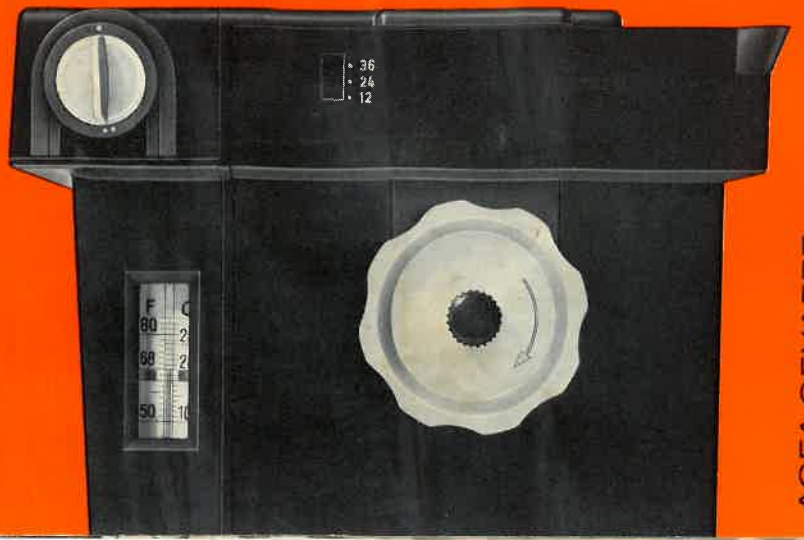


RONDINAX 35U

Daylight developing tank for 35 mm film



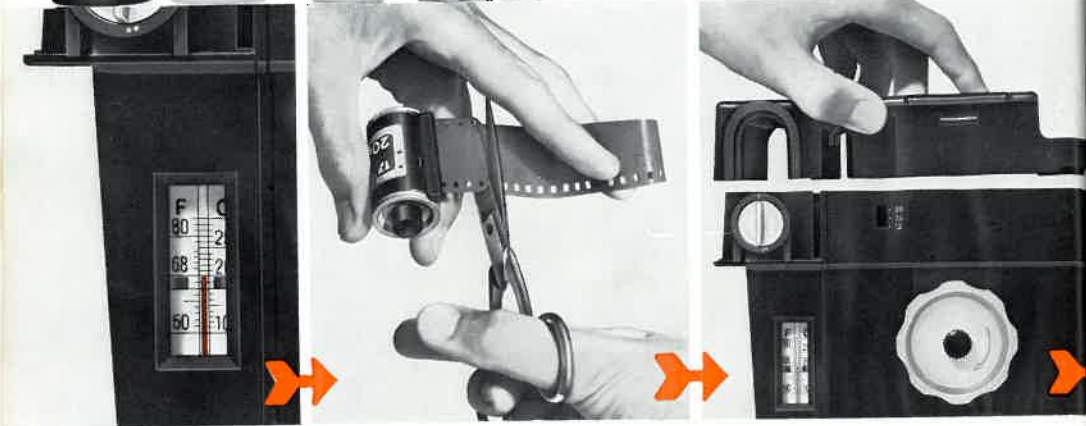
AGFA-GEVAERT

You have now completed the creative phase of photography and are about to start the technical one. But is it really just a technical process if you develop your films on your own? Not at all! The 2 x 4 in. darkroom of your AGFA RONDINAX 35 U allows you to "play" freely on the keyboard of film development. What does that mean? You can develop your films regularly and determine the degree of density of the negatives. However, you can also take advantage of the wide range of processing techniques and "modify" your films by appropriate developers and development times; you will thus gain a great deal of experience which will be valuable for your photographic hobby. For the more you penetrate into the secrets of photography, the more pleasure you will derive from it. Consider the AGFA RONDINAX 35 U to be your development aid from now on.

