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SOLINA

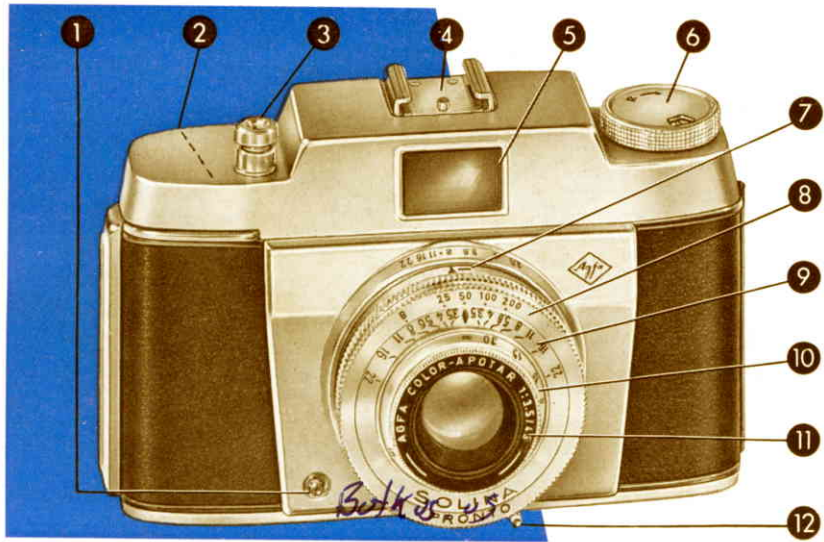
COLOR-APOTAR 3,5 / PRONTO

TYPE 2100/390

AGFA COLOR-APOTAR f 3.5 / 45 mm. LENS

The lens of your Agfa Solina camera was computed and manufactured in conformity with the most up-to-date scientific methods. It was thoroughly tested in the test laboratories of the Agfa Camera Works, Munich, and the high quality of its performance is positively assured with brilliant definition, extremely high resolving power and exceptional contrast rendering to meet the exacting requirements of miniature photography—both colour and black and white.

*AGFA AKTIENGESELLSCHAFT
Camera-Werk, Munich*



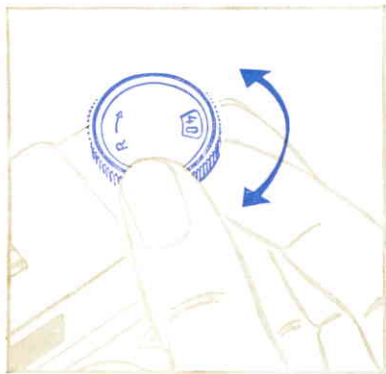
- 1 Flash Contact
- 2 Rapid Winding Lever
- 3 Release Button with Screw Socket for Cable Release
- 4 Accessory Shoe
- 5 Large Full Size Image Viewfinder
- 6 Rewind Knob and Film Type Reminder Disk
- 7 Diaphragm Scale (stops)
- 8 Shutter Speeds
- 9 Depth-of-Field Scale
- 10 Distance Focusing Scale
- 11 Agfa Color-Apotar f/3.5 lens
- 12 Delayed Action

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In your Agfa Solina you have acquired a camera of the highest technical perfection. Everyone will congratulate you on your purchase. The great moment has come for you to press the release for the first time. Your dealer will have explained to you how simple the Agfa Solina is to use, but you will want now to sit down quietly with your new camera and once again go over its movements and investigate its technical potentialities. In the following pages you will find advice and hints which will make you an expert in a twinkling.

Probably your photo dealer has already "*loaded*" your camera. The film is supplied in a light proof cassette and is available in two different lengths, i. e. of 36 and 20 exposures. The picture size of your camera is 24 x 36 mm. Moreover, there are various types of film available. If no film has been inserted refer to instructions on pages 16-17.

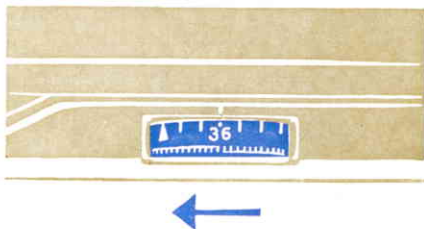


CN 14 = Colour negative film, daylight type
 CN 17 = Colour negative film for daylight
 and artificial light

THE FILM TYPE REMINDER DISK

is an ever present reminder of the type and speed of the film loaded in the camera. Should your dealer have already loaded the camera it will be wise to set this at once. Pull out the rewind knob and rotate the disc by its milled under surface (see illustration) until the appropriate figure or designation appears in the window. The figures 16, 40, 100, 250, 650 indicate the speed of black-and-white films in degrees ASA (as printed on the film carton).

