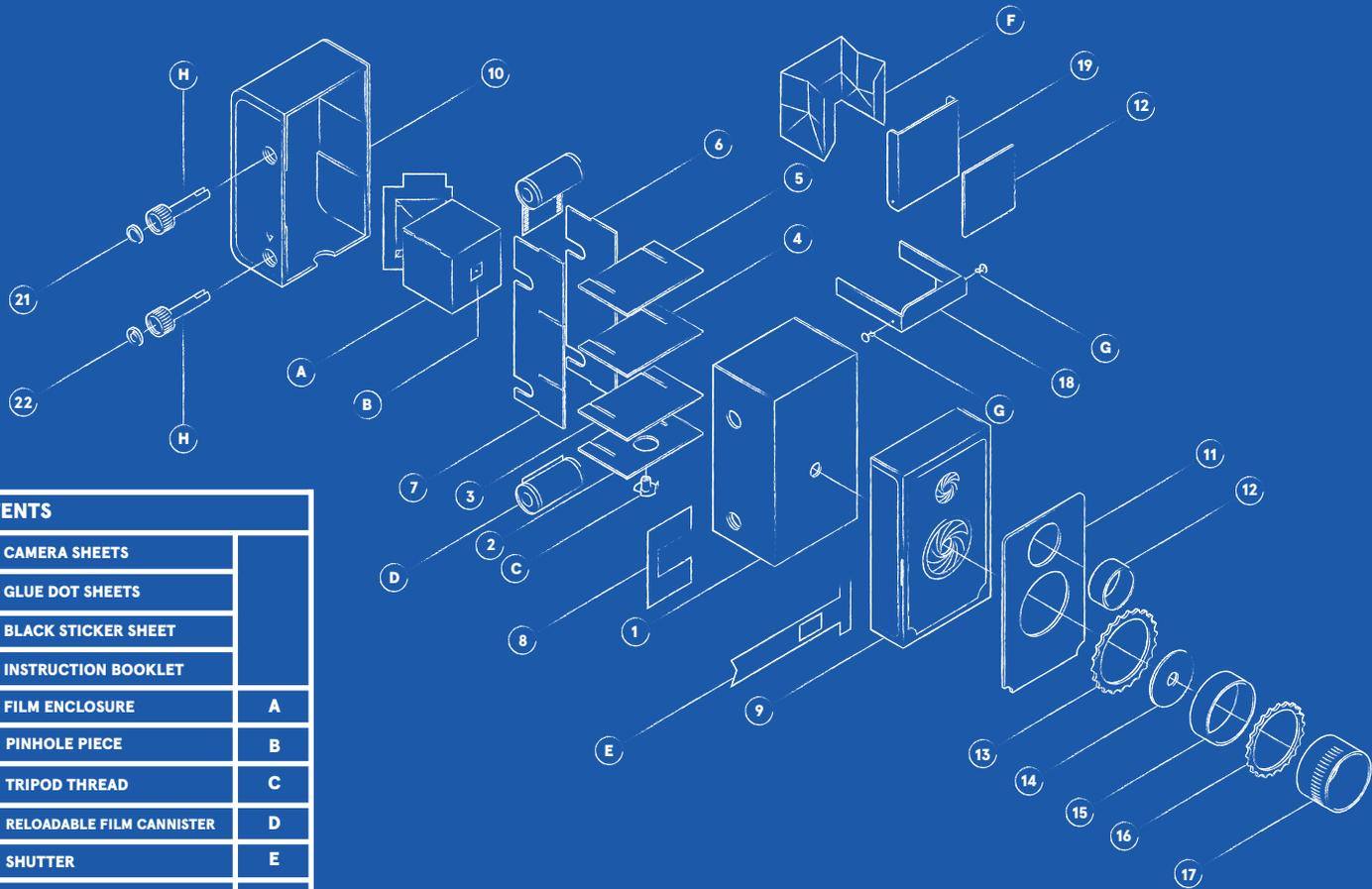




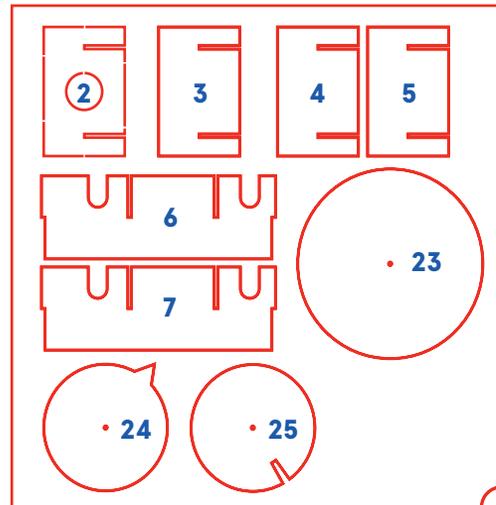
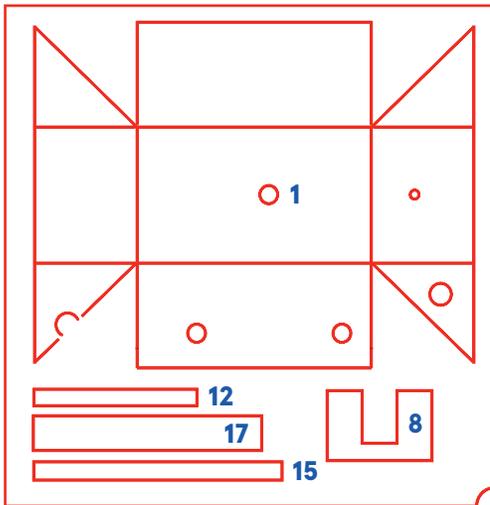
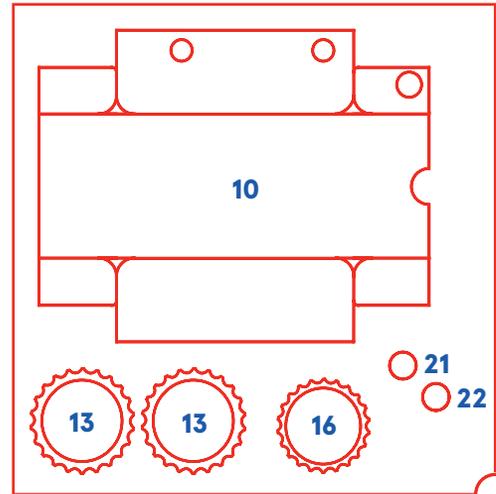
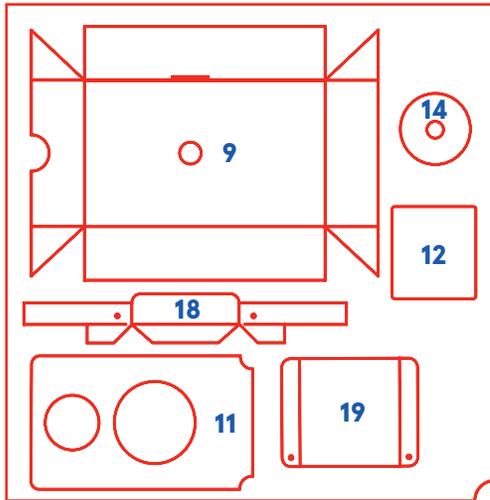
*INSTRUCTIONS*

