

Instructions for



meopta

OPEMUS 6

and



meopta

OPEMUS 7



Difference between Opemus 6 and Opemus 7 is the maximum size of usable negatives. Opemus 6 accepts 6x60mm negatives and Opemus 7 covers 6x70mm negatives as well. Other technical features are the same on both enlargers and accessories fit on Opemus 6 as well as on Opemus 7.

This instructions are mainly for Opemus 7 but can also be used for Opemus 6.

Enlarger **OPEMUS 7**

me opta



Technical description

OPEMUS 7 is an amateur enlarger intended for the enlargements from negatives on roll-films 60 mm, size 60 x 70 mm or on smaller or films of 35 mm of width. OPEMUS 7 is suitable for making black-and-white and colour enlargements. Source of light is represented by opal lamp. The apparatus is intended for interrupted operation which is usual for working with the enlarger. However, the permanent operation do not cause any damage to the apparatus. The objective with focal length of $f = 90$ mm is intended for enlarging from the size 60 x 70 mm, which can reach the maximum enlargement on the enlarging easel at making 6.4 x cut-outs and from the full size of negative maximum enlargement 6 x and minimal one 0.95 x. At enlarging from 60 x 60 mm size and using the objective with focal length of $f = 80$ mm the maximum linear enlargement on the enlarging easel can reach approximately 7.5 x, min. 0.74 x.

With the objective with focal length of $f = 50$ mm the enlargement of 13 x to 2.7 x can be reached.

The apparatus is equipped with the ring for the objective with mounting screw-thread M 39 x 1.

OPEMUS 7 with the stand can be turned through an angle of 180 degrees round the foot screw in the easel. Thus, by projecting past the enlarging easel (e.g. on the floor) bigger enlargement can be reached. The enlargements

of any size are possible by turning the apparatus 90 degrees on the easel and projecting on a vertical projecting plane, e.g. the wall. The apparatus can be used for restitution of pictures by which the convergent lines on the negative, which may appear at photographing architectures, can be adjusted. The turning knob of shifting with handle and the gear on rack ensure the shifting of the apparatus along the stand. The friction mechanism prevents the machine from idle course. With its help, the objective carrier can be shifted at focusing- the outer knob for rough focusing and inner knob for fine focusing. The size of the enlarging easel is 420 x 590 mm. The lead-in cable is 2.2 mm long with a lead switch with fork. OPEMUS 7 is equipped with metal carrier for negatives which has shutter focusing system, two glasses, two adjustable dogs for the film roll guiding and film carriers kept in storage box. It also has a mechanism that ensures the open position of the carrier at putting in the negatives. The upper glass has a special treatment which prevents from creating Newton's rings. Slide-footings for masking the undesirable light are situated directly in the carrier and can be shifted independently. The cut-out size can be adjusted without removing the carrier from the apparatus. The film roll in the carrier is squeezed between the two glasses by the pressure of springs. After the upper part of the carrier is raised and fixed, the film roll can be shifted. The stand rod has a scale on it for the approximate finding or adjusting of linear enlargement ac-

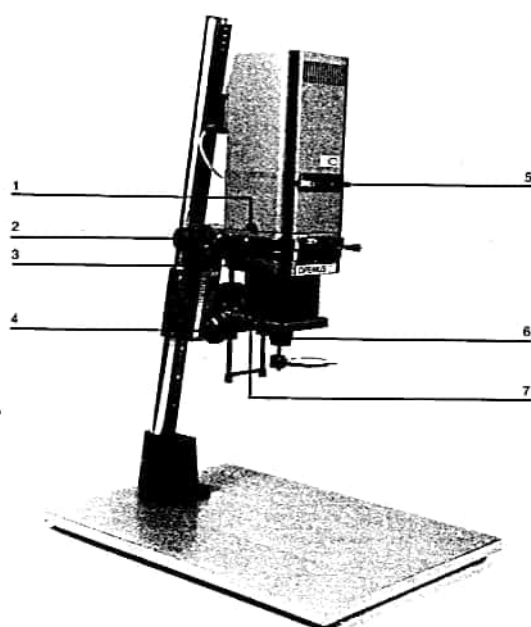
cording to the table to be found on sliding sleeve of the stand, and to the conversion of exposure time if the enlargement changes. The condenser of the apparatus consists of two identical planoconvex lens. The enlarger OPEMUS 7 becomes a universal one by using a special equipment which can be bought additionally: it can be used for photographing, copying and the like.

The colour head Color can be used for enlarger OPEMUS 7 for colour photographs with its own source of light, which makes the work of enlarging on colour material much easier. The enlarger OPEMUS 7 is produced in two types: it can be delivered with the lighting case for opal lamp and condenser lighting system, or with the head for colour photograph Color with halogen lamp and diffused lighting system.

