

# BUEHLER ISOMET™ LOW SPEED DIAMOND SAW



The ISOMET™ is an exceptionally useful instrument for the metallographer and the metallurgical researcher. Endless applications have been found to make use of the ISOMET's™ capability of cutting nearly all materials with minimal distortion and damage of the as-cut surface. This feature, coupled with the low kerf-loss and great versatility in holding all shapes and configurations of samples, has made the ISOMET™ a basic instrument in today's modern metallurgical laboratory. ISOMET™ applications include: cutting of hard and soft materials, brittle and ductile metals, composites, cermets, laminates, miniature devices, honeycombs and a multiplicity of other materials and complex configurations.

Contrary to previously employed methods of sectioning, the ISOMET™ uses relatively low speeds (300 rpm maximum) coupled with a thin, continuous rim diamond impregnated blade to accomplish true cutting of nearly all solid materials. The as-cut surface is generally free of damage and distortion and is ready for microscopic examination with minimal polishing or other preparation.

The concept of low speed cutting was borrowed from the diamond cutters of Antwerp who have been using 3" (7.6 cm) and 4" (10.2 cm) diameter thin diamond-edged blades at extremely low speeds for decades to cut precious gem stones. Low speed sawing does not generally lend itself to the sectioning of extraordinarily large samples which produce slow and less efficient cutting. If such a requirement presents itself, however, the ISOMET™ may be equipped with blades up to 5" (12.7 cm) in diameter.

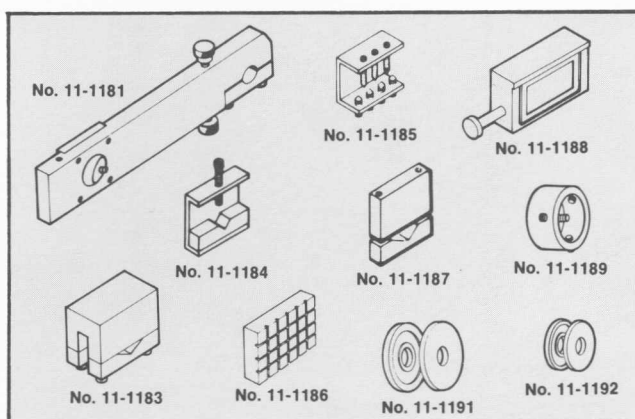
The use of simple mechanical principles, such as gravity specimen feed and drag application of lubricant, makes the ISOMET™ exceptionally easy and convenient to use. A series of chucks and holding devices enable the operator to easily grip nearly any sample configuration. The sample holding arm incorporates a micrometer adjustment, enabling the operator to place the sample at precisely the location where a cut is desired. Dead weights in increments of 25 grams may be applied directly to the sample holding arm. Intermediate weight adjustments are achieved by a sliding counterweight at the rear of the arm.

# ISOMET™

**No. 11-1180 ISOMET™ LOW SPEED SAW** with automatic cut-off switch, counterbalanced down-feed with assorted weights, precision cross-feed and blade spindles, built-in micrometer for cross feed adjustment, built-in coolant tray. 1/50 HP DC motor, continuously variable speed from 0-300 RPM. Includes precision diamond wafering blade, 4"x 0.012"x 1/2" (10.2 cm x 0.3 mm x 12.7 mm); chucks No. 11-1184, 11-1185, 11-1186 and 11-1187. Available in 115 or 220 V. models. Operating instructions.

## SPECIFICATIONS

HEIGHT	WIDTH	DEPTH	SHPG. WT.
6 1/4" (16 cm)	10 1/2" (27 cm)	10 1/2" (27 cm)	25 lbs. (11.3 kg)



## ISOMET™ Accessories

### ACCESSORIES

**No. 11-1181 SWIVEL ARM ASSEMBLY**, adjustable spherical bushing permits positioning of chuck to allow angular sectioning of sample. May be used with any ISOMET™ chuck, permits maximum flexibility of Low Speed Saw and allows operator multiple sample orientation.

**No. 11-1183 CHUCK**, double hold-down saddle type. Prevents possible damage to specimen by holding section portion firmly after cutting is completed. Useful for larger samples and sheet stock.

