

Side support for Rotating Plate.

Hour Line Plate

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Cut or drill the 1/2" hole at the centre of the hour lines for the dowel that will hold the pointer.

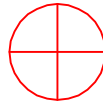
The cyan lines indicate the position of the 3/16" threaded rod used for the rotating plate. The rod is approximately 8-1/2" long and passes through the side supports and the rotating plate.

Transfer all the cyan lines to the back of the styrofoam and cut a notch so the threaded rod will fit correctly. A notch half the diameter of the rod is required in both parts that hold it in place. This applies to all the parts the rod passes through.

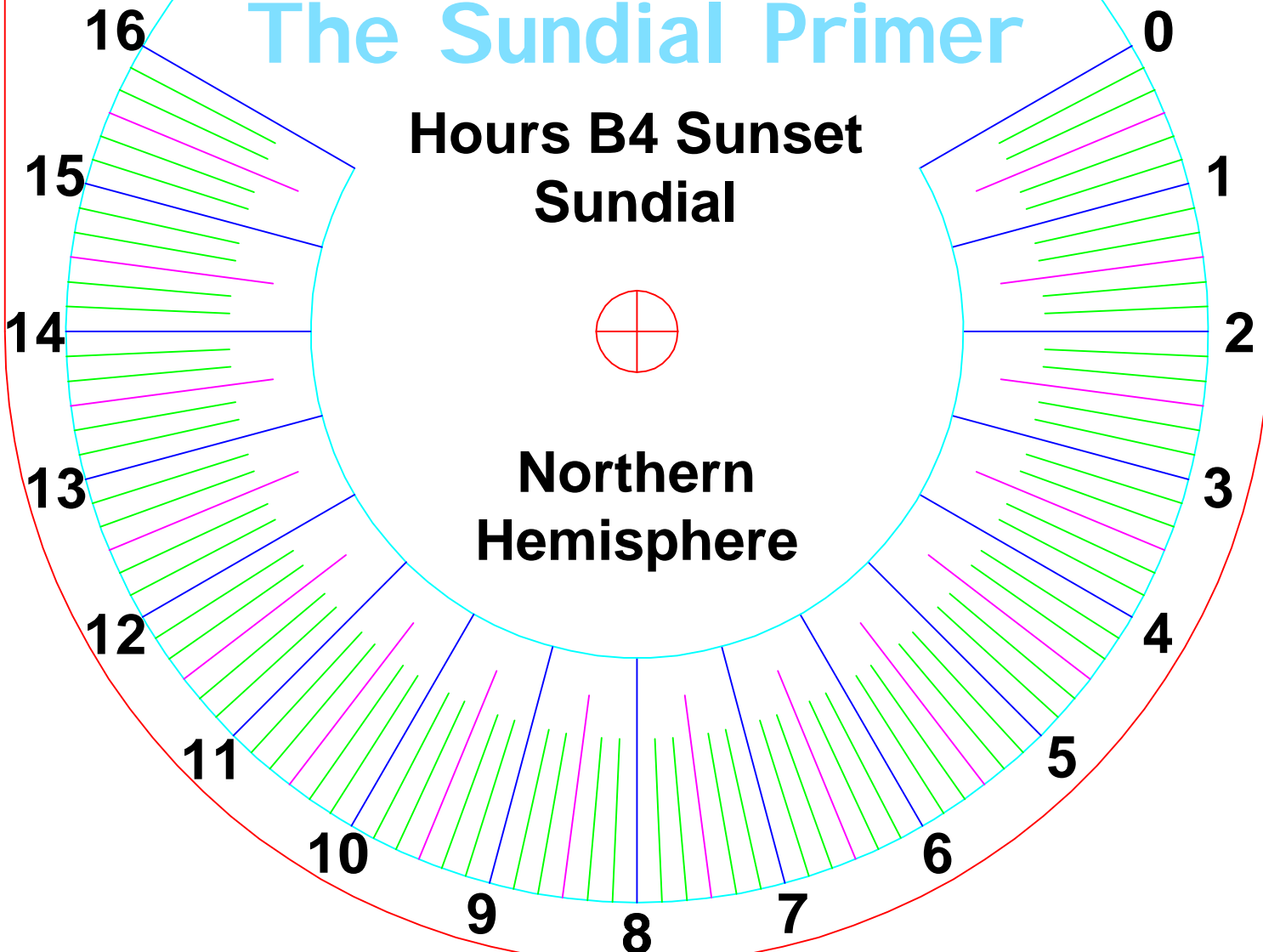
  
**South**

# The Sundial Primer

**Hours B4 Sunset Sundial**



**Northern Hemisphere**

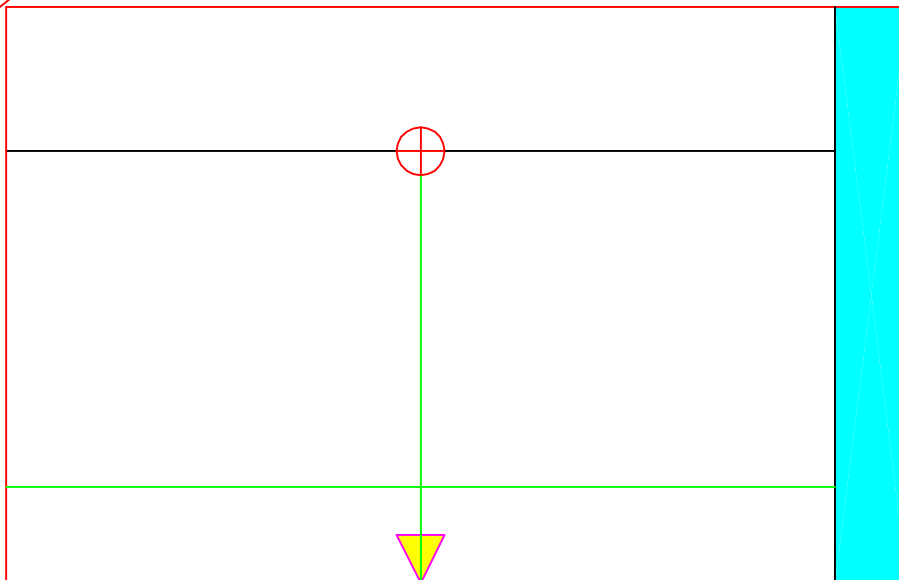


Cut out and glue these parts to the back of the side supports of the Hour Line Plate.

The cyan lines indicate the position of the 3/16" rod used for the rotating plate.

NOTE: If the Rotating Plate fits tightly a threaded rod is not needed and any rod can be used such as one made from a metal hanger. This rod does not need to be as long as it does not have to come out of the side supports. A 6" rod would be adequate.