Technical data

OPEMUS 7	with lighting case	with colour head Meopta COLOR 3	with colour head Color 4-ES
negative size	max. 60 x 70 mm	max. 60 x 70 mm	max. 60 x 70 mm
source of light	opal lamp 210 + 230 V halogen lamp	reflector halogen lamp 12 V/100 W	reflector halogen lamp ESJ B2 V/85 W
objective for 60 x 70 mm negative	f = 90	f = 90	f = 90
enlargement on easel for f = 90	max. 6.4 x	max. 6.4 x	max. 6.4 x
maximum working height	1 095 mm	980 mm	980 mm
minimum working height	790 mm	790 mm	790 mm
easel size	420 x 590 mm	420 x 590 mm	420 x 590 mm
weight	11.1 kg	10.9 kg	10.9 kg

A



Legend to Fig. A

- 1 - screws
- 2 - checking knob
- 3 - basic body
- 4 - focusing knob
- 5 - drawer for
correcting filters
or nut
- 6 - objective
- 7 - screw

Instructions

The enlarger OPEMUS 7 is delivered from the production plant of Meopta set into packing either with the lighting case (Fig. A) or with the head for colour photograph Color. First, the apparatus must be assembled out of the separate groups set in the packing. Fix the stand foot by lever (Fig. B) on the easel. Put the stand rod with rack into the foot and fix by screwing up (Fig. C). The lug of the rack must fit into the hollow in the stand foot. Set the pivot of the apparatus body to the hole in the sliding sleeve and fix by the turning knob of checking (Fig. D). Insert the carrier for negative into the body of the apparatus. The film carriers set in the storage box can be screwed on the carrier for negatives. By means of coin or thing in the shape of coin loosen two screws (Fig. E-1). In the condenser and lighting system. Separate the condenser part from the lighting case. To the lighting case screw in the lamp for enlargers according to the table 1. Assemble the lighting case with the condenser one together again, by a slight turn from the grooves set the condenser and tighten the screws (Fig. E 3). Set the whole lighting system on the basic body (Fig. A-3) and screw on by means of two screws (Fig. A-1). Insert the drawer for correcting filters into the condenser case (Fig. A-5) and thus the enlarger is ready work. In the objective carrier there is an objective ring which is fixed by a screw (Fig. A-7). The base

objective $f = 90$ and $f = 80$ must be screwed into the objective ring to its convex side. Objective $f = 50$ must be screwed into the turnedover objective ring according to (Fig. F).

1. Source of light - the lamp

Use special opal lamp for enlargers with maximum input 150 W, bulb diameter 70 mm and foot E 27, see table 1. There must not be any sign nor any other unevenness of the surface on the top of the bulb.

2. Changing the lamp

The enlarger is delivered without the lamp. Put the lamp into the apparatus only on condition the apparatus is disconnected from electric current.

The change is carried out the same way as is described in assembling the apparatus. Before lamp handling let cool down the instrument!

3. Connecting of the enlarger to the net

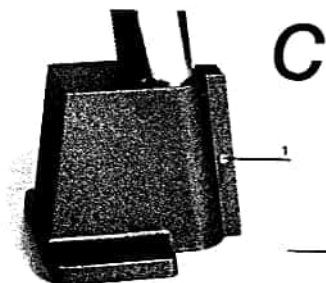
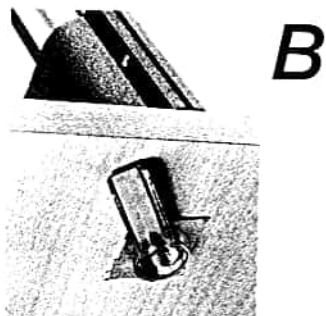
Insert the fork lead to the socket of electrical net and switch on the lamp by means of the lead switch. When operating the enlarger the vents of the lighting case and the colour heads Color must not be covered!

4. Loading the negative into the carrier

Remove the carrier for negatives from the apparatus. Open it and adjust the guiding dogs (Fig. G-3) so that they guide the film roll properly. Squeeze softly and move the dogs which changes their position. If the dogs are adjusted in their extreme position closest to the centre of the carrier, they are adjusted for 35-mm film. The other position of the dogs is for 60-mm film. Lay the film to the carrier and to the guiding

Table 1

Name	Number of type
Tungsram	721, 724
Osram	4613, 4633
Philips	PF 603, 605
Thorn	P 3/3, P 3/4
TESLA	138 0125



dogs dull side of it down, i.e. to the objective, and close the carrier. Insert the carrier into the apparatus. Doing this you have to overcome a slight resistance of the springs that push the both halves of the carrier together and thus squeeze the film roll between the glasses.

If you want to move the film roll in the carrier, you have to raise the upper part of the carrier and check it (Fig. CH-1). This way the roll loosens and you can move it without any danger of damage. Doing this, always hold the film roll carefully by two fingers on the edges not to touch the emulsion. The carrier has a mechanism which ensures the open position of the carrier. If you want the carrier for negatives to be fixed in the open position, raise the upper part of the carrier to its extreme so that it clicks in. The carrier can be brought back into working position by soft pressure on the lever (Fig. CH-2). Thus the carrier is loosened from its checked position and the upper part of the carrier squeezes the film roll in working position. Film carrier can be screwed on the carrier for negatives.

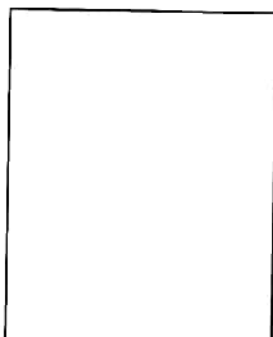
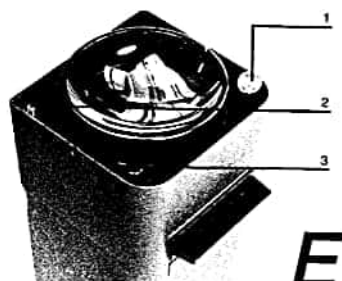


5. Adjustment of desired enlargement of the picture

By turning the aperture mount open the objective aperture wide, (Fig A-6), until the smallest number of aperture appears. Switch on the lamp and project the picture on the prepared service paper spread on the enlarging easel.