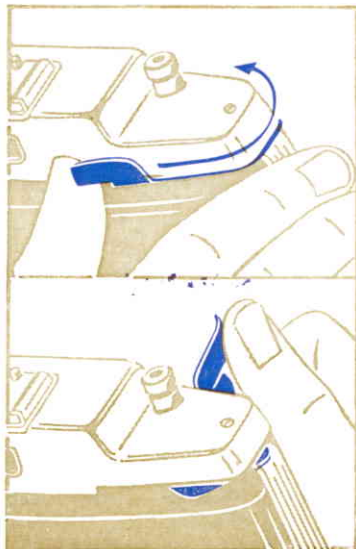
CK
 A = Colour reversal film, artificial light type
 (incandescent lamps with 3400° Kelvin)
 CF
 F = Colour reversal film, artificial flashlight
 type (3800° Kelvin)
 CT
 DAY = Colour reversal film, daylight type



THE EXPOSURE COUNTER

at the lower edge of the back shows how many frames still remain unexposed. In loading the film the apex of the green triangle—in front of the figure 36 (or 20)—must be opposite the fixed index line. Turn the milled ring in the direction of the arrow (see illustration). If the film has been loaded in the manner later to be described, the camera is ready for use when the figure 36 (20) is opposite the index line (see illustration).

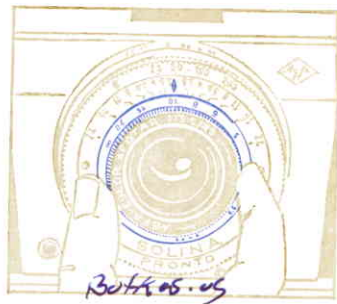
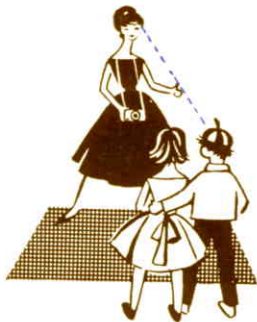
This is effected by winding on the film by means of the —→



RAPID WINDING LEVER

With the thumb of the right hand under the lever swing it round in a half circle as far as it will go towards the front of the camera (see illustration) and release it to allow it to return to its original position. If the rapid wind lever is found to be locked, the shutter release button must first be depressed. Repeat this process of transporting the film and releasing the shutter twice more and the camera will be ready for use.

Caution! If inadvertently the rapid wind lever is not be taken right round to the stop, the operation must be repeated; this time it will usually be checked before reaching the end of its travel. It must not be forced beyond this point.

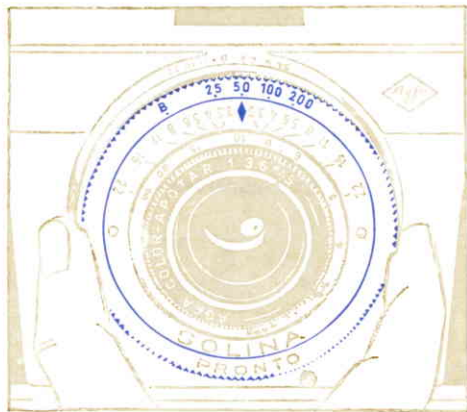


1. JUDGE THE DISTANCE

AND FOCUS

On the front rim of the lens mount the distance values in feet are engraved. The black dot on the adjacent ring is the focusing point (see illustration) which the distance value arrived at must face. Stop numbers are engraved to the left and the right of this focusing mark. These auxiliary numbers have a special task in conjunction with the distance settings, as we shall explain in some detail on pages 19-21.