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Prepare solutions
200 cc developer
200 cc fixer
Bring to a temperature
of 20° C (68° F)



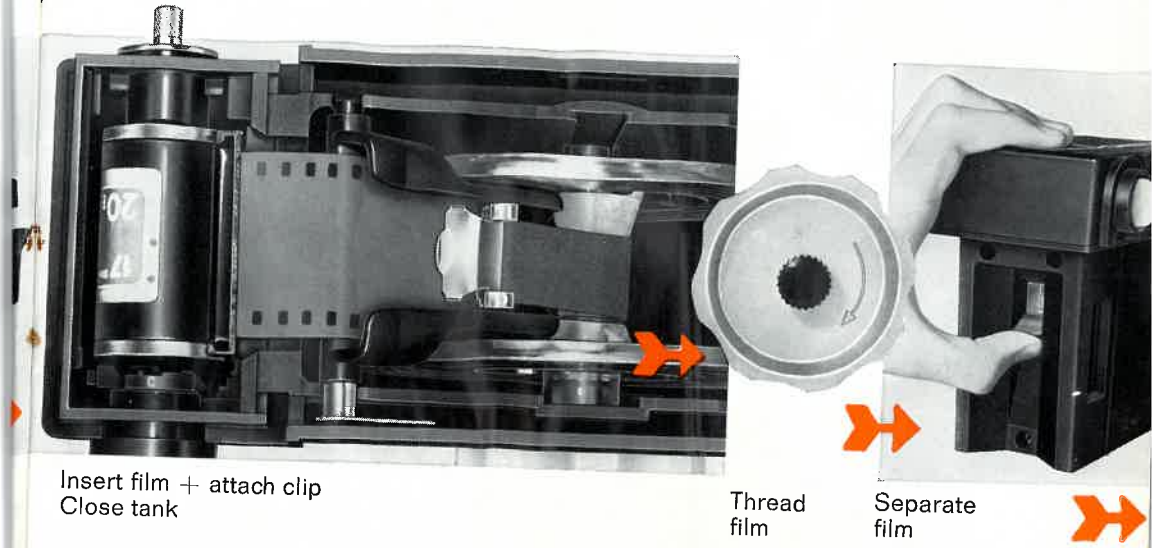
Bring Rondinax tank to a temperature of 20° C (68° F)

Trim film

Open tank

Brief illustrated instructions

You can develop your film
indoors or outdoors.
Direct sunlight should be avoided.