Turn the knob of shifting (Fig K-1) to lift and lower the apparatus along the stand until the desired enlargement is achieved. At the same time, focus roughly the picture on the enlarging easel constantly by means of focusing knob (Fig. A-4). As we control the turning knob of shifting with the left hand, we can in fact watch the focused picture and at the same time its size constantly.





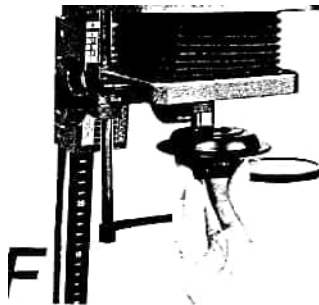
6. Focusing the picture

With the desired enlargement adjusted, focus the picture accurately by means of the inner focusing knob. The carrier is equipped with shutter focusing system (Fig. G-2), which is operated as follows.

Raise the carrier from the apparatus to the position when the press springs clearly snap in the cut-out the carrier. The picture in the picture plane disappears and the image created by shutter system projection appears instead. In case the picture is not focused properly, the image looks like (Fig. H-a) or (Fig. H-b). Turn the focusing knob in either direction until a contour line is projected (Fig. H-c). Thus is accurately focused also the negative, at the same time. Insert the carrier back and the work is finished.

7. The masking of negatives

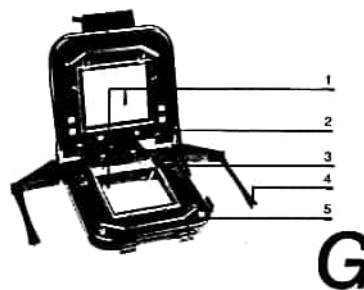
After the desired enlargement is adjusted and the picture focused, mask the picture past the effective area by means of slidefootings, which are placed in the lower part of the carrier for negatives (Fig. G-5). Thus we prevent the diffusing of undesirable light to the surroundings and eventual depreciation of the quality of the positive picture.



8. Screening of the objective

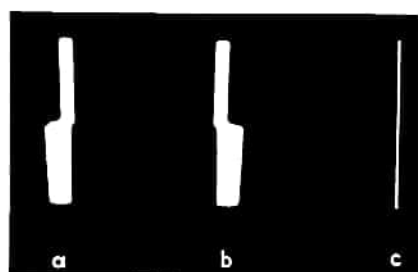
After the negative cut-out is focused and masked, adjust a suitable aperture of the objective by turning the mount (Fig. A-6), on which you can see the numbers of apertures, e.g. 4.5, 5.6, 8, 11, 16, 22. At work, we recommend from the point of view of optimally even lighting and drawing to screen the objective on working aperture 5.6 or 8. Adjust the chosen number of aperture against the white mark. The numbers are organized in such way that the neighbouring higher number always means half of the amount of light coming through the

objective. The aperture ring has a masking mechanism, which snaps in clearly at the adjustment of the aperture to the desired number. This makes the adjustment of exact aperture during the work in darkroom easier, because it is sufficient to count the number of snaps-in. Thus the desired aperture can be exactly adjusted. The aperture ring on ANA-RET S objectives can be adjusted in any position even between the individual positions for the marked numbers of aperture. This is achieved by raising the grooves for the individual positions out of function.

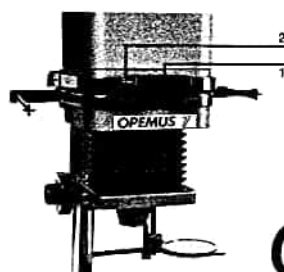


9. Illumination of photographic paper

With the picture on the easel placed correctly, focused and with the objective screened, we proceed as follows: Switch off the lamp, lay the photographic paper to the focused picture plane with its sensitive layer directed to the objective and expose by switching on the lamp. After the exposure, development and fixing we can estimate whether the illumination is proper or not, or we can repeat the test using different illumination time, until we achieve the right result. We recommend to use line exposure



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CH

and realize several illuminations with subsequent covering of the photographic paper. Out of them you can choose the right illumination. The black-and-white photographic paper can be safely left in the light coming through the red filter for 30 sec at minimum enlargement and with the aperture of the objective fully opened. You cannot use the red filter when working with the colour photographic paper! Besides turning, it is also possible to move the

red filter. According to the type of the objective used place the red filter to its optimal position under the objective. We recommend to use exposure apparatus for measuring of different light levels. This apparatus enables finding the optimal exposure of the photographic paper and high degree of copying capability in black-and-white and colour photograph.



10. Enlarging past the enlarging easel

If you want to make large enlargements, project the picture past the enlarging easel either on the floor or on the wall.

a) Projektion on the floor (Fig. M)

Place the enlarger on the table so that the back edge of the enlarging easel is at the edge of the table. Weigh down the easel, e.g. with books and the like. Loosen the lever at the bottom side of the easel (Fig. B), turn the apparatus with the stand around the screw in the plate 180 degrees and fix by tightening the lever. Project the picture on the floor or any other suitable base. The same procedure as for normal enlargement is used.

b) Projection on the wall (Fig. I)

If we want to achieve a greater enlargement than in the case of a), we enlarge by horizontal projection on the vertical wall. Place the enlarg-

er on the table, loosen the checking knob (Fig. A-2), turn the apparatus 90 degrees to the horizontal position and fix it by tightening the checking knob. The size of enlargement is influenced by approaching or moving the whole apparatus away from the wall on which we enlarge.