VIDERE 35MM



### CONTENTS

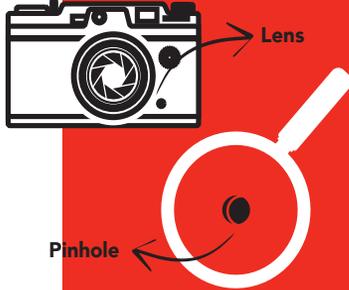
x4	CAMERA SHEETS	
x5	GLUE DOT SHEETS	
x1	BLACK STICKER SHEET	
x1	INSTRUCTION BOOKLET	
x1	FILM ENCLOSURE	A
x1	PINHOLE PIECE	B
x1	TRIPOD THREAD	C
x1	RELOADABLE FILM CANNISTER	D
x1	SHUTTER	E
x1	PAPER ROOF PIECE	F
x3	SPLIT PINS	G
x2	FILM ADVANCE KNOBS	H



# What is a pinhole camera?

A pinhole camera is the very simplest form of camera in the world. Instead of a lens like you might have used on other cameras it instead uses a tiny hole to create images.

The camera you are going to make has a pinhole that is 0.2mm in diameter. That's about the same size as a grain of sand.



## PINHOLE PHOTOGRAPHS

Pinhole photography allows you to create images that conventional cameras can't. Images are usually a little more soft focus.



More 'fuzzy' than a photograph taken with a lens.

Captures movement which can sometimes look like a ghost. This is because the exposure times are longer than a normal camera.

Some images may have a distorted or warped appearance.

# How does it work?

? Did you know that 'camera obscura' means 'dark chamber' in Latin?

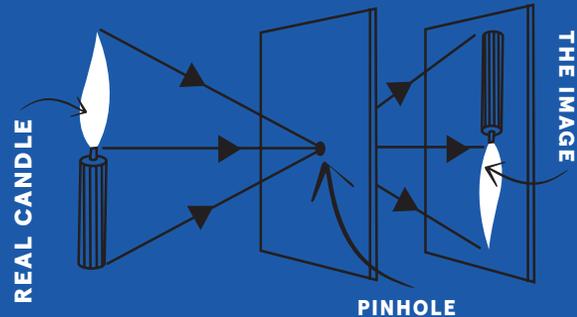
Photography as we know it today was only invented in 1826 yet the idea of the pinhole has been known for a very long time.

The first humans may have even seen a form of pinhole technology thousands of years ago as light from the sun projected through tree leaves, leaving shadows on the floor.

The pinhole technique is based on the principle of the camera obscura which is centuries old. Basically nothing more than a light-proof box with, in the middle of one side, a tiny hole instead of a lens.

When light passes through a pinhole, it will keep traveling in a straight line until it hits the back of the camera, forming an inverted (upside-down) image.

The image appears upside-down because light always travels in a straight line, so the top of the candle becomes the bottom and the bottom becomes the top.



? The exposure time is the amount of time light is let into the camera. On a lens camera this can be a fraction of a second, but anywhere from 1 second to several hours on a pinhole camera.

? Trace the line from the bottom of the real candle to the top of the image of the candle with your finger to help understand this principle.

# Lenses and pinholes

**Human eye**

**Traditional camera lens**

Unlike these lenses the only way we can let more light into a pinhole camera is by opening the shutter for longer to let in more light.

## What is the difference?

Both let in light, but a pinhole camera just has a small hole to let in light whereas your eye, and traditional camera lenses adjust to different brightnesses of light.

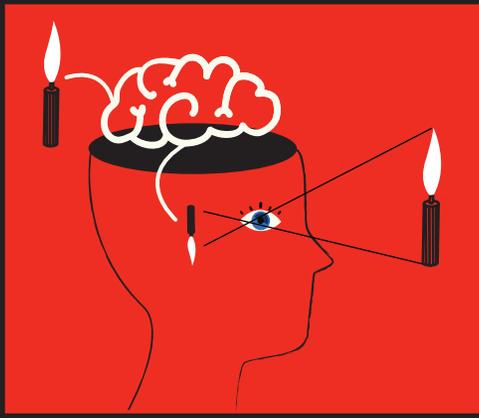
A camera lens, just like your eyes (pupils), lets less light in when it is very bright by using a small aperture (hole) and a bigger aperture (hole) when there is little light around.

Pinholes always have the same size aperture.

? Aperture is a word used to describe how big the hole is that is letting in light.

Our eyes actually see inverted (upside-down) images just like a pinhole camera.

Luckily our brain processes the image for us, so we see everything the right way up.



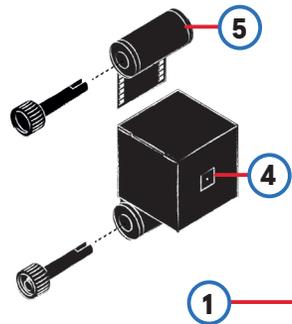
? Light travels at 300,000,000 meters per second (that's 186,000 miles per second).

# Your VIDERE pinhole camera

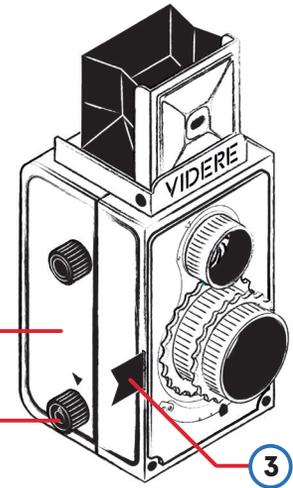
- 1 Camera body**  
It's important that it is very dark inside and that the only light that comes into the camera is through the pinhole.
- 2 Film advance knob**  
Turn this knob once fully to move your film to the next exposure. The 'exposure' means the picture you are taking.

