

## CASTEL-MICRO

This electronically controlled focusing rack has been specially developed for focus stacking in close-up and extreme macro photography of, e.g., insects, minerals, scientific documentation and much more. The CASTEL MICRO has a maximum travel distance of 100 mm and its smallest repeatable step distance is 0.2 micrometer.



## Automatic Bellows Unit BAL-MFT

USER MANUAL

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## Information

For more information, advice and tips concerning our products contact your photo dealer, the distributor of NOVOFLEX products in your country (have a look at the "Where to buy" section at our website to find your distributor) or visit our website [www.novoflex.com](http://www.novoflex.com)

For personal advice about possible accessories which is suitable for your NOVOFLEX product please contact the following phone number or send us an E-mail.

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Application Example: Use with CASTEL Mini II focusing rack and optional accessories.

Nomenclature

1	Camera connector	8	Connection cable
2	Adapter rear standard RETRO-FLEX	9	Release button lens
3	Locking screw rear standard (2x)	10	Drive knob bellows extension
4	Lens connector	11	Dovetail guide (ARCA-type)
5	Adapter front standard FLEX-RETRO	12	Threaded hole for video-pin (2x)
6	Locking screw front standard (2x)	13	1/4" Threaded hole (3x)
7	Locking knob bellows extension	14	3/8" Threaded hole (3x)



For better illustration, the right and left views are shown here.

Accessories Recommendations

Stepping Rings

If your lens has a filter diameter other than 58mm and you want to mount the lens in retro position (see page 5) on the front standard a stepping ring is required for the adaptation.



Lens filter diameter	Stepping ring (order code):
37mm	REDUZIERRING 58/37
46mm	REDUZIERRING 58/46
49mm	REDUZIERRING 58/49
52mm	REDUZIERRING 58/52
55mm	REDUZIERRING 58/55
62mm	REDUZIERRING 58/62
67mm	REDUZIERRING 58/67
72mm	REDUZIERRING 58/72
77mm	REDUZIERRING 58/77
82mm	REDUZIERRING 58/82

Focusing Racks

For focusing by changing the distance, we recommend our stable focusing racks of the CASTEL series. These include:



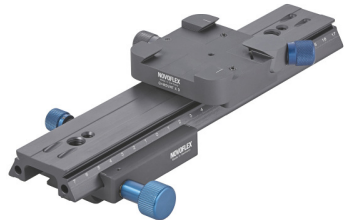
CASTEL Mini II

Our smallest focusing rack has an adjustment travel of 10cm. Mounting is possible on any standard tripod head or directly on the quick releases Q=BASE II or Q=MOUNT.



CASTEL Q

This focusing rack is equipped with a dovetail quick-release on top and holds clamping plates of the Q system (ARCA UNIQ/C compatible). The adjustment travel is 12.5cm. Shown here with the adjustment handle CAST-FINE for even finer settings of the slider, e.g. for focus stacking.



CASTEL XQ II

Being only 25cm in length, this focusing rack offers a camera movement of 37.5cm thanks to the new and integrated Q=MOUNT XD cross quick-release. When using a second focusing rack, e.g. the CASTEL-Q, CASTEL Mini II or CASTEL-XQ II a cross focusing rack for precise adjustment in two directions can be set up within seconds.

