INSTRUCTIONS

LEICA R 3
LEICA R 3-MOT

Leitz

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You will quickly make friends with your new LEICA® R 3/R 3-MOT. It is a modern single-lens-reflex camera with automatic shutter control, offering the choice of integrating or selective light metering through the lens. The "automatic" setting of the shutter speed dial allows rapid picture taking without problems, (see also the enclosed Brief Instructions).

After switchover to manual operation the LEICA R 3/R 3-MOT opens up all possibilities for individual pictorial composition. The large, bright viewfinder of the LEICA R 3/R 3-MOT supplies the necessary information. It is the control and composition centre: focusing, exposure measurement, assessment of the pictorial effect and perspective are virtually simultaneous. The LEICA R 3-MOT with MOTOR WINDER extends the possibilities of dynamic photography and fully automatic photographic recording. The arrangement of all the controls is so convenient that the few necessary actions soon become second nature. All the same, please take the trouble to read these brief instructions, and you will derive even greater enjoyment from taking pictures with your new LEICA® R 3/R 3-MOT.

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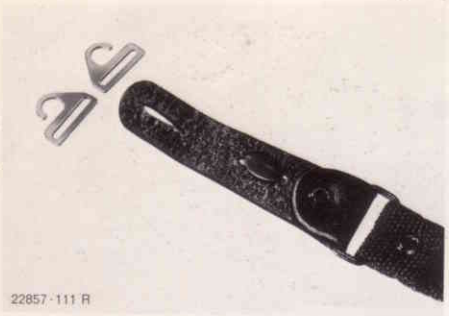
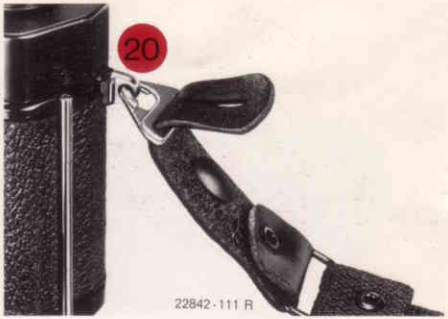




Attaching the carrying strap

The eyes (20) serve for attaching the carrying strap. Detach the doubled leather strap from the round part of the shackle, pull both metal parts off and hock them into the camera in opposite directions. Push the leather holder back through the slots of the metal parts provided for it, and button it on the round part of the shackle.

Inserting the lens

Pick up the lens on the fixed ring (17). The red dot (15) on the lens mount must face the bayonet catch (13) on the camera body. Insert the lens in this position. After a short turn to the right the lens clicks into position.

Attention: To ensure coupling with the spring-back diaphragm, do not depress the depth-of-field lever (14) or leave the shutter open when inserting the lens.

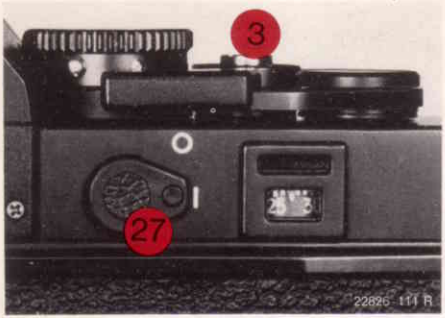
Taking out the lens

The LEICA R lenses are exchanged as follows, independently of the setting of distance and aperture:

Grip the fixed ring (17) of the lens, depress the bayonet catch (13) on the camera.

Turn the lens to the left and take it out.

Change lenses only in the shadow of your body.



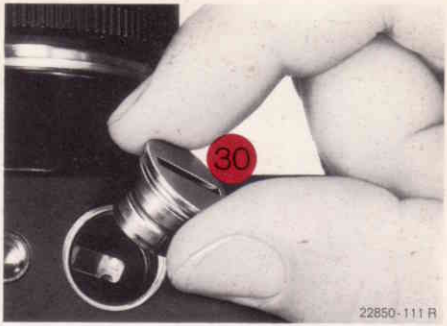
Switching on the camera

The electronic shutter and exposure meter of the LEICA R 3 are switched on with the main switch (27). To save the battery, switch off the camera during prolonged non-use. When the camera is switched off, the functions are disconnected and the release (3) is blocked.