11. Diminishing

The procedure for making diminished pictures or images in 1:1 rate (e.g. making the slides) is following one: Adjust the size of the picture by turning the focusing knob (Fig. A-4) and focus the picture by turning the shift knob for the enlargement adjustment (Fig. K-1), i.e. by the movement of the apparatus itself along the stand. It means, that we proceed in the opposite way than we do while enlarging. If we want to achieve the maximum diminishing possible, adjust the objective as far as possible from the negative. Now lower the apparatus along the stand by turning the shift knob until a clear picture appears on the enlarging easel.



12. Adjustment of convergent lines

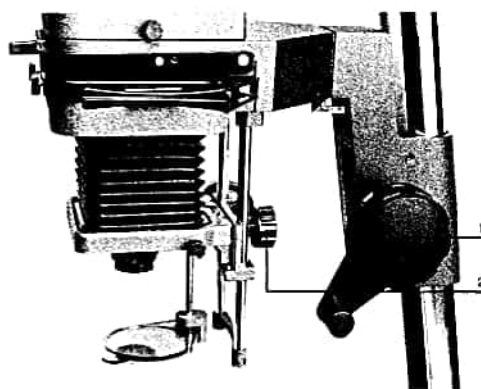
If we tilt the camera while recording, convergent lines instead of parallel ones appear on the negative. Adjustment during the process of enlarging is possible. Insert the negative into the carrier so that lines converge on the right of one negative and adjust the desired enlargement. Loosen the checking knob (Fig. A-2) and tip the apparatus until parallel lines appear on the projecting plane again. Fix the appara-

tus in this position by the checking knob. Focus the centre of the negative by shifting the apparatus along the rod (Fig. K-1). Loosen the screw (Fig. K-2) and tilt the objective carrier and move it at the same time until the picture is focused evenly and the objective axis comes through the centre of the negative. Then screw up (Fig. K-2). Focus the picture again by shifting the apparatus along the rod. If the line adjustment is not satisfactory after the first correction, correct the tilting of the apparatus and repeat the rest of the procedure. If the adjustment is satisfactory, screen the objec-

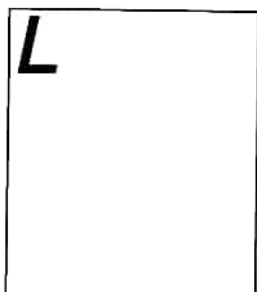
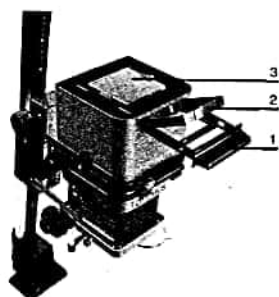


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tive at minimum aperture number 8. This would adjust an eventual minor out-of-focusing. Now the lines of the picture are parallel, but one part of the picture is illuminated more intensively. Therefore we have to screen it partly when exposing. The scale on the objective carrier and on the apparatus scale enables us to note the already adjusted values and enlargement and thus to return always to the original position.



K



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13. Enlarging on colour material

a) with condenser lighting system

If we want colour negatives on positive paper from the apparatus equipped with lighting case and opal lamp, we can use a set of correcting filters to achieve this. Insert the filters sized 7.5×7.5 cm to the filter drawer (Fig. L-1). Use reduction inset for filters sized 7×7 cm (Fig. L-2). The maximum is 4 inserted filters. They are protected before overheating by a thermal filter (Fig. L-3), which is gripped above the drawer. You cannot use the red filter when loading the sensitive paper. You can work only in the prescribed light of the darkroom.





b) with colour head Color

The head for colour photograph Meopta COLOR 3 or Color 4-ES complete with 60 x 70 392 821 620 104 mixing chamber for f = 90 mm objective. If you work with f = 80 objective (for 60 x 60 size) then use 60 x 60 - 392 821 620 102 mixing chamber, or complete the head with 24 x 36 392 821 620 101 mixing chamber for the work with f = 50 objective (for 24 x 36 mm size). The head for colour photographs makes the correction of colour negatives or slides much easier, because it enables a continuous

adjustment of colour subtractive filtration. The adjustment of optimal rates of colour components of light in the exit beam of the enlarger objective is enabled especially by adding exposure-measuring equipment with colour analyzer. The mixing chamber are not included in the basic apparatus equipment, they are delivered as special equipment.

The detailed instructions for handling the head for colour photographs is to be found in the separate instruction list for this apparatus.

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Maintaining of the enlarger

The enlarger is an accurate product and needs proper handling. Keep it in dry room and protect it by suitable cover against dust. During the work do not touch the apparatus with wet or dirty hands, especially when working with solutions and chemicals.

a) How to clean the condensers

Loosen 2 screws (Fig. A-1) and lift the condenser and the lighting case out of the apparatus. After the screws are loosened (Fig. E-3) and the condenser mount turned, we can remove the whole condenser. Clean the outer surfaces of the condenser lens out of dust with hair brush or fine clean cloth. To clean also the inner surfaces of the lens, it is necessary to remove first the condenser cover by turning it (Fig. E-1) and then remove the upper lens. The lower lens is fastened permanently in the condenser mount.

b) How to clean the objective

Take the objective with your right-hand fingers and loosen the screw with your left hand (Fig. A-7). Remove the objective ring downwards and wipe the both outer surfaces of the lens with fine hair brush or fine clean cloth.

c) How to clean and replace the glasses of the negative carrier

Slide out the glasses of the negative carrier by squeezing the glasses towards the flexible coupling (Fig. G-1). Thus the other side of the

glass loosens from the dovetailing. Now slide the glass upwards. Clean the glass with fine dust brush or fine clean cloth. Set the cleaned glasses back to the carrier. We re-recommend to wear a textile glove while replacing and cleaning the glasses. Be cautious not to misplace the glasses. The upper glass has a special treatment to avoid the creation of Newton's rings.