DEVELOPING



Pour in developer
Move rotary knob
by jerks

Pour out developer
while moving
rotary knob



Carry out three inter-
mediate washings
while turning rotary
knob



FIXING

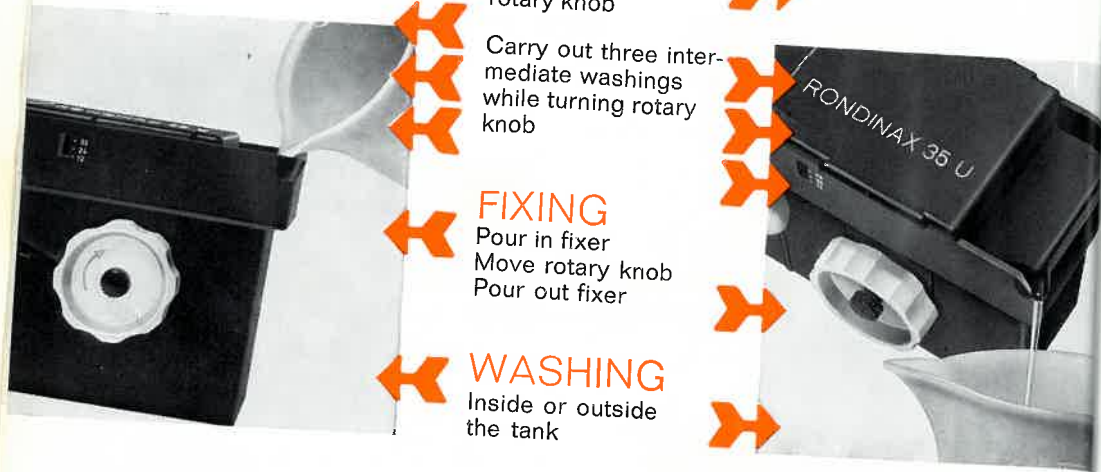


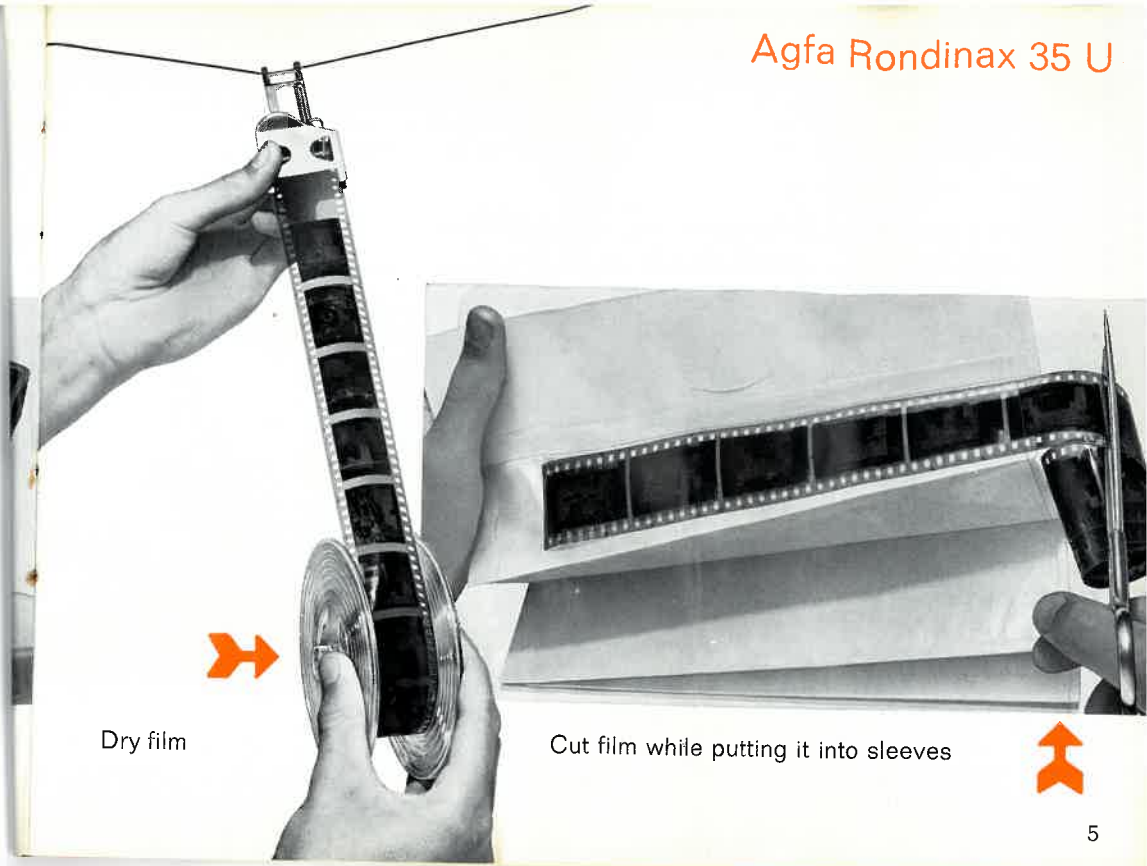
Pour in fixer
Move rotary knob
Pour out fixer



WASHING

Inside or outside
the tank





Dry film

Cut film while putting it into sleeves

Negative developers

Available in powder and in concentrated solution.
The following is a list of Agfa-Gevaert materials available
in small packages:

	powder	liquid
Agfa Atomal	for 1 litre for 5 litres	
Agfa Refinal	for 1 litre for 5 litres	
Agfa Rodinal		100 cc 500 cc
Perutz Perufin S		100 cc 500 cc
Perutz Perinal		5 x 10 cc

The developers available in powder should be mixed with warm water (approx. 30–40°C = 86–104°F), as prescribed. The solution should be stored in a brown bottle with a tight cap. (A dark green bottle may be used as an alternative.) It is advisable to stick a label on the bottle indicating the type of developer and date of preparation.

