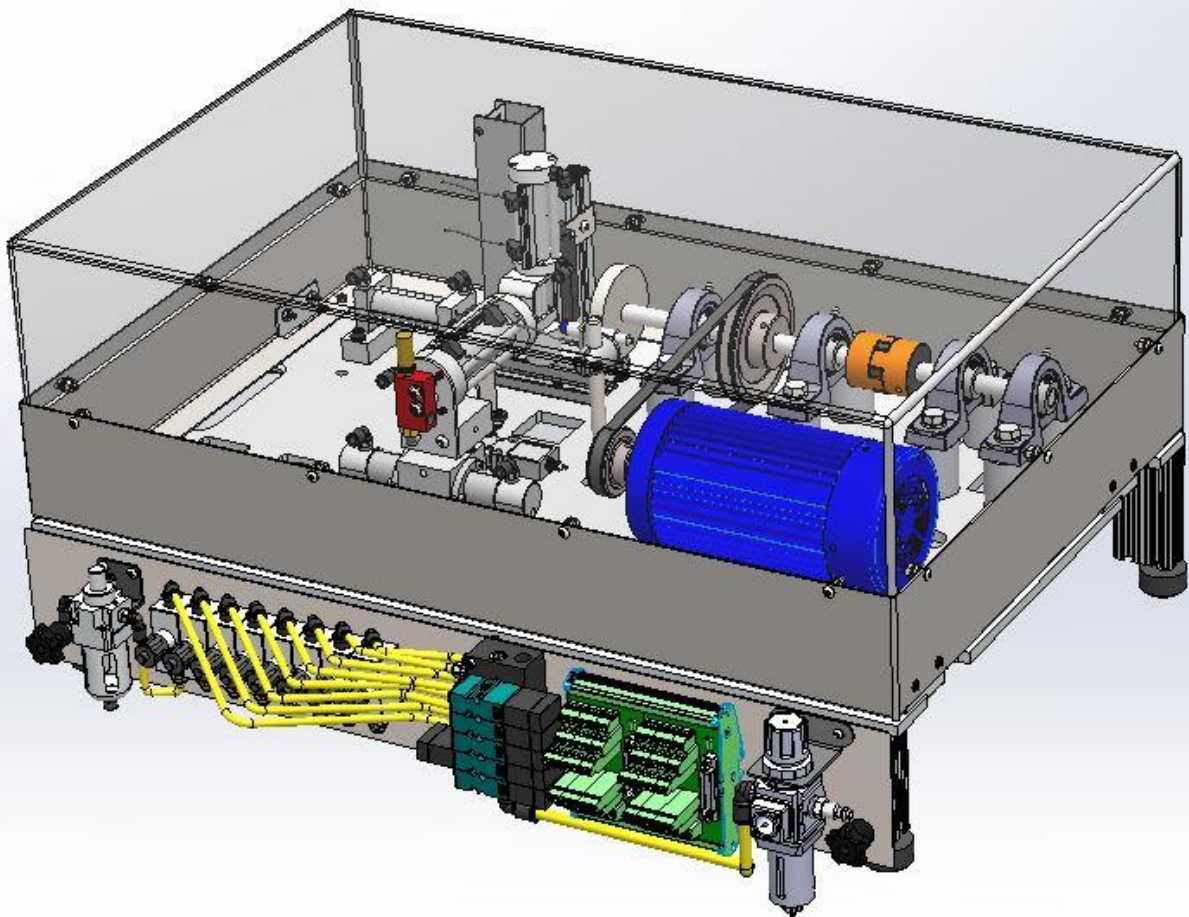
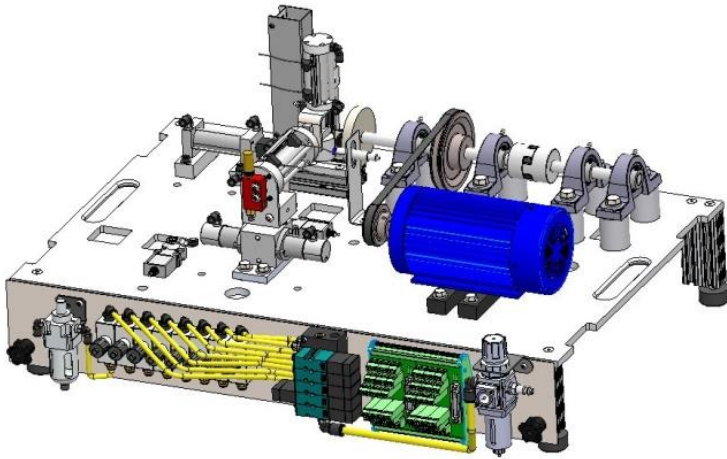




Assess for skills associated with  
Certified Production Technician  
Credentials with

*Skill Boss*





Designed and Manufactured by Amatrol, Inc.