- 3 Shutter**  
When move this shutter in and out it lets light into the camera through the pinhole. This is how you take an exposure (a picture).
- 4 Pinhole**  
Your pinhole sits just behind the shutter inside the camera. It is tiny; only 0.2mm in diameter.
- 5 35mm Film**  
Your VIDERE uses 35mm film. This is widely available and will allow you to take 24 or 36 exposures (pictures).

## INTERNAL



## EXTERNAL



? Take your pinhole piece from the small components box and hold it up to the light to see how small the hole is! Take special care not to loose it.



35mm  
PINHOLE  
PHOTOS

## HOW TO USE THE GLUE DOTS

Your VIDERE 35mm kit comes with glue dots to help construct your camera. If you prefer, you can use craft glue to build your camera, just use it where you would usually place the glue dots.



White dots on a striped background indicate where a glue dot should be placed.

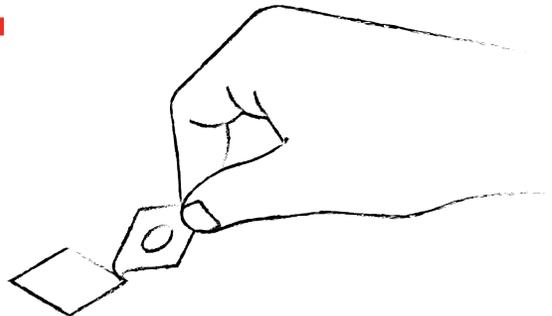
**1**

Take your glue dot sheets from the box. Each glue dot sheet is perforated.



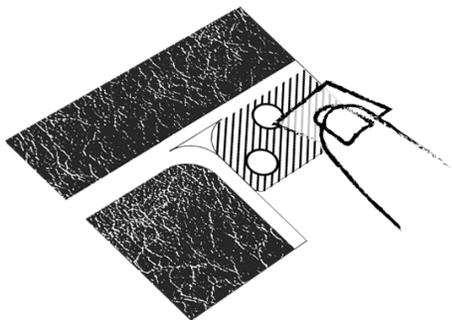
**2**

Take one glue dot and remove the white backing paper.



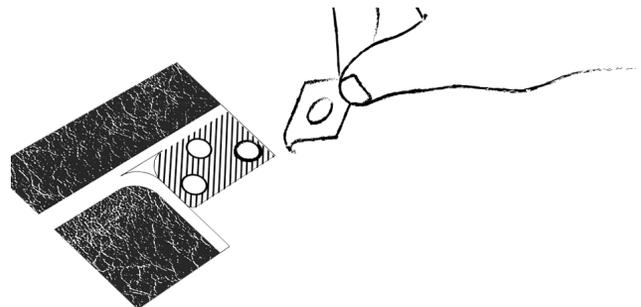
**3**

Place the glue dot down firmly into place, pressing down hard to create a strong bond.

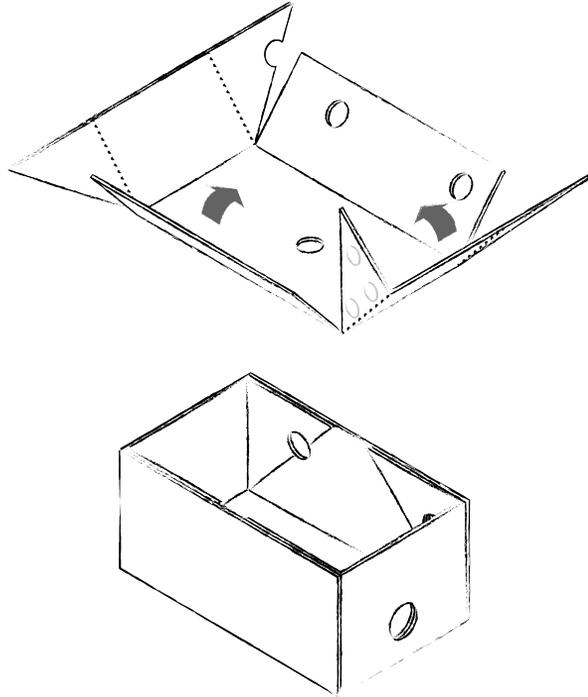


**4**

When in place pull away the remaining backing swiftly. The glue dot should remain in place on the cardboard, making your piece ready to construct.



## BUILDING THE CAMERA BODY

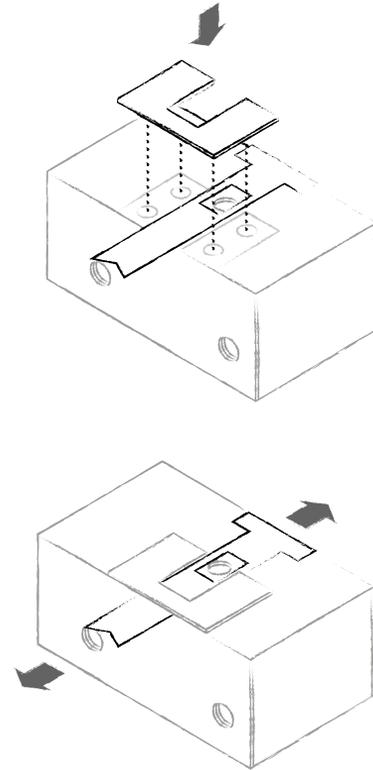


# 1

Pop out part 1.

Ensure any small, perforated circles are removed and discarded.

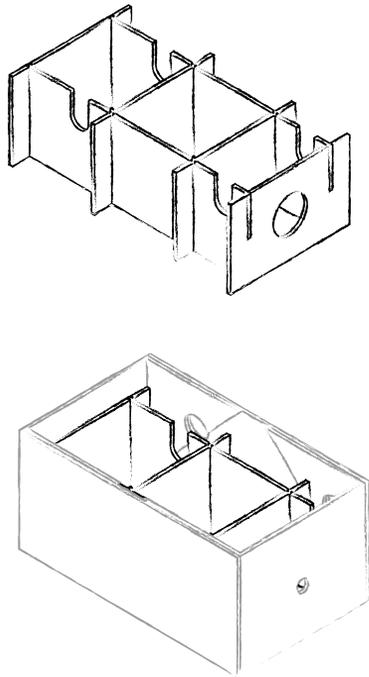
Apply the glue dots to the triangular flaps and construct into a box shape as shown.



# 2

Pop out part 8. Apply glue dots to front two rectangles of part 1. Next, take the shutter (piece E) and sandwich it between part 1 and part 8, ensuring it can move freely from left to right.

