

rubikon



camera obscura



©2005



Jaroslav Juřica

## Instructions to glue the model

Rubikon is a paper model which is a fully functional photographic camera (camera obscura). In 1979 the paper model Dirkon was published in ABC magazine. This model was an imitation of the very popular reflex camera. Rubicon, as an ever-green design, comes after 25 years to be a reaction to digital techno...

You do not need many additional materials to assemble the camera. If you use a small piece of tin plate, it will give you sharper images, because the camera objective lens will be better. The assembly marks are not any different from the standard ones used in the well known ABC magazine. The small triangles showing to the solid line mean fold inward, the dash-and-dot line means fold outward and the dashed crossed line marks a hole.

Now, we can start assembling the camera. We begin with the camera body. Softly cut the edges with a sharp blade (for example a pair of compasses) on parts 1, 2 and 3 as marked. Then, cut those parts out. Do not forget to cut out the hole for the film on part 2. Glue part 1 to the bottom part of the body and part 3 to the top. This part contains the cover which will be possible to open. Then glue only the edges.

The assembling of the camera objective lens follows. It is a bit more difficult, because it contains a zoom. Softly cut the edges which will be folded. Cut out part 4, fold it and glue it to the body. For the camera objective to be light proof, it must have one more layer. You will slide the zoom between these layers. Cut out part 5 and glue it to the prism like shape with rip-off edges. Before you glue this part to the body, slide 4 paper stripes inside. They need to be on the outside part of part 4. This will make sure that the zoom interior will be light proof. The zoom is made from parts 8, 9, 15. Assemble part 8. It is recommended to replace part 15 with a tin plate or aluminum foil with a hole of a diameter of about 0.3mm. Note: the edges of the hole must be sharp and not bigger than 0.3mm, otherwise it will decrease the taken image's sharpness. Glue this part to the interior part of "the optic". Glue part 9 by the edges to the camera objective in such a way that shutter no. 10 can freely slide between those parts. "The optic" has a scale at the top which shows the approximate focal length. You can make a different focal length objective from your own simple box.

Now, we will assemble the part which resembles the electronic shutter. Assemble part 6 first. The narrow and beveled edges should be put together. Glue the assembled part to the camera body according to the markers.

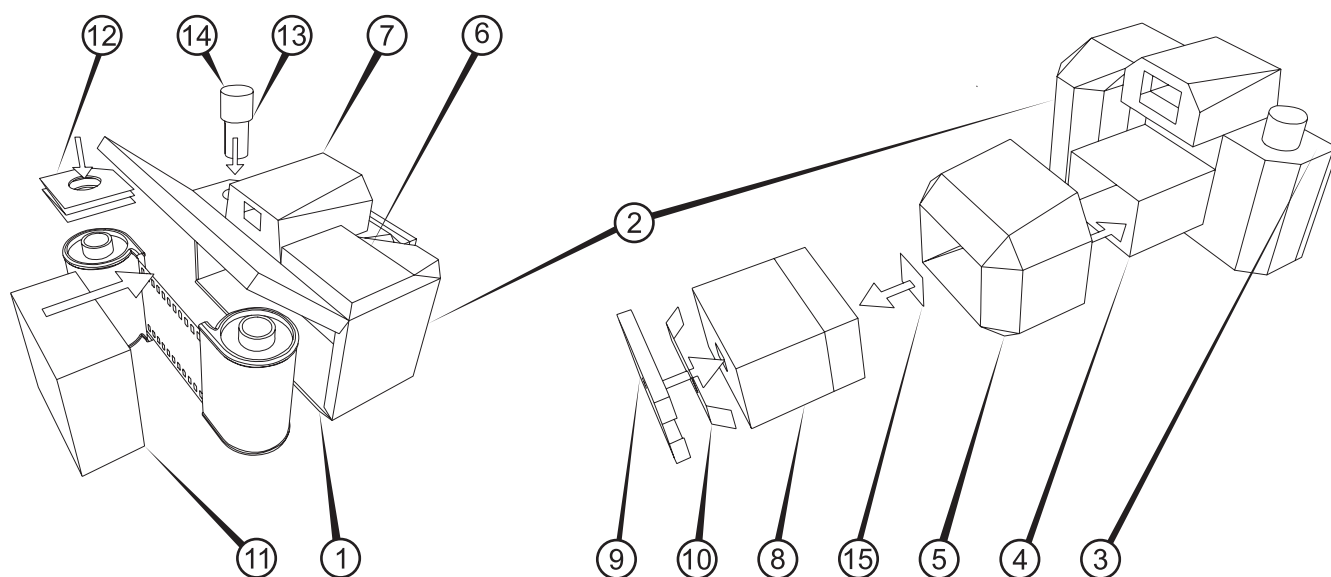
The last part is the viewfinder, the turnable peg and interior fixation parts. Cut out part 7 and glue the box together with the holes on the sides. This will be the viewfinder. Glue it as marked by number on the bottom and on the camera body. The film shift is a simple stripe of paper, glued and winded in such a way that it makes a hard peg. You will harden this peg at the top by gluing part 14 on that. Cut out and glue box 11. Then glue it in the camera. This box presses and straightens the film inside. Fold part 15 like a concertina. Do not forget to put this part on the scroll of winded film. It prevents light to come on the film.

