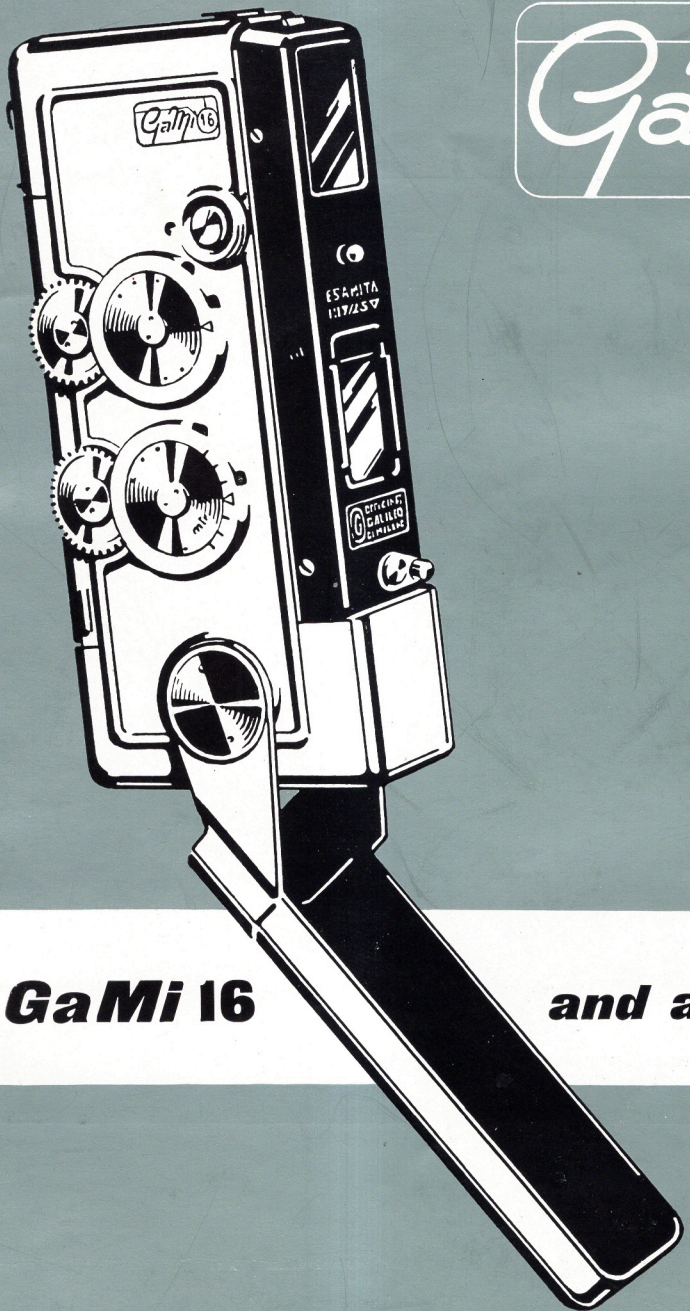
GaMi 16



GaMi 16 and accessories

OFFICINE GALILEO DI MILANO - VIALE EGINARDO 29 - MILANO


GaMi
MADE IN ITALY
GaMi 16

Sub miniature camera GaMi 16

Exposure-meter automatically controlling exposure

New precision sub-miniature camera, made in Italy, entirely automatic operation, of compact streamlined design, handsome, lightweight, pocket size, of universal use for still and rapid sequences, on standard or special 16 mm. films, ready for instant use, ideal for color.

- **A genuine new feature is the built-in exposure meter, automatically coupled with all exposure controls.**

- Built-in optical parallax correction.

- View - finder, range - finder and spring motor for both automatic film transport and shutter resetting.

The small negatives obtained are so clear and sharp that the enlargements seem to be good contact printed photos of larger negatives.
By using color films the advantages of this camera will be still more readily appreciated as, owing to its small sized design, the cost of films is considerably reduced, whilst the lack of grain in color films allows projection in big sizes, comparable to those obtained with 35 mm. cameras.
Since the camera provides for fast sequence of successive shots, it is possible to select the best negative.

- Speed from 1/2 to 1/1000 th. second.

- Lens opening 1 : 1,9 coated.

The high speed of the shutter connected with the large lens opening allows one to take every kind of subject in action, without using high speed films.
The use of extra fine film grain guarantees the best enlargements.

