



Correlation of
Modern Cabinetmaking, Molzahn, Umstatt, Davis
(Goodheart-Willcox Publisher ©2023)

to

Woodwork Career Alliance: 9. Turning

The content of the text and Lab Workbook correlates to Woodwork Career Alliance (WCA) skill standards. The WCA establishes a benchmark to measure and recognize an individual's skills and knowledge. The WCA skill standards help ensure that students are prepared for rigorous industry standards, and provide a pathway for advancement for professional woodworkers.

The WCA skill standards define the minimum requirements for specific woodworking machine operations. Using the WCA skill standards in a wood training program can help you, your students, and your program obtain industry recognition. The Modern Cabinetmaking textbook and Lab Workbook are correlated to the performance standards, helping prepare your students for certification.



Turning 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.
- Tailstock 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.

Hand Lathe

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
Pre-Operation Checklist				
1	—	Performance Standard 1. Verifies spindle blank turns freely by hand without excessive play between centers or contacting the tool rest.	Chapter 36	—
1	—	Performance Standard 2. Verifies that tool rest and tailstock are firmly locked in position.	Chapter 36	—
1	—	Performance Standard 3. Verifies height and clearance adjustment of tool rest.	Chapter 36	—
1	—	Performance Standard 4. Verifies dead center is lubricated (if applicable).	Chapter 36	—
1	—	Performance Standard 5. Verifies that tools are sharp and ready to use.	Chapter 36	—
1	—	Performance Standard 6. Verifies rotational speed selected does not produce unacceptable vibration.	Chapter 36	—
2	—	Performance Standard 1. Prepares and installs spindle blank between centers.	Chapter 36	—
2	—	Performance Standard 2. Adjusts and locks position of tool rest base and tailstock.	Chapter 36	—
2	—	Performance Standard 3. Adjusts height and clearance of tool rest.	Chapter 36	—
2	—	Performance Standard 4. Adjusts rotational speed to optimal setting with dial or step pulleys.	Chapter 36	—
2	—	Performance Standard 5. Lubricates dead center as required.	Chapter 36	—
2	—	Meets Level 1 performance standard.	—	—

Operation—Faceplate Turning				
1	Given a softwood blank 200 mm (8") in diameter and 75 mm (3") thick, mounted (by means of a paper joint) to a faceplate equipped with a plywood faceplate liner on the inboard side of the lathe, and with the tool rest correctly positioned and locked, produce a straight-walled container to specified depth and side wall thickness.	Performance Standard 1. Inside and outside surfaces of container are free from torn grain.	Chapter 36	—
1	Given a softwood blank 200 mm (8") in diameter and 75 mm (3") thick, mounted (by means of a paper joint) to a faceplate equipped with a plywood faceplate liner on the inboard side of the lathe, and with the tool rest correctly positioned and locked, produce a straight-walled container to specified depth and side wall thickness.	Performance Standard 2. All surfaces of container exhibit smooth, continuous shorn cuts.	Chapter 36	—
1	Given a softwood blank 200 mm (8") in diameter and 75 mm (3") thick, mounted (by means of a paper joint) to a faceplate equipped with a plywood faceplate liner on the inboard side of the lathe, and with the tool rest correctly positioned and locked, produce a straight-walled container to specified depth and side wall thickness.	Performance Standard 3. Surfaces of container are flat.	Chapter 36	—