2. SETTING THE SHUTTER SPEED

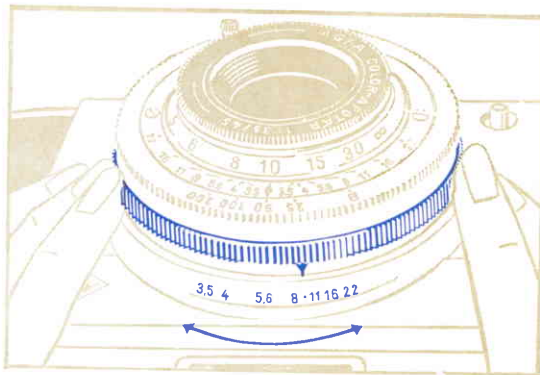


The shutter allows a choice of four speeds: $1/25$, $1/50$, $1/100$, and $1/200$ sec. Here again the required shutter speed is set opposite the central black index—in our illustration $1/50$. The speed is set by rotating the large front milled ring. For the choice of the correct shutter speed see chapter "What we must know" on pp. 19–21.

If the shutter is set to B it will remain open as long as the shutter release is kept depressed. This setting is required only for time exposures: for further details see page 10.

3. SETTING THE STOP

From the exposure tables on pp. 8/9 look up the stop required. Rotate the back milled ring until this number comes opposite the triangular mark on the housing. The figures can be read from above. For our illustration $f/8$ was chosen: for further details on stops and depth of field see chapter "What we must know" on pages 19-21.



EXPOSURE HINTS FOR COLOUR

Correct stop for $\frac{1}{100}$ sec. between 10 a.m. and 4 p.m. in the months of May to August	Agfacolor Negative Film CN 17			Agfacolor Reversal Film CT 18		
	Bright sunshine	Sun through light cloud	Cloudy (dull)	Bright sunshine	Sun through light cloud	Cloudy (dull)
Beach scenes, high mountains	between f/11 & 16	between f/8 & 11	between f/5.6 & 8	f/16	f/11	f/8
Well lighted streets and buildings, open landscape including distance	f/8 & 11	f/5.6 & 8	f/4 & 5.6	f/11	f/8	f/5.6
Figures, groups in the open, landscapes with dark fore- ground, street scenes	f/5.6 & 8	f/4 & 5.6	f/3.5	f/8	f/5.6	f/4
Dark buildings, figures in shadow	f/4 & 5.6	f/3.5	—	f/5.6	f/4	f/3.5

Agfacolor Negative Film CN 17: the universal film for colour or if desired black-and-white prints of any size.

Agfacolor Reversal Film: for direct transparencies ready for projection.

EXPOSURE HINTS FOR BLACK-AND-WHITE AGFA ISOPAN F FILM 17° DIN

May to August, 2 hours after sunrise to 2 hours before sunset

Shutter speed	Stop											
	1/200			1/100			1/50			1/25		
	Sun-shine	Cloudy	Dull	Sun-shine	Cloudy	Dull	Sun-shine	Cloudy	Dull	Sun-shine	Cloudy	Dull
Beach scenes, glaciers, snow	f/11	f/8	f/5.6	f/16	f/11	f/8	—	f/16	f/11	—	—	f/16
Open landscapes	f/8	f/5.6	f/4	f/11	f/8	f/5.6	f/16	f/11	f/8	—	—	—
Landscapes with foreground, figures in the open	f/5.6	f/4	f/3.5	f/8	f/5.6	f/4	f/11	f/8	f/5.6	f/16	f/11	—
Portraits in shade	f/4	f/3.5	—	f/5.6	f/4	f/3.5	f/8	f/5.6	—	f/11	—	—
Sports photography, rapid movement	f/8	f/5.6	f/4	—	—	—	—	—	—	—	—	—

AND IF THE LIGHT IS NOT GOOD ENOUGH

you can still make a time exposure. Set the camera on a firm support or use a tripod. Set the shutter to B, and use a cable release.

When you photograph a fireworks display you are unable to determine any exposure value number because the time of keeping the shutter open depends on how long the fireworks burn. In this case, you use the lens at full aperture (f/3.5), set B against the black triangle, and the infinity symbol ($= \infty$) against the focusing point. In addition you need a cable release with a locking screw, a rigid tripod with ball and socket or tilting head, and a clear view for yourself and your Solina. Such pictures are specially rewarding on Agfacolor Film.

USE FLASH

Flash is simplicity itself. The flashgun is slipped into the accessory shoe and connected to the camera with the synchronising lead. The shutter should be left set at $\frac{1}{25}$ sec. The exact stop to use can then be seen from the following table. When the shutter release is pressed, the flashbulb will fire simultaneously with the opening of the shutter.



This is what your camera will look like with the handy Agfa Synchro Flashgun KM attached

STOP TABLE FOR FLASH EXPOSURES

Use always $\frac{1}{25}$ sec.

