Product Brochure

TechCut 4™

Precision Low Speed Saw

- 3" - 6" Blade Range
  - Digital Speed Display
    - 1-Micron Sample Indexing
      - Spring-Loaded Dressing Stick Attachment
        - All Aluminum & Stainless Steel Construction

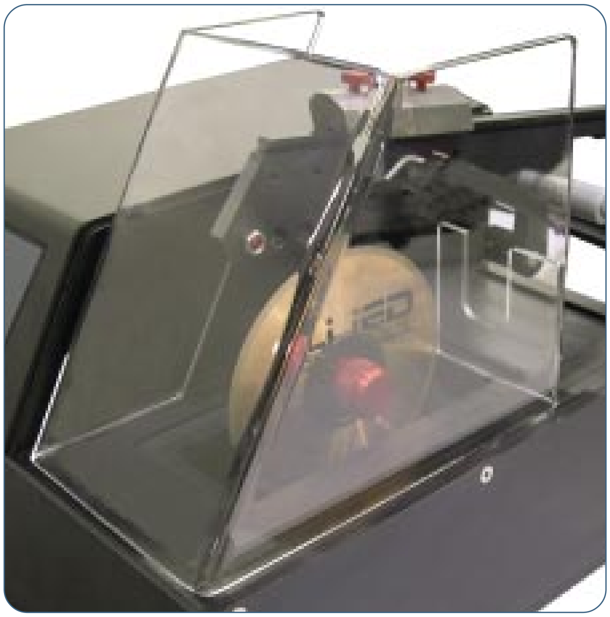
TechCut 4™
Low Speed Saw

A low speed saw excellent for cutting smaller, delicate samples that cannot tolerate excessive friction and heat caused by high speed sectioning. The gravity-fed cutting system uses adjustable weights to apply or counterbalance downward force to the sample during sectioning. Cutting fluid is drawn from the reservoir by the rotating blade and applied to the sample. With a 3 to 6 inch blade range, samples up to 2 inches thick can be sectioned.

Features:

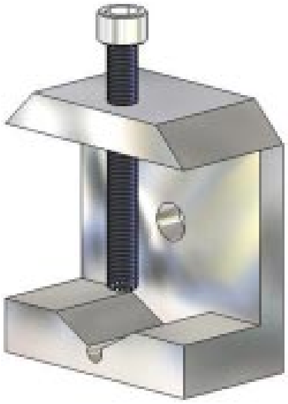
- Gravity-fed cutting system
- 3-6 inch (75-150 mm) diameter blade range, ½-inch (12.7 mm) arbor hole
- Variable speed with LED display: 10-500 RPM (10 RPM increments)
- Cutting capacity: 2-inch (51 mm) diameter
- Micrometer sample indexing, 1-micron resolution, 2-inch range
- Spring-loaded dressing stick attachment allows dressing while sectioning
- Automatic optical shut-off sensor with adjustable stop to control depth of cut
- Precision-machined aluminum and stainless steel construction offers maximum corrosion resistance and durability
- HP (45 W) geared DC motor
- Sliding weights provide variable sample loading: 0-300 grams
- Removable coolant reservoir
- Touch-pad switches control all functions
- Removable splash shield
- Removable catch screen prevents sectioned pieces from falling into reservoir
- Overall Dimensions: 11" W x 17" D x 14" H
  (279 x 432 x 356 mm)
- Weight: 40 lb. (18 kg)
- Two (2) year warranty – parts and labor
- Designed & manufactured by Allied in the USA

Unique spring-loaded dressing stick attachment

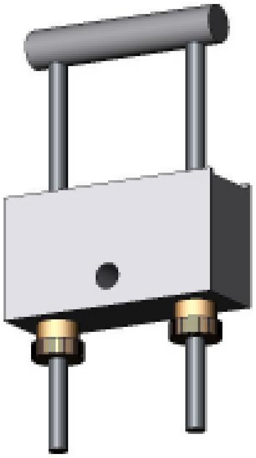


Splash shield included

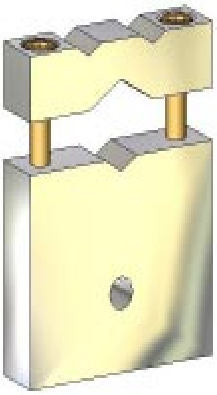
5-5005
Mount Holder, 1½" diameter (.75" radius).



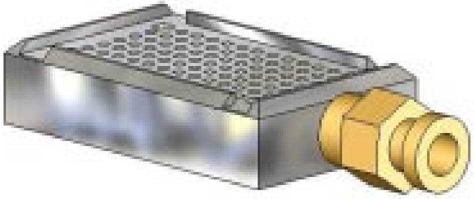
5-5010
V-Block Fixture. Good for short, round stock or short, round mounted samples. 1¾" x 1½".



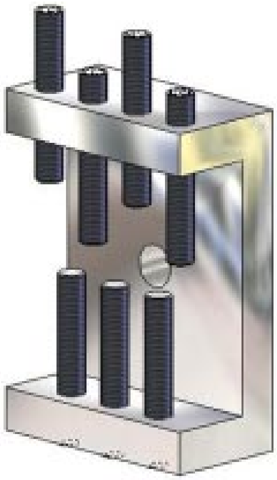
5-5015
Bone Fixture, 2¼" wide.



