

Stainless Steel Travel Mug Turning Kit Instructions

Effective August 2025

Review full instructions prior to use for important safety information.

Always check Rockler.com to confirm that you are using the most recent version of instructions for your product.



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CREATE WITH CONFIDENCE

GENERAL SAFETY WARNINGS

This product is designed only for specific applications as defined in the instructions and should not be modified or used for any manner not described in these instructions. Use only recommended accessories. Before using the Stainless Steel Travel Mug Turning Kit: **READ, UNDERSTAND** and **FOLLOW ALL INSTRUCTIONS AND SAFETY WARNINGS. KEEP THESE INSTRUCTIONS READILY AVAILABLE FOR FUTURE REFERENCE.**

- > Always confirm that you are using the most recent version of the instructions and safety warnings for your product (see the instructions link on the product page at Rockler.com).
- > Before using another tool with this product, always read, understand and follow the instructions and safety warnings in the owner's manual for that tool. If you do not have the owner's manual, obtain one from the tool's manufacturer before using it with this product.
- > Before using any chemical with this product, always read, understand and follow all safety warnings and guidelines in the manufacturer's Safety Data Sheet (SDS; formerly called "MSDS"), especially regarding:
 - How to safely use the chemical, including potential hazards and recommended first aid measures;
 - Personal safety equipment required to safely use the chemical (e.g. gloves, eye protection, mask/respirator, etc.);
 - Proper and safe handling, storage and disposal of the chemical.
- > Before using this product, review and verify that all tools to be used with it have safety equipment installed and are in proper working order as defined by the tool's owner's manual.
- > Do not use this product until you have read and are confident you understand:
 - Product Specific Safety Warnings (p. 3);
 - Blank Preparation: Face-to-Face Construction (p. 4);
 - Blank Preparation: Stave Construction (p. 5);
 - Initial Turning (p. 6)
 - Turning the Mug Sleeve (pp. 6-7).
- > The user assumes all risk and responsibility for the proper and safe use of this product and for ensuring product suitability for the intended application.
- > It is the sole responsibility of the purchaser of this product to ensure that anyone you allow to use this product reads and complies with all instructions and safety precautions outlined in this manual prior to use.
- > Follow all standard shop safety practices, including:
 - Keep children and bystanders away from the tool operating area;
 - Do **NOT** use power tools in explosive environments, or in the presence of flammable liquids, fumes or dust;
 - **TURN OFF AND UNPLUG** all power tools **BEFORE** making any adjustments or changing accessories;
 - Remain alert and use good judgment. Do not use this product if you are in any way impaired by medications, alcohol, drugs or fatigue;
 - Keep your work area well lit and clean;
 - Dress appropriately. Secure loose clothing, remove all jewelry and tie up long hair before using this product;
 - **ALWAYS** wear safety glasses, hearing protection and respiratory protection that complies with NIOSH/OSHA/ANSI safety standards;
 - Use dust collection tools and dust face masks to reduce exposure to dust;
 - Use safety equipment such as featherboards, push sticks and push blocks, etc., when appropriate;
 - Maintain proper footing at all times and do not overreach;
 - Do **NOT** force woodworking tools.
- > These warnings and instructions do **NOT** represent the total of all information available regarding tool safety, use and technique. Always seek out opportunities to learn more and improve your skills and knowledge.

⚠ CA WARNING: Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to www.P65Warnings.ca.gov/wood.

⚠ DANGER

Danger indicates a hazardous situation that, if not avoided, will result in death or serious injury.

⚠ WARNING

Warning indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠ CAUTION

Caution indicates a hazardous situation that, if not avoided, may result in minor or moderate injury or property damage.

NOTICE

Notice indicates important or helpful information and/or user tips.

PRODUCT SPECIFIC SAFETY WARNINGS

⚠ WARNING

- > Mating surfaces of all pieces glued together to form a blank for turning **MUST** be absolutely flat. Any irregularities will create voids in the final blank, potentially compromising the structural integrity of the blank and posing the danger of serious injury should the blank come apart on the lathe during turning.
- > When drilling at the lathe, **ALWAYS** lower the lathe speed to the level specified for the diameter of bit you are using. Failure to do so could result in excess friction, heat buildup, burning of the stock and damage to the bit.
- > Wear a full face shield and safety glasses, not safety glasses alone, when turning this project, especially if using the stave construction method described below. With the stave method, there is an increased risk that the blank could come off the lathe as it spins.

⚠ CAUTION

- > When working with cyanoacrylate (CA) glue or epoxy, make sure the area is well-ventilated, wear nitrile gloves and use an applicator. Avoid contact with skin or clothing.