### Cylinder Template



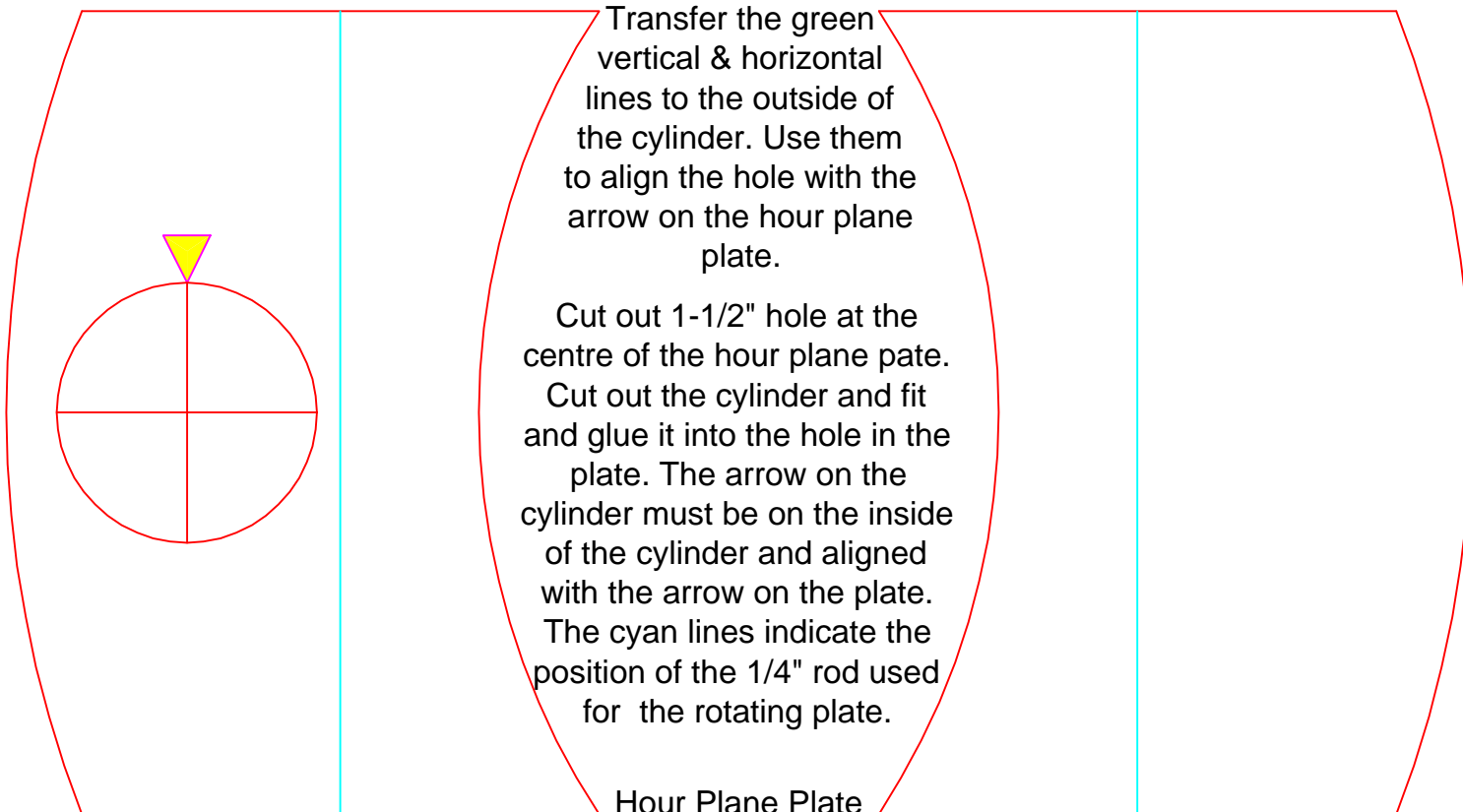
Cut out the hole in the centre of the Cylinder Template.

