

# WOODEN SUNDIAL



## SPECIFICATIONS:

WIDTH: 225mm / 9"  
LENGTH: 225mm / 9"  
HEIGHT: 300mm / 12"  
LATITUDE RESOLUTION: 1°

**MISSING OR DAMAGED PARTS?**  
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### SOME NOTES BEFORE YOU BEGIN:

ASSEMBLE THE KIT ON A LARGE, FLAT SURFACE.

GOOD QUALITY WOOD GLUE, 180 GRIT SANDPAPER, AND A RAZOR SAW ARE REQUIRED TO COMPLETE THE SUNDIAL.

READ ALL INSTRUCTIONS CAREFULLY, IDENTIFYING ALL THE PIECES FOR EACH STEP USING THE ILLUSTRATIONS PROVIDED.

HAVE FUN!

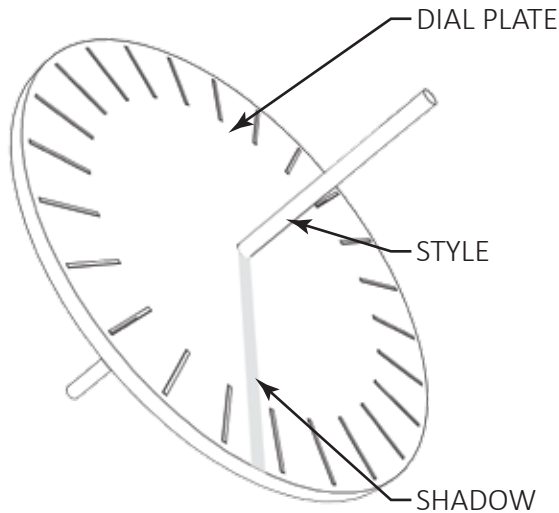
**ABONG**  
i n c o r p o r a t e d

## BACKGROUND INFORMATION

### THE EQUATORIAL SUNDIAL

An equatorial sundial is beautiful in its simplicity. It has only two main parts, a dial plate and a style.

The style is a rod that passes through the center of the dial plate, extending above and below it. The style is perpendicular to the dial plate, and casts a shadow onto it.



The dial plate has an upper and lower dial face, both of which are marked off in hours.

Each hour is exactly 15 degrees wide. The location of the style's shadow indicates the time.

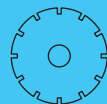
In summer months, the shadow falls on the upper face, and during the winter it falls on the lower face.

## PARTS LIST

### LOCKING PIN



— LONG PIN



— LOCKING PIN KNOB



### PREPARE THE PARTS

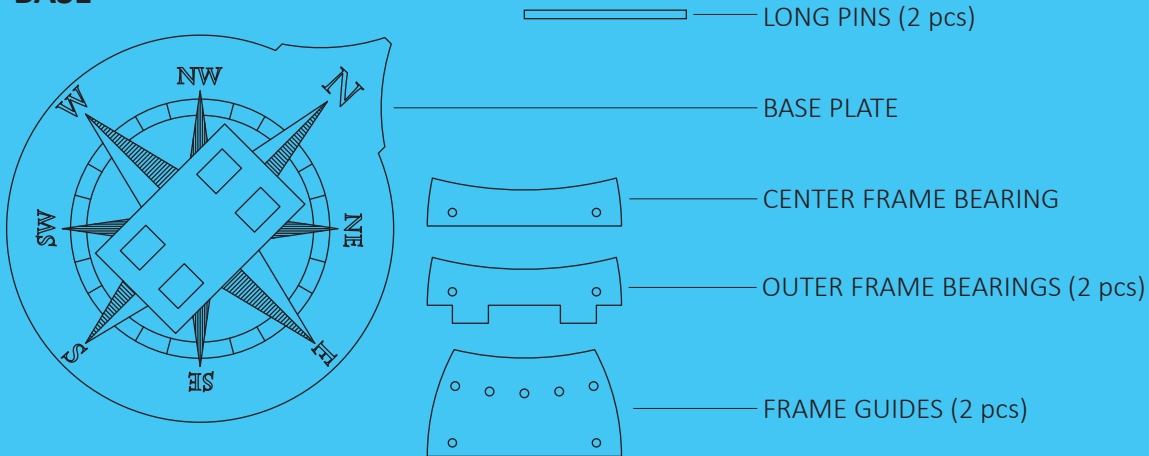
1. Sand the front and back faces of the laser cut part to remove any marks or residue. Dry fit the parts and sand as needed to ensure they fit together easily.

