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 4.375 in [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
**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 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.

**Sectioning Options**

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


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.
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 manual mode.

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

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage/Frequency/Phase</td>
<td>230VAC, 60Hz; 460VAC, 60Hz; 220VAC, 50Hz; 380VAC, 50Hz / 3 phase</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>4.0kW</td>
</tr>
<tr>
<td>Maximum Current</td>
<td>15.7amps @ 220/230VAC; 7.9amps @ 460VAC; 9.1amps @ 380VAC</td>
</tr>
<tr>
<td>Motor Power</td>
<td>5Hp [3.7kW]</td>
</tr>
<tr>
<td>Lighting</td>
<td>Two LED Goosenecks</td>
</tr>
<tr>
<td>Recirculation Tank Capacity</td>
<td>22gal [83ℓ]</td>
</tr>
<tr>
<td>Hose Fitting Sizes</td>
<td>Intake: 1in [25mm]; Discharge: 2in [50mm]</td>
</tr>
<tr>
<td>Sound Rating</td>
<td>78dBA - no load</td>
</tr>
<tr>
<td>Fume Extractor Size</td>
<td>3in [75mm] cut-out diameter</td>
</tr>
<tr>
<td>Control Panel</td>
<td>7in [175mm] diagonal; 320x240 pixels; 256 color screen, backlight NEMA4 [IP 65] water resistant</td>
</tr>
<tr>
<td>T-slot table dimensions</td>
<td>14.375 W x 10in D [365 x 254mm]; 12mm wide t-slots</td>
</tr>
<tr>
<td>Travel movement</td>
<td>Z-Axis: 5.75in [150mm]; Y-Axis: 10.25in [260mm]; X-Axis: 2.75in [70mm]</td>
</tr>
<tr>
<td>Auto Y-Axis Feed Rate</td>
<td>0.3-5in/min [0.1-2.5mm/sec]</td>
</tr>
<tr>
<td>Window Size</td>
<td>14 W x 12in H [355 x 300mm]</td>
</tr>
<tr>
<td>Abrasive Wheel Diameter &amp; Arbor</td>
<td>maximum 12in [305mm] &amp; 1.25in [32mm]</td>
</tr>
<tr>
<td>Wheel Speed</td>
<td>2600rpm @ 50/60Hz; 8200 surface ft/min [2700 surface m/min]</td>
</tr>
<tr>
<td>Maximum Cut Diameter</td>
<td>4.375in [110mm]</td>
</tr>
<tr>
<td>Cutting Wheel Torque</td>
<td>121 in/lb [14Nm]</td>
</tr>
<tr>
<td>Cutting Chamber</td>
<td>36 W x 22 D x 8in H [914 x 558 x 203mm]</td>
</tr>
<tr>
<td>Compliance</td>
<td>CE</td>
</tr>
</tbody>
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*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.*
Technical Specifications

**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)*

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Voltage/Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-2190-260</td>
<td>200-240VAC, 60Hz</td>
</tr>
<tr>
<td>10-2190-460</td>
<td>440-480VAC, 60Hz</td>
</tr>
<tr>
<td>10-2190-250</td>
<td>200-240VAC, 50Hz</td>
</tr>
<tr>
<td>10-2190-400</td>
<td>380-400VAC, 50Hz</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Part Number</th>
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</thead>
<tbody>
<tr>
<td>10-2193-260</td>
<td>200-240VAC, 60Hz</td>
</tr>
<tr>
<td>10-2193-460</td>
<td>440-480VAC, 60Hz</td>
</tr>
<tr>
<td>10-2193-250</td>
<td>200-240VAC, 50Hz</td>
</tr>
<tr>
<td>10-2193-400</td>
<td>380-400VAC, 50Hz</td>
</tr>
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</table>

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

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

**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

2,7 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
  - Must be held by another vise such as MetKlamp™

- **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 to our Product Catalogue. Buehler continuously makes product improvements; therefore technical specifications are subject to change without notice.