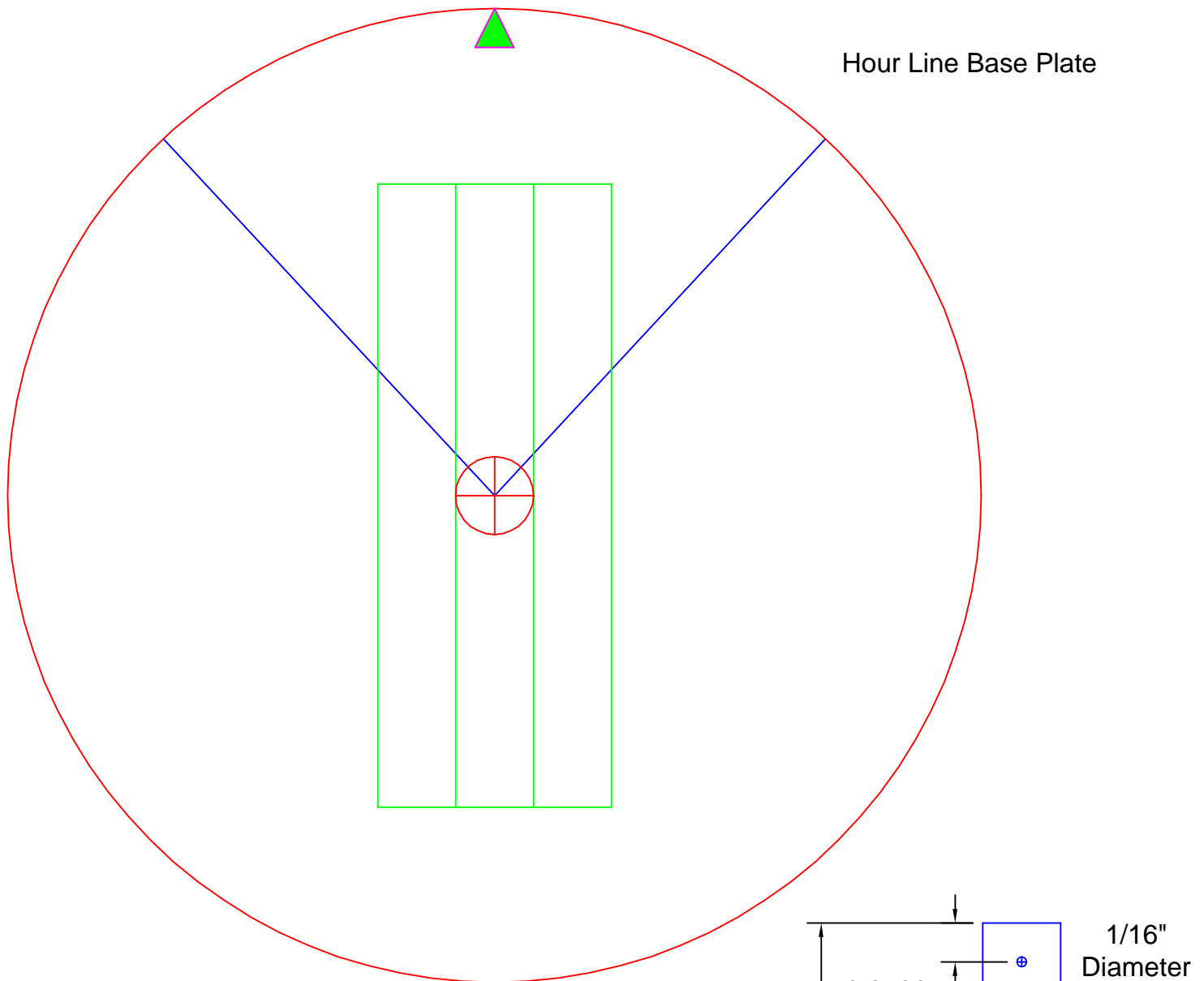
Glue cyan tab to other end of cylinder.

Transfer the green vertical & horizontal lines to the outside of the cylinder. Use them to align the hole with the arrow on the hour plane plate.

Cut out 1-1/2" hole at the centre of the hour plane plate. Cut out the cylinder and fit and glue it into the hole in the plate. The arrow on the cylinder must be on the inside of the cylinder and aligned with the arrow on the plate. The cyan lines indicate the position of the 1/4" rod used for the rotating plate.