2. Apply glue to one end of the long pin and press it all the way in to the locking pin knob. Wipe away any excess glue.

3. Sand the front face of the knob smooth and set the completed locking pin aside.

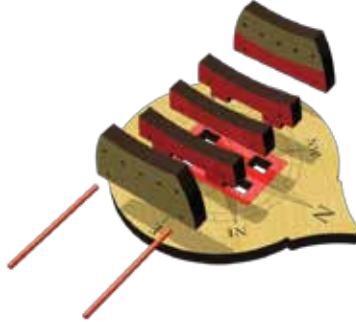
## PARTS LIST

### BASE

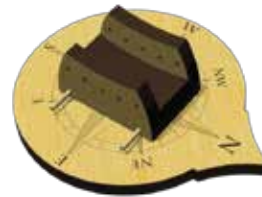


#### PREPARE THE PARTS

4. Sand the front and back faces of the laser cut parts to remove any marks or residue. Dry fit the parts and sand as needed to ensure they fit together easily.



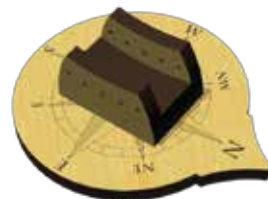
5. Apply glue to the faces of the outer and center frame bearings and the long pins. Assemble the bearings and guides using the pins for alignment.



6. Glue the assembly to the base plate, firmly pressing the parts together as shown. Wipe away any excess glue.



7. Allow the glue to dry. Using a razor saw, trim the pins flush with the frame guides.

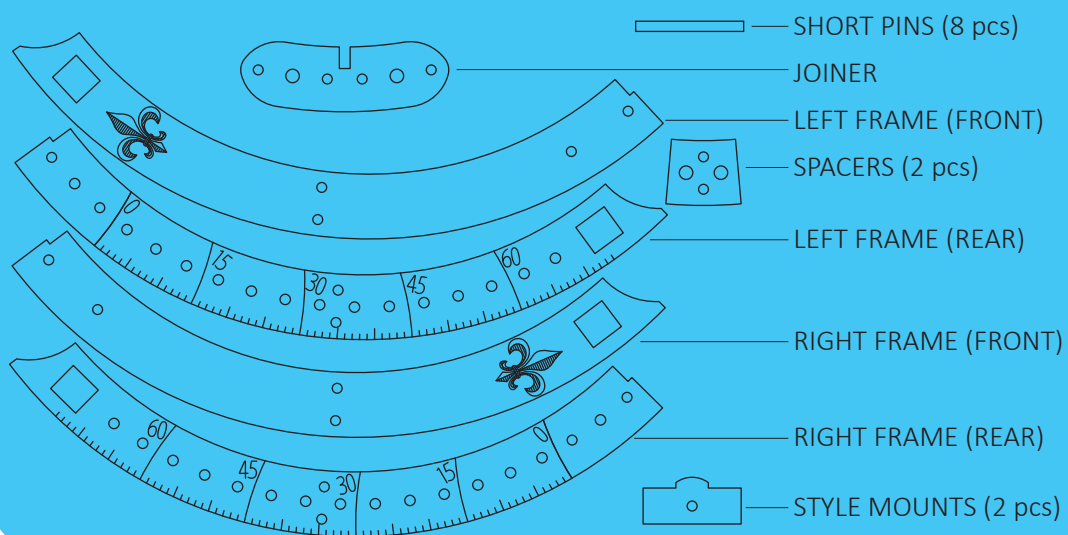


8. Sand the faces of the frame guides smooth and set aside the completed base.

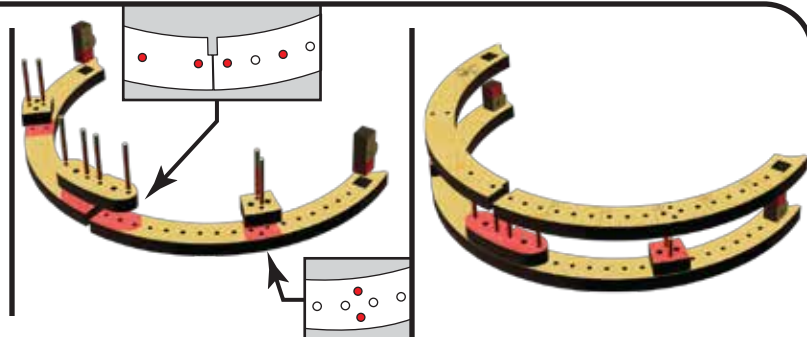
# ASSEMBLY

## PARTS LIST

### FRAME



#### PREPARE THE PARTS



9. Sand the front and back faces of the laser cut parts to remove any marks or residue. Dry fit the parts and sand as needed to ensure they fit together easily.