Fixing salts

Available only in powder

Agfa Acidofix (acid fixing salt)	for 1 litre for 5 litres
Agfa Acidofix Quick (rapid fixing salt)	for 1 litre for 5 litres
Perutz fixing salt for 1 litre (acid)	
Perutz Quickfix (rapid fixing salt)	for 1 litre

In order to distinguish it from the developer, the fixing solution should be stored in a clear plastic bottle.

Wetting agent

Agfa Agepon for	250 1000
-----------------	-------------

- Graduated cylinder for 200 cc
- Graduated cylinder for 10 cc
- Scissors
- Two film clips*
- Agfa film wiper*
- or, as an alternative, a soft, clean leather cloth
- Graduated beaker for approx. 1000 cc*
- Thermometer



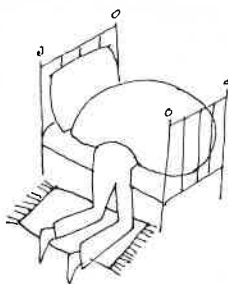
* recommended

Warming up the Rondinax tank and the developer

The prescribed development temperature is 20° C (68° F). The tank and the developer must therefore be brought to the prescribed temperature before the film is inserted. For instance, if the temperature of the tank is 10° C (50° F), it will take about 1½ hours for it to rise to 20° C (68° F) if the tank is placed in a warm room (see figs. on pp. 2 and 3).

Trimming · loading · attaching
threading · separating
the film

Trimming



35 mm film cassette: cut off the specially shaped film leader and round off the edges. (If the film leader has been rewound completely into the cassette, open the cassette in the dark and pull out the leader. Then close the cassette.)

Rapid cassette*: insert into Rondinax 35 U without preparing the film leader.

PAK films may be inserted and wound into the Rondinax tank only in the dark since the cartridge must first be opened and the light-sensitive film taken out.

Special handling of Leica, Contax, Photavit and Robot cassettes (see pp. 12 and 13).

* the same applies to Karat cassettes

Open Hondinax tank by holding lid by its two grips and pulling it off. Turn cassette key upwards so that its mark faces the dot. Pull cassette key and guide pin all the way out. Check whether the spiral reel moves freely. If necessary, loosen sealing knob slightly.

Insert **35 mm film cassette** into loading chamber with slot of cassette core pointing toward prong of guide pin. Then push in guide pin so that its prong engages the slot (turn slightly, if required). Push in cassette key and turn it so that its mark faces the two dots.

If a **Rapid cassette** is inserted, the guide pin and the cassette key must remain pulled out.

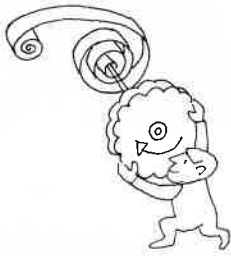
Push film into open mouth of film clip as far as possible and press clip together in the middle of the leading end of film.

With the tank open, thread about 5 cm (2 in.) of 35 mm film; in case of Rapid films, just the length of 5 perforation holes should be threaded. (No pictures will be lost.) This will show whether the film threads properly. Troubles will occur only if the edges of the film leader were not rounded off, if the film clip was not attached in the middle or if you forgot to insert the film guide.

Replace lid and feed film into grooves of spiral reel by means of rotary knob; threading starts at the core of the reel. While the film is being threaded, the film indicator shows the approximate number of negatives ($24 \times 36 \text{ mm} = 135$) wound onto the reel.

Attaching

Threading



Separation

As soon as the full film length has been threaded, a resistance will be felt in case of 35 mm film cassettes. The film must then be separated from the cassette core to which it is fastened. This is done by pushing up the handle of the knife as far as it will go. If only part of the film is exposed, e.g. 24 exposures 24 x 36 mm (135), the film may be cut as soon as the pointer of the film indicator is opposite the number 24.

Since Rapid film* is not fastened in the cassette, it winds onto the spiral reel without resistance; however, in this case it is impossible to cut off just part of the film. (See development process, pp. 14-16.)

