

# A Duxbury Kaleidoscope<sup>1</sup>

A PWG Demonstration

by

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## The Components

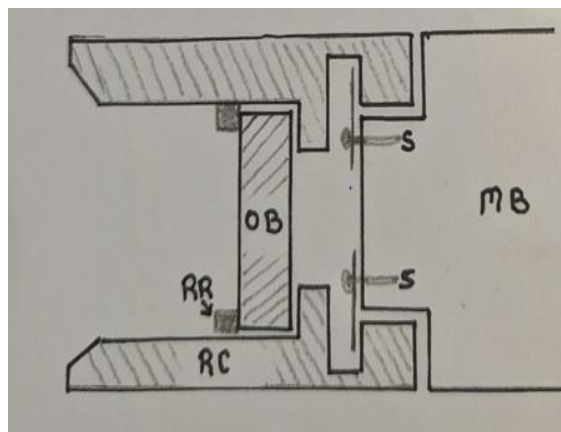
- |                           |                       |
|---------------------------|-----------------------|
| 1. The main barrel        | 5. The object box     |
| 2. The mirror assembly    | 6. The retaining ring |
| 3. The eye piece          | 7. The stand          |
| 4. The revolving cylinder |                       |



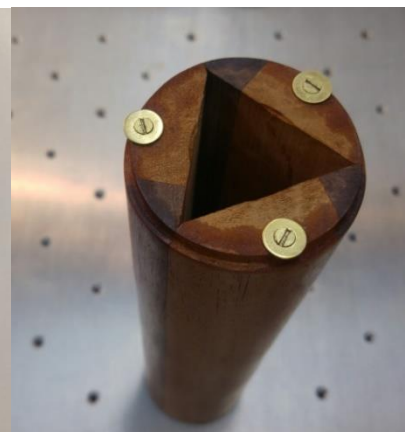
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<sup>1</sup> These notes have been adapted from "Wooden Kaleidoscope Plans for Wood Turners" by James N. Duxbury, 2001. For further information and detailed plans visit [www.duxterity.com/ec](http://www.duxterity.com/ec)

1. The Main Barrel (MB)
  - a. Prepare the blank for the main barrel cutting a 30 degree bevel on the long sides of three pieces of wood.
  - b. The main barrel is formed by gluing together the three pieces of wood and then turning to a cylinder with a spigot at each end.
2. The Mirror Assembly
  - a. Three pieces of mirror glass are cut to size so that they fit neatly inside the channel in the main barrel.
  - b. The mirrors are taped together.
3. The Eye Piece
  - a. Prepare the blank gluing a piece of ebony or similar type of wood in the blank cylinder.
  - b. Bore a 15mm hole in the ebony.
  - c. Turn the eye piece and attach a glass lens to the inside surface of the ebony insert with epoxy glue.
  - d. Glue the eye piece to one end of the main barrel.
4. The Revolving Cylinder (RC)
  - a. Turn the revolving cylinder making sure that:
    - i. There is a neat fit at one end where it will be attached to the main barrel, and
    - ii. That there is also a neat fit at the other end for the object box.
  - b. Cut a slot to allow the revolving cylinder to be screwed to the main barrel.
  - c. Screw the revolving cylinder to the main barrel using brass washers and (S) screws.



Attaching the Revolving Cylinder



Screws set in Main Barrel

5. The Object Box (OB)
  - a. Prepare the object box from PVC pipe & pieces of stained glass.
  - b. Use Epoxy glue to attach a plexiglas disk to the PVC pipe.
  - c. Cover the objects in the object box with glycerine and glue a second plexiglas disk to the other end of the PVC pipe.
6. The Retaining Ring (RR)
  - a. Turn the retaining ring.
  - b. Insert the object box and hold it in place by gluing in the retaining ring.
7. The Stand
  - a. The cradle for the kaleidoscope may be constructed by turning a central connecting rod. The end supports can be cut out either with a scroll saw or on a router table using a suitable template.
  - b. Finish with a wax polish.