

Assembly of PSI Steampunk Kaleidoscope Kit

Kit Features:

- PSI Steampunk Kaleidoscope Kit is unique with unusual design and easy to make.
- The kit consists of a complete Kaleidoscope mechanism which fits into a turned housing that spins inside the gear structure, offering a unique kaleidoscope viewing experience.
- Available in multiple finishes

Required Accessories:

- 7mm Pen Mandrel
- Bushing set(2 pc): #PKSPKSBU
- Drill Bit(s):
- 45/64" Forstner Bit #FB4564
- 7/8" Forstner Bit #FB78

Inside Spins!

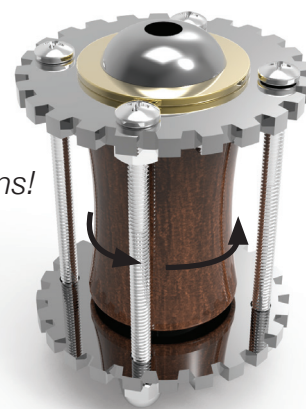


Figure 1 VIEWER COMPONENTS

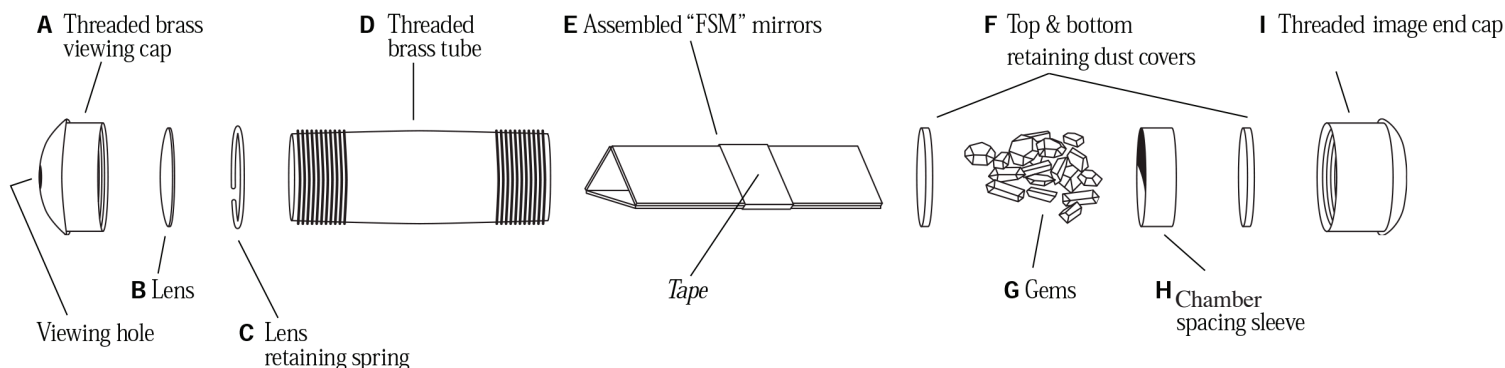


Figure 2 EXTERIOR COMPONENTS

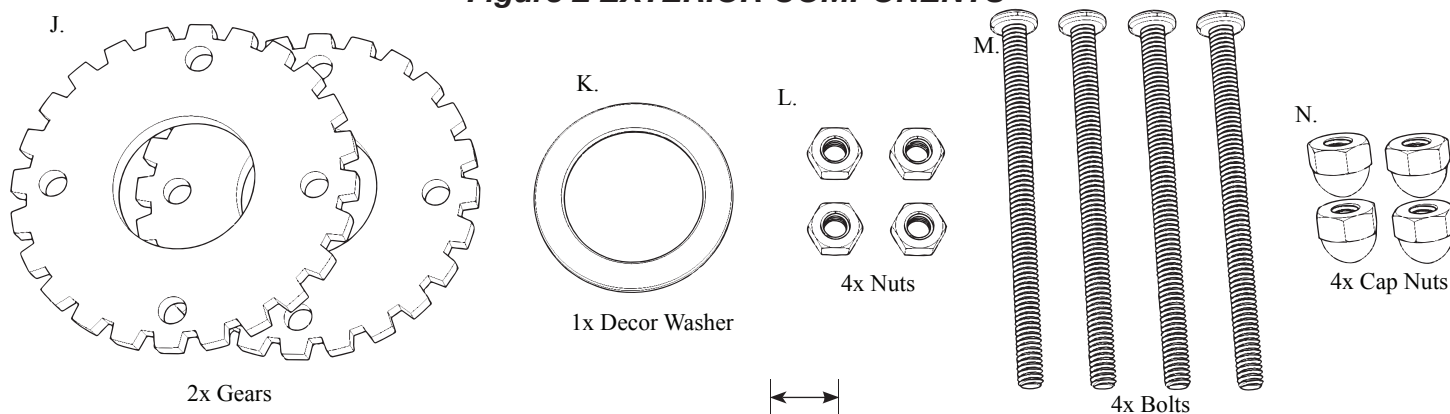
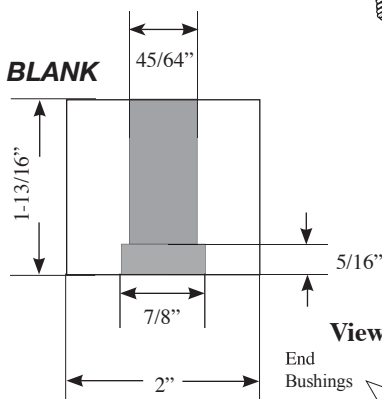


