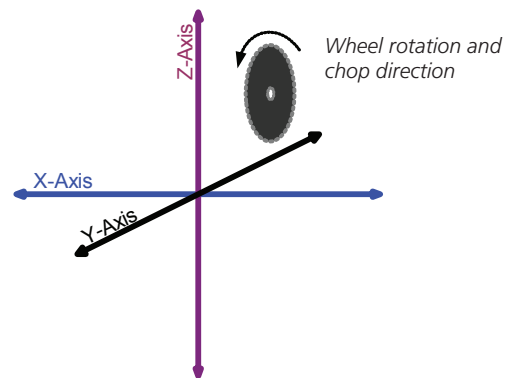
There are 4 options a user can choose from to section a sample. These options allow the choice of:

1. Manual “chop” style cutting in the Z-axis using the manual cutting lever.
2. Manual longitudinal cutting in the Y-axis using the Y-axis handle wheel.
3. Automated longitudinal cutting in the Y-axis using the Y-axis motor feed and touch-screen options.
4. Manual consecutive serial sections in the Y-axis with the optional movable X-bed.

Manual chop action sectioning in the Z-axis provides quick and simple cutting action using the manual arm control lever. This allows the user to “feel” the cut and control the feed rate. Manual Y-axis permits sectioning of long and irregularly shaped samples. This method uses a rotating handle to control the cutting action.

Automatic Y-axis sectioning allows the user to increase productivity. All parameters are set on the user friendly touch-screen control panel. The user sets the cutting length and feed rate and the machine does the rest of the work. In this automatic mode, Buehler’s unique SmartCut system automatically reduced feed rate if necessary to produce burn-free, consistent cuts. Pulse cutting action can also be chosen in this mode to help power through difficult to cut materials.

The optional X-axis sectioning mode provides a method for parallel cutting without having to remove and re-secure a sample. This method also uses a rotating manual handle to move the sample.



Triple X-Y-Z axis sectioning options:

1. Z-axis manual chop action
2. Y-axis manual or motor driven feed for longitudinal cuts
3. Optional X-axis manual drive for serial sectioning



AbrasiMatic 300 standard machine without X-axis direction sectioning.

AbrasiMatic™ 300 - Designed for You

Recirculating Coolant System & Cart

Effective sample cooling is a key factor in producing high quality burn-free cuts. Wet cutting is critical in producing a quality cut face and prevents excessive surface damage caused by overheating and improper wheel breakdown. The AbrasiMatic 300 coolant system is automatically activated when the cutting wheel starts or can be manually activated for use of the clean-out hose. A triple baffle tank design isolates the sludge from the liquid coolant. The AbrasiMatic® 300 Recirculating Coolant System (*sold separately*) includes a centrifugal pump and a 22gal [83ℓ] tank with a flow control and drain hose. The roller-cart makes moving and cleaning the tank quick and easy.



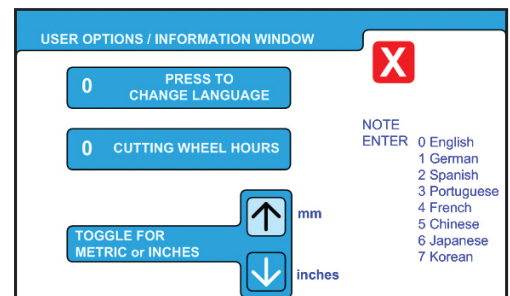
Safety First

Designed with safety as a top priority, the AbrasiMatic 300 Abrasive Cutter is constructed of a protective metal hood and clear protective window. A protective metal wheel guard covers the rotating abrasive cut-off wheel at all times. The large emergency-stop button, which can be quickly accessed and pressed in case of any emergency, will immediately deactivate power to the cutting wheel and recirculating system, but the cutting bay lighting will remain on. A safety switch prevents power to the motor and cutting wheel while the hood is in an open position. For increased safety, a hood lock safety switch prevents the hood from opening while the cutting wheel is rotating. An easily accessible master disconnect switch removes power to the entire machine. Overload protection deactivates the motor in an overload condition and can be easily reset with the flip of a switch. Low voltage (24-volt) controls ensure operator safety. CE marked and RoHs compliant

