Adapter - A part used with certain mandrels to adapt them to fit the spindle chuck on the honing machine.

Alignment Bushing - A concentric bushing used to minimize conical and parallel runout on machines with fully adjustable spindle noses.

Altered Stone - A standard honing stone, which has been shortened or otherwise changed for a specific application.

Aluminum Oxide - A man-made abrasive most often used in honing soft and medium hard steel. Designated by the letter “A” in the Sunnen stone code. Example: K12-A57.

Barrel Shape - A condition where the extreme ends of a bore are smaller in diameter than the middle.

Bellmouth - A condition where the extreme end or ends of a bore are larger in diameter than the middle.

Blind Hole - A bore that is constricted or closed at one end.

Bond - The material that holds the abrasive grains together in a honing stone. Conventional Abrasives use fused clay or glass and are known as Vitrified bonded stones. Superabrasive stones use a metal bond, resinoid bond, or a vitrified bond.

CBN - A man-made abrasive (cubic boron nitride) especially useful for honing the tough alloy steels and other abrasive resistant materials. Designated by the letter “N” in the Sunnen stone code. Example: P28-NM55.

Cork Bond - A bonding material composed of powdered cork and phenolic resin. Cork bonded honing stones are used where extremely fine surface finish is required. (Best results are achieved when used with bronze guide shoes.)

Deburring - A honing process used to remove burrs, sharp edges or similar materials from rough bores.

Diamond - A very hard abrasive grain, which is essential to the honing of carbide, glass and ceramic materials. Designated by the letter “D” in the Sunnen stone code. Example: K8-DV57.

Diamond Dresser - A diamond abrasive used to dress honing stones other than Borazon or diamond.

Fixturing - A method used to hold the workpiece while honing. Suggestions on different fixturing methods can be found in Data Files #107, 108, and 109.

Glazed Stone - A stone with cutting action impaired because the abrasive particles failed to break out of the bond when the cutting edges wore off. This condition shows up when the bond is too hard.

Guide Shoes - A part of the honing unit that stabilizes the bore being honed on the tool.

Hardness - As applied to a honing stone, describes the strength of the bond that holds the abrasive grains together; a soft bond will permit the stone to “break down” faster, exposing new sharp abrasive grains.

Hard-Tip Stone - A honing stone having a tip or end of harder abrasive than the body of the stone. Used for honing blind holes where relief cannot be provided.

Hard-Tip Stones - Used primarily for blind hole applications, the tip of the stone is engineered to be more wear-resistant than the rest of the stone.

Honing - An abrasive machining process primarily used for stock removal, precision sizing, and surfaces. It is characterized by the use of a self-sharpening abrasive stone, a relatively large area of contact with the work, and relatively low cutting speeds.

Honing Length - The actual length of the surface being honed.

Honing Stone - An abrasive stick consisting of thousands of small abrasive grains bonded together.

Honing Unit - A complete honing tool consisting of an adapter (if required), a mandrel and wedge, stone(s), guide shoes, truing sleeve, and stone retainer or tension block.

Loaded Stone - A honing stone with cutting action impaired due to the cutting surface being partially covered with a foreign material, usually the material being honed. This condition is sometimes encountered when honing soft materials.

Mandrel - That part of a honing unit which holds and positions the honing stone and guide shoes in their correct relative positions.

Metal Bond - A powdered metal bond often used with diamond or Borazon abrasives. Designated by the letter “M” in the Sunnen stone code. Example: P28-NM55.

Overstroke - The distance that the workpiece is stroked beyond the end of the stone. This distance is generally one-third the length of the stone (or of the part, whichever is the shortest).

Rainbow (or bow) - Sometimes called camber or banana shape. A condition where a bore’s diameter may be the same over its full length but whose axis or center-line is curved. Correction of rainbow by honing requires a mandrel in which the stone and guide show length is at least 1-1/2 times the length of the bore.

Relief - An enlargement of diameter at the bottom of a blind hole which makes it possible for the end of the honing stone to pass beyond the bottom end of the surface being honed.

Runout - Off-center rotation of the honing unit which causes eccentric motion of the workpiece.

Silicon Carbide - A man-made abrasive most often used for stock removal in materials such as cast iron, brass, bronze or aluminum. Also used for fine finishes in all materials. Designated by the letter “J” in the Sunnen stone code. Example: K12-J47.

Stacking - A technique for honing short parts. Faces of the parts must be square with the bore prior to honing. A holding fixture is necessary for aligning and holding the parts on a common center.

Taper - A bore condition where the diameter of a bore gradually increases from one end of the bore to the other.

Truing Sleeve - A cylinder or workpiece whose purpose is to make the guide shoes and stone straight and parallel to each other, and radiused to the approximate diameter to be honed.

Waviness - A longitudinal wave, series of waves or ripple in a bore surface.

Wedge - The part of the honing unit that expands the honing stone and applies cutting pressure.