

Hamilton-Juniors lab-off-site learning packet day 8

Instructor Mark Hamilton

Date _____

Program/Class AEM JR

Instructional Objective(s):

Materials:

White board

Method of Instruction:

Research

Activities:

Read through handouts, watch videos and do activities

Answer the questions provided

Closure:

Answer questions on the last page

Assessment:

Answer sheets will be collected and is worth ____ points

Junior lesson 4

Name _____

Introduction to CNC code

M Words

M words, commonly called M-codes, are major address codes for miscellaneous functions that perform the instructions that do not involve tool or table movement that involves cutting the part.

These include spindle on and off, tool changes, coolant on and off, and other similar related functions. Most M-codes have been standardized, but there are a few that have a unique function for a particular controller.

Many of the more common M-codes are described below:

Similar to the G-codes there are many other special feature and advanced machining M-codes that aren't commonly used, and therefore not discussed in this basic module.

Note: always consult the operator's manual for the M-code definitions for your specific controller.

M-codes for Milling (including drilling)

Program Stops (M00, M01)
End of Program (M02, M30)
Spindle control (M03, M04, M05, M19)
Tool Change (M06)
Coolant Control (M08, M09)
Clamp Control (M10, M11)
Sub-program Control (M98, M99)

M-codes for lathes

Program Stops (M00, M01)
End of Program (M02, M30)
Spindle control (M03, M04, M05)
Coolant Control (M08, M09)
Clamp Control (M10, M11)
Turret Rotation (M17, M18)
Tail Stock Control (M21, M22)
Sub-program Control (M98, M99)

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Questions: (each question is worth 5 points)

1. What are M words commonly called?
2. When M codes are used do they involve tool movement?
3. What are 3 examples of operations performed by M codes?
4. Do most of the M codes work on most of the CNC machines available?
5. Are there some M codes that are specific to certain CNC machines?
6. What would an M03 control on a CNC machine?
7. What would an M06 control on a CNC machine?
8. What would an M08 control on a CNC machine?
9. What would an M19 control on a CNC machine?
10. What would an M30 control on a CNC machine?