This movement is essential as it what allows light into your camera to expose your film.

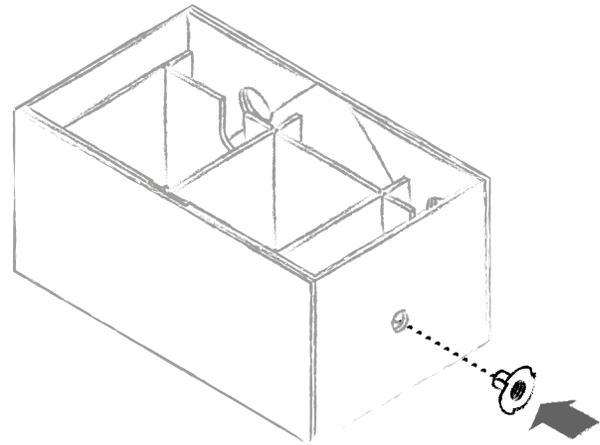


# 3

Pop out parts 2 - 7. Place the shorter pieces into the grooves of the longer parts as shown, ensuring part 2 (the one with the hole) is at the bottom.

When constructed, push the grid into the constructed part 1. This grid is what eventually holds the film enclosure in place.

You should expect a tight fit!

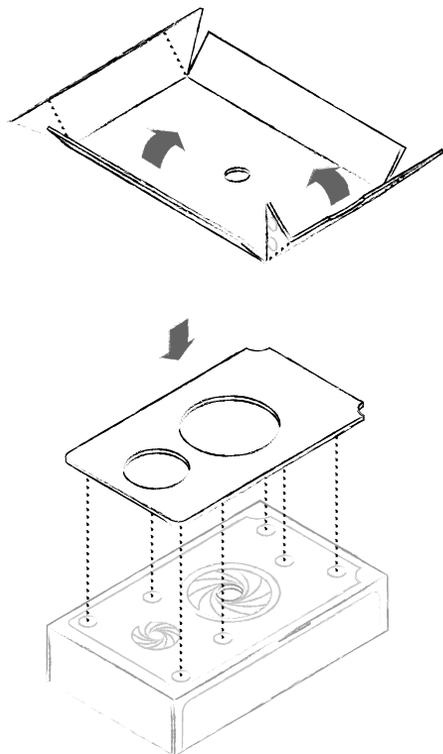


# 4

Take the tripod thread (part C) from the small components box.

Insert it into the hole on the bottom of part 1 as shown.

Press firmly until the pronged edges have pierced through the layer of card, being cautious of your fingers in the process.

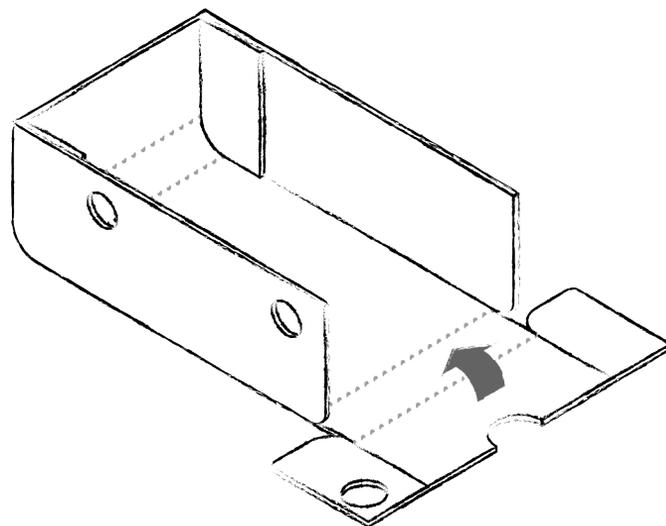


# 5

Pop out part 9. Apply the glue dots and construct into a box shape as shown.

When constructed, flip it over and apply the glue dots to the front the front of part 9.

Pop out part 11 and apply directly on top.

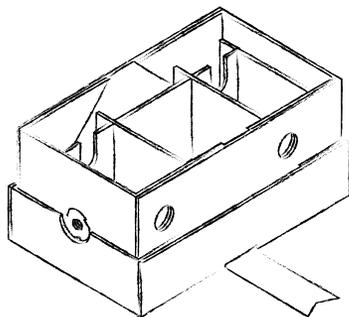
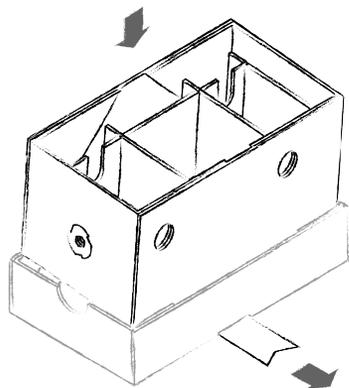


# 6

Pop out part 10.

Apply glue dots to the four flaps and construct as shown, ensuring you maintain the curve in the box.

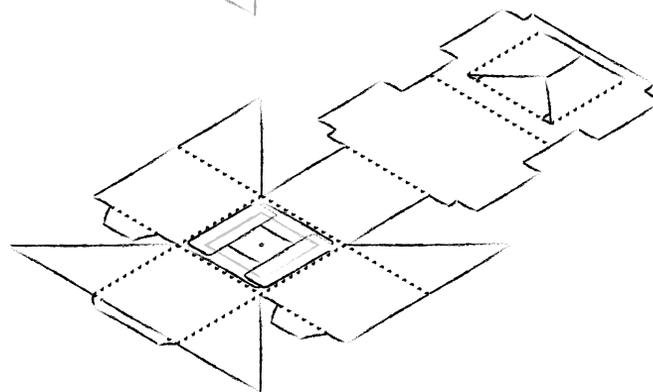
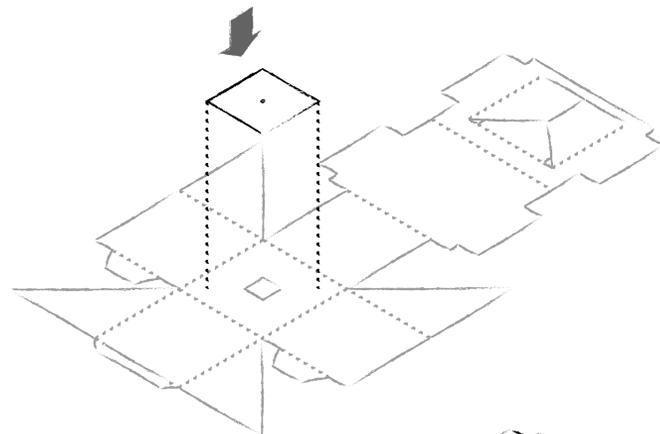
This section is scored to help with this.