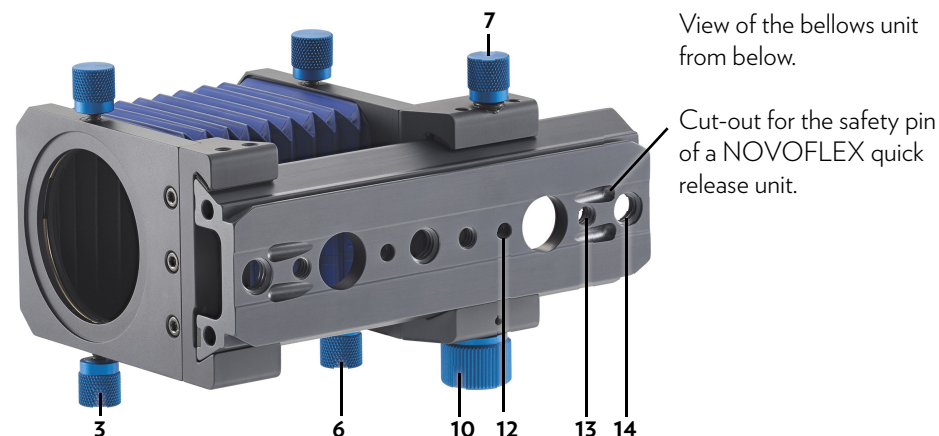
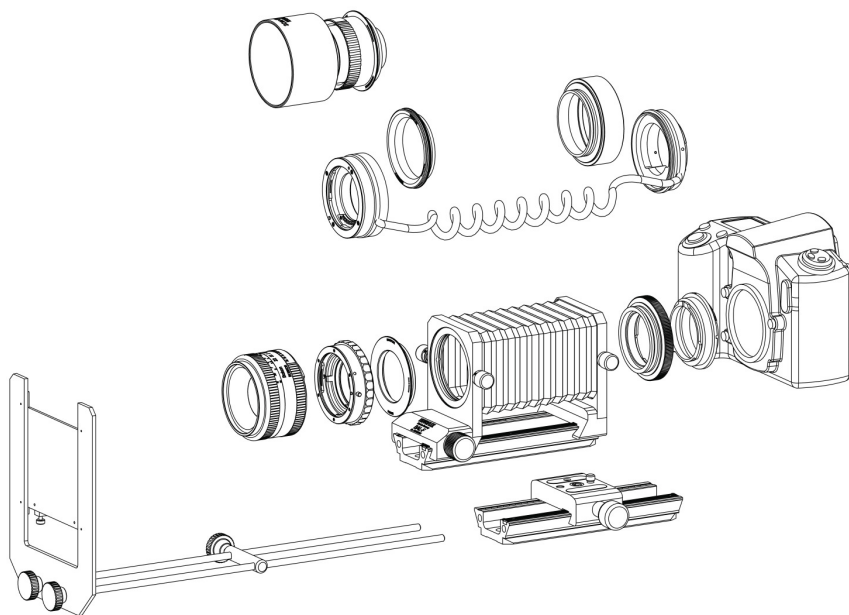
## Practical Tips

- The exposure increase is already taken into account for cameras with internal measurement (TTL).
- Turn off the autofocus of your camera or lens as it will overdrive in most cases. Focusing in the macro range is usually done by changing the lens-to-object distance.
- Since the current lens designs are extremely different today, it is no longer possible to establish a general relationship between bellows extension and magnification. Nevertheless, to determine the magnification individually for your system, proceed as follows:

Use the desired bellows extension, photograph vertically a ruler and determine the width of the image in mm. Now divide the sensor width of your camera by the thus determined value.

Example: With a full-frame camera (36mm sensor width) and 18mm image width, you have a magnification of 2:1 ( $36:18 = 2:1$ )

- The included RETRO reverse adapters can also be used without the bellows unit to mount a lens in retro position directly on the camera.
- Using manual lens heads, magnifying lenses or lenses with the 39 mm Leica thread is possible for special purposes. For this, adapter rings are available as optional accessories. We are happy to advise you in this regard!



Congratulations on the purchase of your new automatic bellows unit BAL-MFT. Even if the operation is very simple, we want to give you some tips on how to handle your BAL-MFT from the very beginning.

## Product Description

The automatic bellows BAL-MFT enables Micro-Four-Thirds photographers to penetrate the near and macro range while retaining all the control functions of their camera. All electronic functions and information are transferred between the camera and the lens. The BAL-MFT is suitable for all cameras of the Micro-Four-Thirds system and for all MFT lenses (maximum diameter lens: 90mm). The lens can be mounted in normal position or in retro position on the front standard. In the latter case, a stepping ring (see page 7) is required, in case your lens has a filter diameter other than 58mm.

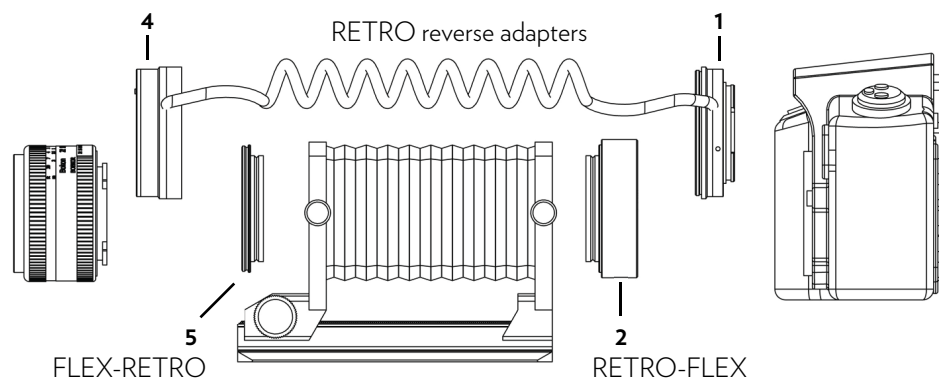
The automatic bellows unit consists of the reverse adapters MFT-RETRO with camera connector (1), lens connector (4) and connecting cable (8), the bellows unit BAL-F with drive knob (10) and locking knob (7) and the two adapters RETRO-FLEX (2) and FLEX-RETRO (5) connecting the reverse adapters to the bellows unit. With the help of the Locking screws (3) and (6), each two times available, the two adapters are attached to the rear- and front standard of the bellows.

