

Exterior LED Table Lamp Project Plan



Tools:

- Bowl Gouge
- Parting tool
- Spindle gouge
- 2 1/8" Forstner Bit (Lockset Size)
- Face Shield
- Chuck with jaws for a 2-3.5 inch jaw opening.

Materials:

- (2) ~ 5.50 inch Diameter 8/4 Rounds
- LED Light Kit including glass.



The LED Lamp project incorporates 12v LED lights on a strip that is covered by glass. This project consists of 2 blanks turned into a top and bottom for the lamp and a turned dowel. If you will be running on battery power, you will also need a battery kit that provides:

(1.9 watt hours x number of feet of LED x number of hours) you want the lamp to stay on.

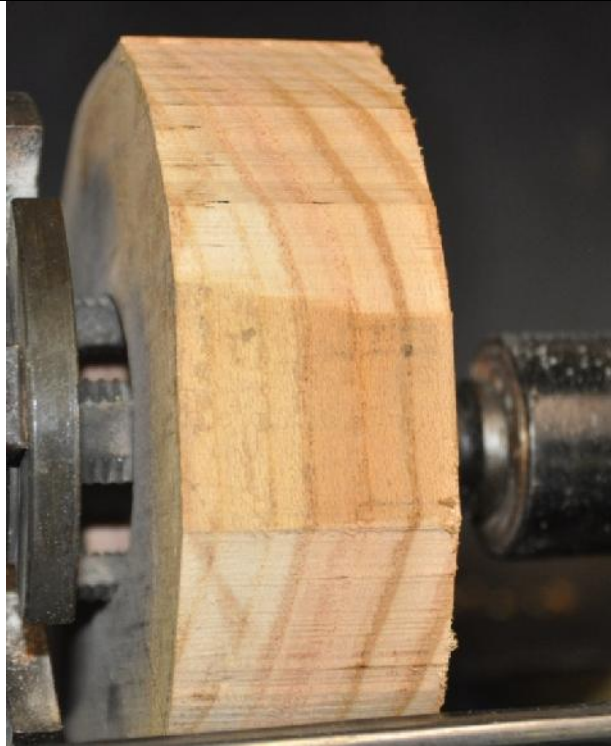


Turning the Top

Find and mark the center of your square block. Using a compass, mark a circle as large as possible. Mark the center on the other side of the blank. Cut out your blank to a rough round using a bandsaw, jig or coping saw.

Using a 2 1/8" forstner bit, drill a 3/8" – 1/2" deep hole in the center of one side.

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Insert the jaws into the hole. Expand the jaws to hold on hole's the outer edge. Bring the tailstock up in support.

Tighten the tailstock and slowly rotate the blank. If there is excessive wobble outside of what is expected from a rough cut blank the jaws may not have seated fully. Remove the tailstock, loosen the jaws and apply force on the blank toward the head stock, retighten the jaws and bring the tailstock back up in support. Recheck.

Round the blank and shear cut the tailstock face.



Cut the widest tenon that your chuck jaws will safely accept on the tailstock side. The lamp's top will require a wide tenon so that you can turn the underside, but not affect the shape options available.



Remount the top using the new tenon just created.

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Begin removing wood to dish the Top's underside in like a shallow bowl. Go at least about half the depth of the blank. This will begin to look like a shallow bowl or platter.



This lamp uses a preserve / canning jar. Since this will be battery operated and the batter will be located in the base, the jar will be upside down. The Top's underside will need to be formed to accept the jar's bottom.

The jar bottom will be glued in, but the closer to fitting the better. Find the diameter for the very bottom of the jar and mark it on a memory board or your ruler. Mark the diameter where jar starts to curve down to the bottom.



Transfer the marks to your blank.

Using your parting tool, mark the very bottom and start of the down jar's downslope.

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Take light cuts and check the fit regularly. You will need to make the hole deep enough that you have a ¼ inch wall that is vertical. This is necessary to recheck the blank and turn the other side.

If you have the fit right, proceed to clean up any transition errors you may have in the lid's underside.

Sand the underside to 220 grit. This will be the last time you have this side exposed on the lathe, so it is a great time to get it sanded.



Reverse your turning and begin shaping the top. Take light cuts as you form the top. In your initial shaping, bring the tailstock up in support. A spindle or smaller detail gouge can be used.

When finished with the shaping. Move the tool rest out of the way and sand using successive grits until you reach 220.

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LIGHT POST

You will need to turn a post that holds the LED light strip inside the jar. 2 feet of LED lights comes up about 3 inches when wrapped around the post. Turn a post that is 5 inches or less long and narrow enough to fit in the jar with the LED lights wrapped around it. For most jars this has been a post of about 2 inches in diameter. Depending on which jar you use, you will need to check that the width inside is consistent. If your post will reach toward the bottom of the jar, you will need to narrow the post to allow for the space taken up by the LEDs.

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Place your new top upside down on a roll of blue tape. Level the upside down top. Ensure the bottom of the jar is clean and dry. Mix up epoxy and glue the lid to the top. The jar's bottom is concave and you should be able to fill in that concave area with the epoxy as well and applying the epoxy to the bottom edges.

Leave upright in a safe spot to cure.



LAMP BASE

Mount the lamp base by expanding the jaws into the hole drilled with the forstner bit.

Turn round and clean up the face.

Center the jar lid on the blank and mark its circumference.

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Using a parting tool, mark the circumference of the jar lid.



Now that the lid fits, remove the center. Remove enough wood that the entire lid fits inside. When this is done, we don't want to see the lid from the side once the lamp is assembled.



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Profile and shape the base into a design that is pleasing to your eye.



While still on the lathe, sand to 220 or 320 grit. Once off the lathe, wipe it down and finish as desired. Oil or poly urethane are popular choices.

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Turn a post that will fit inside the glass jar and provide enough space for the led strips (approximately 2 inches in diameter, but depending on the jar chosen it may be smaller).

Center the post on the jar's lid. Screw the post to the lid.



Before you start wrapping lights around the post, connect the leads and plug into a 12v source to verify the LED lights are working. The LED light strip is two feet or less in length.

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Start by the jar's lid and remove the sticky back of the LED strip. Apply to the post nearest the lid, remember to leave room for the connector, and wrap around the post. Press firmly as you go.

Once the LED strip has attached to the post, use a hand held drill and a 1/8" or 1/4" bit to drill through the post and out the top of the jar's lid.

DO NOT HOLD IN YOUR HAND while doing this. Hands are bad stop blocks for this process.



Place the lid on a piece of wood and drill the hole. Once done, feed the connector's wire through the hole to the lid. With a dab of silicone on the outside, this will give you a water proof light.

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Drill another hole with the same drill bit, through the bottom of the base and connect your wires or battery pack.



This picture is with 6 feet of LED light strip. I recommend two feet or less for allowing friends to see one another and converse without sunglasses. 😊

Happy Turning!