# 7

Carefully insert the constructed inner part of the camera (part 1 etc.) inside the outer front of the camera (part 9) as shown.

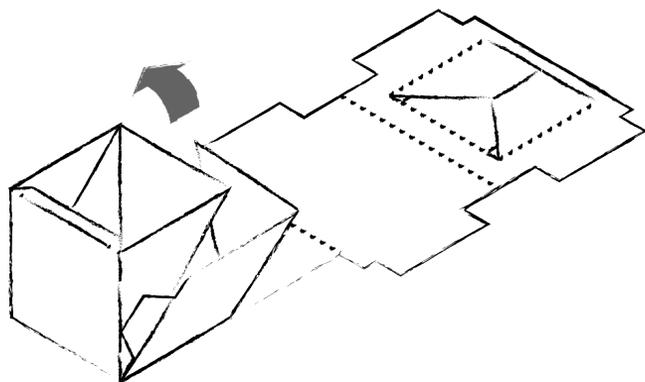
Ensure the shutter feeds through the slot at the front of the camera and can move freely.



# 8

Take the film enclosure (part A) from the main box and the pinhole piece (part B) from the small components box.

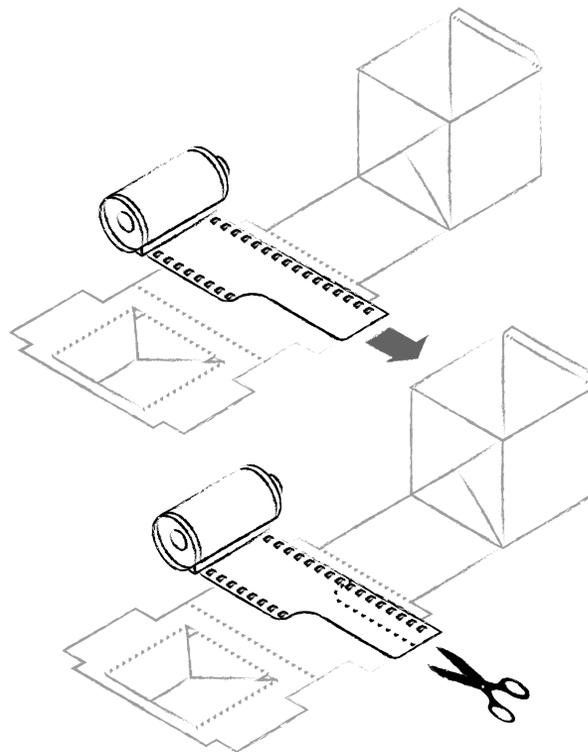
Use 4 stickers from the sticker sheet to hold the pinhole piece in place where shown. Ensure that the pinhole is central to the small square opening.



# 9

Construct the box around the pinhole piece by clicking the flaps into place as shown.

## LOADING THE FILM

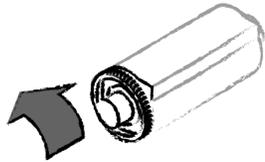


# 10

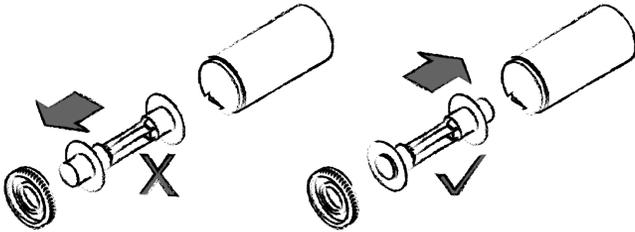
Take your 35mm film and lay it across the film enclosure as shown.

You may need to pull a little more film out of the canister.

Next, trim the end of the film with scissors to the shape shown, being cautious of your fingers in the process.



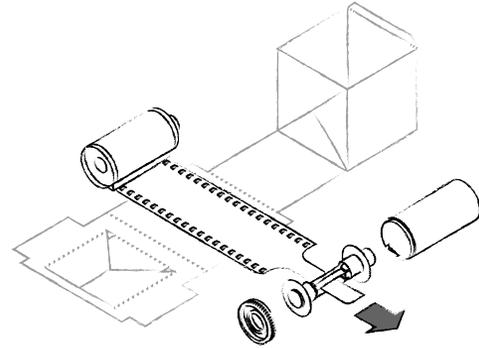
Unscrew the reloadable film canister (part D) to open it.



**11**

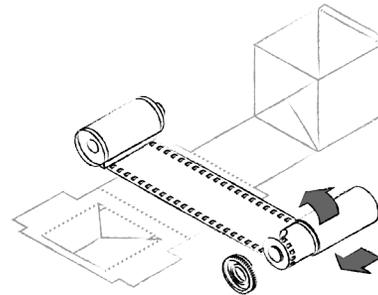
Take your reloadable film canister (part D) from the small components box and open it up as shown in the upper illustration.

When open, flip over the inner section of the reloadable canister so it is facing the direction shown.



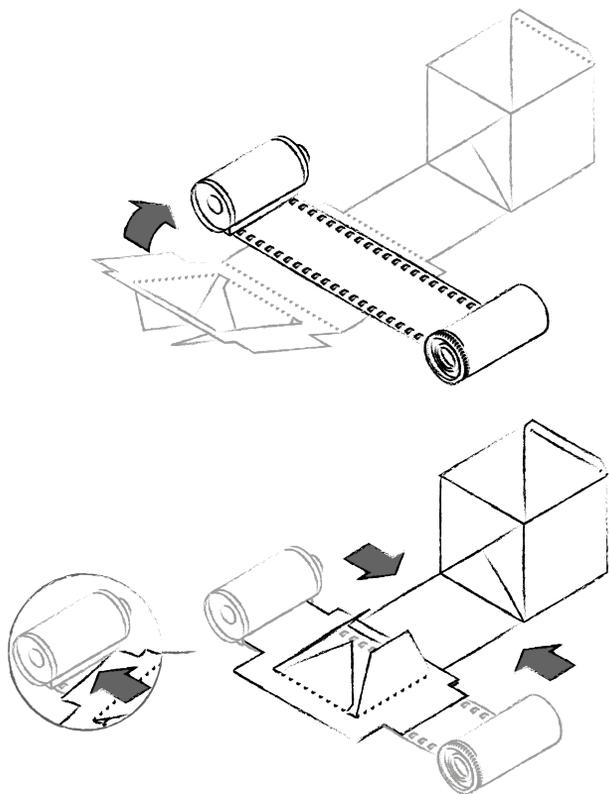
**12**

Feed the trimmed film through the hole in the middle of the reloadable canister. The teeth should grip the film firmly.