Main features:

Frame size: either 12 x 17 mm. or 10 x 17 mm. (silent film).
Film used: unperforated 16 mm. film, color, black and white, microfilms, in special fast loading cartridges for 30 exposures. 16 mm. standard movie films in strips can be loaded in the fastloading cartridge.

Weight: less than 10 $^1/_2$ ounces.

Size: 4 $^1/_2$ x 2 $^3/_{16}$ x 1 in.

Built-in spring motor: providing the motion of the film and the cocking of the shutter.

Each winding of the spring motor allows three single photos or sequence.

Galileo Esamitar Anastigmatic, extra fast lens, 6 elements, opening 1 : 1,9, focal length 1".
Corrected for color, black and white, and microfilm.
Coated on all surfaces.
The field is similar to Leica and Contax with 2" lens.

Iris diaphragm with click stop, adjustments from F/1.9 - F/2.8 - F/4 - F/5.6 - F/8 - F/11.

All metal lens shutter, with speeds from

1/2 to 1/5, 1/10, 1/25, 1/50, 1/100, 1/250, 1/500, 1/1000 th. second and B.

Range-finder, view-finder, exposure meter, parallax corrector.

- Superimposed split-image range-finder coupled with view - finder in one window.
- Focusing range from 20" to infinity.
- Eye-level view - finder with view adjusting lens.
- Automatic parallax - corrector displacing the view-finder and coupled with range-finder.

Depth-of-field indicator in connection with diaphragm and distance, symmetrically engraved on both sides of the distance scale index and coupled with range-finder.

Built-in film-type indicator calibrated for films speed from 6 - 12 - 25 - 50 - 100 ASA black and white and 10 - 20 - 40 - 80 ASA color.

Built-in yellow filter which can be placed before the lens; it acts automatically on the exposure meter for correction of shutter speed.

Built-in visual extinction type exposure meter visible through the lens of view and range-finder, coupled with: shutter-speed regulator, iris diaphragm, sensitivity indicator and yellow filter.

- The exact exposure can be determined, after the diaphragm or the shutter speed have been adjusted, by simply observing the view-finder ocular.
- By adjusting the exposure meter, all other elements connected with exposure are automatically adjusted.
- When the shutter speed is less than 1/25 th. second a visual indicator indicates that camera is to be held still by tripod or other means.

Built-in flash contact: X synchronization for electronic and open-flash.

Automatic counting device registering each exposure and counting up to 36 exposures. Provision for standard cable release, self-timer, flash synchronizer, etc.

Built-in tripod socket - standard 3/8" or 1/4" attachment.

- Red signal near the shutter release shows when the camera is unloaded or when the film is finished.
- Automatic shutter lock when the camera is closed or unloaded.
- Back cover removable for quick, positive film loading and internal inspection.
- Very easy and simple loading and unloading in full daylight with fast cartridges for 30 exposures, black and white or color or microfilm.
- The cartridges consist of two rolls assembled in a frame. One roll contains the unexposed film, the other receives the exposed film as exposures are made.
- Change of cartridge possible in daylight whenever it is desired.
- It is unnecessary to wait until all the film in a cartridge is exposed.
- When opening the camera at the back, the last photo is not damaged and the loss of the film is only about 1".
- Except for the optical parts in glass and the insulating pieces for the flash circuit, all parts are made of metal.
- The parts of light alloy are anodized: other parts are of bronze, phosphore bronze, stainless steel and chrome steel.
- Beautiful duraluminium finished in two tone satin, anodized, streamlined.
- All optical parts are protected so that the camera can be carried in a pocket or handbag even without its case.

Ref. n. **1650** *Gami*

GaMi 16 ENLARGER

This enlarger is designed for the specific purpose of enlarging photographs taken on 16 mm film with GaMi 16 or with other subminiature cameras.

