

MICRO 100 is a “space age,” micro-grain carbide developed for machining high-strength, thermal resistant alloys. The following is a partial list of materials **MICRO 100** is best suited for: **ALUMINUM • BRASS • BRONZE • COBALT • HASTALLOY • HIGH SPEED STEEL • “M” Series HIGH SPEED STEEL • INCONEL • MARAGING ALLOYS • MOLYBDENUM • RENE 41, 80 & 95 • STAINLESS STEELS (Precipitation – hardening) • SUPER ALLOYS (Iron & Nickel base) • TUNGSTEN • TITANIUM • WASPALLOY • ZIRCONIUM.**

HELPFUL HINTS:

BORING When boring and tools do not meet your expectations, simply grind 5-10 degrees positive top rake, radius nose .010” to .020” and lightly hone cutting edge.

BOX TURNING When turning hex or square stock, grind a land across the entire face of tool .020” to .025”. Be sure to lightly hone cutting edge after grind.

CUT-OFF Depending on material, often removing and breaking the chip becomes necessary. Here are chip-breaker recommendations: Land = 1 to 1-1/2 times the feed per revolution. Width = 3 to 4 times the feed per revolution. Depth = .010” to .015”. Always use as much feed rate as possible.

MILLING It is important to select the End Mill not only in the appropriate diameter for the job but to

also choose the correct size with the number of flutes most efficient for the milling operation performed. In general, the harder the workpiece, the higher the number of flutes should be selected; and the softer the material, the fewer, but wider flutes are required for better chip clearance. After each resharpening, the feather edge on the flutes should be removed with a fine grit hone to avoid chipping.

TURNING Rigidity of your set-up and starting your cut at centerline is of utmost importance. A side rake angle of 15 degrees is desirable, and 30-45 degrees for your side cutting edge angles will distribute the cutting force and improve tool life. For heavy interrupted cuts or forgings, use as large a nose radius as possible. For light finishing cuts, grind a 45 degree land .010” deep across the nose, or radius .015”-.020”. All chip breakers should have a radius, equal to depth at rear.

GRINDING Use diamond wheels with coolant whenever possible. Hold the tool against the wheel with relatively light pressure and remember to keep moving the tool constantly. Start with the top face always, and follow with the side-end reliefs, grinding the radius last. By following this sequence it is possible to obtain a better cutting edge inasmuch as minute flaking at the cutting edge is avoided. Lightly hone cutting edge with a hand hone after each grind. Depending on the

depth of cut; hone .001”-.003” for light cuts, and .004”-.006” for heavy cuts. Never cool the tool after grinding by quenching in water or oil. Let cool naturally.

BRAZING “Micro-grain” carbide, because of density should be “sandwich-brazed”: A copper shim between two pieces of silver solder material. This will eliminate “stress-cracking” due to co-efficient of expansion.