Subject distance feet	Clear flashbulb Black-and-white film Colour Negative Film (CN 17) 17° DIN = 40 ASA		Blue flashbulb Colour Reversal Film for daylight 18° DIN = 50 ASA	
	XM 1 PF 1	XM 5 PF 5	XM 1 B PF 1/97	XM 5 B PF 5/97
5	f/11	f/16	f/11	f/16
7	f/8	f/11	f/8	f/11
11	f/5.6	f/8	f/5.6	f/8
16	f/4	f/5.6	f/4	f/5.6

Any shutter speed, i. e. $\frac{1}{25}$ to $\frac{1}{200}$ sec., can be set if an **electronic flash** unit is used for black and white or daylight type colour film. However, the above table cannot be used for setting the stop which must be calculated from the guide number of the flash unit used, e. g. the guide number 96 is divided by 12 ft. (distance from subject), which equals 8; this is the aperture at which the lens should be then set.

HOLDING THE CAMERA—SHUTTER RELEASE

To obtain sharp pictures the camera must be steady. Our advice is to hold your Solina in both hands. In that way your arms form an angle with your body and act as a support. Your thumbs should lie along the back of the camera and the index finger of your right hand operates the shutter release.

As soon as you have taken aim at your subject you depress the release button: your finger tip slowly depresses the release button as far as it will go.



Do try it with your very first picture: e. g. hold your camera level and **as close to your eye as possible**. It is entirely up to you which eye you use for viewfinding, the



only important thing is to close the other eye. Now take a breath, hold it . . . and release your shutter.

How you hold your camera for vertical pictures, that is whether the rapid winding lever is up or down, is absolutely immaterial. Choose the position which you find to be more convenient and use either the thumb or the index finger to release the shutter.

Hand held exposures are only possible at shutter speeds $1/50$, $1/100$, $1/200$, or in exceptional cases at $1/25$ sec. (never with "B" setting).

You cannot make two exposures on the same frame because your Solina is equipped with a double exposure lock (see page 17).

VIEWFINDER PARALLAX

Since the viewfinder is at a higher level than the camera lens, in the case of close-ups at distances between 3 and 6 feet there will be a small error. To compensate for it, for horizontal pictures the camera should be tilted slightly upwards, for vertical pictures turned slightly in the direction of the viewfinder.

DELAYED ACTION

Occasionally the photographer may want to be in the picture himself, and to enable this wish to be met your Solina is equipped with a delayed action mechanism. Start by setting your camera on a tripod, or at least placing it on a firm support and then after you have wound on the film, move the lever with the red knob (12, see main illustration) in the direction of the centre of the camera. As soon as you depress the release button, the small lever will move, automatically releasing the shutter at the set speed after about 7 secs. The lever will always return to its starting position and must therefore be wound afresh for each delayed action exposure. All shutter speeds with automatically controlled exposure times can be used, and flash photographs can also be taken in conjunction with the correct shutter speed. *Time exposures, however (B setting), cannot be made in conjunction with the delayed action.*

A FEW HINTS FOR THE CORRECT CHOICE OF FILM

For general purposes always use Agfa Isopan F 17° DIN (approx. 40 ASA). It is a fine-grain film of excellent definition and compensates a wide measure of over and under-exposure.

On murky days we recommend the use of Agfa Isopan ISS 21° DIN (approx. 100 ASA) allowing greater latitude for stop and shutter speed.

In bad light use Agfa Isopan Ultra 25° DIN (approx. 250 ASA).

If the worst comes to the worst and even Isopan Ultra is not fast enough, you can fall back on Isopan Record. This film is equal in grain and sharpness to Isopan Ultra but offers you the advantage of being able to stop down by a further aperture. Hints on its use are contained in the carton.

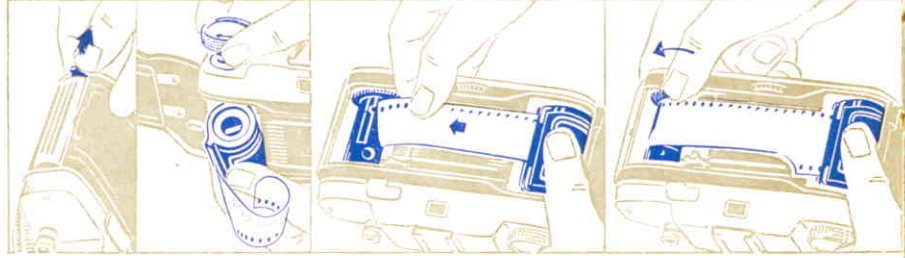
In cases where extreme sharpness is required, or when taking pictures that must be enlarged considerably, Agfa Isopan FF 13° DIN (approx. 16 ASA) will be "your" film. Agfacolor opens to you the wondrous world of colour! For more than twenty years it has been in public favour because it renders in their natural shades both the subdued and bright colours. The high sensitivity of Agfacolor Film admits of striking colour snapshots!