**13**

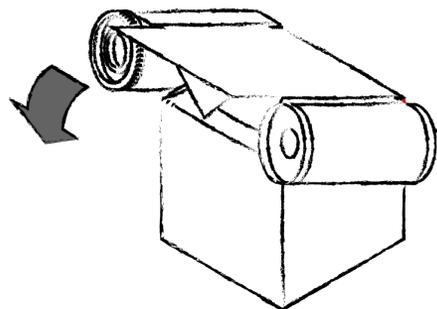
Roll the film around the inner canister a few times before feeding it back into the outer canister. Once the film is in place screw the lid back on.



# 14

Next fold over the large plastic flap, sandwiching the film between the two plastic layers.

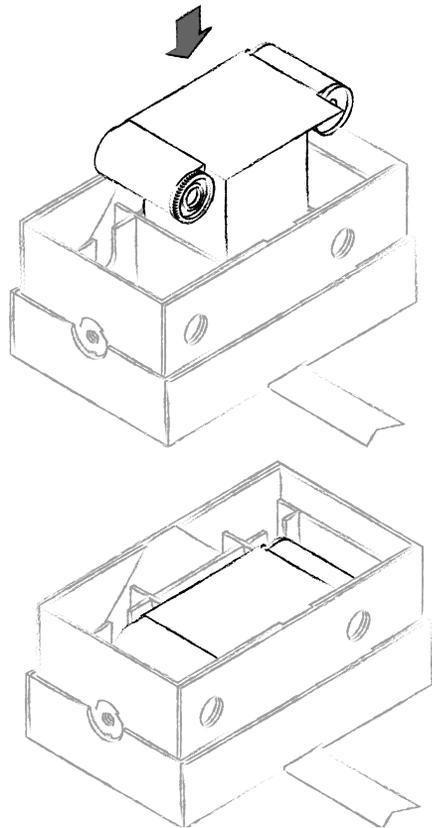
To keep the film in place, there are two tabs at each side of the flaps. Feed both layers of the tabs into both film canisters as shown. This helps to prevent any unwanted light reaching the film. It may feel like a tight fit.



# 15

Once both canisters are firmly in place, complete the film enclosure by feeding the two side flaps into the side of the box and clicking the top flap in place.

If you feel like there are any gaps where light might enter the film enclosure, use a little tape to ensure the gaps are sealed.

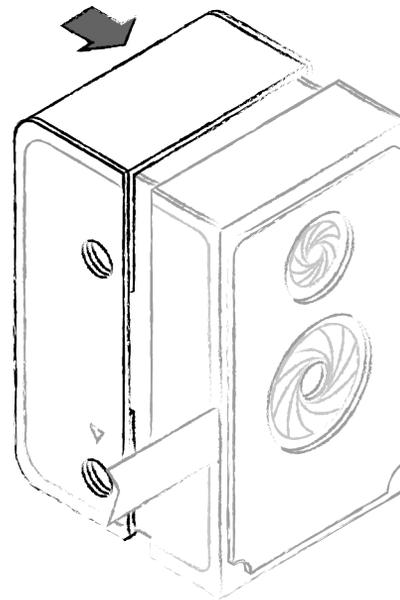


# 16

Take the completed film enclosure and insert it into the square grid inside the front camera body. The protruding parts of both the lower and upper cannister should neatly fit into the slots of the grid.

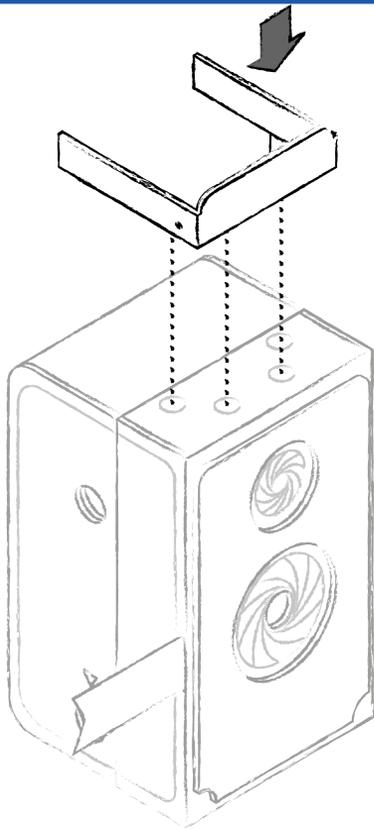
At this point, also ensure the shutter is closed by ensuring it is fully extended outwards.

## CONT. TO CONSTRUCT THE CAMERA BODY



# 17

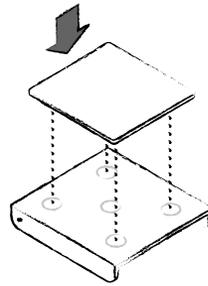
Take the rear of the camera (part 10) and fit it over the constructed front camera body as shown.



# 18

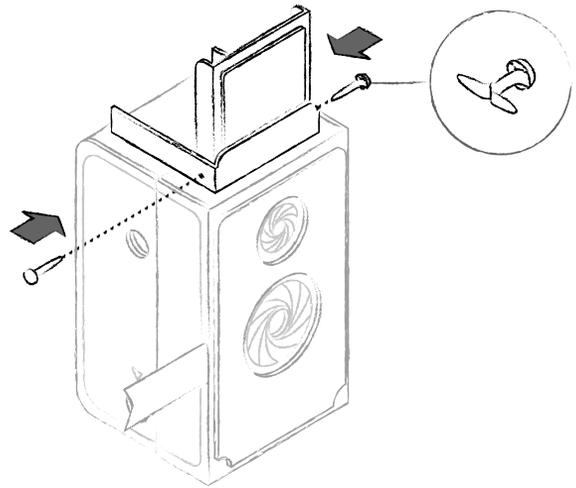
Pop out part 18.

Place glue dots where indicated on the top of the constructed front camera body and attach part 18 as shown.