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1	Given a softwood blank 200 mm (8") in diameter and 75 mm (3") thick, mounted (by means of a paper joint) to a faceplate equipped with a plywood faceplate liner on the inboard side of the lathe, and with the tool rest correctly positioned and locked, produce a straight-walled container to specified depth and side wall thickness.	Performance Standard 4. Wall thickness is uniform when checked with calipers at top, middle, and bottom, target deviation not more than ± 1.5 mm (1/16") [0.0625"].	Chapter 36	—
1	Given a softwood blank 200 mm (8") in diameter and 75 mm (3") thick, mounted (by means of a paper joint) to a faceplate equipped with a plywood faceplate liner on the inboard side of the lathe, and with the tool rest correctly positioned and locked, produce a straight-walled container to specified depth and side wall thickness.	Performance Standard 5. Depth of container is as specified, target deviation not more than ± 1.5 mm (1/16") [0.0625"].	Chapter 36	—
2	Given the blank described in Level 1, turn a bowl to specifications with convex exterior and a concave interior.	Performance Standard 1. Inside and outside surfaces of bowl are free from torn grain.	Chapter 36	—
2	Given the blank described in Level 1, turn a bowl to specifications with convex exterior and a concave interior.	Performance Standard 2. All surfaces of bowl exhibit smooth, continuous shorn cuts.	Chapter 36	—
2	Given the blank described in Level 1, turn a bowl to specifications with convex exterior and a concave interior.	Performance Standard 3. Inside and outside surfaces have curves which match the negative image pattern provided.	Chapter 36	—
2	Given the blank described in Level 1, turn a bowl to specifications with convex exterior and a concave interior.	Performance Standard 4. Thickness of bowl sides is uniform when checked with calipers at top, middle, and bottom, target deviation not more than ± 1.5 mm (1/16") [0.0625"].	Chapter 36	—

2	Given the blank described in Level 1, turn a bowl to specifications with convex exterior and a concave interior.	Performance Standard 5. Depth of bowl is as specified, target deviation not more than ± 1.5 mm (1/16") [0.0625"].	Chapter 36	—
2	Given the blank described in Level 1, turn a bowl to specifications with convex exterior and a concave interior.	Meets Level 1 performance standard.	—	—

Hand Lathe

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
Pre-Operation Checklist				
1	—	Performance Standard 1. Verifies spindle blank turns freely by hand without excessive play between centers or contacting the tool rest.	Chapter 36	—
1	—	Performance Standard 2. Verifies that tool rest and tailstock are firmly locked in position.	Chapter 36	—
1	—	Performance Standard 3. Verifies height and clearance adjustment of tool rest.	Chapter 36	—
1	—	Performance Standard 4. Verifies dead center is lubricated (if applicable).	Chapter 36	—
1	—	Performance Standard 5. Verifies that tools are sharp and ready to use.	Chapter 36	—
1	—	Performance Standard 6. Verifies rotational speed selected does not produce unacceptable vibration.	Chapter 36	—
2	—	Performance Standard 1. Prepares and installs spindle blank between centers.	Chapter 36	—
2	—	Performance Standard 2. Adjusts and locks position of tool rest base and tailstock.	Chapter 36	—
2	—	Performance Standard 3. Adjusts height and clearance of tool rest.	Chapter 36	—
2	—	Performance Standard 4. Adjusts rotational speed to optimal setting with dial or step pulleys.	Chapter 36	—

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	—	Performance Standard 5. Lubricates dead center as required.	Chapter 36	—
2	—	Meets Level 1 performance standard.	—	—
Operation—Spindle Turning				
1	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").	Performance Standard 1. Profile cuts are positioned correctly along the length of the spindle, target deviation not more than ± 0.8 mm (1/32") [0.0312"].	Chapter 36	—
1	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").	Performance Standard 2. Profiles match pattern, target deviation not more than ± 0.8 mm (1/32") [0.0312"].	Chapter 36	—
1	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").	Meets Level 1 performance standard.	Chapter 36	—

Level	Objective	Performance Standards	Textbook Chapter(s)	Lab Workbook Material
2	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 skews to produce a cove, bead, V, shoulder, ogee, and taper cut.	Performance Standard 1. Surface is free from visible cross sanding and tool marks when examined with side lighting of x lumens by a person with normal (20/20) visual acuity.	Chapter 36	—
2	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 skews to produce a cove, bead, V, shoulder, ogee, and taper cut.	Performance Standard 2. Surface is wet-sanded to 1200 grit and 35° sheen.	Chapter 36	—
2	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 skews to produce a cove, bead, V, shoulder, ogee, and taper cut.	Meets Level 1 and Level 2 performance standards.	—	—