# Bridgeport Milling Machine

1) Quiz taken, hair/clothing properly restrained?
2) Demonstration of control box and pneumatic drawbar
3) Identify:
    a) Power
    b) Way Locks (X, Y, knee, and quill)
4) Identify Tools and know purpose
    a) Drill Chuck, Collet, Vise, Clamp
    b) End Mill
5) Oil Ways
    a) Pump & Fitting*
6) How would you tram the head and indicate the vise
7) Look at the part drawing
8) Square up workpiece (check for the following)
    a) Secure workpiece (that is rough cut)
        i) Do they account for not being square
            (1) Using wood/cardboard/dowel as a shim for unknown/rough geometry
        ii) Do they use parallels when needed
        iii) Using rubber mallet/dead blow to tap down part
            (1) When should you do this?
    b) Installing Tools
        i) Pick tool, why one or the other?
        ii) Picking Collet
        iii) CLEAN Collet and spindle
            (1) Use rag then hands, to make sure completely clean
    c) Change the Drive Speed*
        i) What speed do they choose

ii) Belt Bridgeport
    (1) Keep belt straight
    (2) Tension belt
iii) Variable Speed Bridgeport
    (1) Make sure machine is running
iv) If this were steel, how would you change your tool, speed, feed and depth of cut?

d) Make Cuts
i) When and how would you brush on cutting oil if this was Al?
ii) Face Mill
iii) Side Mill
    (1) Please explain Climb vs Conventional Mill
        (a) Which direction is which
        (b) Conventional is for bulk material
        (c) Climb is for light finish passes (could break tool due to backlash otherwise)

9) Slot Mill the island
    i) To the depth + dimensions shown in drawing
10) Explain how you would clamp to Table
    a) Make sure you won't drill/mill table
    b) Bolts close to the workpiece
    c) Clamp at a declined angle to workpiece
11) Demonstrate Quill Power Feed
12) Using Back Gears
    a) When to use what speed (same principles as Drill Press)
    b) Look up feed/speed in Machinery's Handbook
13) Cleaning up tool
    a) Replacing accessories
    b) Vacuumed up after use