

Introduction of a Tool Naming Scheme

MAZATROL programs call tools by name (e.g. GENERAL OUT, DRILL), nominal size and optional ID code. This concept allows for being independent of pocket numbers i.e. tools can get reassigned new pocket numbers without compromising the programs which engage those tools.

The tool name is automatically set in the process of registering a tool whereas the nominal size and the ID code are freely selectable, however restrictions apply. The nominal size is a number of the format: AA.BB, leading zeros are discarded. The ID code is just a character: A, B, C, . . .

It is reasonable to choose a naming scheme for the nominal size which is independent of the pocket number. The following naming scheme presented utilizes the nominal size item to provide additional information about the tool geometry, making the programs more self descriptive.

GENERAL OUT/IN/EDG:

AA specifies the cutting angle (CUT ANGLE) and BB the tool nose radius (NOSE-R) in millimeter e.g.:

GENERAL OUT	80.12	A
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Describes a GENERAL OUT tool with a 80° cutting angle and a 1.2mm nose radius.

GROOVE OUT/IN/EDG:

AA specifies the tool tip width (TIP WID) in hundreds of an inch and BB the tool nose radius in millimeter e.g.:

GROOVE OUT	13.02	A
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Describes a GROOVE OUT tool with a tip width of 0.13" and a nose radius of 0.2mm.

THREAD OUT/IN/EDG:

AA.BB specifies either the TPI or the lead, whatever is appropriate e.g.:

THREAD IN	11.5	A
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Describes a THREAD IN tool with a 11½TPI insert mounted.

DRILL, END MILL, CHAMFER, . . .:

This specification includes all milling/boring tools.

AA.BB specifies the nominal cutting diameter in inch e.g.:

END MILL	0.5	A
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Describes an END MILL with a nominal diameter of 0.5".

The ID code distinguishes between tool configurations which share the same tool name and nominal size. As EIA/ISO programs call tools by pocket number and optional ID code it is recommend to assign an ID code for every configuration in order to make tool calls distinctive.

For versatile machining on both headstocks, turning tools can be indexed in two positions. It is recommend to assign ID codes with an odd ordinal number corresponding to the indexing position in which the tool is taught on the tool eye e.g.:

1	GENERAL IN	80.12	A
1	GENERAL IN	80.12	B

NOTE: If for any reason the tool geometry can't be expressed by this system then a 99.99 should be entered for the nominal size e.g.: a groove tool defined as a THREAD IN for clipping.

NOTE: The nominal size must be updated if the geometry changes.

NOTE: Nominal sizes always should be rounded up, so they represent the most restrictive value.