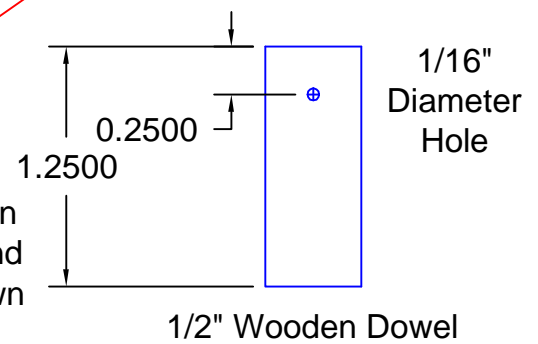
### Hour Plane Plate





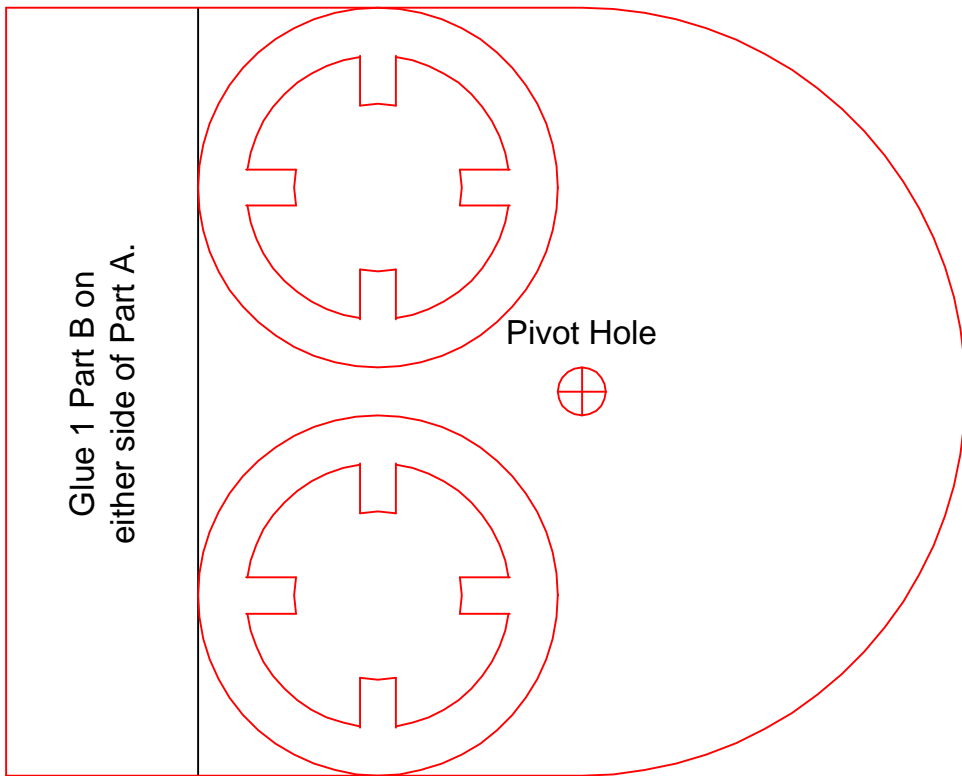
Hour Line Base Plate

Cut or drill the 1/2" hole at the centre of the plate for the wooden dowel that will hold the pointer. The dowel is 1/2" in diameter and 1-1/4" long with a 1/16" diameter hole 1/4" from the top as shown in the diagram. Drill the hole about three quarters of the way through the dowel. The pointer is a 1/16" diameter rod 3-1/4" long and is secured in the hole. The rod can be part of a metal coat hanger. Adjust the size of the hole for the pointer being used.



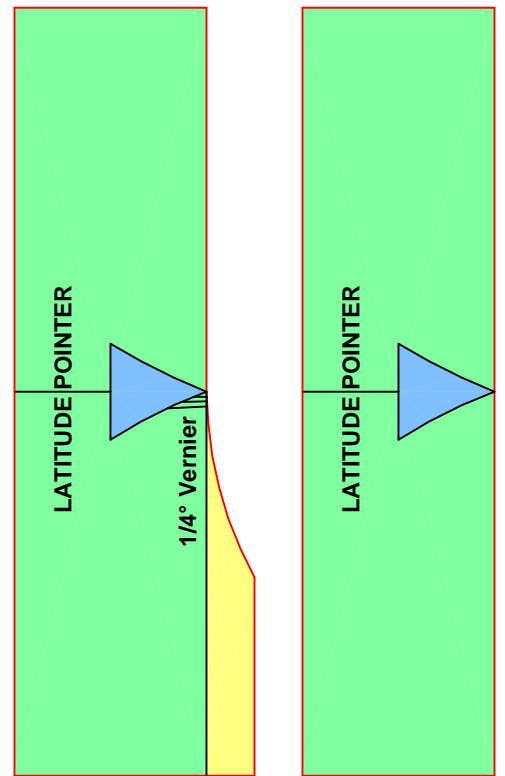
Install the Rotating Plate on the Hour Line Plate.

Once the sundial base is completed glue it to the Hour Line Base Plate aligned with the green rectangles. Put some glue in the Base Plate Hole. Place the Hour Line Plate on the Base Plate using the blue lines and arrow for alignment. The positioning of the Hour Line Plate is important and must be done accurately. Push the dowel through both plates until the pointer is on the Hour Line Plate and aligned with the "0" hour line. The hour line plate must be able to rotate about the dowel so be careful not to glue it.



