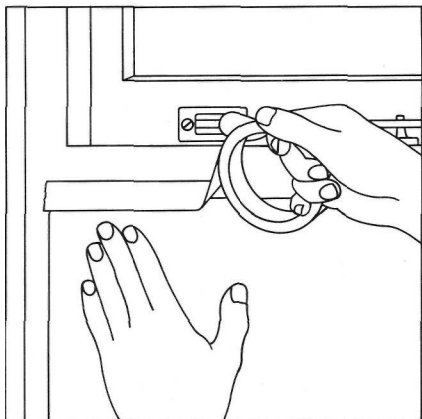


ILFORDINFO

HOW TO PROCESS YOUR FIRST BLACK AND WHITE FILM

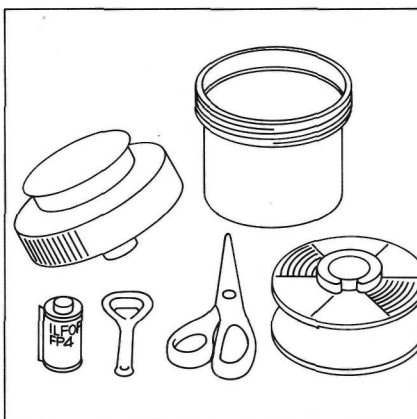


1



Your darkroom (kitchen, bathroom or cupboard) needs to be completely blacked out to stop light from entering. For windows use thick card cut to shape and held in place with black canvas tape. For doors use tape or black cloth or canvas to seal the edges. When finished, spend five minutes in the darkroom to check that it really is light-tight.

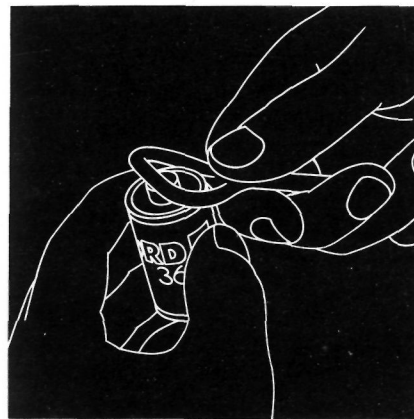
2



Set out the materials in a logical order, where you will be able to find them in the dark. You only need the things to get the film out of the cassette and into the light-tight developing tank.

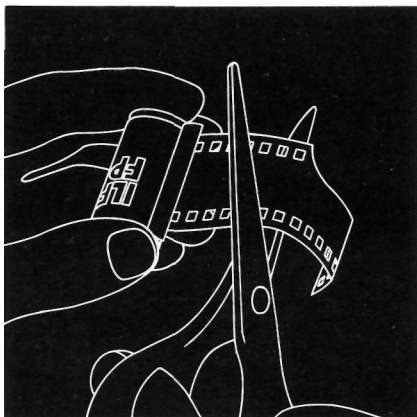
Note: if the film end has not been wound completely into the cassette, you can trim the end and start it in the spiral in daylight. Of course the exposed part of the film must still be wound on in complete darkness.

3



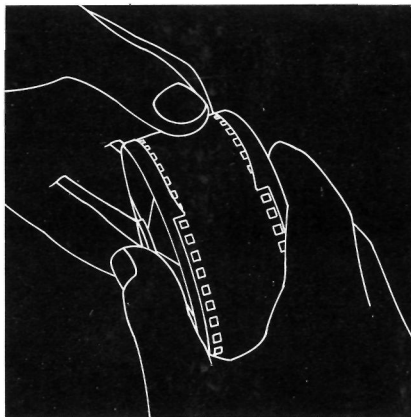
Take hold of the cassette and your opener and turn out the light. Lever the cap off the cassette, and slide the film spool part way out. Find the film's shaped leader, slot this through the light-trap opening, then slide the spool back. This saves having 4½ feet of loose film falling on the floor.