**No. 11-1184 CHUCK** for bar and tube stock up to 3/8" (10 mm) in diameter.

**No. 11-1185 CHUCK** for irregular shaped samples.

**No. 11-1186 CHUCK** for wafers, single crystals and thin sections.

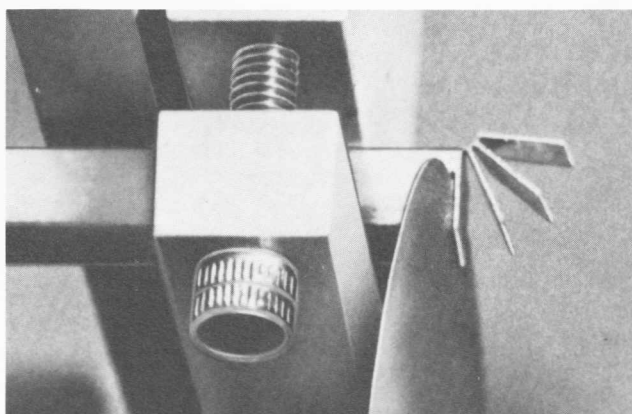
**No. 11-1187 CHUCK** for long samples, saddle type.

**No. 11-1188 CHUCK** for petrographic and ceramographic thin-sections, vacuum type, to hold glass slide.

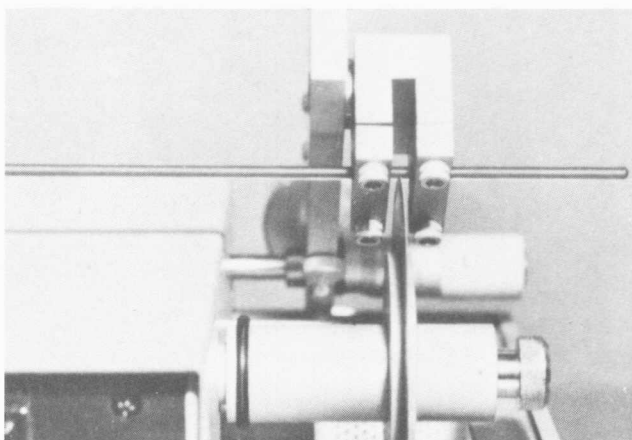
**No. 11-1189 CHUCK** for 1" (25 mm) or 1 1/4" (32 mm) diameter stock in mounted samples. This chuck requires use of one set of two No. 11-1192 Recessed Flanges.

**No. 11-1191 FLANGE**, 1 1/4" (44 mm) dia., recessed, set of two for use with the swivel arm assembly for larger specimens and where greater depth of cut is required.

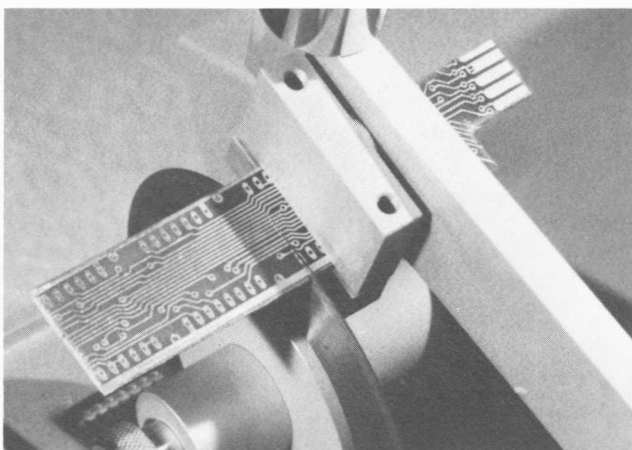
**No. 11-1192 FLANGE**, 1 3/8" (35 mm) dia., recessed, set of two for use with No. 11-1189 Chuck, with No. 11-1189 Chuck and where maximum depth of cut is required.



ISOMET™ sectioning a series of aluminum wafers for TEM study



ISOMET™ with Double Saddle Chuck



ISOMET™ sectioning printed circuit board

(See page 14 for Wafering Blades and Cutting Oil.)