Part A - 1 required

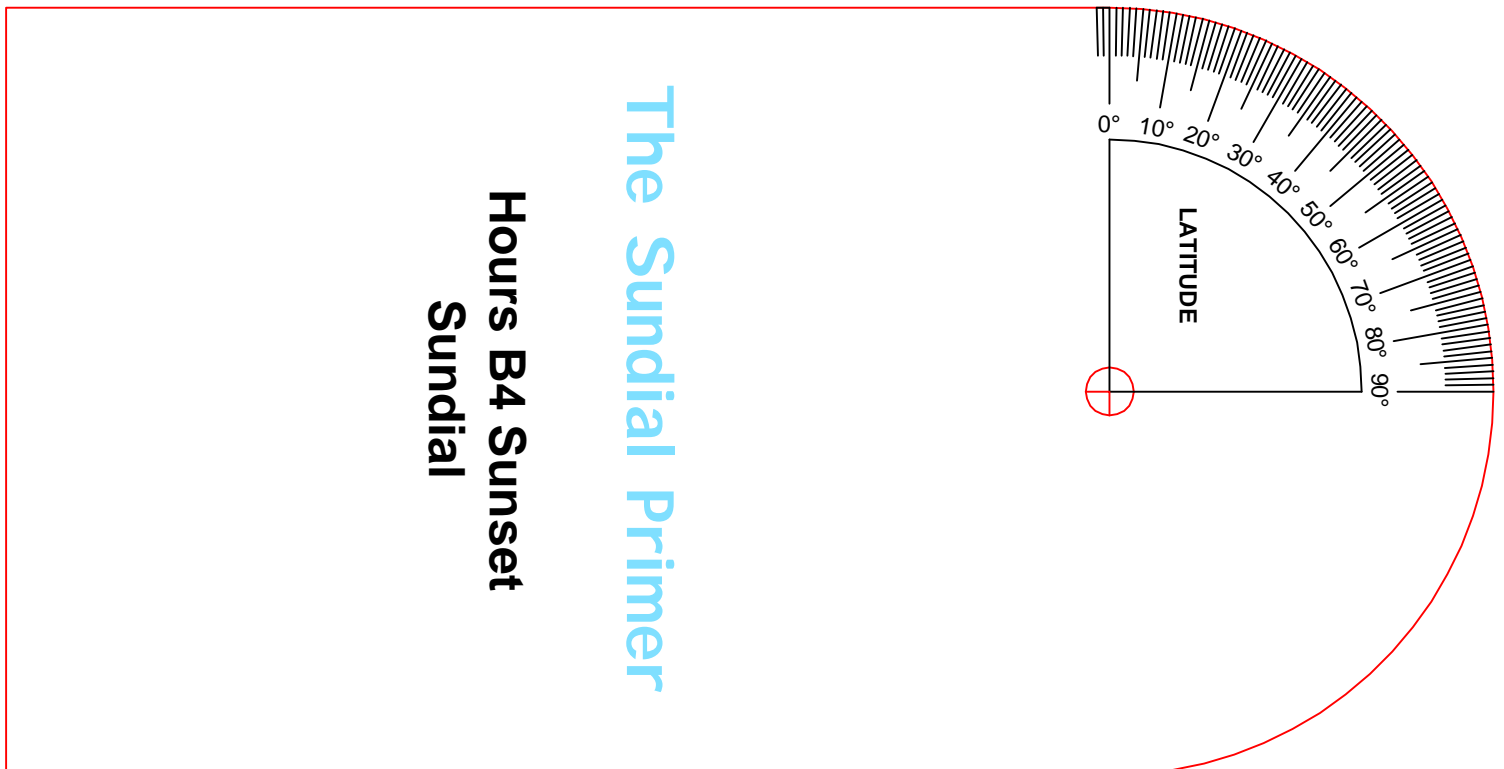
After cutting Part A from styrofoam cut out the 2 circular pieces. Fold the 4 tabs. Slide these pieces over the outside of the cylinder and glue only the tabs to the cylinder. One goes along the transferred horizontal green line and the other near the top of the cylinder. Use only if needed.



Part B - 2 parts using the right template are required. Choose 1 template & glue as shown in figure. The left template will allow the latitude to be set to 1/4° using the vernier instead of estimating.

Part C - 2 required

Save template & glue as shown in figure.