4



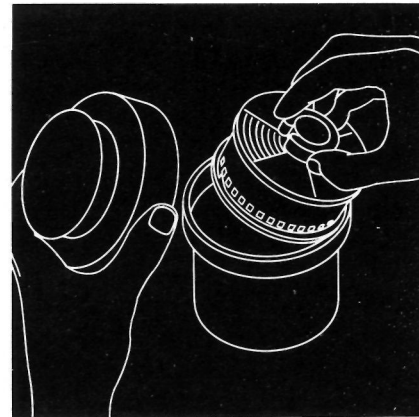
Pull all of the leader (the cutaway portion) beyond the lips of the cassette. Hold the cassette as shown in the diagram, so your finger-ends are out of the way of the scissors, and cut off the leader. If possible, try to cut between sprocket-holes.

5



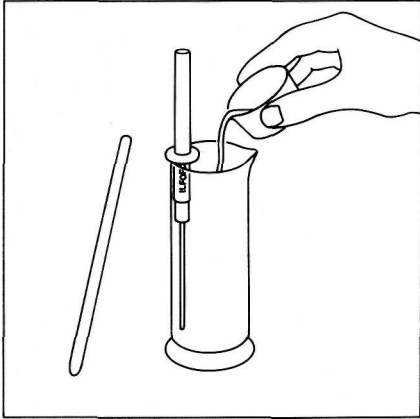
Pick up the spiral and find the projecting lugs which mark the film entry point. Have these lined up and pointing towards you. Grip the end of the film and pull an inch or two into the first channel, between the lugs. Pull about a foot of film out of the cassette. Rotating the sides of the reel back and forth will wind this film into the spiral.

6



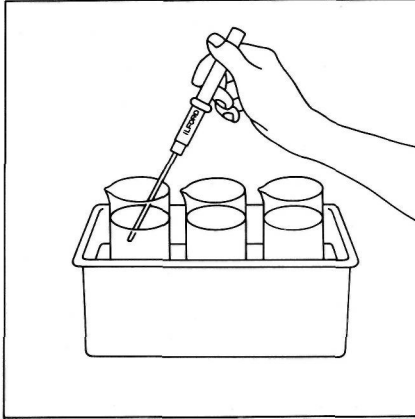
Continue step 5 until you reach the end of the film, then cut this away from the cassette spool. Give a few extra turns to get it all the way on. Finally, put the spiral into the developing tank with its plastic sealing ring (if needed), and screw on the tank lid. The film is now sealed inside a light-tight container, so you can switch the room lights on.

7



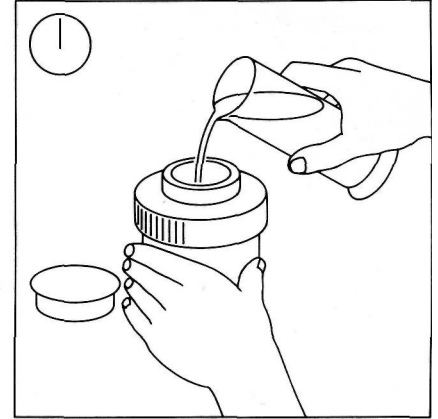
Mix the developer. Pour exactly 30ml of ILFOSOL 2 into the measuring cup supplied. The dilution needed is 1+9, so pour 270ml of water into a large (600ml size) cylinder. Mix hot and cold so the water is at about 23°C. Pour the developer into the water, stir with a stirring rod, and measure the temperature of the solution.

8



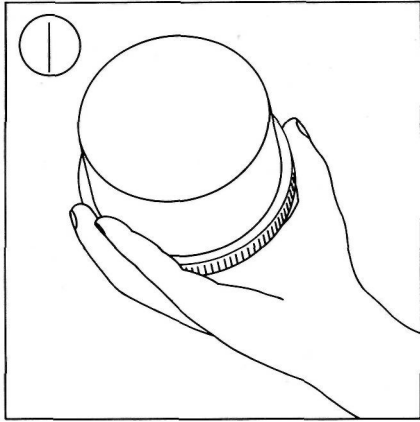
If you have three cylinders or plastic containers, mix up the stop bath and fixer as well. For the stop bath use 7 to 10ml of IN-1 plus 290ml of water. For the fixer, use 60 ml of HYPAM plus 240ml of water. Stand the three containers in a bath of water that is a couple of degrees warmer than the chosen working temperature of 20°C.

