

Illustrated Construction Manual: The Plumber's Telescope

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https://michelswunderland.de/solderiron/diy_scope.html



Individual parts of the kit and additional material (three pipe parts from the DIY store).



Step 1: All beginnings are easy - lens tube. Instead of a mark on the tube, the sleeve is used as a guide for the cut.



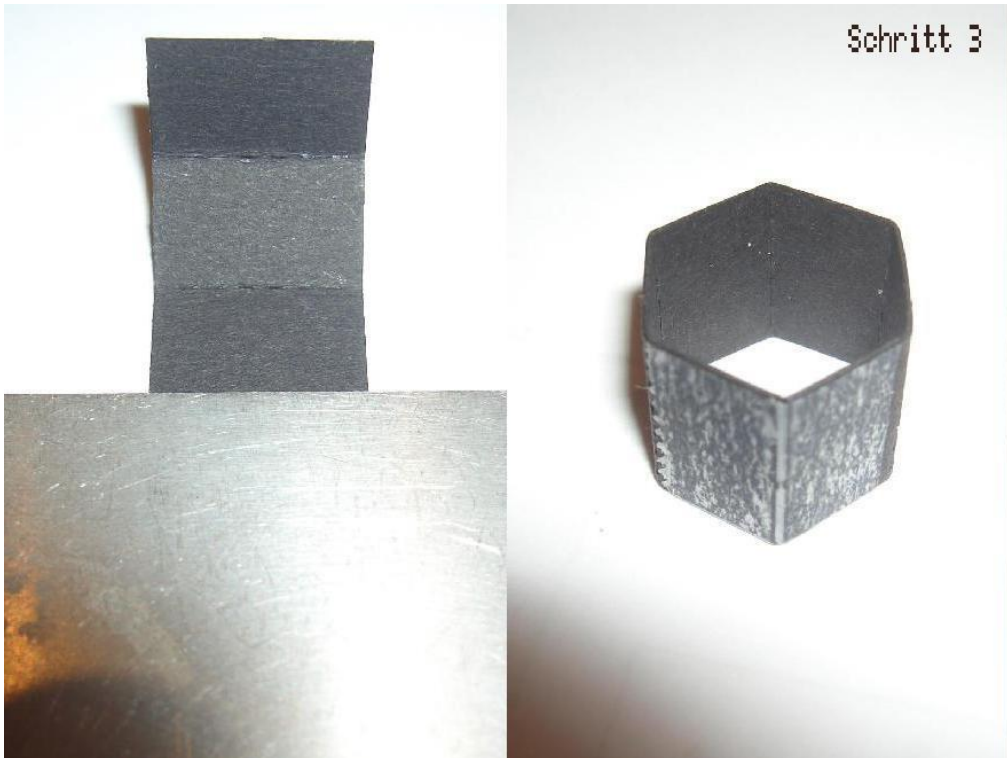
Step 1: Sanding the cut edges with 80 and 240 grit.

At the time of building this telescope, the instructions indicated 70mm for the length of the piece that is cut from the objective tube - hence the photo of the caliper. However, the current edition of the manual assumes 75mm, as experience has shown that 75mm is better for compensating for visual errors when, for example, a spectacle wearer uses the telescope without glasses.

