



09

Turning

9.1 Hand Lathe

9.1.1 Spindle Turning

Candidate Name: _____ Date/Time: _____

Evaluator Name: _____ Location: _____

Completed test successfully: Yes No (If no, reason:) _____

Pre-Operation Checklist

Level 1

PERFORMANCE STANDARD:

- ▶ Verifies spindle blank turns freely by hand without excessive play between centers or contacting the tool rest.
- ▶ Verifies that tool rest and tail stock are firmly locked in position.
- ▶ Verifies height and clearance adjustment of tool rest.
- ▶ Verifies dead center is lubricated (if applicable).
- ▶ Verifies that tools are sharp and ready to use.
- ▶ Verifies rotational speed selected does not produce unacceptable vibration.

Level 2

PERFORMANCE STANDARD:

- ▶ Prepares and installs spindle blank between centers.
- ▶ Adjusts and locks position of tool rest base and tailstock.
- ▶ Adjusts height and clearance of tool rest.
- ▶ Adjusts rotational speed to optimal setting with dial or step pulleys.
- ▶ Inspects drive belts to confirm they are free from cracks and tensioned correctly.
- ▶ Inspects pulleys to confirm positive attachment to drive shaft.
- ▶ Lubricates dead center as required.
- ▶ Meets Level 1 performance standard.

Considerations:

- ▶ Pre-Operation Checklist is a prerequisite for ANY operation.
 - ▶ Proper stance and position are demonstrated.
 - ▶ The spur teeth and center are sharp and properly ground.
 - ▶ Live centers rotate smoothly and dead centers are sharp and lubricated.
 - ▶ Tail stock and spindle are properly positioned and locked securely.
 - ▶ Top edge of tool rest is smooth and free from nicks.
 - ▶ Tool rest is adjusted correctly relative to the spindle blank.
 - ▶ Spindle blank is from clear, even grained wood, free from checks or other defects.
 - ▶ All gouges, parting tools, skewers or other tools are sharp and ready to use.
 - ▶ Speed is adjusted to suit diameter of spindle being turned.
 - ▶ Lathe cutting tools are fed with a smooth, continuous and controlled feed motion.
 - ▶ Operator clears machine and cleans work area after use.
 - ▶ Required OSHA approved personal protective equipment is worn.
 - ▶ No loose clothing, jewelry etc. is worn by operator.
 - ▶ Dust collection is utilized effectively.
 - ▶ Lock-out/Tag-out procedure is in place and followed.
- Please use back side for additional notes

Operation Checklist

Level 1:	Performance standard:	
Given a suitable 50 mm (2") square, 400 mm (16") long spindle blank installed between centers and with the tool rest set to the correct height and clearance, use a sharp gouge to produce a cylinder to a specified diameter 45 mm (1 3/4").	<input type="checkbox"/> Surface of cylinder is free from torn grain. <input type="checkbox"/> Surface of cylinder exhibits smooth, continuous cuts from end to end. <input type="checkbox"/> Surface of cylinder is flat.	<input type="checkbox"/> Diameter is the same when checked at both ends with calipers, target deviation not more than ±0.4 mm (1/64") [0.0156"]. <input type="checkbox"/> Diameter is the same when checked at 3 equidistant locations along the length of the cylinder, target deviation not more than ±0.4 mm (1/64") [0.0156"].

Level 2:	Performance standard:	
Given a suitable cylindrical spindle blank mounted between centers and with the tool rest adjusted to the correct height and clearance, use a mirror image pattern, gouges, round nose chisels, spear point chisels, parting tools and skewers to produce a cove, bead, "V", shoulder, ogee, and taper cut.	<input type="checkbox"/> Profile cuts are positioned correctly along the length of the spindle, target deviation not more than ±0.8 mm (1/32") [0.0312"]. <input type="checkbox"/> Profiles match pattern, target deviation not more than ±0.8 mm (1/32") [0.0312"].	<input type="checkbox"/> Meets Level 1 performance standard.