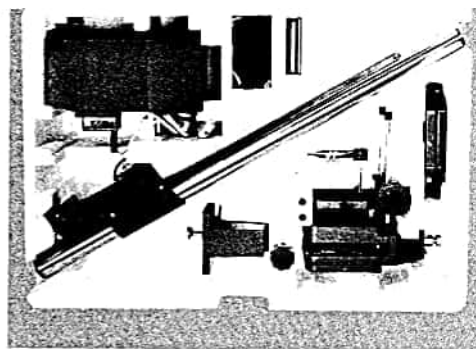
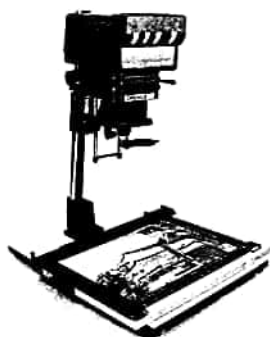
d) How to maintain the shifting and frictional mechanisms

Keep the stand rod including the rack (Fig. F) and focusing system pole clean. If necessary, wipe it with a cloth with grease or machine oil. If the focusing knob becomes too tough or too easy, adjust it by tightening the screws that keep the spring screwing the friction up to the pole. The run of the frictional mechanism must be continuous.

The complete equipment of OPEMUS 7 with lighting case for 150-W lamp

- a) the enlarger itself with the stand and enlarging easel
- b) condenser and lighting case
- c) Ø 105 mm condenser
- d) carrier for negatives
- e) complete film carrier 60
- f) thermal filter
- g) drawer for correcting filters
- h) reduction inset for filters 7 x 7 cm
- i) instruction list and certificate of guarantee
- j) storage box

The type of apparatus to be delivered:
392 211 401 012 - OPEMUS 7 without lens



**The complete equipment
of OPEMUS 7 with head for
colour photograph Color**

- a) the enlarger itself with the stand and enlarging easel
- b) the head for colour photograph Meopta COLOR 3 or Color 4 ES

- c) 60 x 70 mixing chamber
- d) carrier for negatives
- e) complete film carrier 60
- f) instruction list and certificate of guarantee
- g) storage box

CAUTION

In the interest of continuous development the manufacturer deserves the right to carry out changes and modifications of the product and, consequently, deviations from the text or illustrations of the operating instructions.

Special equipment of enlarger OPEMUS 7

1. The apparatus for line exposure 392 821 890 091

It makes the test of positive process for black-and-white and colour photographs easier. We can expose up to 5 exposures on a single photographic paper sized 10.5 × 14.8 cm. From a single processing we can the survey of the values for our next enlarging work.

2. Masking equipment 18 × 24 cm 392 821 720 064

It enables quick gripping of the sensitive paper and framing of the photographic picture with border at the same time.

3. Masking equipment 30 × 40 cm 392 821 720 054

It enables quick gripping of the sensitive paper and framing of the photographic pictures with white border at the same time.

4. Reproduction equipment 35 mm 392 821 520 101

It enables to make copies, macrographs and the like on 35-mm film spooled in cartridges on special spool for 5-mm film.

5. Reproduction equipment 60 × 60 392 821 520 061

It is intended for photographing originals, models or various subjects on photographic plates or 6.5 × 9 cm flat films.

6. 6.5 × 9 cm cartridge 392 821 590 061

A cartridge intended for photographic plates 6.5 × 9 cm. The cartridges are to be loaded into the reproduction equipment.

7. Cartridge Inset 392 821 590 071

The inset for 6.5 × 9 cm flat films to be inserted into the 6.5 × 9 cm cartridge.

8. UNIVERZAL illuminating device 392 821 540 074

Intended for illuminating the photographed models - with four lighting units.

9. UNIVERZAL illuminating device 392 821 540 075

Intended for illuminating the photographed models - with two lighting units.

10. UNIVERZAL illuminating device 392 821 540 076

Intended for illuminating the photographed models - complementary lighting unit.

11. Reproduction arm 392 821 550 091

It is intended for fixing the photographic or filming apparatus to the enlarger stand while reproducing, recording the subtitles and the like.

12. OPEMUS macroextension 392 821 330 081

Use it for photographing small subjects or reproduction of small models. It extends the objective extension.

13. Stand reduction 392 821 590 121

Stand reduction enables to fix the enlarger head to the photographic stand, and thus convert OPEMUS 7 into a simple photographic camera by adding the reproduction device.