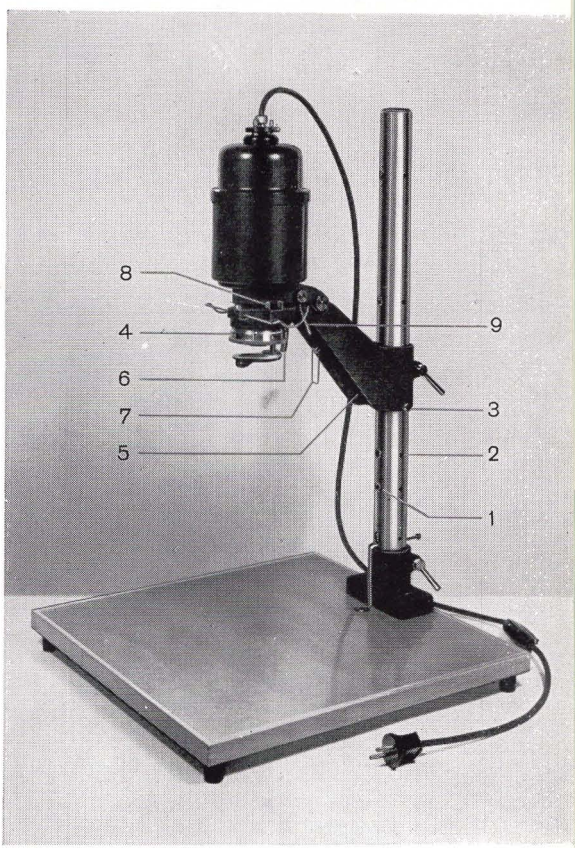
Outstanding features:

- Predetermined focusing system, excluding adjustements by the operator.
- Optical system especially designed for high correction on subminiature formats.
- Ruggedness and stability.

Many details in design make this enlarger unique for convenience and efficiency. The size of its plywood base is 45 x 45 cm (18 x 18"). The column, ground to strict tolerances, is 26" high and detachable.
The light-housing, double walled for efficient air cooling, holds a 60 W. bulb in a socket which is adjustable in height and for centering.
The light-housing is held by a pivoting arm, so that it can be tilted upwards for inspection and cleaning of the condenser and of the negative. In the tilted position the negative is invested by grazing light which reveals the slightest specks or other defects, so that they can be easily detected and removed. This helps in obtaining enlargements free from spots and other blemish.

Focusing

The arm holding the head can be stopped at different heights of the column corresponding to different numbers engraved on it. The same numbers appear on the focusing ring of the lens. By matching these two series of numbers, a perfect focusing is achieved for a desired magnification.
The focusing obtained by this procedure is perfect inasmuch it has been calibrated at the factory using a microscope. Therefore, the operator should not worry about focus control if he works with the standard enlarged sizes for which the enlarger is calibrated.
If the operator, on the other hand, wants to use the enlarger to obtain enlargements intermediate or outside the range provided for, he must proceed in the conventional way stopping the head at any height on the column and adjusting the helicoidal focusing mount of the objective until he obtains, to his own judgement, the best focus. For higher magnifications than those allowed by the height of the column one can turn the arm and head of the enlarger 180° around the column and operate outside the base.



1. Column. - 2. Numbers engraved. - 3. Pin. - 4. Focusing ring. - 5. Arm. - 6. Filter. - 7. Hook. 8. Film. - 9. Lever to tilt light-housing.

Optical system

The optical system is particularly designed for high resolution on subminiature formats. To avoid as much as possible the reproduction of grain structure, scratches or other blemish, the illumination of the negative is partly by diffusion. The lens has a high resolving power, gives high contrast and is chromatically corrected over the whole format. The objective has a fixed stop, adjusted to the value found to give best results.

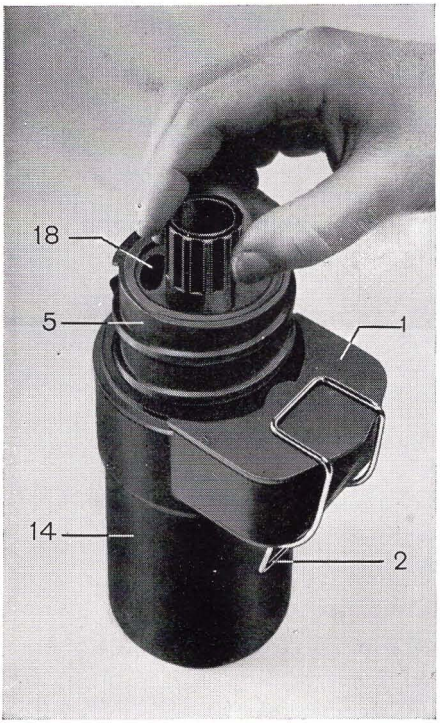
Ref. n. **1670** *Gaing*

LENS FOR OTHER ENLARGERS:

Our F/4 - F = 30 mm lens, is also available separately with special adapter for use on other 35 mm enlargers. (Leitz etc.)