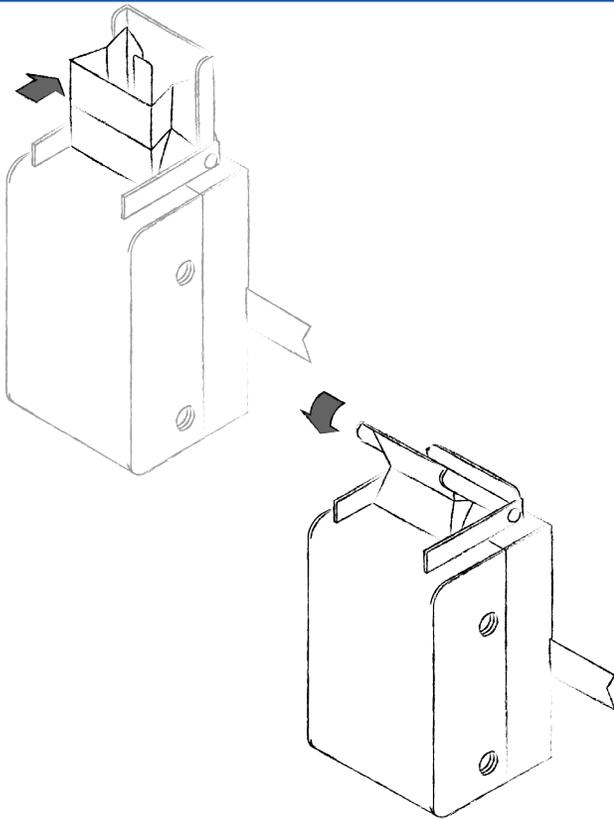


# 19

Pop out parts 19 and 12. Place glue dots on part 19 and attach part 12 directly on top, as shown.



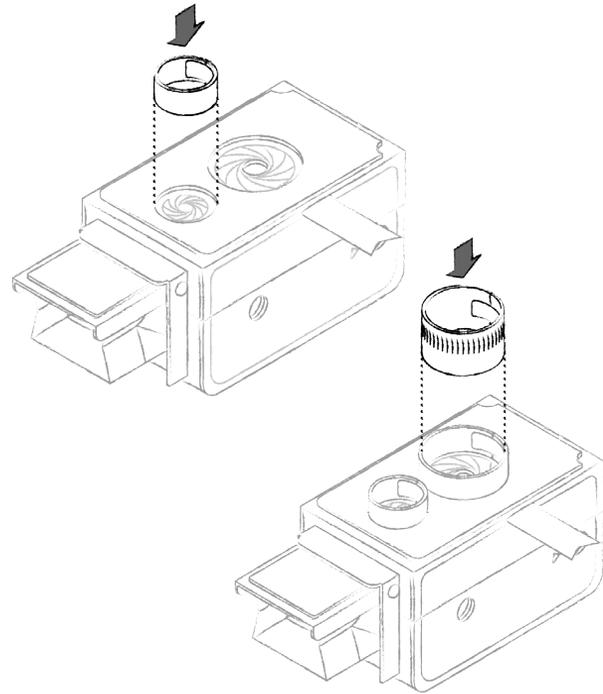
When in place, attach into place as shown using two of the split pins (part G) provided in the small components box.



# 20

Next, take the paper roof piece (part F) and hold in place using two black stickers as shown.

When in place, encourage the folds in the paper using your hands, and slowly fold down the roof, before opening it up again.

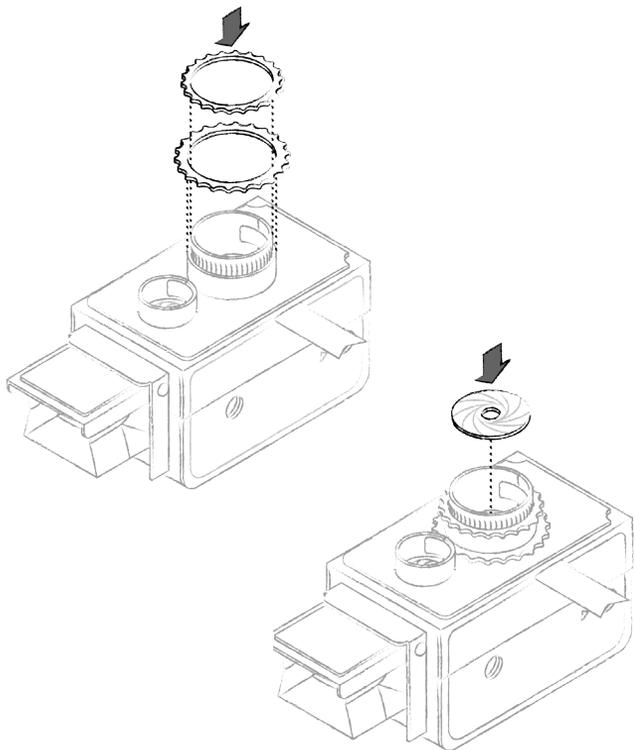


# 21

Lay the camera on its back. Next, pop out part 12 and form into a circle, using a sticker to secure it in place. When complete, press the circle into the upper circular indent on the front of the camera.

Pop out parts 13 (both parts) 14, 15, 16 and 17. Make parts 15 and 17 into circles as with part 12, again securing them with stickers.

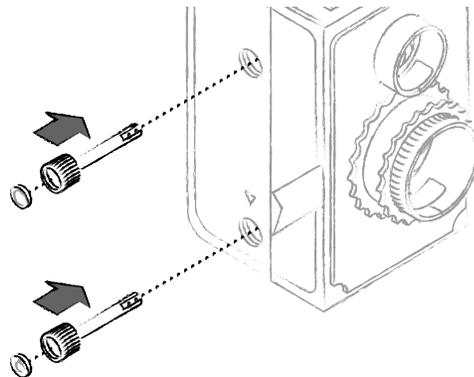
Fit part 15 to the lower circular indent in the front of the camera, and fit part 17 within it as shown.



# 22

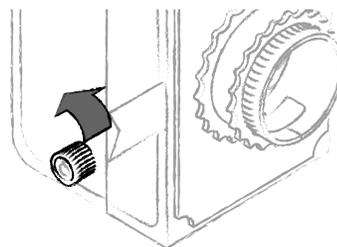
Next take both parts of 13 and place the cog shapes over the larger circle. Do the same with part 16, fitting over the smaller circle.

Finally for this section, take part 14 and ensure that the small middle circle is removed. Now press it firmly inside the lower circle as shown.