- 14. Focusing mechanism**
392 821 290 021
Enables accurate focusing of the projected negative picture on the photographic paper.
- 15. Insets for the negative carrier**
60 × 70/60 × 60
392 821 430 230
After the glasses are removed, press softly the lugs of the insets under the bends of the flexible couplings, and thus insert the insets to the negative carriers. They prevent from projecting the dirt, dust etc. that may settle on the glasses. The inset with bigger hollow is to be inserted to the upper part of the carrier. Use them for enlarging from 60-mm film.
- 16. Insets for the negative carrier**
60 × 70/60 × 45
392 821 430 229
Use them for enlarging from 60-mm film.
- 17. Insets for the negative carrier**
60 × 70/24 × 36
392 821 430 228
Use them for enlarging from 35-mm film.
- 18. Insets for negative carriers**
60 × 70/60 × 70
392 821 430 231
After the glasses are removed, press softly the lugs of the insets under the bends of the flexible couplings, and thus insert the insets to the negative carriers. They prevent from projecting the dirt, dust etc. that may settle on the glasses. The inset with bigger hollow is to be inserted to the upper part of the carrier. Use them for enlarging from 60-mm film.
- 19. Insets for negative carriers**
60 × 70/28 × 28
392 821 430 226
Use them for enlarging from 35-mm film with one-sided perforation.
- 20. Insets for negative carriers**
60 × 70/18 × 24
392 821 430 227
Use them for enlarging from 35-mm film.
- 21. Insets for negative carriers**
60 × 70/13 × 17
392 821 430 225
Use them for enlarging from 16-mm film.
- 22. Insets for negative carriers**
60 × 70/11 × 14
392 821 430 224
Use them for enlarging from 16-mm film.
- 23. Inset for negative carrier**
60 × 60/DIA 5 × 5
392 821 430 188
Press softly the lugs of the inset under the bends of the flexible coupling and thus remove the glasses. Then you can insert the inset. In this case it is not possible to use the shutter system of focusing.
- 24. Inset for negative carrier**
60 × 60/DIA 3 × 3
392 821 430 189
Press softly the lugs of the inset under the bends of the flexible coupling and thus remove the glasses, then you can insert the inset. In this case it is not possible to use the shutter system of focusing.
- 25. Ring for $f = 30$**
392 821 310 391
Use it for setting ANARET objective 4.5/30. Screw the objective inside the ring.
- 26. M 42 × 1 ring**
392 821 310 381
Objective ring with M 42 × 1 assemble thread.

- 27. Thread reduction**
M 39 × 1/M 23.5 × 0.5
392 821 310 311
Before using objectives **ANARET 4.5/50**, **BELAR 4.5/50** and **ANARET 4.5/80**, each of the objectives must be screwed into this reduction and tightened by screw.
- 28. ANARET 4.5/30**
392 821 110 271
Enlarging objective for enlarging of the negatives sized 11 × 14 mm and 13 × 17 mm. Assemble thread M 23.5 × 0.5. For the objective use the ring for f = 30, No. 392 821 310 391.
- 29. BELAR 4.5/50**
392 821 110 265
Enlarging objective for enlarging of the negatives sized 24 × 36 mm and smaller. Assemble mount M 23.5 × 0.5. To screw it into the basic ring of the objective it is necessary to use thread reduction M 39 × 1/23.5 × 0.5, No. 392 821 310 311.
- 30. ANARET 4.5/50**
392 821 110 236
Enlarging objective for enlarging of the negatives sized 24 × 36 mm and smaller. Assemble thread M 23.5 × 0.5. To screw it into the basic ring of the objective it is necessary to use thread reduction M 39 × 1/23.5 × 0.5, No. 392 821 310 311.
- 31. ANARET S 2.8/50**
392 821 110 391
Enlarging objective for enlarging of the negatives sized 24 × 36 mm and smaller with the show-through scale of aperture numbers. Assemble thread M 39 × 1.
- 32. ANARET S 4.5/50**
392 821 110 343
Enlarging objective for enlarging of the negatives sized 24 × 36 mm and smaller with the show-through scale of aperture numbers. Assemble thread M 39 × 1.
- 33. MEOGON S 2.8/50**
392 821 110 361
Enlarging objective for enlarging of the negatives sized 24 × 36 mm and smaller with the show-through scale of aperture numbers. Assemble thread M 39 × 1.
- 34. ANARET 4.5/80**
392 821 110 242
Enlarging objective for enlarging the negatives sized 60 × 60 mm and smaller. Assemble thread M 23.5 × 0.5. To screw it into the basic ring of the objective it is necessary to use thread reduction M 39 × 1/M 23.5 × 0.5, No. 392 821 310 311.
- 35. ANARET S 4.5/80**
392 821 110 248
Enlarging objective for enlarging of the negatives sized 60 × 60 mm and smaller with the show-through scale of the aperture numbers. Assemble thread M 39 × 1.
- 36. MEOGON 2.8/80**
392 821 110 371
Enlarging objective for enlarging of the negatives sized 60 × 60. The adjusting of the aperture is continuous or with the checking of the aperture numbers. Assemble thread M 39 × 1.
- 37. MEOGON S 4/80**
392 821 110 351
Enlarging objective for enlarging of the negatives sized 60 × 60 and smaller with the show-through scale of the aperture numbers. Assemble thread M 39 × 1.
- 38. Head of colour photograph**
Meopta COLOR 3
392 821 620 091
Light source enabling continuously adjustable subtractive filtration values 0 ~ 200 in filtration units as well as a continuously adjustable density screen in a range of two lens aperture numbers.
- 39. Transformer TRONIC**
392 821 890 133
The transformer is designed to feed the halogen lamp 12 V/100 VA the colour head **Meopta COLOR 3**.

40. Head of colour photograph

Color 4-ES
392 821 621 061

Enables continuously adjusting the desired density of the correction filter. It operates on basis of subtractive mixing method. The filtration range is 0 + 200 filtration units.

41. Mixing chamber 24 × 36
392 821 620 101

It completes the head for colour photograph Meopta COLOR 3 or Color 4-ES in case we work with the objective the focal length of which is $f = 30-50$ mm.

42. Mixing chamber 60 × 70
392 821 620 104

It completes the head for colour photograph Meopta COLOR 3 or Color 4-ES in case we work with the objective the focal length of which is $f = 90$ mm.

43. Mixing chamber 60 × 60
392 821 620 102

It completes the head for colour photograph Meopta COLOR 3 or Color 4-ES in case we work with the objective the focal length of which is $f = 80-90$ mm.