For colour transparencies use Agfacolor Reversal Film, for colour paper prints—Agfacolor Negative Film.

For details regarding loading of your camera please refer to pages 16 and 17.

LOADING THE FILM INTO THE CAMERA

(in subdued light only, or at least using the body as a screen from direct sunshine)



To open the back of the camera pull the catch in the direction of the arrow.

Pull the rewind knob right out with the right hand and insert the new film.

Press back the rewind knob.

Pull out film until the narrow end easily reaches the take-up spool. With the milled head turn the spool until the broad slot with its small tooth is uppermost.

Insert the end of the film in the slot, so that the tooth engages in the second perforation. Then continue to turn the winding head in the direction of the arrow until about half an inch of the full width of the film is projecting from the cassette.

Close the camera back and simply snap it shut.

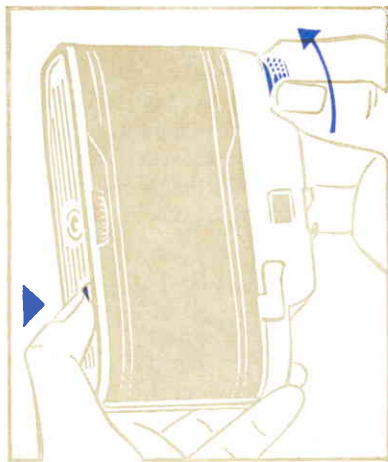


WINDING THE FILM ON FOR THE FIRST EXPOSURE

Turn the milled disk of the exposure counter as described on page 3 until the green triangle in front of the figures 36 or 20—according to the length of film loaded—appears opposite the central index line. Swing the rapid wind lever right round to the stop as already described and depress the shutter release. Repeat this twice and the camera is ready for use.

SHUTTER RELEASE AND FILM WIND INTERLOCK

The Agfa Solina is provided with a double exposure and blank frame prevention lock. This means that it is impossible to make two exposures on the same frame or to wind on the film inadvertently before a frame has been exposed. If therefore the release button cannot be operated the film must first be wound on by the rapid wind lever.



THE FILM HAS BEEN EXPOSED— REWINDING THE FILM

After the last exposure (No. 1 on the counting mechanism) the rapid winding lever can no longer be operated. Since, however, the film in a miniature camera is always wound openly on the take-up spool, it must be re-wound into its light-proof cassette before the back is opened. Therefore, pull out the rewind button until you feel the first resistance (approx. $\frac{1}{4}$ ") and rotate it in the direction of the arrow, at the same time depressing the locking button in the bottom of the camera (see illustration). When the rewind button can be rotated further without any noticeable resistance or after releasing the locking button the rewinding is complete. The camera back can be opened as described on page 16. The rewind button is pulled out as far as possible, and the cassette removed. It must be placed immediately in a light-proof wrapping and marked "exposed".

WHAT WE MUST KNOW

The stop, or diaphragm, of a lens regulates the amount of light which reaches the film from the subject. If the light is bad the full aperture of the lens must be used, and the stop accordingly set to 3.5. With better light, the stop can be correspondingly reduced: this is termed "stopping down".

If you want to see yourself how the stop aperture of your camera opens and closes set the shutter speed ring to B (with your camera empty), depress the release button and watch the lens from the front. When turning the diaphragm ring you will then notice that at large aperture a small number (e. g. f/3.5) and at small aperture a large number (e. g. f/16) is opposite the triangular mark.

The shutter speed. The shutter of the camera provides the second way of controlling the incoming light. High speeds, e. g. $1/200$, naturally allow much less light to reach the film than the slower speeds, such as $1/25$ second.

Note, therefore, that with higher shutter speeds the diaphragm must be opened wide and with slower speeds it is "stopped down" further.

If you want to capture a rapidly moving subject, a fast shutter speed is essential in order to obtain a sufficiently sharp picture.