* the same applies to Karat film.

Your decision to develop the films on your own in the future shows that you not only enjoy photography, but also that you wish to become more familiar with your hobby. We should like to draw your attention to some brochures which can be obtained from our head office at Leverkusen.

Brochures:

"Isopan films"

Agfa-Gevaert
"Black and white
photographic
papers"

"Setting up an ama-
teur laboratory"

AGFA-GEVAERT AG
Druckschriften-Abtlg. Photochemie
509 LEVERKUSEN
Bayerwerk
West Germany



Development times at 20°C
(68°F) for Agfa and Perutz films

The table shows the development times in minutes for normally exposed negatives on

	Isopan IF Perutz 17	Isopan ISS Perutz 21	Isopan ISU Perutz 27	Agfapan 1000 Professional
Agfa Atomal Ultrafine grain developer	11—13	11—13	11—13	15—17
Agfa Refinal Fine grain developer	6—8	6—8	6—8	8—10
Agfa Rodinal* Universal developer diluted 1 + 25	4—5	5—7	9—11	
diluted 1 + 50	6—8	9—11		
Perufin S	6—8	7—9	11—13	15—17
	min.	min.	min.	min.

* Further development hints are given on page 17

Special handling of Leica, Contax, Robot and Photavit cassettes

Since all-metal cassettes differ in design and size from commercially available 35 mm film cassettes and some types even have a special closing mechanism, special instructions must be followed for their insertion.

Leica cassettes



Set cassette key to upper dot. Pull cassette key and guide pin all the way out.

Insert Leica cassette, with its spring pointing down, in such a way that, when the cassette key is pushed in again, the large recess (next to C) engages the knob of the cassette. Then clip on the film. Close the lid, turn cassette key to the double mark and push in guide pin. All further operations should be carried out as described on pages 9 and 10. If just part of the film is to be developed, the cassette key must be turned and set to the single dot before separation of the film.

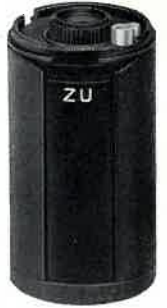


Contax cassettes



Set cassette key to upper dot. Pull cassette key and guide pin all the way out.

The film must be attached to the clip and „threaded“ into the film guide **before** the cassette is placed in the loading chamber. When the film is taut, the cassette pin must be exactly opposite the C (Contax) on the cassette key. Then close lid, turn cassette key to the double mark and push in guide pin. All further operations should be carried out as described on pages 9 and 10. However, if just part of the film is to be developed, the cassette key must be set to the single dot before separation of the film. Before the Contax cassette is reused in the camera, it must be locked completely by hand. The word „zu“ (= closed) must be positioned exactly in the middle of the mouth of the cassette.



Robot and Photavit cassettes

The guide pin and cassette key must remain pulled out during the whole development process. All other operations should be carried out as already described.

Development process

Development · intermediate rinsing · fixing
washing · drying · cutting

of the film

Development



Intermediate rinsing

As the first three phases of development must be carried out without interruption, you should familiarize yourself with the sequence and type of operations before starting the actual development (see figures on pp. 4 and 5).

Check whether the temperature of the developer and of the tank is 20° C (68° F).

Tilt the tank and pour the developer (200 cc) into the filling opening in the tank while turning the rotary knob continuously, at jerks. Unless indicated otherwise in the instructions for the developer, during the whole development process the spiral reel must be turned with a jerk once every two seconds in direction of arrow. See exposure tables on pp. 11 and 17.

At the end of the prescribed development time pour out the developer while turning the spiral reel constantly; then carry out three rinses. The water must be changed very quickly (the spiral reel being again rotated during that time) as the development process as such is stopped only in the subsequent fixing bath. Since the film is still light-sensitive, the tank may not be opened yet.