Testing the batteries

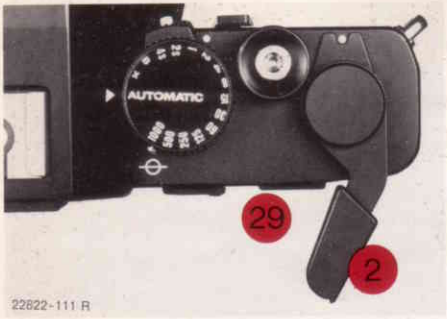
The LEICA R 3 requires electrical energy for the exposure measurement and shutter control. Two silver oxide button cells of 1.55v each serve as current source, whose energy is theoretically sufficient for the exposure of about 400 films of 36 exposures each at $^1/_{30}$ sec. When the camera is switched on, a set of batteries has a life of up to 2 months. The manufacturers claim a life of 1-2 years for the switched-off battery. It is therefore recommended to carry out the battery test before the camera is used – especially after a long interval. Depress the test button (22) (also indicator for the DIN setting) with a fingernail. A red warning

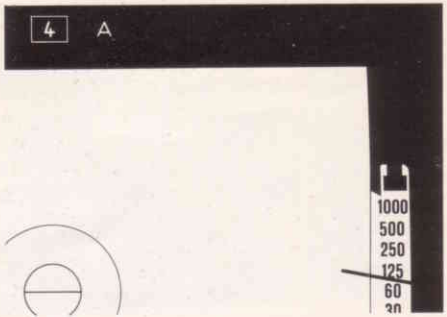
light in the window (21) reliably indicates whether the available energy is still sufficient. Only when the warning light fails to light up are the silver oxide button cells discharged below their operational value or exhausted and must be exchanged to avoid faulty exposures. If no fresh button cells are available, it is possible to work with the shutter speeds X (= $^{1}/_{90}$ sec) and B **with the battery set removed.** Exposure measurement, however, is not possible.
Attention: Always take out exhausted batteries.



Changing the batteries
Unscrew the cover (30) on the underside of the camera body with a coin. Replace the exhausted batteries in the holder with new ones. Make sure that the engraved details face upwards.
The following silver oxide button cells can be used:

Varta	V 76 HS	Mallory	MS 76 H
Ucar	S 76 E	Eveready	S 76 E
Ray-o-vac	RS 76 G	National	G 13



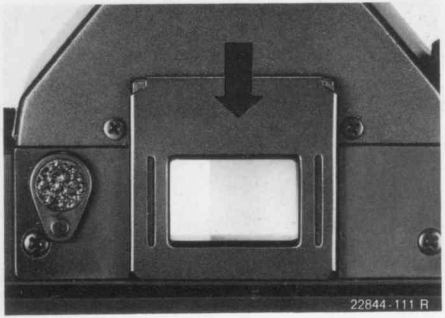


Rapid winding lever

The rapid winding lever (2) winds the film through 1 frame at each full stroke, cocks the shutter and advances the film counter (29).

The composition and control centre

The viewfinder of the LEICA R 3 is both the control centre for all important items of information: focusing, picture area and perspective, measuring field for selective and integrating light measurement and display of the chosen measuring mode (in model R 3-MOT only). The F/stop number is read above the view finder image. It is reflected directly from the lens barrel into the view finder via an optical system. Also seen is the shutter speed selected or an orange letter 'A' if automatic operation has been chosen. The pointer of the exposure meter indicates the electronically calculated exposure time on the righthand margin of the viewfinder image.



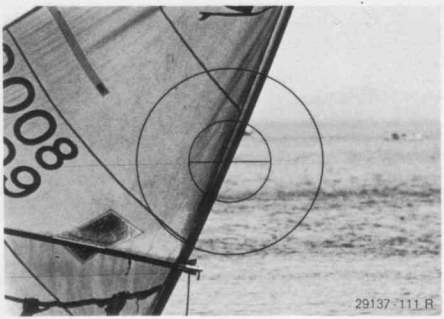
Correction lenses

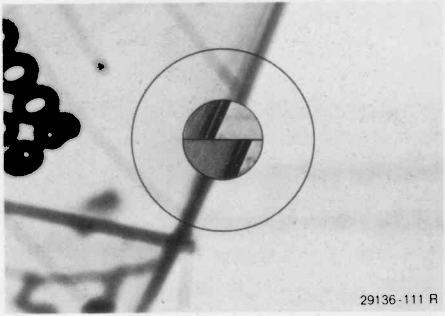
To exhaust the possibilities of the LEICA R 3 and the excellent performance of the LEICA R 3 lenses fully, the viewfinder image of the camera must be seen by the user at optimum sharpness whether he looks through the eyepiece with or without spectacles. It is important to see the measuring edge of the split-image rangefinder at maximum sharpness and with good contrast.