44. FLEXIBLE SHAFT
392 821 550 106

The flexible shaft is an additional device serving for easily controlling the focusing knob. If the instrument is not fitted with focusing microfeed, it is necessary to provide for it under the number 392 821 890 251 for OPEMUS 6, AXOMAT 5 392 821 890 252 for MAGNIFAX 4.

45. MEOGRADE
392 821 620 151

Universal light source able to yield light and shadow scale of various gradation - ILFORD MULTIGRADE type

46. DIFFUSER
392 821 290 031

The diffusion focusing screen for exposition time measurements is replaced by the focusing knob.

47. Reproholder OP (AX)
392 821 550 122

The repro-holder is a device for fixing an arbitrary photographic or cine camera and other taking apparatus featuring a weight less than 2 kg.

48. VIPONEL-NOVEX Darkroom Clock,
Type Student

The double-range darkroom clock is used for precise measuring of the switching-on time of the connected electric consumer, especially, enlarging apparatus. Owing to the possibility of precise repeating of the switching-on time it is suitable for work with black-and-white as well as colour photographic material. Furthermore, it may be used for work in laboratories and others like that.

Switching current: 6A/220 V ac
upon desire 6A/110 V
Switching range: „10 x“ 2 + 60 sec.
Dimensions: 98 × 140 × 78 mm

49. VIPONEL Darkroom Clock,
Type S 15

The double-range darkroom clock is used for precise measuring of the switching-on time of the connected electric consumer, particularly enlarging apparatus. Owing to the possibility of precise repeating of the switching-on time it is suitable for work with black-and-white as well as colour photographic material. Furthermore, it may be used for work in laboratories and others like that.

Switching current: 6A/220 V ac
upon desire 6A/110 V
Switching range: „1 x“ 0,2 + 6 sec.
„10 x“ 2,0 + 60 sec.
Dimensions: 98 × 140 × 78 mm

**51. VIPONEL electronic Darkroom Clock,
Type E 01**

The digital darkroom clock is used for precise measuring of the switching-on time of the connected electric consumer, particularly enlarging apparatus. It is equipped with reversing socket. Use of this clock is inevitable in laboratories and darkrooms when making black-and-white and color photographs.

Switching current: 3A/220 V ac

or upon desire 3A/110 V

Switching range: 10 s 0,1 + 9,9 sec.

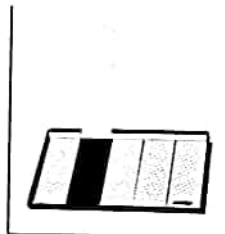
100 s 1,0 + 99,0 sec.

1000 s 10,0 + 990,0 sec.

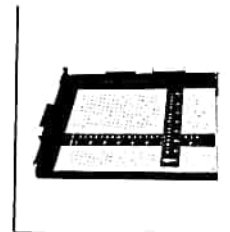
Dimensions: 150 × 165 × 84 mm

OPEMUS 7

Special equipment
of enlarger OPEMUS 7



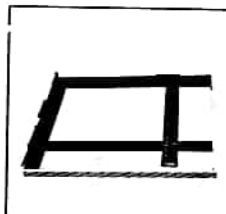
1. The apparatus for line exposure
392 821 890 091



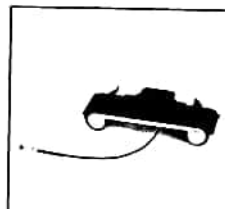
2. Masking equipment 18 x 24 cm
392 821 720 064



3. Masking equipment 30 x 40 cm
392 821 720 054



4. Reproduction equipment
35mm
392 821 520 101





5. **Reproduction equipment**
60 x 60
392 821 520 061

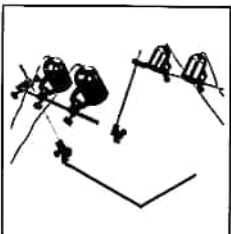


6. **6.5 x 9 cm cartridge**
392 821 590 061

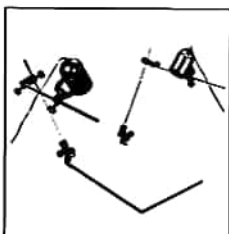


7. **Cartridge inset**
392 821 590 071

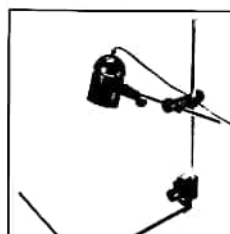
8. **UNIVERZAL illuminating device**
392 821 540 074