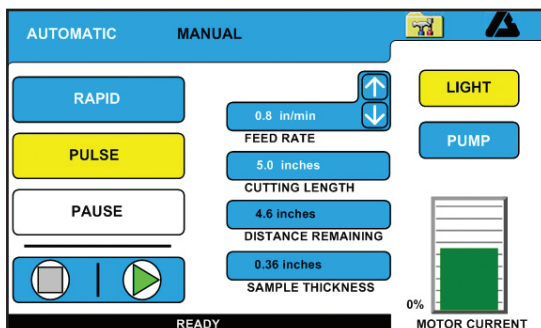


Control Panel

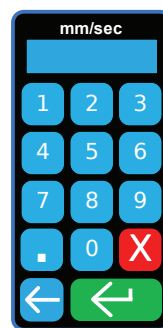
The Abrasimatic® 300 utilizes state-of-the-art color touch-screen controls. The HMI (Human Machine Interface) provides information exchange and communication between the user and the machine's electromechanical system. This allows the user to input commands through touchable images on a user-friendly window. There is a separate screen for manual and automated operation. All screen text has been translated into eight languages (English, German, Spanish, Portuguese, French, Chinese, Japanese and Korean) and all units of measure are viewable in either metric or imperial.



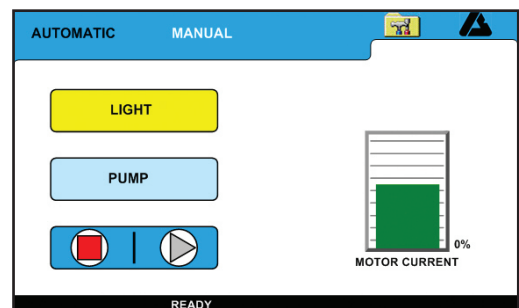
Set-up screen allows choice of 8 language options and metric or imperial units.



Operation screen for automatic mode.

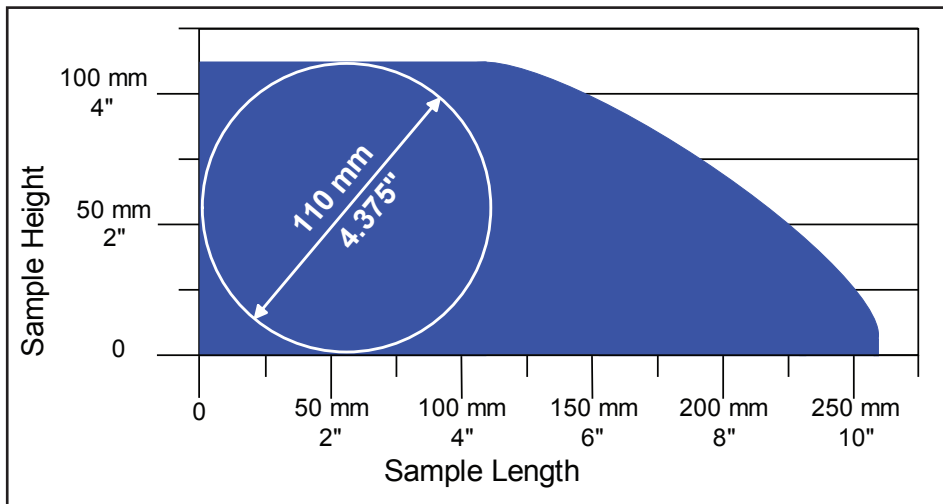


Number keypads make it easy to program cutting length and feedrate.