Ref. n. **1692** *Gaobb*

GaMi 16 *DAYLIGHT DEVELOPING TANK*



This daylight developing tank can be used to develop all negative films, black and white, reversible or color, used with the GaMi Camera, without any need of a dark room.

All operations take place without touching or handling the film. The film magazine is introduced in the tank and the film is transferred automatically from the magazine to the developing tank.

The tank requires only 4 fluid ounces, so that a freshly prepared bath can be used every time at negligible cost.

The solutions can be thermally controlled.

The film, once transferred into the tank, finds itself wound on a helix at the outer surface of a cylinder, emulsion side outwards. It can thus be easily subjected to the light exposure which is necessary for the inversion of reversible black and white films or for color.

1. Cover. - 2. Hook. - 5. Internal cylinder. - 14. Tank. - 18. Inlet for thermal control liquid.

Ref. n. **1660** *Gasvi*

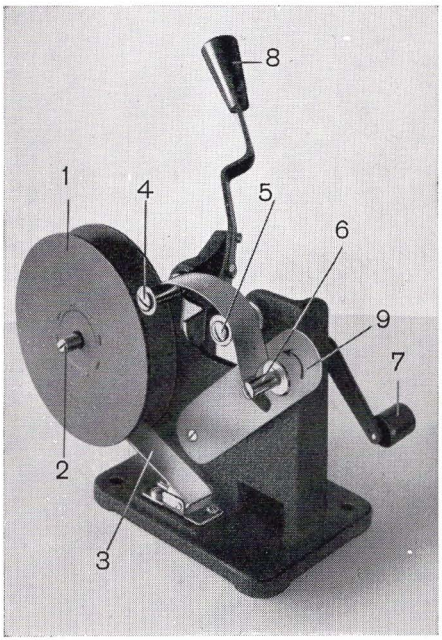
GaMi 16 SPOOLWINDER

The spoolwinder has been designed to load the GaMi 16 subminiature camera magazines with proper length of 16 mm negative film.

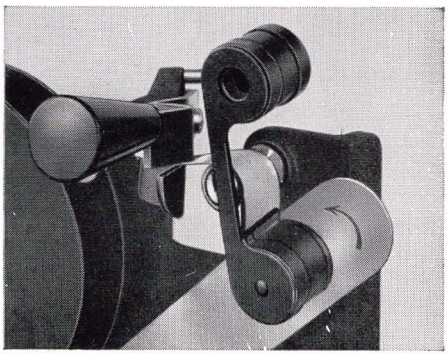
The spoolwinder can be attached to a table or bench by means of a special clamp or screws.

The film can be taken from regular reels up to 100 feet. If the available film is not already wound-up on a standard metal spool, it can be mounted on a special decomposable reel consisting of two discs. The taper cut makes the film tail useful when using the GaMi 16 tank developer, and operates the automatic lock of the GaMi 16 when all exposures are taken.

Ref. n. **1680** *Gabob*



1. Special reel. - 2. Axle. - 3. Lever. - 4.-5. Rollers. 6. Slit axle. - 7. Handle. - 8. Knife. - 9. Extractor.



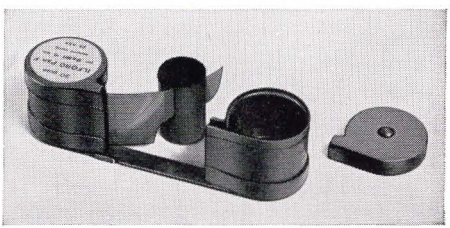
EMPTY FILM CARTRIDGES:

May be filled with any 16 mm film by the GaMi 16 Spoolwinder.

Note. - A variety of films: Black and White, Color, or Microfilm, are available in the special cartridges for GaMi 16. They are enlisted separately.