Many people suffer from minute visual defects, which remain unnoticed until maximum accuracy of adjustment of eye and instrument is essential during the use of optical instruments, such as a viewfinder eyepiece.

If any difficulties are experienced in focusing, the use of LEITZ correction lenses for the LEICA R 3 is recommended. They are supplied in the following + and — values: 0.5, 1.0, 1.5, 2.0 3.0 (please enclose your optical prescription with your order).

The additional use of correction lenses may be an aid also to spectacle wearers if they cannot see objects at optimum sharpness at a distance of 1m (without looking through the camera eyepiece).





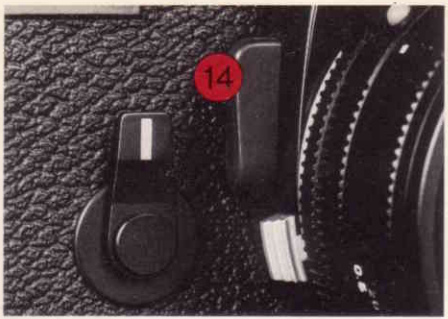
Focusing

The distance setting ring (18) on the lens is turned to focus the image.

Unless the image is in perfect focus, edges and lines of the object are mutually displaced in the horizontal split-image field of the viewfinder.

The central split wedge is surrounded by a ring with a square microprism screen, which serves for the focusing of objects with weak contours. Notable flickering indicates that the image is not focused properly.

The surrounding field consists of ground triangular microprisms, which produce a groundglass screen effect. The surrounding field is used for focusing mainly with long-focal-length lenses and in the close-up range, or if the pictorially important feature is situated outside the measuring field.



Depth-of-field lever

The LEICA R 3 measures the exposure at full lens aperture. The depth-of-field lever (14) permits the assessment of the depth of field to be expected with the preselected aperture value in the viewfinder. When the lever (14) is operated, the lens diaphragm closes to the preselected aperture value.

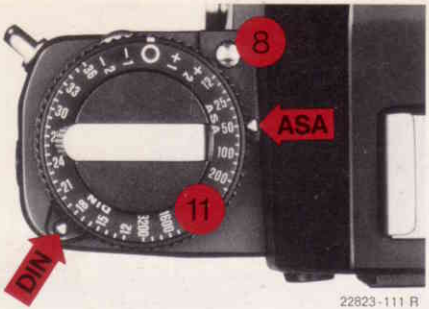
Please note: Do not depress lever (14) during exposure measurement to avoid wrong results.

Depth-of-field scale

The depth-of-field scale indicates the extent of the depth of field for the focusing distance set.

If, for instance, you have focused the 50mm SUMMICRON®-R f/2 lens at 5m, your object will be in focus from 3m to about 20m when the lens is stopped down to f/11. If, however, you stop down only to f/4, the depth of field will extend from 4m to about 8m.

More detailed information about depth of field with all focal lengths is contained in our Depth-of-field Table No. 110-57.

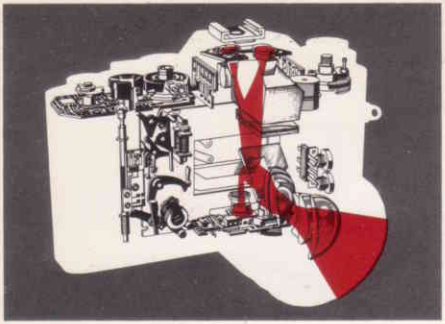


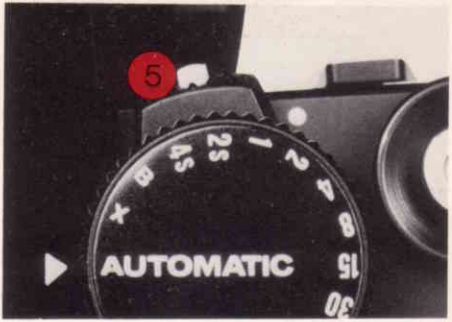
Exposure meter

Setting the film speed

Correct setting of the film speed is essential to correct exposure measurement. The setting ring (11) has a scale of DIN/ASA values. To set the value for the film in the camera depress the locking button (8) and at the same time turn ring (11) until the desired figure faces the index mark.

