EML2322L Example Tapped Hole Quiz

Based on the information presented in the lab and lecture, explain the exact tools and sequence used to tap a #10 thread into an aluminum workpiece on a manual milling machine. A similar quiz must be correctly completed by all team members to use the CNC milling machine to drill and tap the holes in your second lab hub; otherwise you must perform these operations on the manual machines for the necessary practice.

THREAD SPECIFICATION (i.e. 10-24, 1/4-20, M6x1.0, etcetera): __________

SEQUENCE & TOOLS (be explicit with regard to tool names and sizes):

1. Find part zeros using a(n) ____________________ and the DRO to locate the sides of the part and set datums
2. Use a(n) ____________________ to accurately locate and begin drilling the hole
3. Use a(n) ____________________ (of size __________ ) to finish drill the hole to final size for threading
4. Load a(n) ____________________ into the spindle to ensure the hole is tapped normal to the part’s surface
5. Thread the hole using a(n) ____________________ , tap handle and cutting oil

Based on the information presented in the lab and lecture, explain the exact tools and sequence used to tap a 3/8” thread into a steel workpiece on a manual milling machine.

THREAD SPECIFICATION (i.e. 10-24, 1/4-20, M6x1.0, etcetera): __________

SEQUENCE & TOOLS (be explicit with regard to tool names and sizes):

1. Find part zeros using a(n) ____________________ and the DRO to locate the sides of the part and set datums
2. Use a(n) ____________________ to accurately locate and begin drilling the hole
3. Use a(n) ____________________ to drill the initial (or pilot) hole through the part
4. Use a(n) ____________________ (of size __________ ) to finish drill the hole to final size for threading
5. Load a(n) ____________________ into the spindle to ensure the hole is tapped normal to the part’s surface
6. Thread the hole using a(n) ____________________ , tap handle and cutting oil