Fixing

Slowly pour 200 cc of the prepared fixing solution into the opening in the lid. Start turning the rotary knob immediately and slow down the rotational movement after 2 minutes; for the rest of the time one full turn per minute is sufficient. When fixing is completed, remove the lid of the tank. If the film still shows some milky areas, it must be fixed for another 1-2 minutes in the closed tank. The fixing bath may be used twice but should not be used more often than that. The fixing time is approximately 8-10 minutes.

Washing

Finally the film must be washed thoroughly so that all chemicals are removed. There are two ways of doing this:

Washing inside the Rondinax tank: take off lid, remove film guide and fill tank with water until reel is completely covered. Then turn rotary knob several times to allow the air between the windings of the film to escape. Change the water after 5 minutes. Repeat this process 5 to 6 times.

Washing outside the tank: take off lid, remove film guide, unscrew rotary knob and place spiral reel into a bowl, sink or the like, under running water. Move and turn spiral reel several times.

The washing time amounts to 30 minutes; if the water temperature is below 12° C (54° F), washing will take 45 minutes.

After washing, the film should be treated in a 2% Agepon bath for 60 seconds. The wetting agent Agfa „Agepon“ prevents the formation of water spots on the film during drying.



Drying



Cutting

Wet film is very susceptible to scratches and must therefore be handled very carefully. Hang up the film on a line as shown in the figure on page 5. The distance from the line to the floor should be 1.90 m (6 $\frac{1}{4}$ ft.) for a 36 exposure film and 1.20 m (4 ft.) for a 20 exposure film. The spiral reel can be used to weight the film, but another film clip would be preferable. The surplus water can be removed from both sides by means of a clean, very soft leather cloth. The Agfa film wiper is even better suited for this purpose. Never use an ordinary rag! Do not hang up the film to dry in the sun or near a heater. Today's thin emulsion films dry relatively quickly in the air so that a cold air electric dryer rarely needs to be used.

It is advisable to cut the dry film into six strips (24 x 36 mm) and place them into transparent sleeves. Water spots which may have dried on the film because no Agepon bath was used can be removed easily by breathing on the glossy surface of the film and wiping it off right after with a soft, dry leather cloth. The AGFA RONDINAX 35 U, always ready for use, is a valuable addition to your camera. The subjects which you just saw in the viewfinder can be hung up to dry an hour later – as black and white negatives. The step toward making the print is just a small one if you own an enlarger.

With the Agfa Rodinal developer it is possible to adapt the development to the respective subject contrast simply by changing the ratio of dilution. See table below.

Furthermore, to comply with personal preferences for softer or more brilliant negatives, the table shows the appropriate development times. The shorter times yield soft negatives while the longer ones yield more brilliant negatives.

Development times at 20° C (68° F) for tank development with interrupted agitation

Subject contrast	low		normal		high	
	strong		normal		soft	
	dilution	minutes	dilution	minutes	dilution	minutes
Isopan IF Perutz 17	1 + 25	6—8	1 + 25 1 + 50	4—5 6—8	1 + 50	4—6
Isopan ISS Agfapan 100 Prof. Perutz 21	1 + 25	8—11	1 + 25 1 + 50	5—7 9—11	1 + 50	6—9
Isopan ISU Agfapan 400 Prof. Perutz 27	1 + 25	15—18	1 + 25	9—11	1 + 25	6—8

Films with exposures of different contrast should be developed according to the instructions given in the frame **normal**.

At 18° C (64° F) the above times should be increased by $\frac{1}{3}$, at 22° C (72° F) they should be decreased by $\frac{1}{5}$.