The viewing window (24) in the camera back indicates whether a film has been loaded. As a rule, type of film and film speed can also be read.





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Choice of Measuring Method

The LEICA R 3 has an exposure meter for two different methods of measurement – integrating or selective. The exposure is measured through the lens.

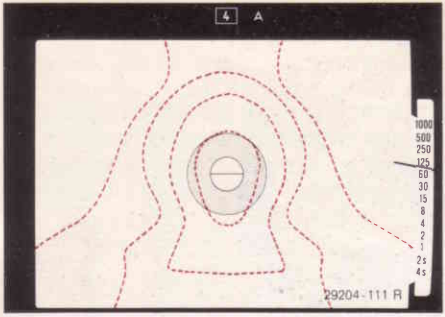
In conjunction with the LEICA-R lenses measurement is carried out at full aperture. With the selector (5) the exposure measurement is preselected. The symbol integrating (□) or selective (●) of the measuring method set appears when you depress the white button and move the switch according to the desired setting. In the LEICA R 3-MOT the chosen measuring mode is also displayed in the viewfinder window.

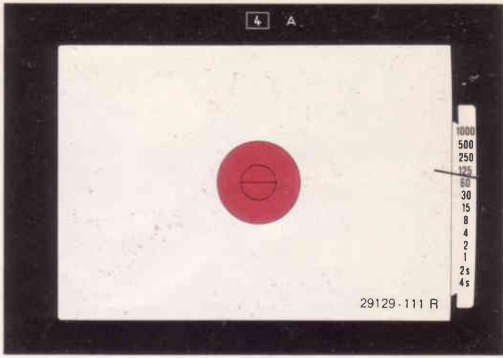
Most subjects are composed of details of different brightness. The reflection of such average subjects is about 18%. This corresponds to a mean grey value.

Generally the details of different brightness are evenly distributed throughout the entire subject. For such cases the largefield integrating measurement is chosen.

Selective light measurement will be used whenever

1. great brightness differences occur in the subject,
2. the image is to be measured accurately
3. a certain detail is to receive precise exposure.





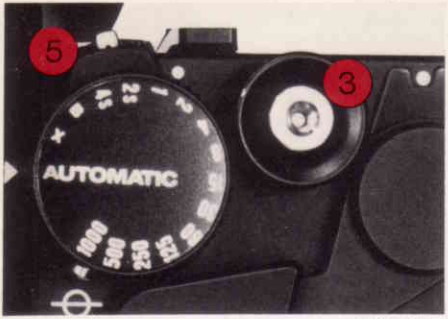
Largefield integrating measurement

Two CdS double photo-resistors are arranged above the viewfinder prism for largefield integrating measurement. They are coupled with the CdS double photo-resistor built into base of the camera for selective light measurement. This ensures that about 80% of the entire picture area is measured, with the centre and the area a little below it being weighted compared with the rest of the picture area.

Selective light measurement

Part of the light coming through the lens is deflected to the CdS double photo-resistor in the camera base via a cylindrical deflecting mirror installed behind the partially-transmitting hinged mirror. The arrangement of the CdS double photo-resistor for selective light measurement has been chosen so that no stray light can influence the measurement. The measuring field is clearly defined in the viewfinder by the large central circle, has the same size irrespective of the focal length of the lens, and is prominently indicated.