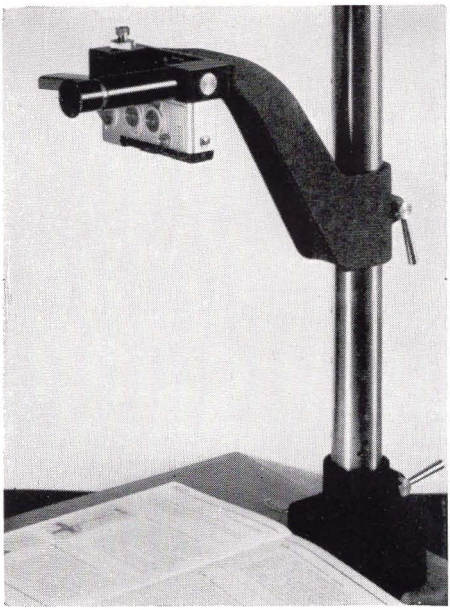
Empty cartridge.

Ref. n. **1668** *Gaspo*



GaMi 16 COPYING OUTFIT

The GaMi 16 copying outfit is used to take pictures of documents, drawings, illustrations or small objects which must be accurately focused at short range.
The outfit consists of a base and column, (the same as for GaMi enlarger), on the top of which the camera can be securely attached, lens downwards, by means of the socket of the GaMi flash attachment. In this way a regular flash bulb (or electronic) can be used as a light source, to take the pictures.
The outfit carries a small horizontal telescope looking into the GaMi's viewer.
In such manner the operator makes use of the camera's coupled rangefinder, viewer and parallax corrector to frame and focus the subject.
The GaMi can be set at the maximum distance of 75 cm (30") from the subject. For distances between 10" and 20" (25 to 50 cm) the camera must be equipped with the « Prox » close-up additional lens.
The setup is rugged enough to maintain the camera in position during the loading of the spring every three exposures, (by closing and opening the front cover) and when changing the film magazine.



Ref. n. **1671** *Garip*

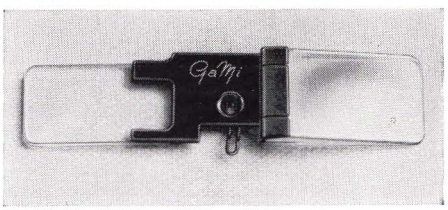
Arm with telescope, but without column and base, to be attached to the column and base of GaMi 16 Enlarger.

Ref. n. **1672** *Gabra*

CLOSE-UP ADDITIONAL LENS - PROX -

The minimum range of the GaMi camera is 20 inches (50 cm.).
To take pictures of close-ups at less than 20 inches, one can use an additional lens which permits taking sharp pictures at a range of 10 to 20 inches (25 to 50 cm.).
The « Prox » outfit consists of a mount which carries two lenses: one which combines with the camera lens and the other with the viewfinder. This second lens acts on the rangefinder and the parallax corrector in such way as to maintain the proper automatic coupling of range and parallax with the camera lens, within the range from 10 to 20 inches.

Ref. n. **1652** *Galen*



GaMi 16 FRAME VIEWER

The GaMi 16 frame viewer consists of an aplanatic loupe, of a base and two special holders. It serves two purposes:

1. Inspection of films, black and white negative or color, obtained with the GaMi 16 camera, in order to select the frames suitable for enlargement or to be mounted into regular projection slides. The selected frames are identified by a small hole punched on the edge of the film.

2. Viewing of color pictures after they are mounted on the regular 2" x 2" slides.

Inspection of films

For this use the viewer is assembled as shown in fig. 1. The viewer is set on a table oriented so that the light should hit the white surface of the base.
The white surface acts as a diffuser permitting a clear, glareless and shadowless observation through the lens.
The lens is a Steinheil triple aplanat, highly corrected, of about 7 magnifications, set in a helicoidal mount for focusing.
To operate the punch on the film it is only necessary to exert a positive pressure on plate.

Vision of color slides

The instrument is set up as in fig. 2: that is, assembling slide holder to the base by means of thumbscrew (2). The slide holder permits observation and prompt substitution of regular 2" x 2" slides.
The first slide is set in the slide track from one side and pushed towards the center when it comes under the eyepiece. Edge (9) of the slide track stops finger as soon as the slide has reached a position allowing picture to be observed through eyepiece (4).
Subsequently, other slides can be pushed into the track one after the other, towards the center. The slides already viewed are automatically pushed out from the other side and become free.
The viewer has enough power to present the image of a GaMi frame as if it were a postcard size picture and gives perfect detail with optimum luminosity.