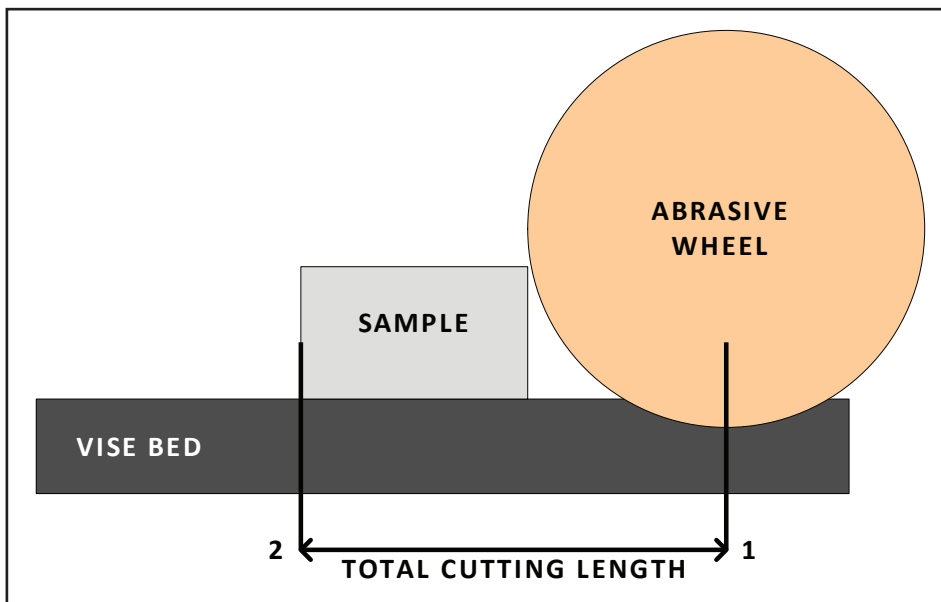


Operation screen for manual mode.

Cutting



AbrasiMatic 300 cutting envelope (with new 12in [305mm] blade) is one of the largest in its class with up to 10.25in [260mm] longitudinal cutting capacity.



Determine cutting length by measuring the distance where (1) the abrasive wheel meets the vise table when first making contact with the sample plus the (2) length of the sample.

Did You Know?

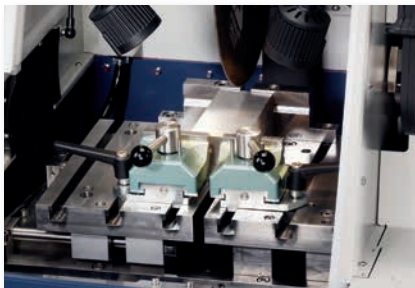
SmartCut™ automatically lowers the saw's feed rate when the cutting motor reaches its maximum load to minimize sample damage during a cut.

Technical Specifications



Specifications

Voltage/Frequency/Phase	230VAC, 60Hz; 460VAC, 60Hz; 220VAC, 50Hz; 380VAC, 50Hz / 3 phase
Power Consumption	4.0kW
Maximum Current	15.7amps @ 220/230VAC; 7.9amps @ 460VAC; 9.1amps @ 380VAC
Motor Power	5Hp [3.7kW]
Lighting	Two LED Goosenecks
Recirculation Tank Capacity	22gal [83ℓ]
Hose Fitting Sizes	Intake: 1in [25mm]; Discharge: 2in [50mm]
Sound Rating	78dBA - no load
Fume Extractor Size	3in [75mm] cut-out diameter
Control Panel	7in [175mm] diagonal; 320x240 pixels; 256 color screen, backlight NEMA4 [IP 65] <i>water resistant</i>
T-slot table dimensions	14.375 W x 10in D [365 x 254mm]; 12mm wide t-slots
Travel movement	Z-Axis: 5.75in [150mm]; Y-Axis: 10.25in [260mm]; X-Axis: 2.75in [70mm]
Auto Y-Axis Feed Rate	0.7-5in/min [0.3-2mm/sec]
Window Size	14 W x 12in H [355 x 300mm]
Abrasive Wheel Diameter & Arbor	maximum 12in [305mm] & 1.25in [32mm]
Wheel Speed	2600rpm @ 50/60Hz; 8200 surface ft/min [2700 surface m/min]
Maximum Cut Diameter	4.375in [110mm]
Cutting Wheel Torque	121 in/lb [14Nm]
Cutting Chamber	36 W x 22 D x 8in H [914 x 558 x 203mm]
Compliance	CE



Sliding vises provide versatile, quick clamping/release for routine applications.