Figure 3 BLANK

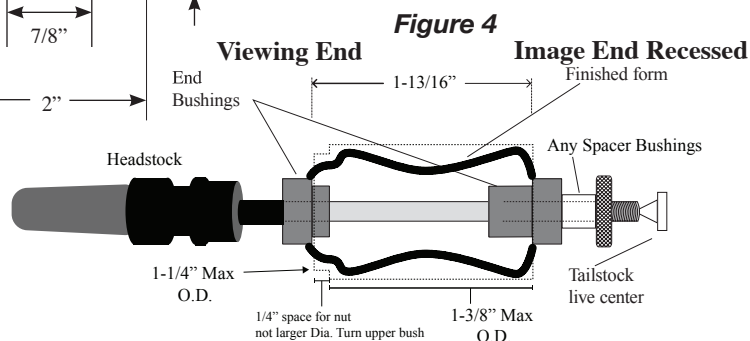
Drilling the Blank (Figure 3)

- Mark the center on each end of the 2 x2 square x 1-13/16" long blank. It is very important the blank is completely square at each end.
- Drill a recessed 7/8" dia (#FB78) hole 5/16" deep in the center of the blank
- Continue the drilling through the center with a 45/64" forstner bit (#FB4564) through the blank



Turning the Blank (Figure 4)

- Mount the shorter bushing onto the mandrel shaft
- Slide the blank, not recessed end, into the bushing. Insert the longer bushing over and into the opposite end of the blank. Add spacing bushings and slide the tailstock to close the space. Lock set up in place.
- Turn the blank to your choice of profile. Note: do not exceed bushing diameter for first 1/4" of the non recessed end (to clear the assembly nuts), for the rest of the body, do not exceed 1-3/8" or lower bushing diameter (to stay inside the assembly bolts.)
- Sand and finish the blank

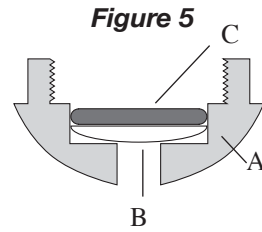


Assembling of the Kit

Layout kit interior components according to (FIGURE 1)

INSTALLING THE LENS IN THE VIEWING CAP (Figure 5)

- Position the viewing cap (A) with the Eye hole facing down. Drop the lens (B) into the recess inside the cap with the convex side down, flat side up as shown.
- Place the lens retaining spring (C) on top of the lens. Use a pencil eraser to hold and a blunt instrument to push the spring down in the recess to secure the lens in place.



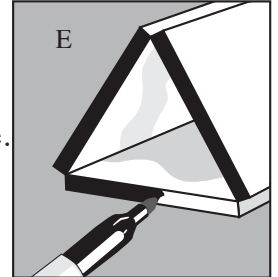
ASSEMBLING THE IMAGE END

- Position the threaded image end cap (I) with the open threaded end facing up. Peel the protective paper off the retaining dust cover (F) BOTTOM and position it to set on the bottom of the image end cap.
- Insert the plastic spacing sleeve into the end cap so that it seats firmly on the bottom retaining dust cover. Press firmly to force the sleeve to seat completely on the bottom dust cover.
- Insert the gems (G). The gems should occupy no more than 1/2 of the space in the image cavity. A variety of gems are provided to allow for a selection that pleases the user.
- NOTE: putting too many gems (i.e. all provided) into the cavity may cause the objects to jam in the cavity and not tumble freely. If they do not tumble after final assembly, remove selected gems to allow for the remaining gems to tumble.
- Remove the protective paper from the remaining dust cover (F) TOP and position it on top of the spacing sleeve to completely enclose the gems in the image cavity.