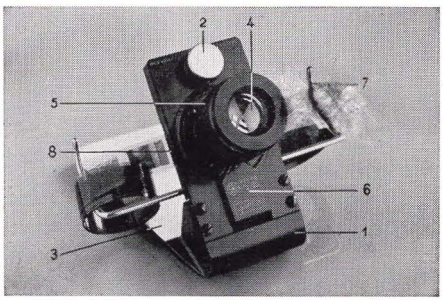


Fig. 1

1. Base. - 2. Thumbscrew. - 3. White surface of the base. - 4. Steinheil triple lens. - 5. Helicoidal mount of lens. - 6. Plate to operate punch. - 7. Metal rod for film.

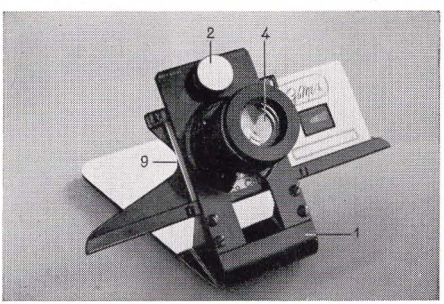
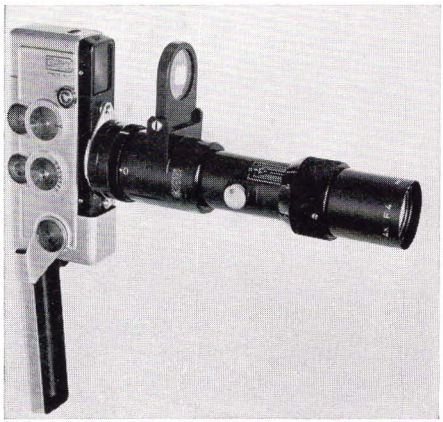


Fig. 2

GaMi 16 Frame viewer.

Ref. n. **1681** *Gasvi*

AFOCAL TELELENSES FOR GaMi 16



Telescopic lenses are available for taking pictures of landscapes, buildings, animals, etc., at a great distance. Such telelenses, may be fitted on the front of GaMi 16, before the lens, and have the exceptional F/4 aperture. The image is limited to a square of 12 x 12 mm., instead of the usual 12 x 17 mm.

The telelenses are provided with a collapsible lens which works in conjunction with the viewer of the camera and enlarges the image given by it. The GaMi built-in exposure-meter is very useful also with the telelenses.

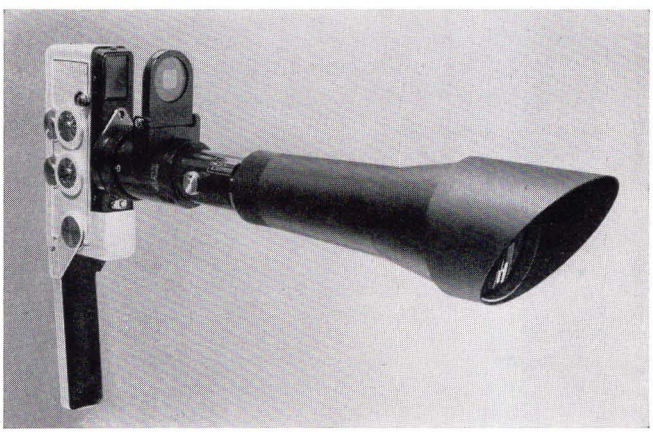
The **afocal telelens 4 x F/4** is equivalent to a normal F = 200 mm. telelens fitted on a 24 x 36 mm. standard camera.

The **afocal telelens 8 x F/4** is equivalent to a F = 400 mm. telelens fitted on a 24 x 36 mm. standard camera.

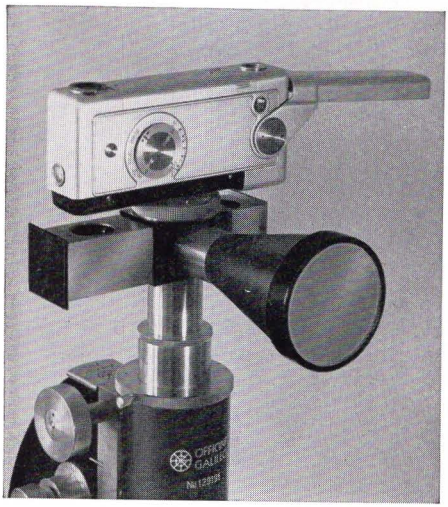
Telelens 4 x F/4, with case
Ref. n. **1665** *Gatel*