NOTICE

- > To complete this project, you will need:
 - 3 $\frac{5}{8}$ " x 3 $\frac{5}{8}$ " x 7" wood blank (or glued-up, segmented or stave blank)
 - A lathe with a drive center and live center
 - A four-jaw lathe chuck with 50mm jaws
 - A lathe drill chuck (also called a Jacobs-style chuck)
 - 2 $\frac{1}{8}$ " diameter Forstner bit (53944, sold separately)
 - 2 $\frac{7}{8}$ " diameter Forstner bit (56974, sold separately)
 - Wood glue
 - Thick cyanoacrylate (CA) glue or epoxy
- > This project is intended for mid-level to experienced turners, as it requires both spindle-turning and hollowing skills and tools. Much of the interior waste can be removed by drilling with Forstner bits, but you must be able to complete the interior diameter of the blank using lathe tools.
- > Because of the large blank size required for this project, it's possible that you'll have to glue up material to achieve the required dimensions. You can do this by gluing thinner boards together face to face or by creating a segmented or stave assembly.



Fig. 1

Blank Preparation: Face-to-Face Construction

⚠ WARNING

> Mating surfaces of all pieces glued together to form a blank for turning **MUST** be absolutely flat. Any irregularities will create voids in the final blank, potentially compromising the structural integrity of the blank and posing the danger of serious injury should the blank come apart on the lathe during turning.

1. Check the pieces to make sure that the faces to be glued are dead flat. If they are not, joint and plane them until they are. Mating faces must make full contact for a strong glue joint.
2. Cut the pieces a little wider and longer than the finished dimensions of the blank.
3. Apply glue to the mating faces and clamp the assembly. Allow the glue to cure overnight. **Fig. 1.**
4. After the glue has dried, machine the blank to its final dimensions: $3\frac{5}{8}" \times 3\frac{5}{8}" \times 7"$. Then cut the corners along the long edges to make initial turning easier.



Fig. 2

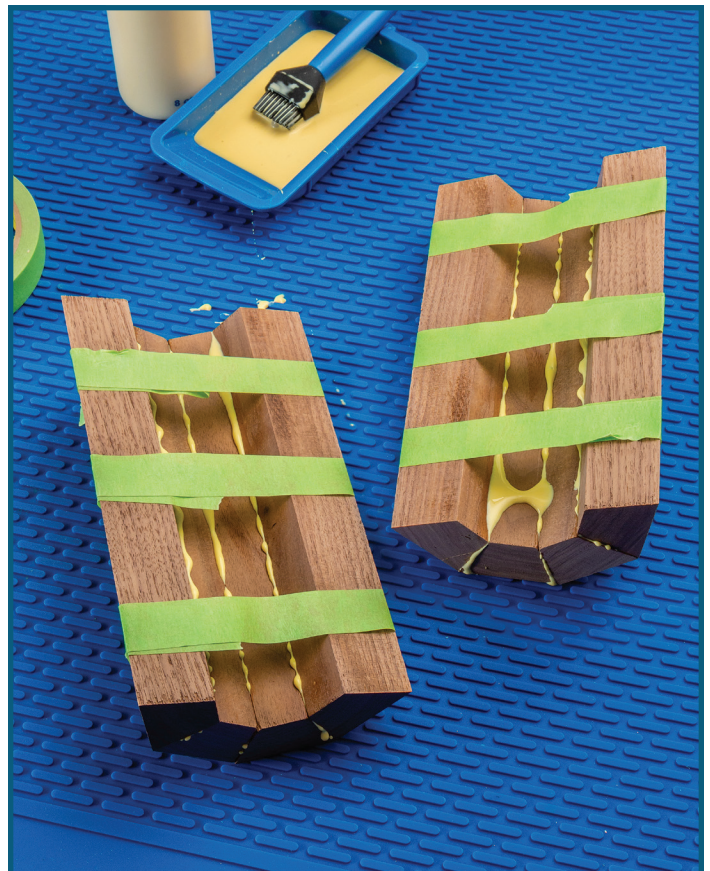


Fig. 3

Blank Preparation: Stave Construction

NOTICE

You will create the blank from staves glued up to form an octagonal cylinder with glued-on end caps made from octagonal pads cut from other boards. To achieve the inside and outside dimensions required for turning, material used for the staves should be at least 7/8" thick. The length of the glued-up blank, including staves and end caps, must be at least 7" – longer if you intend to part off one or both end caps. (The final interior hole must be 6" long.)

If you want only the staves to be visible, you will need to turn an internal rabbet or shoulder in what will be the bottom of the blank and turn a round disk/plug to be glued into the rabbet. If you go this route, you will need to consider these factors when determining the length of the staves.