Here are several technical notes for the end. You will need one more film container to put the film into the camera. The film will be winded into this container after exposure. The shift for one exposure field is about 3 half turns or 1.5 full turns by the film peg. I would recommend sealing the camera film opening by tape, because the lid locking might add additional technical difficulties. It is possible to calculate the correct exposure by the formula written on the back of the camera. The formula is for a camera objective pinhole of 0.3mm.

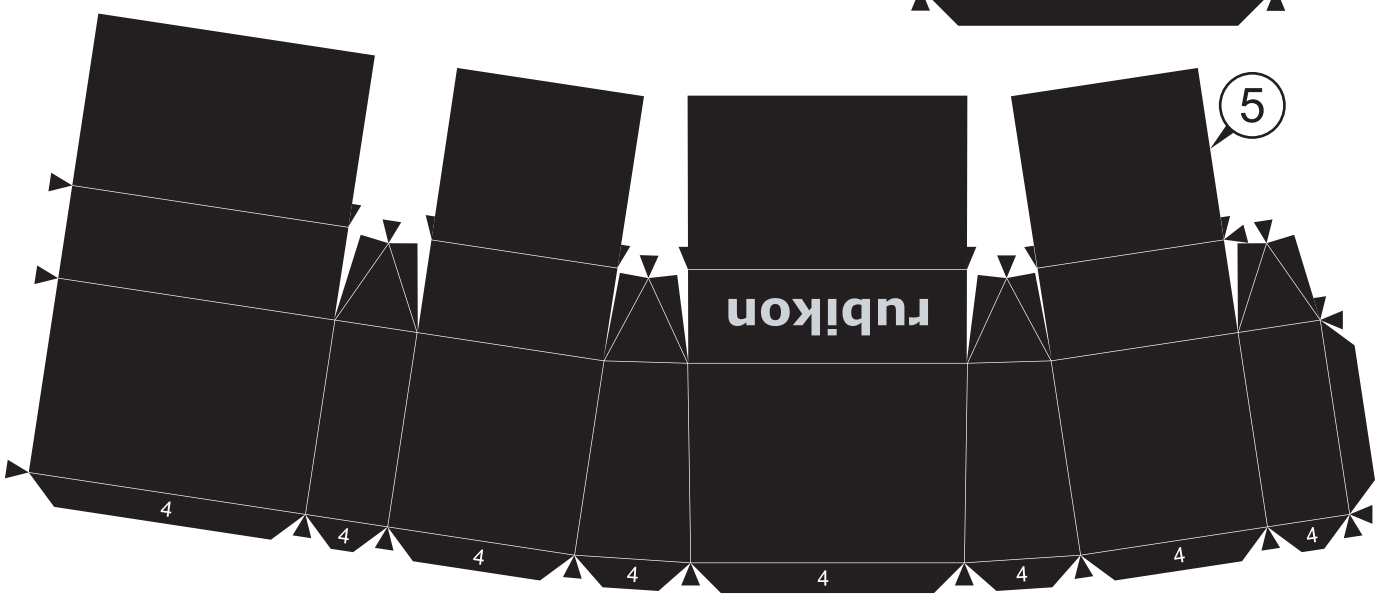
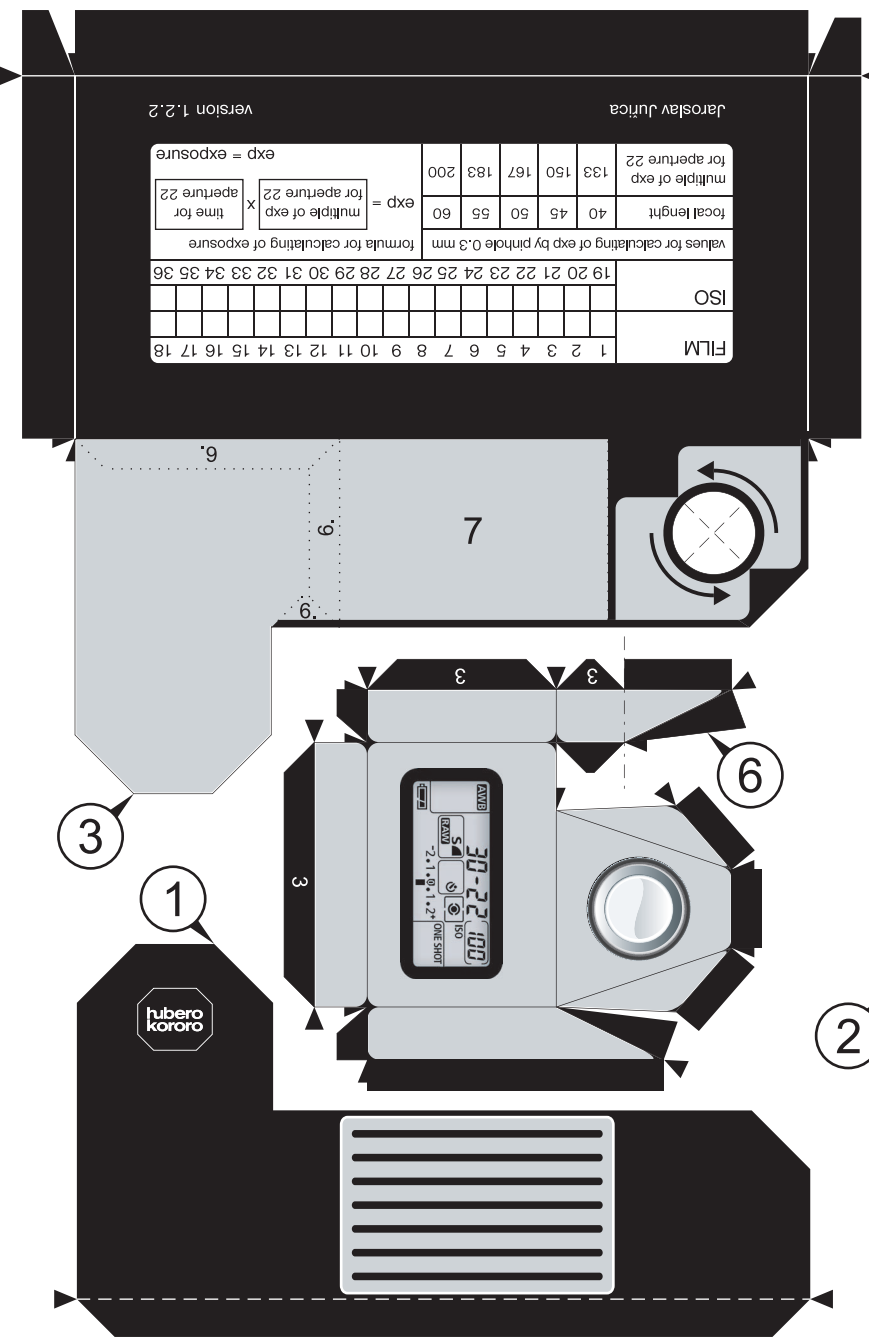
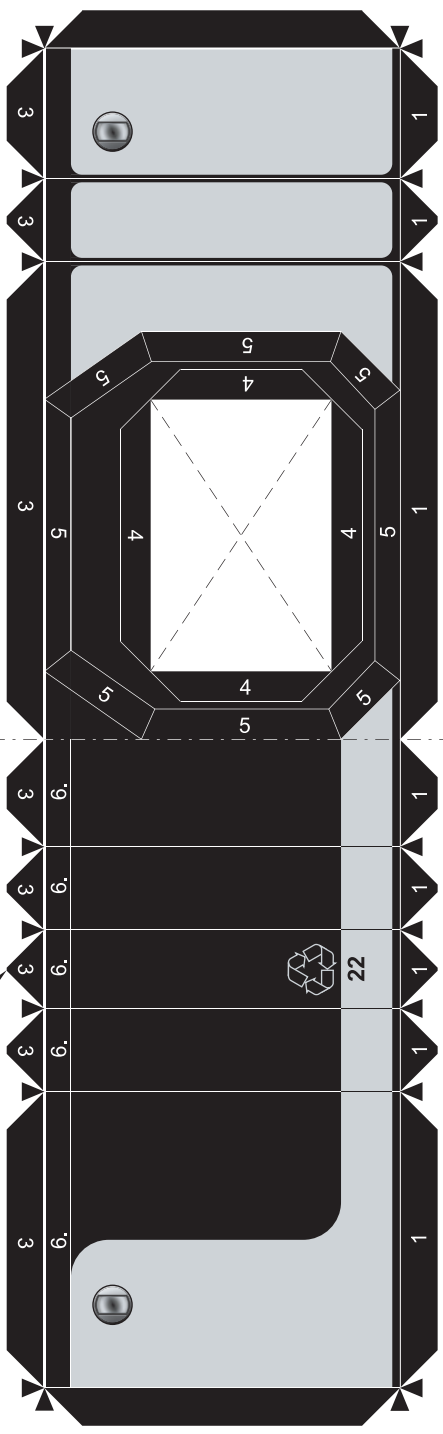
Questions, suggestions and ideas can be sent to my address: [jurica@huberokororo.net](mailto:jurica@huberokororo.net).