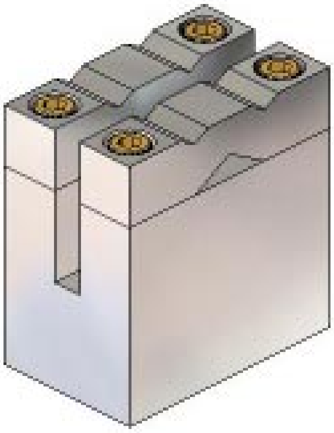
5-5020
Single Saddle Clamp with large V-Groove and second side with two smaller V-Grooves. 1.25" wide sample holding area.



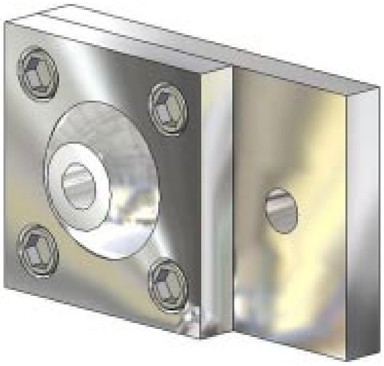
5-5025
Vacuum Fixture for Thin Sections to hold 1" x 1.8” Glass Slide. Used in petrographic applications. Accepts 1/4” OD vacuum tube. 1¼" x 2".



5-5030
Irregular Shaped Sample Fixture, 1.50" x 1.40".



5-5035
Dual Saddle Clamp with large V-Groove and second side with two smaller V-Grooves. 1.25" wide sample holding area. Excellent fixture for burr-free cutting of small rod or bar stock samples.



5-5040
Swivel Attachment, 2¼" x 1½". Allows for precise alignment of samples needing to be sectioned at specific planes off angle to the geometry of the sample or the fixture. A setscrew tightens the ball in place once the angle is set.

Wafering Blades

Wafering (ultra thin) blades are available in **Bonded**, **Plated** or **Solid Core** configurations with Diamond, CBN (cubic boron nitride), Aluminum Oxide or Silicon Carbide mineral. They are recommended for precision sectioning or when kerf (cut width) loss needs to be kept to a minimum.

Bonded Blades

Bonded blades are composed of an inner metal core and an outer rim. The rim consists of either metal or resin mixed with abrasive, cured under high temperature and pressure to bond the matrix together. Metal bonding offers long life and durability, while resin bonding creates less heat, provides better surface finish and is well suited for cutting hard, delicate or brittle materials.

Metal Bonded Blades

Diamond, Metal Bond

High Concentration

Recommended for general laboratory sectioning, either low or high speeds.

Item	Dimensions
60-20065	3" x .006" x 0.5" (76 x .15 x 12.7 mm)
60-20070	4" x .012" x 0.5" (102 x .31 x 12.7 mm)
60-20075	5" x .015" x 0.5" (127 x .38 x 12.7 mm)
60-20080	6" x .020" x 0.5" (152 x .51 x 12.7 mm)
60-20081	7" x .025" x 0.5" (178 x .64 x 12.7 mm)
60-20084	8" x .030" x 0.5" (203 x .76 x 12.7 mm)

Low Concentration

Recommended for sectioning very hard or brittle materials such as ceramics, silicon, glass and refractories where chipping and pullout need to be kept to a minimum. Used at low or high speeds.

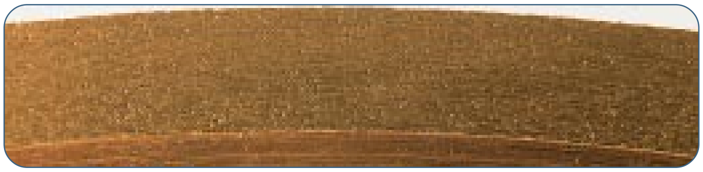
Item	Dimensions
60-20085	3" x .006" x 0.5" (76 x .15 x 12.7 mm)
60-20090	4" x .012" x 0.5" (102 x .31 x 12.7 mm)
60-20095	5" x .015" x 0.5" (127 x .38 x 12.7 mm)
60-20100	6" x .020" x 0.5" (152 x .51 x 12.7 mm)
60-20101	7" x .025" x 0.5" (178 x .64 x 12.7 mm)
60-20104	8" x .030" x 0.5" (203 x .76 x 12.7 mm)

Resin Bonded Blades

Diamond, Resin Bond

Recommended for cutting hard, brittle or delicate materials including ceramics, carbides, composites and exotic metals where low heat generation or improved surface finish is desired. Most commonly used at higher speeds.