Telelens 8 x F/4, with case
Ref. n. **1673** *Gatop*

Orange filter for Telelens 8 x
Ref. n. **1685** *Garon*



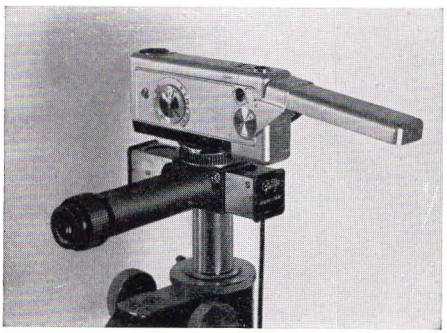
MICROSCOPE ADAPTERS



The GaMi subminiature camera can also be used as a microphotographic attachment when in conjunction with a special adapter which can be secured to the eyepiece tube of any standard microscope.

The GaMi built-in exposuremeter works regularly also in conjunction with the microscope adapters and therefore the time of exposure is automatically set.

This is the first time that a microphotographic outfit of minimum size and weight is available which includes an automatic exposure meter.



A) The « Ref » adapter with Reflex has a lateral frosted glass screen for framing and focusing the subject, by means of the movements and fine adjustment of the microscope.

The top of the adapter is provided with a clamp to hold the GaMi camera and the bottom carries a special eyepiece which is introduced into the eyepiece holder instead of the regular eyepiece used for visual observation. In the body of the adapter a sliding mirror is located which performs the following functions:

1. projects image on screen for proper framing and focusing;

2. allows reading of GaMi exposure meter and automatic setting of time;

3. allows shooting a sequence of one - two - or three exposures without cocking or resetting, as provided by the automatic features of the GaMi camera.

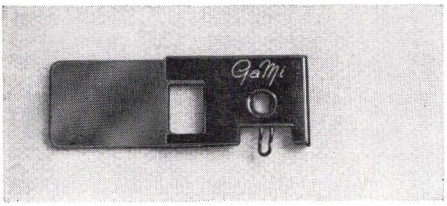
Ref. n. **1674** *Gamic*

B) The « Oc » adapter carries an adjustable eye-piece instead of the Reflex device with glass screen. The camera is kept ready on the microscope and the specimen can be seen through the horizontal eye-piece.

Ref. n. **1694** *Gamoc*

The **main difference between A and B** is that through A a direct examination, (with whatever eye-piece), and a better focusing are possible. But A has to be secured to the microscope every time it is needed, while B is already fastened to the latter and pictures may be shot at all times. The specimen, however, is to be viewed exclusively through the « OC » eye-piece.

GaMi 16 COLOR FILTERS



On the front of the GaMi 16, a color filter can be inserted instead of the built-in yellow filter.

The front cover can be closed even with the additional filter inserted.

The filters normally supplied, are optically flat and made of colored glass.
We supply the following colors and shades:

- yellow . . . . . time factor 2-3
  Ref. n. **1653** *Gagia*
- red . . . . . time factor 6-10
  Ref. n. **1654** *Gares*
- green . . . . . time factor 2-5
  Ref. n. **1665** *Gaver*
- pale-blue
  for tungsten-light . . . time factor 2-3
  Ref. n. **1656** *Gablu*
- U.V. for color . . . time factor 1
  Ref. n. **1684** *Gauv*

SIGHT CORRECTING LENSES FOR GaMi 16

The viewer of the GaMi 16 can be adjusted for the individual eye correction, from + 3 and – 3 diopters. By fitting in the viewer small correcting lenses of + 3 or – 3 diopters, one can augment the compensation up to about + 6 or – 6.

Sight correcting lens + 3 diopters
Ref. n. **1657** *Gapiù*

Sight correcting lens – 3 diopters
Ref. n. **1658** *Gamen*

GaMi 16 PROJECTION LENS - PROL -

The GaMi 16 transparencies, once mounted on the GaMi 16 slides, can be projected by any standard projector taking the 2 x 2" slides. It is however advantageous to use a projection lens of a focal length shorter than the one normally used for miniature films projection.

We have designed such a projection lens which would give, for a certain distance of projection, approximately the same screen format for a GaMi 16 frame that would be obtained with a regular miniature frame and a regular projection lens.
This GaMi « PROL » lens has a high speed

of f/1,9 and a focal length of 2" 3/16 (55 mm.).