However, if you want to photograph a landscape in which the foreground as well as the background is to be sharp, a small lens aperture is necessary.

Depth of Field

is the term for the range of sharp definition which extends to a certain distance in front of and behind the point to which the focusing of your lens has been actually set. Note therefore:



Large
aperture
e. g. 3.5 =

high lens speed,
but little
depth of field.



Small
aperture
e. g. 16 =

slow lens speed,
however, large
depth of field.

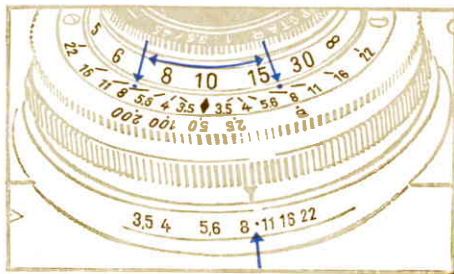
As you will see from the example, the zone of sharp depth is variable; it increases with decreasing aperture and also with increasing distance. To enable you to control the extent of the sharp zone, your Solina has a so called depth-of-field scale (see main illustration, 9) from which you can read at any time the approximate extent of the zone.

If, for instance, you have focused on 15 ft. and stopped down to $f/8$, the range from one engraved 8 to the other 8 defines the depth of field at this aperture and distance: in this particular case approximately from 10 to 30 feet (see below).

SNAPSHOT SETTING

The two-point setting provides the simplest and most convenient way of dealing with the depth-of-field problem in practice. The index of the diaphragm ring is set to the red dot between 8 and 11 and the red 10 or 30 on the distance scale to the focusing index mark.

The arrows and points marked in the picture illustrate the above and show you the depth-of-field zone indicated by the depth-of-field scale of your camera.



DEPTH-OF-FIELD TABLE FOR AGFA COLOR-APOTAR f/3.5—45 mm.

Circle of confusion of diameter 0.03 mm.

Distance focused upon	With diaphragm set at		
	3.5	4	5.6
	sharp definition from ft. . . . to ft. . . .		
3 ft.	2'10 ³ / ₄ " — 3'1 ¹ / ₂ "	2' 10 ¹ / ₂ " — 3' 1 ³ / ₄ "	2' 10" — 3' 2 ¹ / ₄ "
3 ¹ / ₂ ft.	3'4 ¹ / ₄ " — 3'8"	3' 4" — 3' 8 ¹ / ₄ "	3' 3 ¹ / ₄ " — 3' 9 ¹ / ₄ "
4 ft.	3'9 ³ / ₄ " — 4'2 ³ / ₄ "	3' 9 ¹ / ₄ " — 4' 3"	3' 8 ¹ / ₄ " — 4' 4 ¹ / ₂ "
5 ft.	4'8 ¹ / ₄ " — 5'4 ¹ / ₄ "	4' 7 ³ / ₄ " — 5' 5"	4' 6 ¹ / ₄ " — 5' 7 ¹ / ₄ "
6 ft.	5'6 ¹ / ₂ " — 6'6 ¹ / ₂ "	5' 6" — 6' 7 ¹ / ₂ "	5' 3 ³ / ₄ " — 6' 10 ³ / ₄ "
8 ft.	7'2 ¹ / ₂ " — 9'	7' 1 ¹ / ₄ " — 9' 2"	6' 9 ¹ / ₂ " — 9' 8 ³ / ₄ "
10 ft.	8'9 ¹ / ₄ " — 11'7 ¹ / ₂ "	8' 7 ¹ / ₂ " — 11' 11"	8' 2" — 12' 10 ³ / ₄ "
15 ft.	12'4 ¹ / ₂ " — 19'1"	12' 3 ⁴ / ₄ " — 19' 10 ¹ / ₄ "	11' 2 ¹ / ₄ " — 22' 9 ³ / ₄ "
30 ft.	20'11 ¹ / ₄ " — 53'1 ¹ / ₂ "	20' 1" — 59' 7 ¹ / ₄ "	17' 8 ³ / ₄ " — ∞
∞	52'8 ³ / ₄ " — ∞	47' 6" — ∞	36' 1 ¹ / ₄ " — ∞

The focusing distance is measured from the film plane (rear edge of the accessory shoe)!

DEPTH-OF-FIELD TABLE FOR AGFA COLOR-APOTAR f/3.5—45 mm.

Circle of confusion of diameter 0.03 mm.