The measurement method set with the selector (5) can be identified without the need



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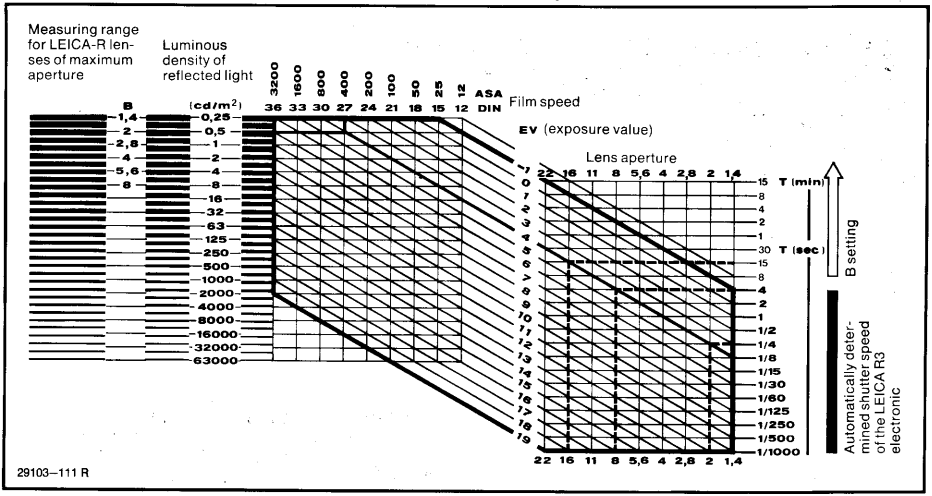
for taking the LEICA R 3 from the eye: only with the selective light measurement setting will the measuring pointer move downwards when the strain of the release button (3) is taken. In the LEICA R 3-MOT the chosen measuring mode is also displayed in the viewfinder window.

Nomogram of the exposure meter of the LEICA R 3

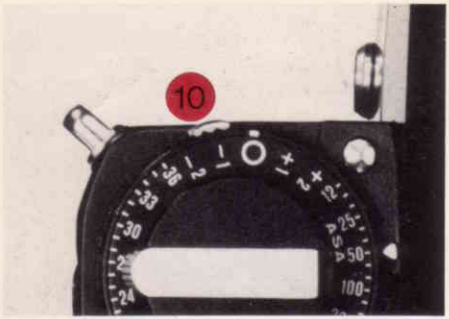
The nomogram provides all the important data of the exposure meter system of the LEICA R 3, such as the measuring sensitivity and measuring range as well as what extreme shutter speed can still be measured at a given lens aperture and film speed.



Example

Lens: 50mm SUMMICRON-R f/2
Set aperture: f/2
Film speed: 400 ASA (27 DIN)
The minimum luminous density measured is 0.5cd/sq.m. This corresponds to the exposure value (EV) 4 and indicates a shutter speed (T) of ¼sec, or, at f/8, of 4sec.

The nomogram also shows that at f/16 the film must be exposed for 15 seconds.
Shutter speeds of up to 4 seconds are determined electronically; longer exposure times of any duration can be obtained manually with the "B" setting.



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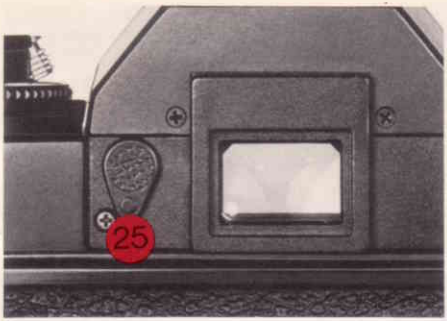
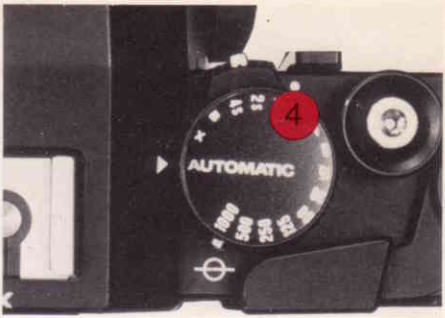
Exposure corrections

The exposure meter is calibrated for a mean grey value. With largefield integrating measurement it may therefore be desirable, for instance for pictures in the snow or of bright sand to feed a general correction of +1 aperture value. Contre jour subjects may require an adjustment of + 2 aperture values. A minus correction must be made for mainly dark subjects such as pictures in twilight or at night. Press button (10) for the adjustment.