9



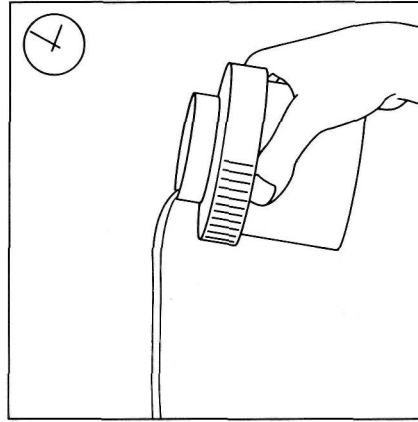
Start the development by pouring the developer solution smoothly, but as quickly as possible, into the tank. The developer should start at 21°C, to allow for a slight temperature drop during processing. The tank should stand in a tray, to collect drips and insulate it from a cold work-surface. Start your timer when you finish pouring.

10



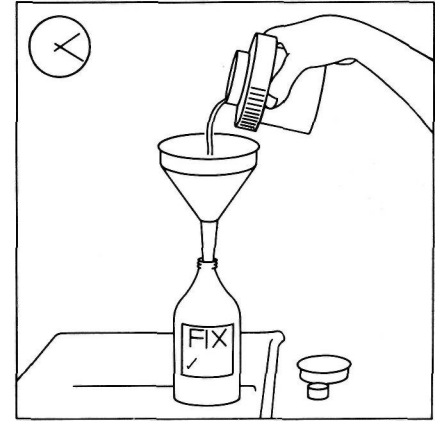
Fit the sealing cap and turn the tank upside down 4 times (once a minute throughout development) to agitate the developer. Each time you invert the tank tap it on the bench to dislodge any air bubbles which may have formed on the film.

11



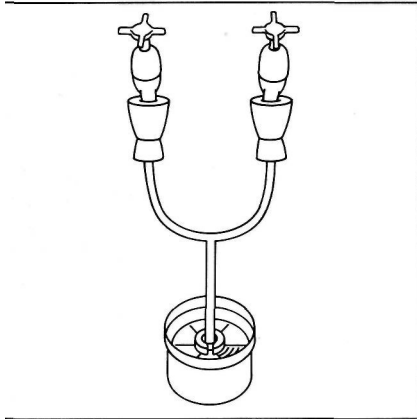
FP4 film needs 4 minutes in ILFOSOL 2 (1+9) at 20°C. Therefore, 15 seconds before the 4 minute mark is reached, start to pour the developer out of the tank. This developer solution won't be used again, so it can be poured straight down the sink. The timer should come to 4 minutes just as you finish pouring.

12



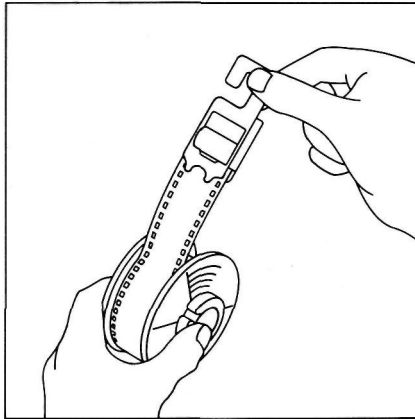
Pour the stop bath solution (at 20°C) into the tank. Agitate by turning the tank upside down twice. After about 10 seconds, pour it out. Zero the timer and pour in the fixer solution (also at 20°C). Start the clock as you finish pouring, then agitate as during development until fixation is complete, this will take 2 minutes. Then pour the fixer into a storage bottle.

13



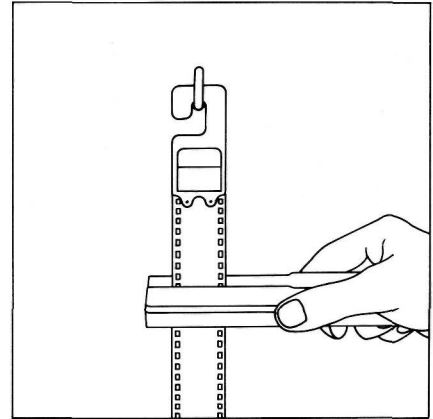
Now the film is fixed you can remove the tank lid. If you have running water at about 20°C, use a piece of rubber tubing to feed this down the centre of the spiral to the bottom of the tank. Wash the film in running water for 5 to 10 minutes. Alternatively mix up a large jug of clean water at 20°C, and give the film ten one-minute rinses instead. Don't just leave the tank under the tap or the film may not be thoroughly washed.