Speed vise and riser blocks provide vertical clamping forces for large and irregularly shaped samples.

AbrasiMatic™ 300 Abrasive Cutter

- Manual or automatic operation, 5Hp
- 12in [305mm] wheel capacity
- 12mm T-Slot stainless steel bed
- Optional X & Y-axis motion
- SmartCut™ feedback system included
- Touchscreen

(Includes SuperAlloy Abrasive Wheels. Recirculating System and vising not included)



	Part Number	Voltage/Frequency		Part Number	Voltage/Frequency
X-axis Only	10-2190-260	200-240VAC, 60Hz	X & Y-axis	10-2193-260	200-240VAC, 60Hz
	10-2190-460	440-480VAC, 60Hz		10-2193-460	440-480VAC, 60Hz
	10-2190-250	200-240VAC, 50Hz		10-2193-250	200-240VAC, 50Hz
	10-2190-400	380-400VAC, 50Hz		10-2193-400	380-400VAC, 50Hz

Abrasive Cut-Off Wheels - 12in [305mm] Diameter 1.25in [31.75mm] Arbor (qty. 10)

Recommended Use	Part Number/Thickness
SuperAlloys and General Steel, Non-ferrous	12-4405-010 0.055in [1.4mm]
Ferrous materials >HRC60	12-4110-010 0.105in [2.7mm]
Ferrous materials HRC50-60	10-4412-010 0.105in [2.7mm]
Ferrous materials HRC35-50	12-4116-010 0.105in [2.7mm]
Ferrous materials HRC15-35	12-4120-010 0.105in [2.7mm]
Ductile materials, Ti & Ti-alloys, Zr & Zr-alloys	12-4145-010 0.055in [1.4mm]

Accessories & Consumables

Recirculating System 22 gal [90ℓ]

(shown with 16-1497 Cart)



10-2332-260	[200-240VAC, 60Hz]
10-2332-460	[440-480VAC, 60Hz]
10-2332-250	[200-240VAC, 50Hz]
10-2332-400	[380-400VAC, 50Hz]

Cool 2 Fluid

Water miscible fluid concentrate. Recommended mix ratio is 1 part Cool 2 Fluid to 30 parts water.

41-10102	33.8oz [1ℓ]
41-10103	1gal [3.8ℓ]
41-10104	5gal [19ℓ]
109011 ^{2, 3}	1ℓ
109012 ^{2, 3}	10ℓ



^{2, 3} Items only available in Europe, Middle East, Africa and Asia.

Vises with 12mm T-Nuts

Speed Vise Kit, small  10-3531	Riser Block Kit, small for Speed Vise Kit  10-3532 for 10-3531	Sliding Vise Kit  10-2170 (left) 10-2171 (right)	Fastener Vise  95-C1702 <i>Must be held by another vise such as MetKlamp™</i>
MetKlamp Vise  95-C1701 (right) 95-C1703 (left)	MetKlamp VII Cam-Lock Vise  95-C1821 (left) shown 95-C1822 (right) shown	Universal Clamping Kit  10-3570	

Large Vises with 12 & 14mm T-Nuts

12mm T-Nuts fit AbrasiMet 250, AbrasiMatic 300 and AbrasiMatic 450.
14mm T-Nuts fit Delta Manual and Delta Orbital and Chop Cutters only.

Speed Vise Kit, large  10-3523	Riser Block Kit, large for Speed Vise Kit  10-3528	Chain Clamping Vise  460030	Speed Clamping Vise  10-2180 (left) 10-2181 (right)
Horizontal Clamp for Speed Vise  10-3526	Vee Block Clamp Kit  10-3527	Adjustable Vee Blocks  10-3525	



Shop online at www.buehler.com. (US, DE, FR and UK only)

For a complete listing of consumables, visit our website at www.buehler.com or refer our Product Catalogue. Buehler continuously makes product improvements; therefore technical specifications are subject to change without notice.

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AbrasiMet • AbrasiMatic • IsoMet

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