Exposure corrections are limited at the end values of the DIN/ASA scale.

The same applies to selective light measurement. It is, however, possible as a rule to take a reading of a representative detail of mean grey value from the whole subject because of the smaller and exactly defined measuring field. In these conditions no correction is required.





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Eyepiece shutter

Part of the exposure meter for largefield integrating measurement is housed in the prism seating of the camera. With the setting at largefield integrating measurement light entering through the eyepiece may therefore affect the result of the measurement if the user, for instance when working with a tripod, does not look through the eyepiece. To close the eyepiece, it is covered by shifting the lever (25) towards the ocular.

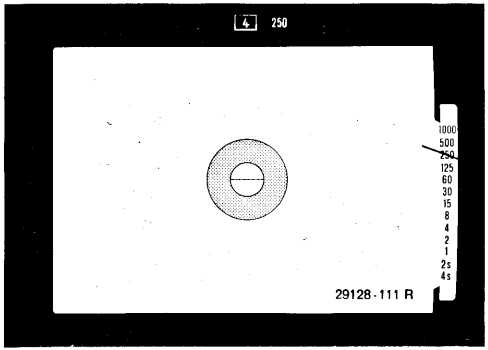
The shutter speed dial

With the **"Automatic"** setting the electronic shutter is controlled to give **continuously variable** values. All shutter speeds between $^{1}/_{1000}$ and 4sec are automatically determined and indicated by the pointer of the exposure meter on the shutter speed scale on the right in the viewfinder.

Shutter speeds are manually set with the shutter speed dial (4). Press chrome button on edge of shutter speed dial to release dial from "Automatic" setting. These engraved values, too, are electronically determined. The shutter speed dial can be set before or after film transport and clicks

into position at the engraved values. It does **not provide for intermediate settings.** At the "B" setting the shutter remains open as long as the release button is depressed.
When electronic flash units are used the setting is at "X" (further details: Flash Table). The same setting ($= {}^{1}/_{90}$sec) is used when the batteries are defective (see p. 9).

Automatic operation
Set the shutter speed dial (4) at "Automatic". An orange-coloured letter "A" appears in the top of the viewfinder. The automatically determined shutter speed is indicated by the measuring pointer on the shutter speed scale along the right-hand margin of the viewfinder. The shutter speed can be varied with variations of the aperture value.
With the setting at selective light measurement, the measured value can be stored with slight pressure of the release button (3) (taking up the slack); now the desired picture area can be determined. The storage process is indicated by the rapid downward movement of the exposure meter pointer. Continued taking up of the slack stores the value for about 30sec.
Attention: Do not touch the release button before raising the camera to your eye, to avoid faulty exposures owing to accidental storage of the measured value.



Manual operation

A) With aperture preselection
After aperture preselection set the shutter speed dial (4) at the value indicated by the exposure meter pointer. Selected shutter speed appears in the top of the viewfinder.

B) With shutter speed preselection
Set the shutter speed and adjust the measuring pointer of the shutter speed scale to the preselected shutter speed value by turning the diaphragm ring (16) of the lens.

With manual operation set only full shutter speed values for both measuring methods. Carry out any corrections with the diaphragm ring (16).

Measurement through working aperture

Some accessories, such as extreme telephoto lenses, the ring combination for the close-up range, and the focusing bellows-R, do not include an automatic spring-back diaphragm. The shutter speed must be measured through the working aperture. Here the photo-resistor receives more or less light as the lens aperture is adjusted. The rest of the operation is identical with that of lenses with automatic spring-back diaphragm.

The use of filters

Generally, light metering through the lens automatically allows for the loss of energy caused by filters. But the sensitivity of various films in certain regions of the spectrum differ. With dense and extreme filters deviations from the measured shutter speed can therefore occur.

Orange filters, for instance, thus require as a rule an increase by 1 aperture value, red filters on average by about 2 aperture values. A generally valid figure cannot be given because the red sensitivity of black-and-white films varies widely.

With the circularly polarizing filters supplied with our lenses, measurement and settings can be carried out as with ordinary filters. With polarizing filters without circular effect, the slowest shutter speed is determined by rotation of the filter and set, the desired effect obtained and the exposure made.

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