14



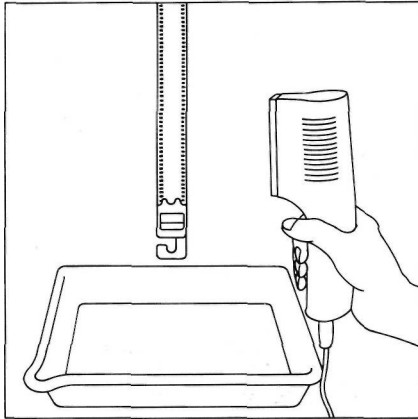
Add one drop of ILFOTOL wetting agent to the final wash water, stir briefly, then lift the film spiral out of the tank. Pull the end of the film out of the spiral, and securely attach a wooden or plastic film clip to it. (To get a tight grip you may have to double over the end of the film.)

15



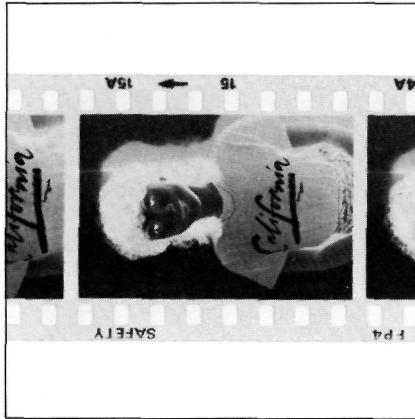
Hang the film from a hook, nail or line which must be about 6 feet off the ground. Slowly unwind the film out of the grooves of the spiral: see next step. To remove any excess water, carefully run squeegee tongs or clean fingers down the length of the film. (Any grit caught up here will scratch the whole film.)

16



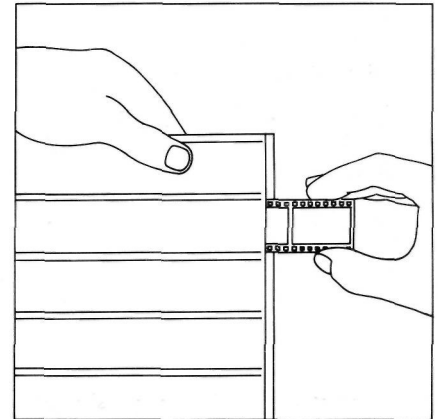
Attach a weighted film clip to the bottom end of the film, with a tray under it for drips. Leave it to dry in a still, dust-free atmosphere. Drying can be speeded up by using a hair-dryer on a low setting, kept moving and about a foot away from the shiny side of the film.

17



When dry, examine the negatives. The film edges (rebates) should be clear, with legible frame numbers along the bottom. A correctly exposed and processed negative should have a full range of tones, with some parts almost clear (like the rebates) and other parts so dense you can only just read print through them.

18



Count the negatives: a 36-exposure film may give 37 or 38 pictures. The best way to store them is in filing sheets which take six or seven strips of six negatives, so try to cut them up in this way. (You may be able to drop a blank shot or bad exposure to do this.) Date and label the filing sheet straight away, and they are ready for making prints.

Processing a film is easy: just follow the step-by-step instructions in this leaflet carefully, and you are virtually certain to get it right first time. Even so, it is not a good idea to start off by processing an important film of a wedding, or unrepeatable holiday pictures.

The most difficult part of processing is getting the film into the spiral.

The grooves of the spiral hold different parts of the film away from one another, so that the developer can circulate freely. If the film is not loaded correctly, uneven development causes spoiled pictures.

Start by practising loading in daylight (using an old, or wasted film) until you can thread it in easily. Then practice with your eyes closed, before finally attempting it in the dark with a real film.

ILFORD film and chemicals

FP4 film
ILFOSOL 2 developer
IN-1 stop bath
HYPAM fixer
RAPID HARDENER (optional)
ILFOTOL wetting agent

The chemicals

All the chemicals you need are listed below. Other chemicals can be used, those listed come in liquid concentrate form, which makes them very easy to mix up for use.