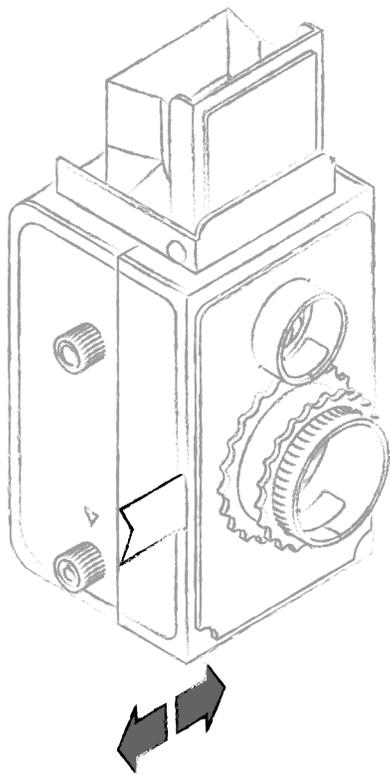
# 25

Pop out parts 21 and 22 and press them into the indents of the film advance knobs (parts H). You'll find these in the small components box. Then slide the knobs into the side of the camera as shown, ensuring they fit inside each film canister.



# 24

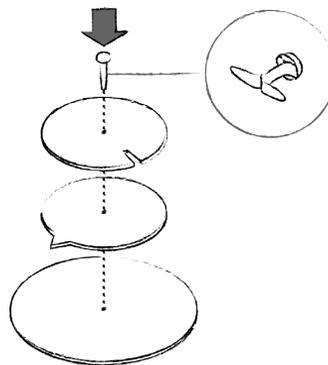
When the knobs are in place, turn the bottom knob 3 full turns anti-clockwise to get to your first exposure.



# 25

You are now ready to use your camera!

To take an pinhole photograph, push the shutter towards the camera. When your exposure is complete, pull the shutter back out.



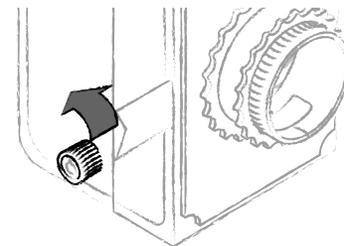
# 26

To know how long to take your pinhole photos for, use the exposure calculator.

Pop out parts 23 - 25. Place section 23 at the bottom, with 24 in the middle and 25 on top. Hold this in place with the final remaining split pin (Piece G).

Simply select your film speed (ISO) and lighting conditions to find out how long to open the shutter for!

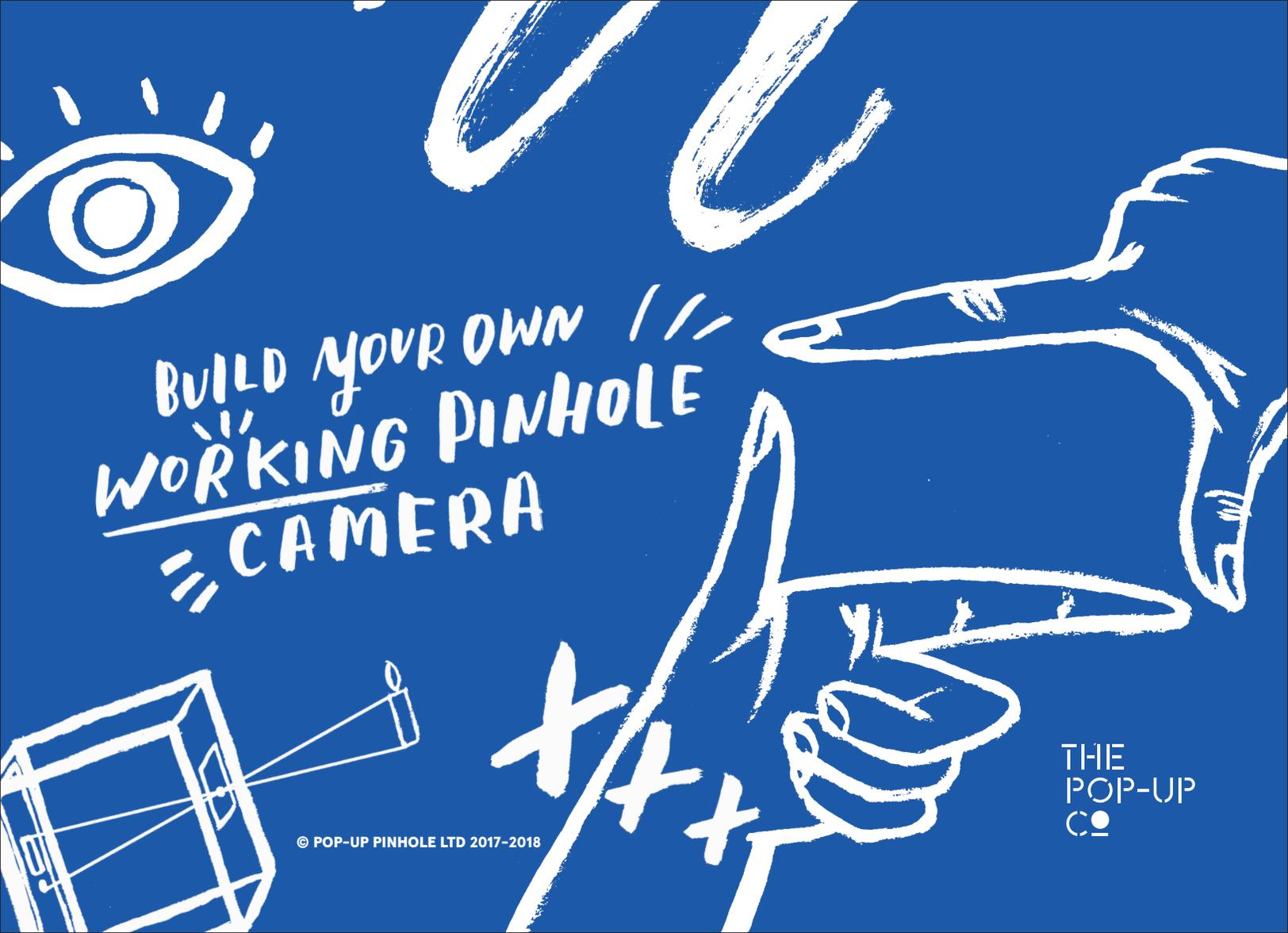
# 27



Wind the lower film advance knob one full turn anti-clockwise after you've taken each exposure to be ready for your next one.

When you've reached your last exposure (usually 24 or 36 pictures), you'll need to wind the top film advance knob clockwise to feed the film back into its original cannister. This may be as many as 40 turns.

When you've done that, open up the camera, release the film cannister and take it to be developed locally and wait for your unique pinhole photographs.



BUILD YOUR OWN  
WORKING PINHOLE  
CAMERA

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