# MSSC Skill Boss Hands-On Assessment Device

## Safety Skills

- Demonstrate Electrical Lockout/ Tagout
- Demonstrate Pneumatic Lockout/ Tagout
- Put a Guard in place
- Check that safety interlocks are working---verify that safety switch is working
- Perform a pre-startup safety inspection
  - Check appropriate PPE
  - Check for frayed power cords
  - Check for spills
  - Check for guard
  - Observe power indicators on machine
  - Observe air pressure
  - Remove Lockout/ Tagout
  - Verify zero energy state
- Locate Safety Data Sheet for oil used in machine
- Interpret GHS labeling on lubricant refill container
- Handle and store lubricants properly

## Quality Skills

- Measurement and Print Reading
  - Use a tape measure to measure the outer dimensions of the machine
  - Use a rule to measure parts and compare to a blueprint spec to determine if in tolerance
  - Use a dial caliper to measure parts for meeting spec
  - Use a digital caliper to measure parts for meeting spec
  - Use a metric micrometer to measure parts to determine if within spec
  - Use an English micrometer to measure parts to determine if within spec
  - Measure some parts against GDT hole diameter tolerances on a print
  - Use a dial indicator to measure runout on a shaft and compare to a GDT spec on a print
  - Use a digital indicator to measure runout on a shaft and compare to a GDT spec on a print

### **Production Processes Skills**

- Hand Tool Use
  - Assemble and disassemble various parts on the machine (make sure they are hardened)
  - Use allen wrenches, crescent wrenches, flat head screwdriver, phillips screwdriver, portable power tool
  - Types of fasteners—bolts, nuts, screws all metric
  - Use a blueprint of an assembly to locate parts and assemble something on the machine
- Mechanical Knowledge
  - Calculate/ Measure amount of torque by measuring force output
  - Calculate power given speed and torque
  - Measure speed with a photo tach
- Machine Operation
  - Operate the machine from an HMI (controlled by a small PLC)
    - Start, stop, reset, manual operation of actuators
    - View alarms and reset them
    - View production data-times, parts produced
    - MCR relay with E stop pushbutton
    - Adjust speed of electric motor

### **Maintenance Awareness Skills**

- Troubleshoot basic operator-relevant problems
  - Check air pressure reading
  - Check shutoff valve to determine if it is on
  - Check a actuator sensor to see if it triggering
  - Check a safety interlock
  - Check to see if a plc output is on
  - Check main power
  - Check MCR power
- Maintain and adjust electro-pneumatic system
  - Adjust pneumatic lubricator drip rate
  - Refill oil in pneumatic lubricator
  - Replace an air filter element
  - Adjust pressure setting on regulator
  - Adjust flow control speed of actuators
  - Adjust physical stops of pneumatic actuators
  - Manually operate valves using manual overrides
  - Connect/Disconnect a quick connect hose---main air hose and a control hose
  - Two valves, one 2 position and one 3 position on a manifold

- Maintain and adjust mechanical systems
  - Lubricate a pillow block bearing using a grease gun
  - Identify the proper grease
  - Check/refill small automatic lubricator to bearings
  - Basic Shaft/ Lovejoy Coupling alignment with feeler gage and straight edge
  - Basic V-Belt Drive tensioning and alignment
  - Basic Chain alignment and tensioning
  - Consider a small gearbox to reduce speed
- Maintain and adjust electrical systems
  - Use a multimeter to check voltage on a machine
  - Use a clamp-on meter to measure current
  - Adjust position of an electronic sensor
  - View status of indicator lights on PLC
  - Reset a PLC after a fault
  - Check the status of a fuse
  - Reset a circuit breaker and check it.