10. Place the front and rear right frames marked side down on a flat surface. Glue the style mounts, spacers, and joiner to the frames using short pins to align the pieces.

11. Apply glue to the style mounts, spacers, and joiner. Press the front and rear left frames onto the assembled left frame, ensuring the parts are marked side up.



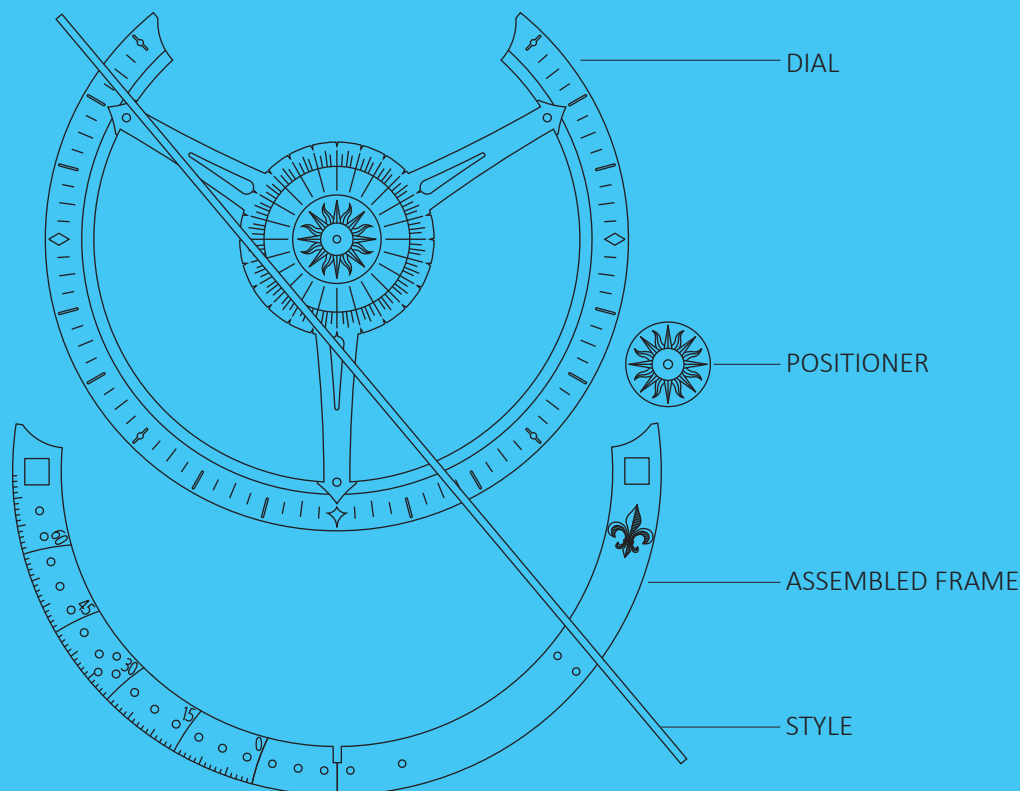
12. Allow the glue to dry. Using a razor saw, trim the pins flush with the frame.



13. Sand the faces of the frame smooth and set aside the completed part.

## PARTS LIST

### DIAL



# ASSEMBLY

### PREPARE THE STYLE



14. Using the guide at the side of this page, mark the style in two places. The first mark is located 2.38" (60.3mm) from one end, and the second mark is located 6.75" (171.5mm) from the same end. Use sandpaper to taper the opposite end, forming a blunt point as shown on the guide.



### PREPARE THE PARTS

15. Sand the front and back faces of the laser cut parts to remove any marks or residue. Dry fit the parts and sand as needed to ensure they fit together easily.

### \*DO NOT GLUE



16. Slide the style through the mounts, positioner and dial until the lowest mark is aligned with the inside face of the rear mount.

• Positioner faces away from the dial.