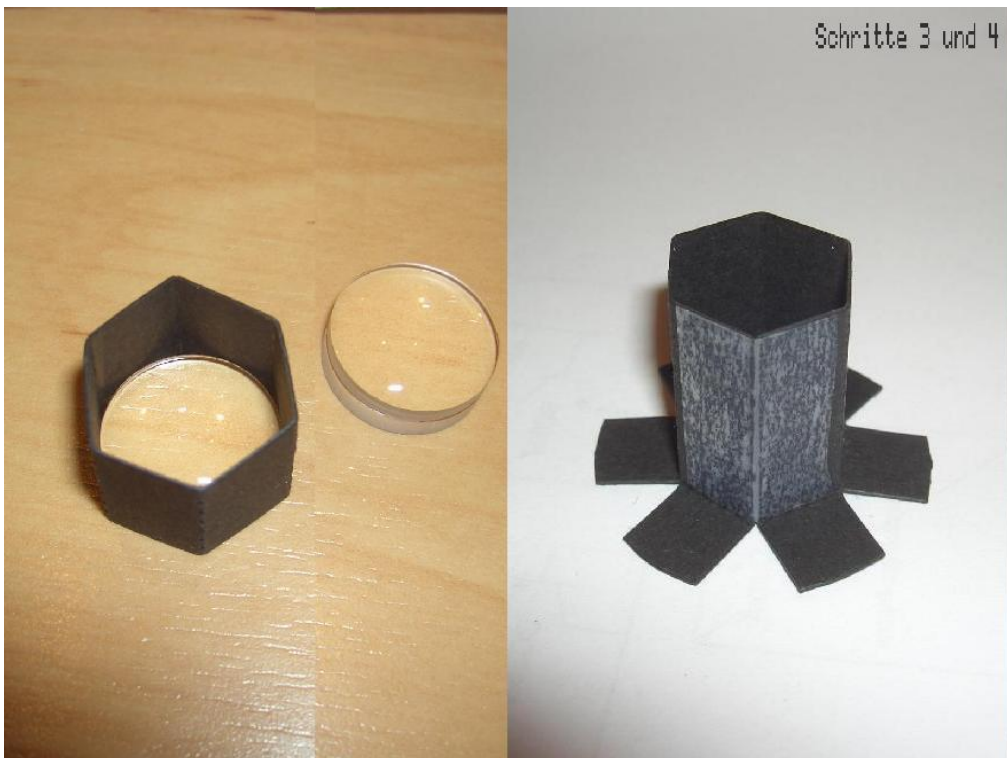


Step 2: The attachment of the objective lens.

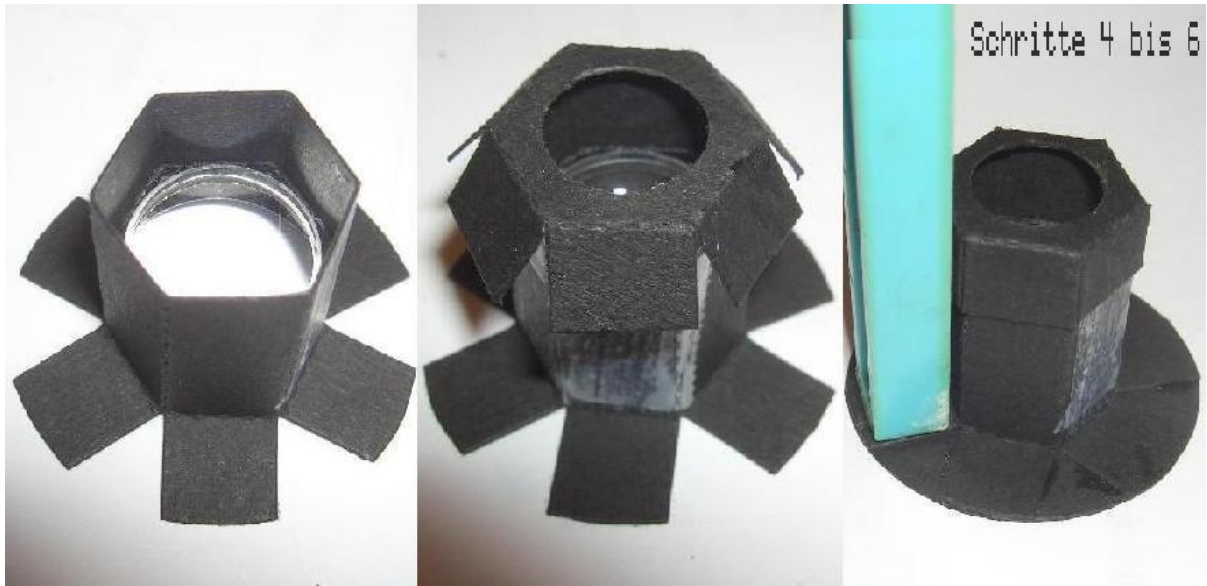
In contrast to the instructions, the lens was attached with a few tiny drops of cyanoacrylate.



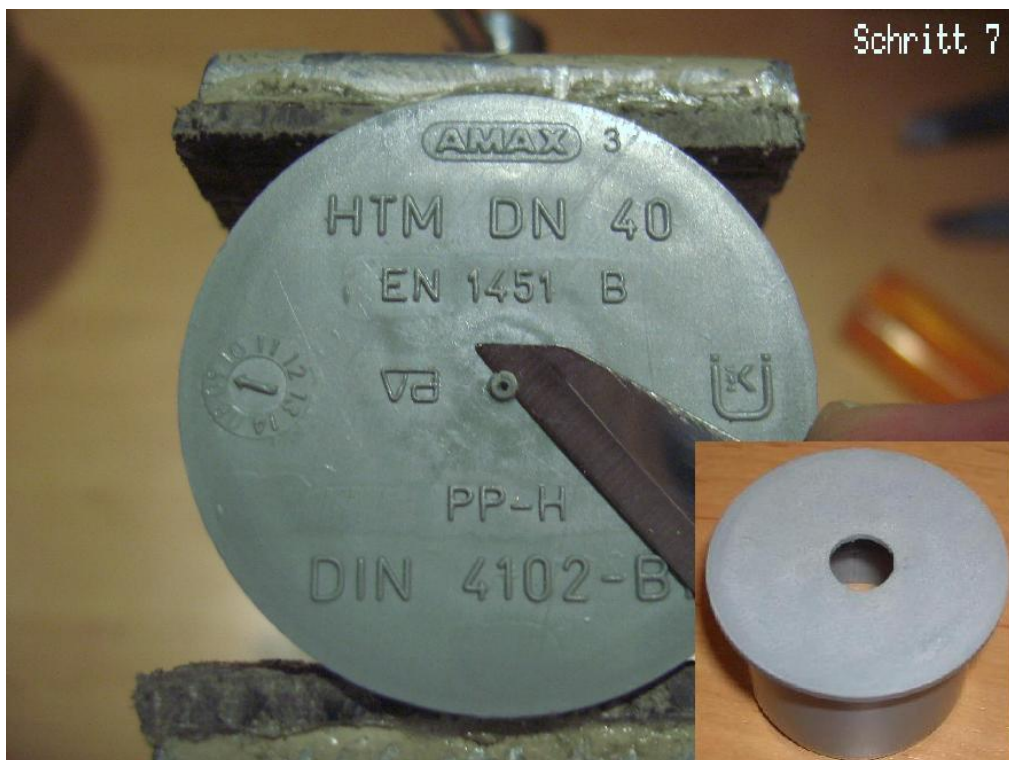
Step 3: Tube for the Ploessl eyepiece. The use of a steel ruler facilitates the precise folding of the small cardboard parts.