The bellows extension can be changed with the drive knob (10) while the locking knob (7) is open. By tighten up the locking knob (7) the extension is fixed. For reproducible work, the guide rail scale, which shows the bellows extension, can be seen from above.

The bellows unit is equipped with a dovetail guide (11) for direct mounting on a NOVOFLEX quick-release of the Q=System (ARCA / UNIQ/C compatible). The safety pin of a NOVOFLEX quick-release engages into the milling cut-out and prevents unintentional slipping out of the rack if the corresponding clamping screw was accidentally not fully tightened. Alternatively, the 1/4 "or 3/8" threaded holes (13) or (14) can be used for mounting on a focusing rack or tripod head. The installation of a video-pin (threaded hole 12) serves as anti-twist protection.

## Assembly of all components, lens in normal position (state of delivery)

This classic way of mounting is used with focal lengths from 50mm.



1. The camera-side adapter ring RETRO-FLEX (2) is screwed into the camera connector (1) of the RETRO reverse adapters. The camera is attached and locked accordingly.
2. The lens-side adapter ring FLEX-RETRO (5) is screwed into the lens connector (4) of the RETRO reverse adapters. The lens is now inserted in the bayonet of the lens connector and locked.
3. Insert both units into the connection openings of the bellows unit BAL-F and lock them with the two locking screws (3) and (6) on the standards. Disassembly is carried out after releasing the corresponding release button on the camera. To release the lens connector (4) from the lens, push the release button (9) in the direction of the engraved arrow.

## Operation

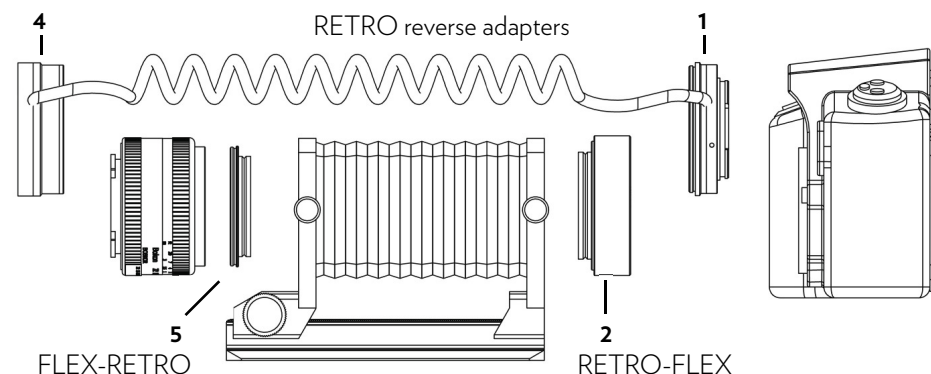
For close-up and macro shots, the image section (magnification) is determined only by the length of the bellows extension. The length can be changed with the drive knob (10). To loosen or clamp the rack, use the locking knob (7).

Focusing is done by changing the lens-to-object distance. With free hand shots one achieves this by changing the posture. When shooting from a tripod or on a copy stand this is done with the help of a focusing rack. Recommended focusing racks can be found on page 7.



## The lens in retro position on the bellows unit

This type of mounting is recommended for focal lengths of less than 50mm, as the distance to the subject is longer than for classical installation. The lens is mounted in retro position on the front standard



The assembly corresponds to the installation in normal position, but this time the lens and not the lens connector is screwed into the lens-side adapter ring 58mm bellows unit (FLEX-RETRO, 5). If the lens has a different filter diameter than 58mm, appropriate stepping rings (see page 7) are optionally available as accessories. The lens connector (4) of the reverse adapters is inserted into the bayonet ring of the lens.

For lenses with larger front lens diameter, a spacer is available to allow attachment to the front standard. Alternatively, the installation can be made reversed with the lens attached to the rear standard.

To disassemble, release the corresponding unlock button on the camera body. To dismantle the lens connector of the reverse adapters from the lens, push the unlock button (9) in the direction of the engraved arrow. Now the lens can be unscrewed from the lens connector FLEX-RETRO (5) of the reverse adapters.