I wish you many pleasant experiences and interesting pictures taken by "digital" camera Rubikon.

Jaroslav Juřica, author



design: Jaroslav Juřica  
phone: +420 776 719 217  
e-mail: [jurica@huberokororo.net](mailto:jurica@huberokororo.net)  
url: [www.huberokororo.net](http://www.huberokororo.net)



Jaroslav Jufica

version 1.2.2

values for calculating of exp by pinhole 0.3 mm

formula for calculating of exposure

exp =  $\frac{\text{multiple of exp for aperture 22} \times \text{time for aperture 22}}{\text{multiple of exp for aperture 22}}$

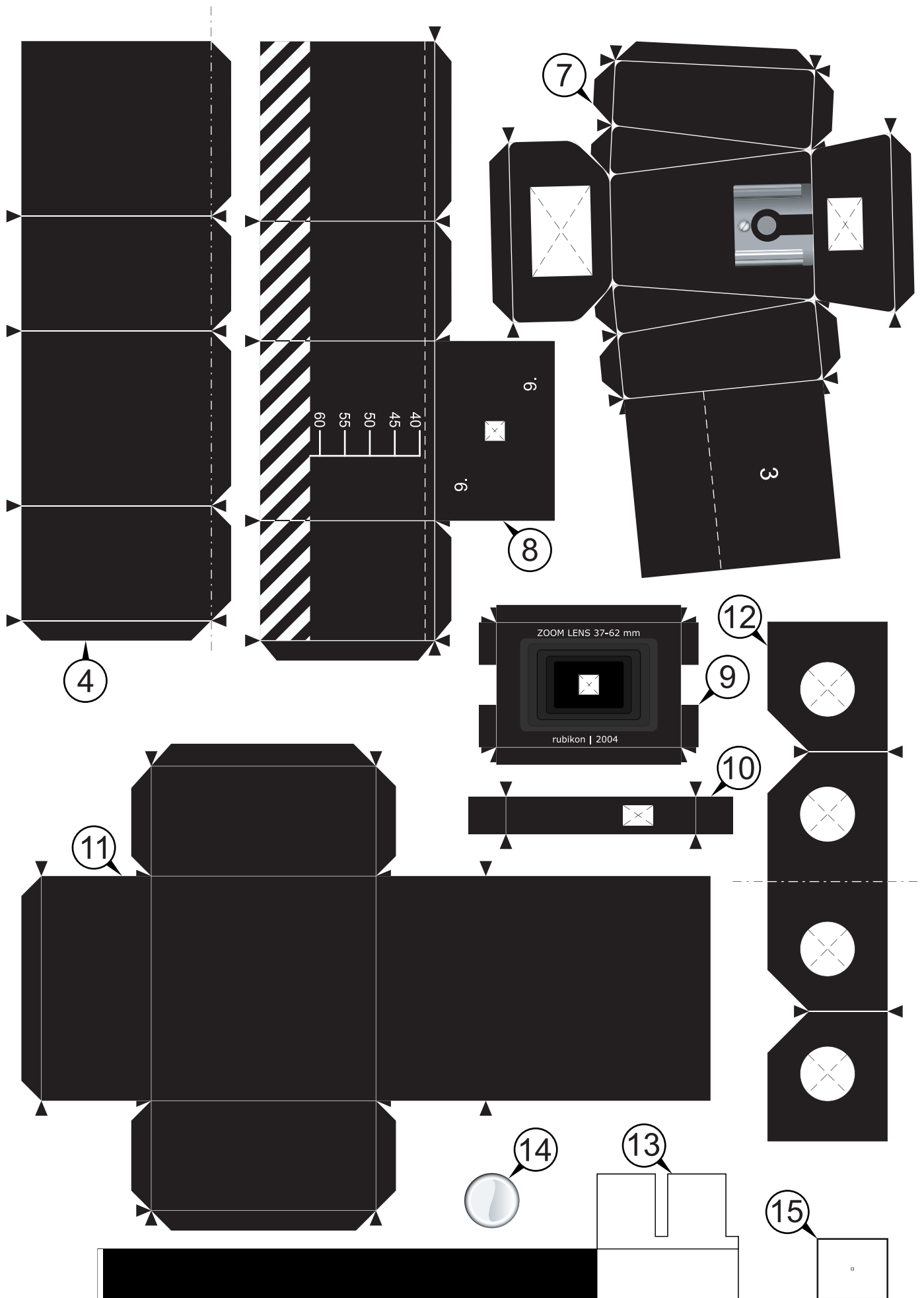
FILM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
ISO	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36

multiple of exp for aperture 22

focal lenght

multiple of exp for aperture 22

exp = exposure



scale 0 5 10