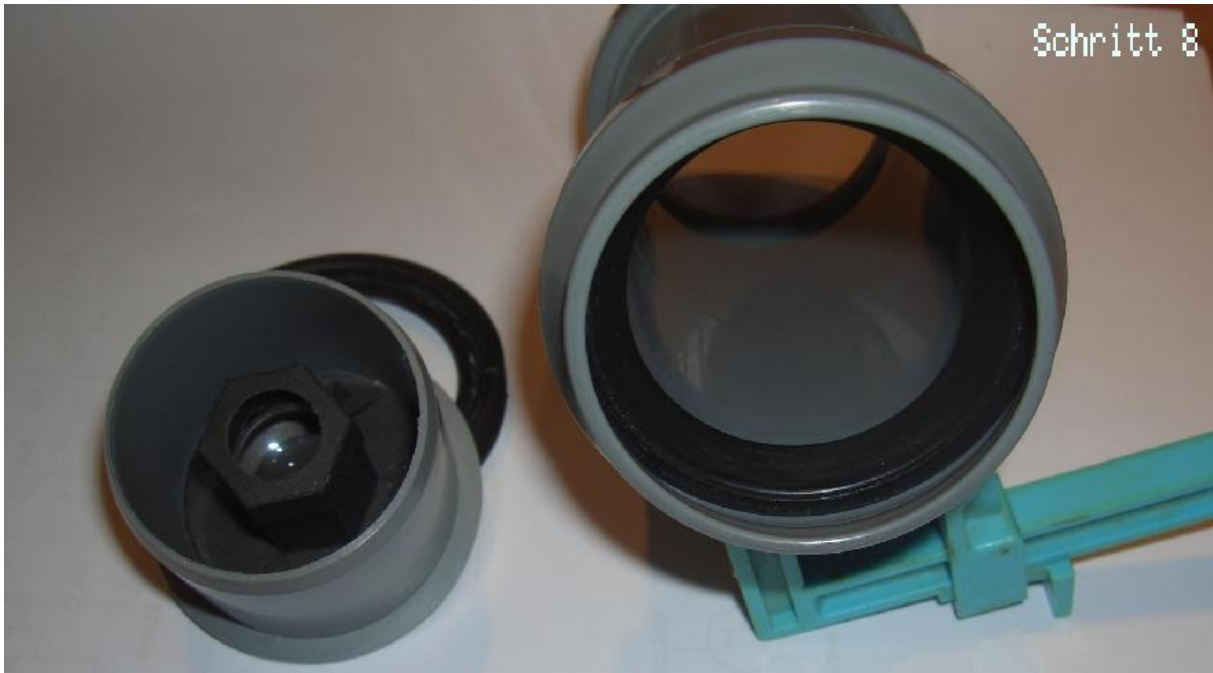
Steps 3 & 4: Tube of the Ploessl eyepiece (left) and its holder (right).



Steps 4 – 6: The first attempt to fix the lenses in the tube using all-purpose glue failed - the lenses slipped during assembly. A second attempt using cyanoacrylate sparingly was successful. Pressing the tabs on the bottom part (right picture detail) after gluing provides a flat support surface for further processing in step 8.



Step 7: The sleeve plug becomes the eyepiece tube. Appropriate pre-machining facilitates the attachment of the centric bore. The removal of the raised inscription is purely cosmetic.



Step 8: Eyepiece glued into the tube and sleeve with sealing ring.



Step 8: Finished assembled eyepiece tube, inside and outside view.



Steps 9 & 11: Completely assembled telescope.

Instead of adhesive tape, cyanoacrylate was used to attach the tripod adapter to the lens barrel. If the eyepiece tube is difficult to move on the objective tube, this can be remedied by using silicone oil sparingly.