Hints for making up the solutions

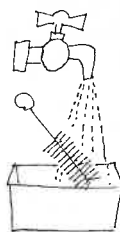


Hints for the development process

- If the tap water is very calcareous, it is advisable to use only boiled water.
- Observe the right order when dissolving the chemicals.
- Make up only $\frac{3}{4}$ of the prescribed quantity of the solutions and fill up to the required volume afterwards.
- Pour the substances slowly into the water while stirring constantly, otherwise they will cake.
- If an extremely small quantity (e.g. 0.5 cc of the concentrate) is added, it is advisable to place a glass rod against the rim of the bottle.
- Development must be carried out at the prescribed temperature, for even slight deviations may influence the result. Do not shun the small trouble of putting the container for the solution into a water bath for a short time.
- The fixing bath cools down considerably while it is being made up. If the bath is to be used immediately, warm water must be used.
- The developer should be used only once, the fixing bath may be used twice.
- In case of very short exposure times (below 5 minutes) the film will develop more readily if it is prewashed briefly: after threading the film and cutting it off, fill 200 to 300 cc of water heated to 20° C (68° F) into the tank, turn the reel two or three times by means of the rotary knob, pour off all the water and fill in the developer.
- The usability of the fixing bath can be checked with the Agfa fixing aid. The fixing bath which has been used for the films must not be poured back into the storage bottle and used for fixing the prints later on.

the Rondinax tank

Cleaning



The tank must be disassembled after each use and its individual parts cleaned thoroughly under running water. Any gelatine particles which may have accumulated in the grooves of the spiral reel should be eliminated with a brush. If some solution has penetrated into the loading chamber and thus into the guide slot of the knife, it is necessary to unscrew the loading chamber. The knife will then fall out.

Drying

The tank and all its components must be dried carefully. If the next film is to be developed right after, special attention must be paid to the grooves of the spiral reel. If you use an electric dryer, only cold air may be employed because of the plastic material.

Assembly

Insert the spiral reel into the tank so that the square hole coincides with the hole in the tank. The sealing knob links the rotary knob to the spiral reel. Tighten the sealing knob just far enough so that the rotary knob can still be turned easily. If the loading chamber was unscrewed, the knife must be fastened first. For this purpose first hook the small eye on the tension spring to the pin (back of knife) and then insert the hook of the spring into the tank recess. Stretch the spring upwards and bring the knife

with its handle into normal position. Then secure the loading chamber with its three screws. Finally insert the film guide and replace the lid.

Loading and cutting section

Developing section



Film separating knife with tension spring



Loading chamber

The components
of the daylight
developing tank
Agfa Rondinax 35 U



Spiral reel

Tension band
and film clip

Guide pin

Guide slot for knife

Developing chamber

Film indicator

Spout

Thermometer



Tank lid

Grip



Rotary knob



Sealing knob



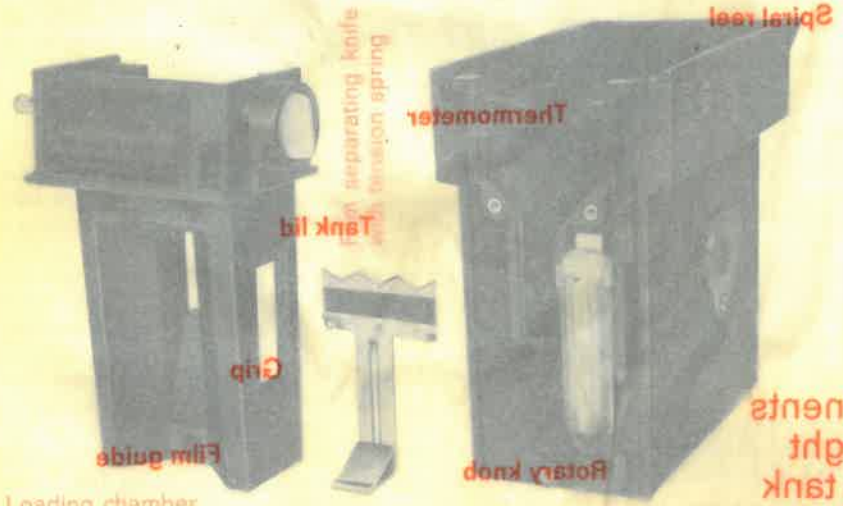
Film guide

with its handle into normal position. Then secure the loading chamber with its lid. Carefully insert the film guide and replace the lid.

Developing chamber
 Film indicator
 Cassette key

Loading and cutting section

Developing section



Loading chamber

Sealing knob

The components of the daylight developing tank Agfa Rondinax 35 U