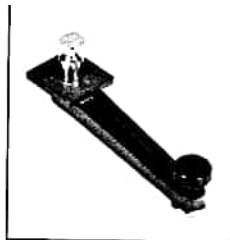


9. **UNIVERZAL illuminating device**
392 821 540 075



10. **UNIVERZAL illuminating device**
392 821 540 076

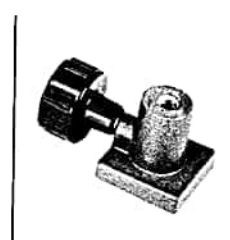




11. Reproduction arm
392 821 550 091



12. OPEMUS macroextension
392 821 330 081

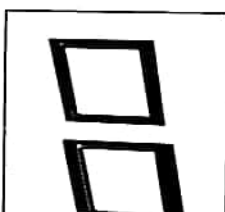


13. Stand reduction
392 821 590 121

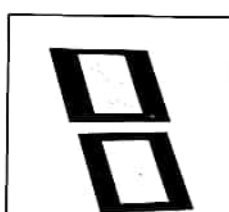
14. Focusing mechanism
392 821 290 021

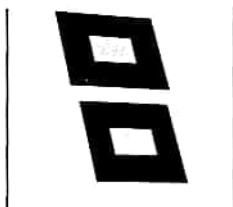


15. Insets for the negative carrier
60 x 70/60 x 60
392 821 430 230



16. Insets for the negative carrier
60 x 70/60 x 45
392 821 430 229

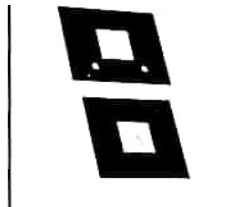




17. Insets for the negative carrier
60 x 70/24 x 36
392 821 430 228

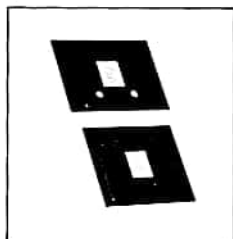


18. Insets for negative carriers
60 x 70/60 x 70
392 821 430 231

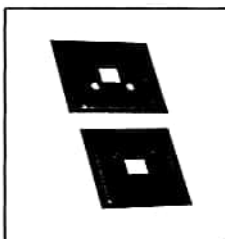


19. Insets for negative carriers
60 x 70/28 x 28
392 821 430 226

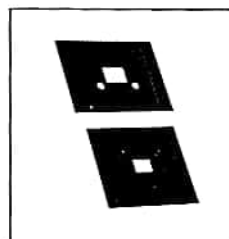
20. Insets for negatives carriers
60 x 70/18 x 24
392 821 430 227

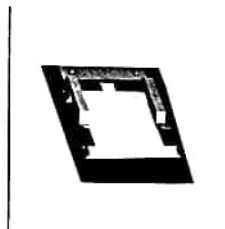


21. Insets for negative carriers
60 x 70/13 x 17
392 821 430 225



22. Insets for negative carriers
60 x 70/11 x 14
392 821 430 224





23. Inset for negative carrier
60 x 60/DIA 5 x 5
392 821 430 188

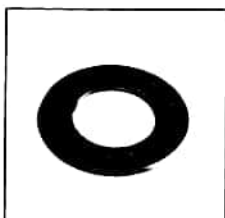


24. Inset for negative carrier
60 x 60/DIA 3 x 3
392 821 430 189

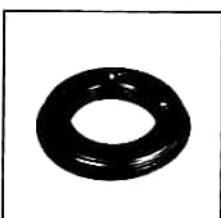


25. Ring for $f = 30$
392 821 310 391

26. M 42 x 1 ring
392 821 310 381



27. Thread reduction
M 39 x 1/M 23.5 x 0.5
392 821 310 311



28. ANARET 4.5/30
392 821 110 271





29. BELAR 4.5/50
392 821 110 265



30. ANARET 4.5/50
392 821 110 236



31. ANARET S 2.8/50
392 821 110 391

32. ANARET S 4.5/50
392 821 110 343



33. MEDEON S 2.8/50
392 821 110 361



34. ANARET 4.5/80
392 821 110 242





35. ANARET S 4.5/80
392 821 110 248

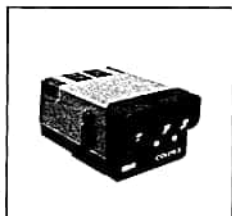


36. MEOGON 2.8/80
392 821 110 371

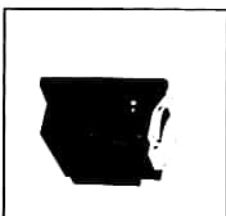


37. MEOGON S 4/80
392 821 110 351

38. Head of colour photograph
Meopta COLOR 3
392 821 620 091



39. Transformer TRONIC
392 821 890 133



40. Head of colour photograph
Color 4-ES
392 821 621 061

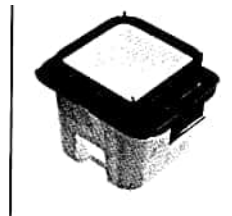




41. Mixing chamber 24 x 36
392 821 620 101

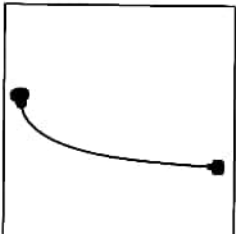


42. Mixing chamber 60 x 70
392 821 620 104



43. Mixing chamber 60 x 60
392 821 620 102

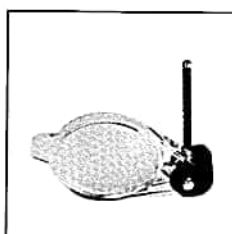
44. FLEXIBLE SHAFF
392 821 550 106

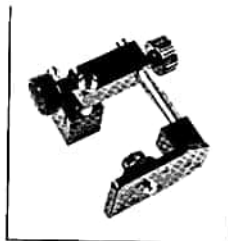


45. MEOGRADE
392 821 620 151



46. DIFFUSER
392 821 290 031

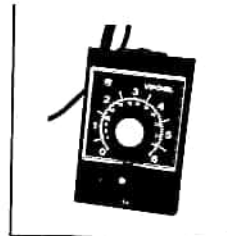




47. Reproholder OP (AX)
392 821 550 122

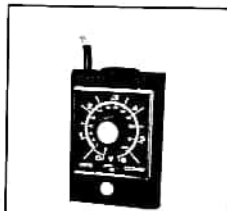


48. VIPONEL-NOVEX
Darkroom Clock,
Type Student



49. VIPONEL
Darkroom Clock,
Type S 15

50. VIPO COMBI
Darkroom Clock,
Type B 6



51. VIPONEL electronic
Darkroom Clock,
Type E 01