1. Cut or rout eight staves with long edges angled at 22.5° from the same face. On their widest faces, the staves must be 1 1/16" wide (long point to long point).
2. You will glue up the assembly in two steps. For the first glue-up, assemble two sets of four staves, positioning the staves next to each other, long point to long point, on strips of painter's tape.
3. Apply glue to the mating surfaces and use additional tape to draw the pieces tightly together. **Fig. 2 and 3.** Let the glue fully cure.
4. After the glue has cured, remove the painter's tape and test the final two joints. They should meet perfectly. If they don't, gently sand the half-section on a piece of sandpaper laid on the completely flat surface such as the table of a table saw. **Fig. 4.**
5. Once the joints are tight, glue the two half-sections together, using tape to hold them. **Fig. 5.**
6. After the glue has cured, remove the masking tape and cut each end of the blank square with a miter saw.
7. Cut a pad of solid wood to attach at each end. Do this by tracing each octagonal end onto a board and cutting to the lines on the band saw.

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8. Glue the pads onto each end of the blank using thick CA (cyanoacrylate) glue or quick-set epoxy and clamp securely. **Fig. 6.**



Fig. 4



Fig. 5



Fig. 6



Fig. 7

Initial Turning

1. Mark the center on each end of the blank. Mount the blank between the drive center in the headstock and the live center in the tailstock.
2. Turn the blank round.
3. Cut a tenon on the headstock end of the blank to fit into the 50mm jaws of your chuck. **Fig. 7.**
4. Remove the blank from the lathe, replace the drive center with the four-jaw chuck, and mount the blank in the chuck according to the directions that came with the chuck.
5. Carefully part off the pad on the tailstock end of the blank.

Turning the Mug Sleeve

Any material you can drill out of the blank will simplify the hollowing process. This step is easiest with $2\frac{7}{8}$ " and $2\frac{1}{2}$ " Forstner bits. If you don't have these bits, drill the largest hole you can and hollow the rest with a lathe chisel.

⚠ WARNING

When drilling at the lathe, **ALWAYS** reduce the lathe speed to the level specified for the diameter of bit you are using. Failure to do so could result in excess friction, heat buildup, burning of the stock and damage to the bit.

1. Mount the $2\frac{7}{8}$ " Forstner bit in a drill chuck in the tailstock.



Fig. 8



Fig. 9

2. Turn on the lathe, adjust the speed and drill 1¼" into the end of the blank. Feed the bit slowly – drilling end grain, especially with a large bit, builds up heat. **Fig. 8.**
3. Turn off the lathe and allow the bit to cool. Then switch to the 2⅝" bit.
4. Drill a 2⅝" diameter hole 4¾" beyond the bottom of the first hole, for a total depth of 6".
5. Slide the tailstock out of the way. You now have two stepped holes inside the blank.
6. Hollow the blank by connecting the step at the bottom of the 2⅝" hole to the bottom of the 2⅝" hole. Use a round-nose scraper or similar hollowing tool.
7. Once you have hollowed the blank close to its final shape, make a mark 3/8" down from the open end of the blank. Use a parting tool to cut an external rabbet from the end to this line, making a recess that will fit under the rolled-over lip on the mug insert. **Fig. 9. Be conservative with your cuts and stop the lathe frequently to check the fit between the mug insert and the hole.** If the insert won't seat all the way, make certain it's not being restricted by the hole inside the blank before removing too much material from the rabbet.
8. When the insert fully seats into the blank, mark where the bottom of the turning will be on the outside of the blank. Do this by measuring the depth of the hole in the blank, adding 3/8", and marking a line on the outside of the blank at this distance. Part to this line to define the bottom of the mug.
9. Use a parting tool and calipers set to 2⅝" to establish the outside diameter of the base of the mug. **Fig. 10.**
10. Shape the outside of the blank. Turn the top so it transitions nicely into the stainless steel insert lip. Gently taper the blank from top to bottom and add beads and coves as you like. Be aware of the wall thickness so you don't cut through. **Fig. 11.**
11. Sand and finish the turning inside and out. Polyurethane is an excellent choice of finish for this project, as it holds up to damp environments.
12. Part the blank from the lathe.



Fig. 10



Fig. 11



Fig. 12

⚠ CAUTION

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13. With a bead of thick CA glue or epoxy inside the lip of the mug insert, push the wooden blank in place. **Fig. 12.** Allow the glue to dry.

Check Rockler.com for updates. If you have further questions, please contact our Technical Support Department at 1-800-260-9663 or support@rockler.com