Item	Dimensions
60-20069	4" x .020" x 0.5" (102 x .51 x 12.7 mm)
60-20074	5" x .020" x 0.5" (127 x .51 x 12.7 mm)
60-20079	6" x .020" x 0.5" (152 x .51 x 12.7 mm)
60-20086	7" x .025" x 0.5" (178 x .64 x 12.7 mm)
60-20088	8" x .030" x 0.5" (203 x .76 x 12.7 mm)



Metal Bonded Diamond Blade

CBN, Metal Bond

Recommended for sectioning ferrous metals including steels, iron, cobalt, nickel and lead based alloys at low or high speeds.

Item	Dimensions
60-20071	4" x .012" x 0.5" (102 x .31 x 12.7 mm)
60-20076	5" x .015" x 0.5" (127 x .38 x 12.7 mm)
60-20082	6" x .020" x 0.5" (152 x .51 x 12.7 mm)
60-20083	7" x .025" x 0.5" (178 x .64 x 12.7 mm)

CBN, Resin Bond

Recommended for sectioning hard steels above Rc 60 at high speeds.

Item	Dimensions
60-30005	5" x .020" x 0.5" (127 x .51 x 12.7 mm)
60-30010	6" x .020" x 0.5" (152 x .51 x 12.7 mm)
60-30015	7" x .025" x 0.5" (178 x .64 x 12.7 mm)
60-30020	8" x .030" x 0.5" (203 x .76 x 12.7 mm)

Plated Blades

Plated blades consist of a solid metal core with diamonds nickel-coated to the rim. They provide aggressive cutting action on samples containing resins and soft materials including PCBs, fiber composites and plastics. They are recommended where surface finish, dimensional accuracy or long life of bonded blades is not critical.

Diamond Plated, Segmented Rim Blade

Diamond, Segmented Rim

Recommended for sectioning resin or plastic composites, and other materials where metals are not predominate. The diamond segments draw coolant into the cut, providing aggressive, cooler sectioning. Used at either low or high speeds.

Item	Dimensions
65-10005	4" x .008" x 0.5" (102 x .20 x 12.7 mm)
65-10010	4" x .020" x 0.5" (102 x .51 x 12.7 mm)
65-10025	6" x .020" x 0.5" (152 x .51 x 12.7 mm)
65-10030	6" x .040" x 0.5" (152 x 1.0 x 12.7 mm)

Diamond, Continuous Rim

For fast, general sectioning of a wide variety of materials at either low or high speeds.

Item	Dimensions
75-10005	4" x .012" x 0.5" (102 x .31 x 12.7 mm)
75-10010	4" x .020" x 0.5" (102 x .51 x 12.7 mm)
75-10020	5" x .020" x 0.5" (127 x .51 x 12.7 mm)
75-10035	6" x .040" x 0.5" (152 x 1.0 x 12.7 mm)
75-10045	8" x .025" x 0.5" (203 x .64 x 12.7 mm)

Silicon Carbide Dressing Stick

Used to clean the rim and expose new abrasive on all wafering blades.

Item	Dimensions
60-20105	6" x 0.5" x 0.5" (152 x 12.7 x 12.7 mm)

Cutting Fluid, Low Speed

Designed exclusively for low speed cutting (<500 RPM) applications where a thicker formula is needed to lubricate blades, remove debris from the cut and reduce friction.

Item	Description
60-20110	32 oz. (950 mL)

Cut-Off Blades

Abrasive cut-off blades consist of abrasive mineral mixed with either resin or rubber to form a continuous matrix (solid core) through the entire blade. Aluminum oxide is recommended for cutting ferrous metals and super alloys, while silicon carbide is best used for cutting non-ferrous metals and alloys. Recommended for medium to high speed cutting on non-gravity fed saws.

Rubber Bond (Pk/10)

Rubber bond blades are recommended for cutting metals and softer materials and offer long life.

Al_2O_3	Dimensions	SiC
80-11190	5" x .025" x 0.5" (127 x .64 x 12.7 mm)	80-11195
80-11200	6" x .030" x 0.5" (152 x .76 x 12.7 mm)	80-11205
80-11210	7" x .030" x 0.5" (178 x .76 x 12.7 mm)	80-11215
80-11220	8" x .035" x 0.5" (203 x .89 x 12.7 mm)	80-11225

Resin Bond (Pk/10)

Resin bond blades are excellent when sectioning hard metals or when it is important to reduce heat generation.

Note: Requires a spacer flange for saws with ½-inch arbors. Fits on abrasive cut-off saws with 1¼-inch arbors.

Al_2O_3	Dimensions	SiC
80-11300	6" x .024" x 1.25" (152 x .61 x 31.75 mm)	80-11400
80-11305	7" x .030" x 1.25" (178 x .76 x 31.75 mm)	80-11405
80-11310	8" x .030" x 1.25" (203 x .76 x 31.75 mm)	80-11410

Cutting Fluid, High Speed

Recommended for high speed cutting (>500 RPM) applications to extend the life of cut-off blades and reduce heat. This non toxic formula contains non foaming and rust inhibiting additives, and mixes 2-5% in water.

Item	Description
80-10145	32 oz. (950 mL)
80-10140	128 oz. (3.8 L)

Equipment is subject to change due to
innovations/improvements at any time.

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**Allied Equipment and Fixtures
are Designed and Manufactured
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