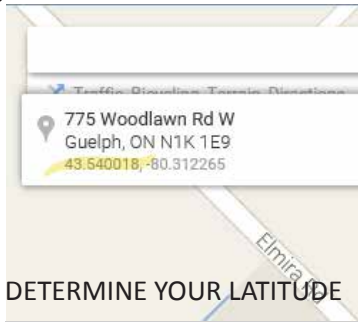
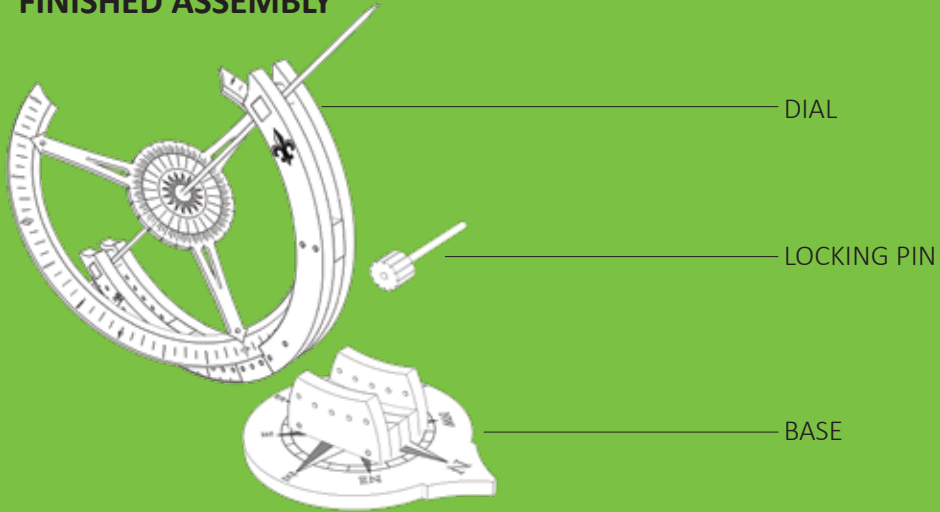
### \*DO NOT GLUE THE DIAL



17. Glue the style to the frame at both mounts. Align the unmarked face of the positioner with the second mark and glue it to the style.

## PARTS LIST

### FINISHED ASSEMBLY



DETERMINE YOUR LATITUDE



18. The dial is set at an angle equal to the latitude of your location. Use an online map, a GPS, or a smartphone to find your coordinates.

- Latitude is the first number

19. Place the dial in the base and tilt it until the mark indicating your latitude is at the edge of the frame guide.

- Sand the frame to fit as needed
- 43° shown

20. The five holes in the frame guide allow adjustment to within 1.0°. Slide the locking pin through the hole which is best aligned with a hole in the frame.



DETERMINE TRUE NORTH



21. The base needs to be oriented facing true north (not magnetic north). Use an app, GPS or old school pole star to find true north.

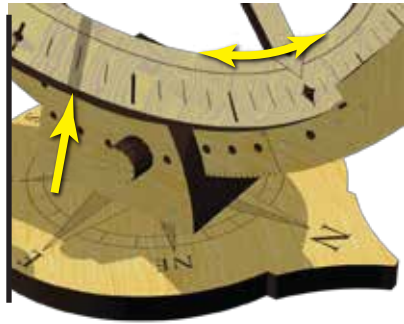
- AndroidS Compass Pro app shown

22. Find a sunny location and place the sundial aligned with true north.

23. The sundial is now indicating the current solar time. The time is shown by the shadow of the style on the dial face.



#### ADJUST TO LOCAL TIME



**24.** The sundial face can be adjusted to tell local time, or to make adjustments for daylight savings time.

**25.** Rotate the dial face until the shadow of the style indicates the local time.

• 2:30 PM Local time shown.

**26** Congratulations! The sundial is now telling the correct time.

- Unless there are clouds.
- Or it is night.
- Keep your alarm clock.

## FINISHING AND MOUNTING.

### SUGGESTIONS

#### FINISHING

Because a sundial needs sunlight to work, you will likely be tempted to place your new sundial outdoors.

If you choose to do so, we suggest you disassemble the dial and locking pin and apply a waterproof finish to all the parts and let them dry thoroughly. There are several brands of clear polyurethane coatings that work nicely on items exposed to the elements.

You could also stain or paint the parts... they're wood, after all! Use your skill and creativity, and send us a picture.

#### MOUNTING

It can get tedious aligning the sundial with true north every time someone bumps into it, or picks it up to admire it. You may consider permanently mounting it in a convenient location.

#### THANK YOU

Most importantly, thank you for purchasing one of our kits! We make every product at our own local factory, using materials sourced from all over the United States and Canada.

*-The friendly folks at ABONG*

## READY FOR A CHALLENGE?

**CHECK OUT OUR WEBSITE ([WWW.ABONG.COM](http://WWW.ABONG.COM)) FOR OTHER GREAT KITS. IF YOU LIKED THE SUNDIAL, WE BET YOU'LL LOVE OUR WOODEN CLOCK!**

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