Mix up just enough developer to process one film at a time. After use, it will be poured down the drain. You can mix up larger quantities of the stop bath and fixer; after use, these chemicals can be poured back into stock bottles and reused - but make sure you follow the leaflet instructions.

The RAPID HARDENER can be used to make films less susceptible to scratches, and makes for quicker drying. However, it needs very thorough washing, as detailed in the leaflet supplied.

Essential equipment

Processing tank
Measuring cylinders
ILFORD thermometer
Scissors
Film clips or pegs
Place to hang film

Other equipment

The ILFORD thermometer is suitable for use with all photographic chemicals, which are normally used in the range from 15°- 45°C. It is not suitable for stirring chemicals: for this use a chemical stirring rod.

The most useful cylinders are 150ml, for measuring chemicals, and either 300ml or 600ml, for making up solutions.

If you use plastic beakers or bottles buy different colours, then always use one colour for a particular solution (eg red for developer). This avoids any cross-contamination between chemicals.

You can time processing with a clock or watch, but you may find a timer more convenient to use.

Optional items

Chemical stirring rod
Bottle opener
Squeegee
Beakers and storage bottles
Negative file
Hair dryer
Rubber tubing
Timer



Extending your range

Once you have processed medium-speed FP4 film (125ASA), you can use the same equipment, chemicals and techniques to process other films. Only the development time needs to be varied: the stop bath, fix and wash times stay the same.

Two ILFORD films to try are PAN F and HP5. PAN F (50ASA) is slower than FP4, and so needs more light or longer exposures in the camera. However, it offers finer grain, more definition and slightly better sharpness. HP5 (400ASA) is a faster film than FP4. The grain is not as fine, but HP5 allows you to take pictures in low light levels without flash, or use fast shutter speeds to stop action etc.

Using different developers with these same films allows you to vary the results to suit your own preferences. ILFORD ID-11, PERCEPTOL and MICROPHEN are all supplied in powder form, rather than as liquid concentrates, and must be dissolved before use.

ID-11 is the standard fine grain developer which gives the best all-round results with PAN F, FP4 and HP5. PERCEPTOL provides finer grain with each film, but with a loss of film speed of about one stop. MICROPHEN provides a speed increase over the standard rating, but with a slight increase in graininess.

If you plan to process a film in PERCEPTOL or MICROPHEN, you must expose the film at the ASA rating shown in the table, not at the standard rating printed on the box. Development times are also given in the table, but the stop, fix and wash times remain the same as usual.

If you need even more speed, HP5 can be uprated to 800ASA, if given 8½ minutes development in MICROPHEN. For 1600ASA the time is 11 minutes, and for 3200ASA it is 16 minutes, though at very high speeds there can be a noticeable increase in graininess.

Experimenting with the range of film/developer combinations will enable you to produce the negatives which suit your photography best... or to choose a combination that suits a particular subject or set of lighting conditions. Processing your own film puts you in control, with a little help from your friends at ILFORD.

Basic black and white film processing

Processing steps	PAN F (50ASA)	FP4 (125ASA)	HP5 (400ASA)
Developer			
ILFOSOL 2 dilution 1+9	3½ minutes	4 minutes	7 minutes
Stop bath			
ILFORD IN-1 dilution 1+39	15-20 seconds	15-20 seconds	15-20 seconds
Fixer			
HYPAM dilution 1+4	2 minutes	2 minutes	2 minutes
Wash in running water	5-10 minutes	5-10 minutes	5-10 minutes

All times are for a processing temperature of 20°C

Advanced black and white film processing

Developer/characteristics	Film - speed rating and development times		
	PAN F	FP4	HP5
ID-11	50ASA	125 ASA	400ASA
Standard fine grain recommendation	6 minutes	6½ minutes	7½ minutes
PERCEPTOL	25ASA	64ASA	200ASA
Finer grain but with loss of film speed	11 minutes	10 minutes	11 minutes
MICROPHEN	100ASA	320ASA	500ASA
Fine grain with speed increase	7 minutes	7½ minutes	6 minutes

All figures are for 35mm films processed at 20°C