Ref. n. **1691** *Gapro*

PRISM FOR GaMi 16 VIEWER

To take pictures without directing the camera toward the object, a small prism can be fitted on the viewer which deviates at right angle the direction of the shot.

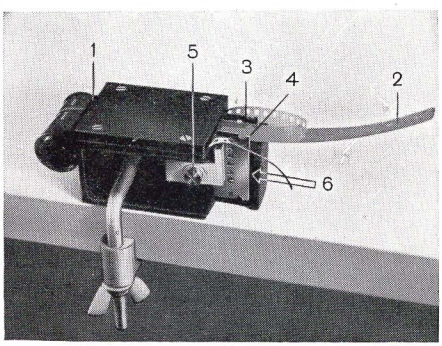
Ref. n. **1659** *Gapris*

GaMi 16 FLASH ATTACHMENT

The GaMi 16 has an incorporated Flash-synchronization X-type.
To employ flash-bulbs or electronic flashes it is necessary to use a special attachment which must be screwed in GaMi 16 socket. The screw has on its top a standard concentric bipolar plug for electric cord.
Any kind of electronic or bulb flash can be used.

Ref. n. **1651** *Galam*

GaMi 16 FILM CUTTER



The film cutter has been designed with the purpose of providing an easy method of cutting out a 16 mm. unperforated strip from any regular 35 mm film, in strips or cartridges. It does not cut strips longer than m. 1.50 (5 ft.).
The device can be secured to a bench or table by means of a clamp or screws.

1. Slide. - 2. Film. - 3.-4. Razor blade. - 5. Clamp-blade.

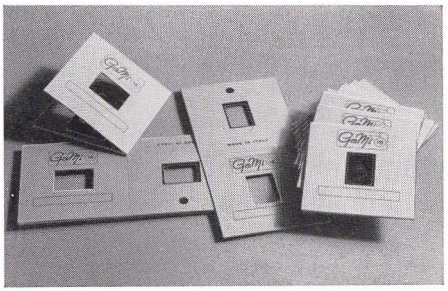
Ref. n. **1682** *Gateg*

SLIDES FOR GaMi 16 TRANSPARENCIES

Slides are available to mount color transparencies taken with the GaMi 16 camera, for the purposes of viewing and projection. These slides are made of a double cartboard sheet and contain a thin black mask which sharply limits the format.

The mounting of a picture in the slide is easily done by slipping the film between black mask and cardboard and by framing the subject properly.

The cardboard is glued inside so that when moistened it can be folded and the picture will be held permanently in place. The format of the black mask corresponds to the GaMi 16 cardboard slide and is of the 2 x 2" standard size, used for all miniature slides. These slides can therefore be used with any miniature film projector.

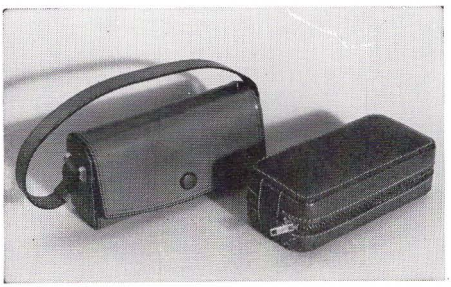


The slides bear a reference dot for the proper orientation of the picture in the projector.

The slides are supplied with two different types of markings, one for horizontal and one for vertical frames.

Ref. n. **1690** *Gadia*

SPECIAL GaMi 16 CARRYING CASE



A special pig-skin type deluxe carrying case may be had, on request, in place of the standard leather case normally supplied with the GaMi 16.

Ref. n. **1683** *Gastu*

GaMi 16 NEGATIVE FILES

GaMi negatives can be properly preserved and filed in special leatherette albums with detachable plastic sheets in which the single negative strips can be inserted and easily located.

Ref. n. **1688** *Gabum*

TRIPODS, SELF-TIMERS, CABLE RELEASES

Note. The GaMi 16 has a threaded tripod socket for the 3/8" standard, with a connector for the 1/4", so that it can be used both with European and American tripods. The threads for the cable release are also standard.

Print from GaMi 16

Print from GaMi 16
with Telelens 4 x

Print from GaMi 16
with Telelens 8 x

VIALE EGINARDO 29
MILANO - TEL. 464.846

5000-7-57 - Tip. A. Lucini e C. - Milano