Distance focused upon	With diaphragm set at		
	8	11	16
	sharp definition from ft. . . . to ft. . . .		
3 ft.	2' 9 $\frac{1}{4}$ " — 3' 3 $\frac{1}{2}$ "	2' 8 $\frac{1}{4}$ " — 3' 4 $\frac{3}{4}$ "	2' 6 $\frac{3}{4}$ " — 3' 7 $\frac{1}{2}$ "
3 $\frac{1}{2}$ ft.	3' 2" — 3' 10 $\frac{3}{4}$ "	3' 3 $\frac{1}{4}$ " — 4' 1"	2' 11" — 4' 5"
4 ft.	3' 7" — 4' 6 $\frac{1}{2}$ "	3' 5 $\frac{1}{4}$ " — 4' 9 $\frac{1}{2}$ "	3' 2 $\frac{3}{4}$ " — 5' 3 $\frac{1}{4}$ "
5 ft.	4' 4" — 5' 10 $\frac{3}{4}$ "	4' 1 $\frac{3}{4}$ " — 6' 4"	3' 10" — 7' 2 $\frac{3}{4}$ "
6 ft.	5' 3 $\frac{1}{4}$ " — 7' 4 $\frac{1}{2}$ "	4' 9 $\frac{1}{2}$ " — 8' 1"	4' 4 $\frac{1}{2}$ " — 9' 7 $\frac{1}{4}$ "
8 ft.	6' 4 $\frac{3}{4}$ " — 10' 8 $\frac{3}{4}$ "	5' 11 $\frac{1}{4}$ " — 12' 3 $\frac{3}{4}$ "	5' 4" — 16' 4 $\frac{1}{2}$ "
10 ft.	7' 7" — 14' 9"	6' 11 $\frac{1}{2}$ " — 17' 11 $\frac{1}{2}$ "	6' 1 $\frac{1}{2}$ " — 28' 3 $\frac{3}{4}$ "
15 ft.	10' 1 $\frac{1}{4}$ " — 29' 5 $\frac{1}{4}$ "	9' — 46' 2 $\frac{1}{2}$ "	7' 7 $\frac{1}{2}$ " — ∞
30 ft.	15' 1 $\frac{1}{4}$ " — ∞	13' 1" — ∞	10' 1 $\frac{1}{2}$ " — ∞
∞	26' 6 $\frac{1}{2}$ " — ∞	19' 11 $\frac{3}{4}$ " — ∞	14' 2" — ∞

The focusing distance is measured from the film plane (rear edge of the accessory shoe)!

STILL MORE PLEASURE FROM YOUR PHOTOGRAPHS

is assured you, if you use the small but so very important accessories such as filters, lens hood and supplementary lens. The filters—light yellow, medium yellow, yellow-green and red-orange—are supplied in 30 mm. slip-on mounts. Their purpose is to enhance the moods of your black-and-white pictures or, by intentional exaggeration (over-filtering), to achieve special effects. An instruction leaflet, which is packed with every Agfa filter, tells you how to select the right filter colour and gives the factor by which exposure must be increased.

If you photograph reflecting objects (glistening water surfaces or snowfields) against the light or in very bright light, you should never forget to use a lens hood. It shields the Solina lens from image-impairing light rays. And also in rain or snow, or, for instance, when photographing breakers on the beach, the lens should always be protected by a lens hood. It prevents drops of water reaching the front element of the lens.

Probably every amateur photographer has wanted at some time to capture the magic of tiny objects with his camera. With your Solina it's quite simple. You slip

the appropriate Agfa supplementary lens over the front of your lens mount—and you can then take close-ups at ranges from 16 to 32 in. A supplementary parallax-adjusting viewfinder (Natarix) that ensures accurate framing is also available.

The great advantage of these Solina accessories is their uniform slip-on mounts. If exposure conditions require it, for instance, they enable you to take close-ups using supplementary lens, filter and lens hood simultaneously. Moreover, the lens hood and two filters can be conveniently stowed in a leather case.

Your camera equipment would by no means be complete, if you neglected to get an ever-ready case. It not only protects your camera from the weather, but also makes it easier to carry. Since it is firmly attached to the Solina with a retaining screw, you can shoot at any angle from the case without running the slightest risk.

We reserve the right to make structural alterations of the Agfa Solina as a result of further development of the camera.

AGFA AKTIENGESELLSCHAFT
Camera-Werk Muenchen