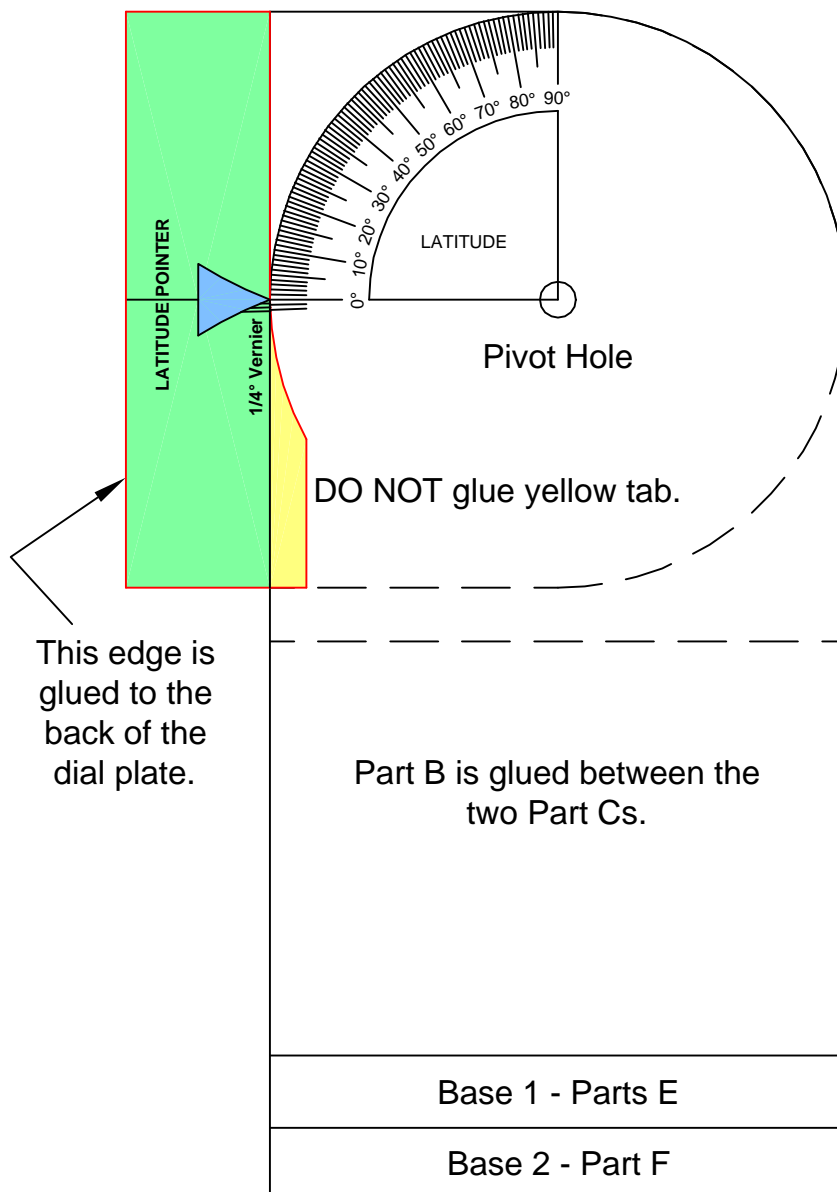


Part D - 1 required  
 Glued between & at the  
 bottom of the 2 Part Cs.

Part E - 2 required  
 Used to widen Base 1.

Part F - 1 required  
 This part is the width of Part E  
 but is as long as the entire  
 length of the base or about  
 9-1/2". Confirm the length  
 before cutting  
 Used to raise the base 1/2"  
 to provide adequate clearance.  
 Only required for high latitudes

Position Part A & Part Bs low enough on  
 the back of the dial plate so the plate will  
 clear the base.



The pivot hole passes through Part A  
 and the 2 Part Cs. Use a small bolt,  
 washers and wing nut to create the  
 pivot.

Glue the back plate on to a flat and  
 rigid surface, for example styrofoam  
 or wood. Drill the 1/2" hole located in  
 the small shield. Insert a section of  
 1/2" wood dowel so it extends 1/4"  
 above the top surface. The top plate  
 will rotate around the dowel. Drill a  
 perpendicular hole in the centre of  
 the dowel the same diameter as the  
 gnomon. The wire from a clothes  
 hanger is quite stiff and will make a  
 good gnomon.

Add weight to the base if  
 it is unstable.