ASSEMBLING AND INSTALLING THE FRONT SURFACED MIRROR (Figure 6)

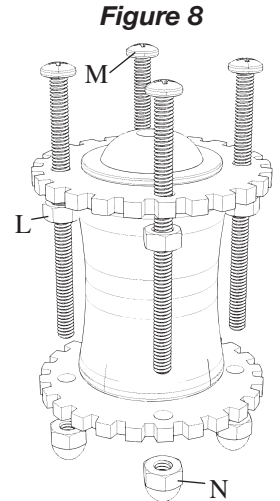
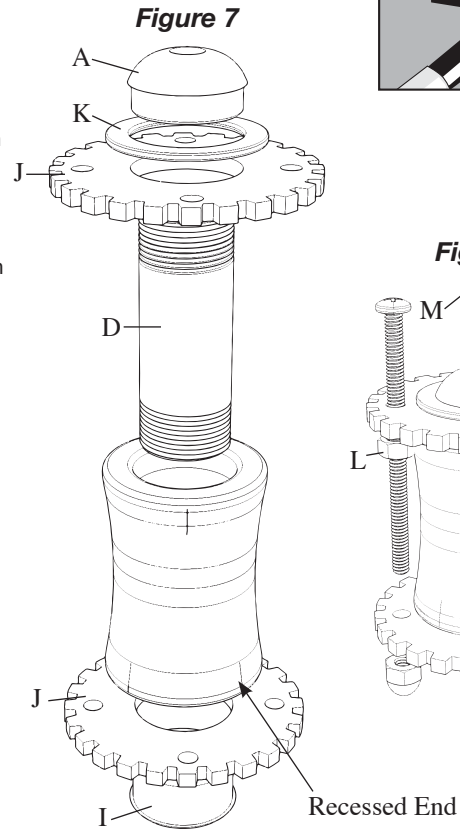
- The three pieces of mirrors are marked with a black "X" or a line on one side. This indicates the back side of the mirror and should be placed away from the center when assembling these pieces.
- Place the three mirrors inside the threaded brass tube D one-by-one forming an equilateral triangle. See diagram. As usual when handling cut glass, use caution not to cut your fingers or chip the glass.
- The mirrors should fit snugly inside the tube. If the mirrors slide freely inside the tube wrap additional tape around so they fit snugly.

Mark eyepiece edge of mirrors black. Edges form equilateral triangle.



FINAL ASSEMBLY (FIGURE 7,8)

- Step 1** – Assembling the Gear and Viewing assembly (Figure 7)
 - Thread viewer cap (A) over one end of tube
 - Press the threaded brass tube assembly (D) into the opening of the un-recessed end of the housing blank. Press until cap bottoms against blank.
 - Unthread viewing cap to expose threads.
 - Slide the décor washer (K) then a gear component (J) over the viewing cap end.
 - Screw the image assembly onto the exposed threads on the brass tube. (Be careful not to spill the gems). Tighten to bottom.
 - On the opposite (image end), slide the other gear component over the viewing component shaft.
 - Insert and screw in the viewer housing assembly onto the brass tube inside the recess to bottom. Tighten entire assembly at both ends.
 - Holding the gear components, the blank should spin freely.
- Step 2** – Final assembly with support bolts (Figure 8)
 - Insert 4 support bolts (M) into the holes in the gear plate at the viewing end. Screw in the flat nuts (L) tight onto the inside plate.
 - Thread the nuts up the threads while inserting the bolt through the bottom gear.
 - Thread the nuts up to bottom on the gear.
 - Thread the cap nuts (N) onto the bolts on the bottom where they pass through the gear. Tighten all nuts and cap nuts to be tight as possible to avoid unscrewing.
 - Likewise tighten the viewer component and image component to be very secure.



USING THE KALEIDOSCOPE

- The assembly can sit on any table top as an accessory
- Hold the housing to point at a light source
- Hold the gear components while the body spins inside.
- Enjoy the view.

Figure 9 Bushing Set

