



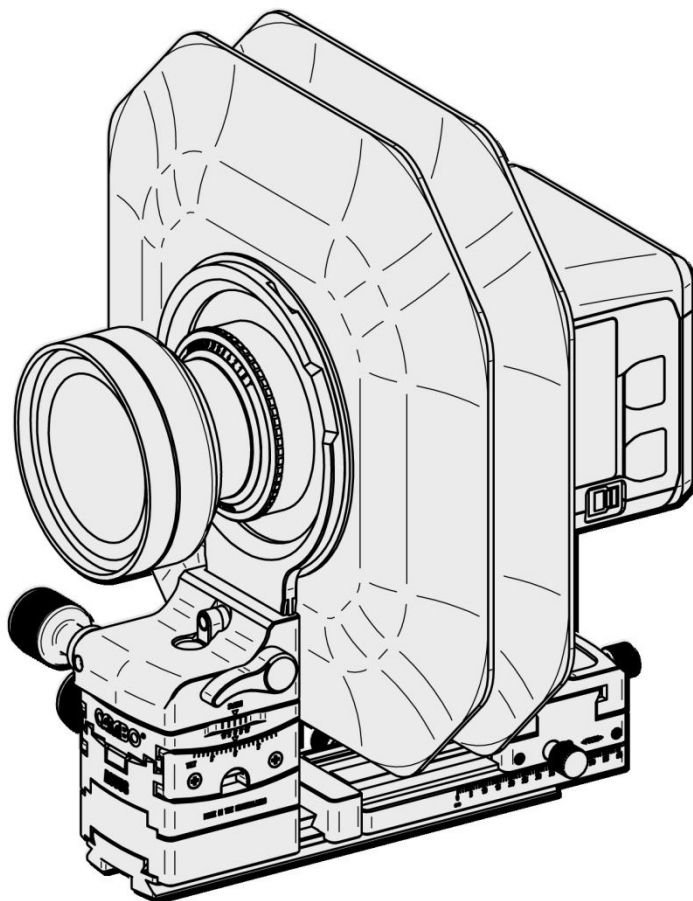
# Actus DB

Compact View Camera

## INSTRUCTION MANUAL

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**Please read this manual carefully before using the Cambo Actus DB!**



Version 1.15

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## Thank you for purchasing a Cambo product

The **Actus DB** (Digital Back) is a compact view camera system featuring lateral and vertical shift of the rear standard as well as a swing and tilt movement of the front standard. The Cambo SLW adapter plate is used as an interface between the Actus and the digital back. These interface plates are the same as used in the Cambo WRS and Ultima 23 series.

The precision gearing enables a fine rear shift/rise and fall control which is ideal for perspective control, image displacement and high quality panoramic stitching. The precision gearing tilt and swing movement of the lens enables the photographer to optimize spatial sharpness.

For the conversion of a standard Actus to an Actus DB please refer to page 11.

### 1. Key Features Actus

- Small size<sup>1</sup> 153 x 114 x 203mm (L x W x H)
- Lightweight, only 1.2 kg (excl. lens and digital back)
- High grade CNC milled aluminum camera body
- Horizontal shift 40mm (20mm left/20mm right)
- Vertical shift 27mm (15mm / 12mm)
- Stitching possibilities (2-way / 4-way)
- Tilt 19 degrees (9°/10°)
- Swing 30 degrees (15°/15°)
- Compatible with the Cambo SLW interface plates
- Interchangeable interface plate, lenspanel, rails and bellows
- Millimetre/degree movement indicator
- Precision geared movements (tilt, swing and rise/fall)
- Zero position click indication
- Wide fine focus range (0-60mm)
- Telescopic rail system, standard extension 115mm
- Ability to set the infinity position stop
- Adjustable safety stop to prevent collision of the rear lens element
- Durable genuine leather bellows
- 3/8" and 1/4" tripod mounting option
- Integrated Arca® dovetail

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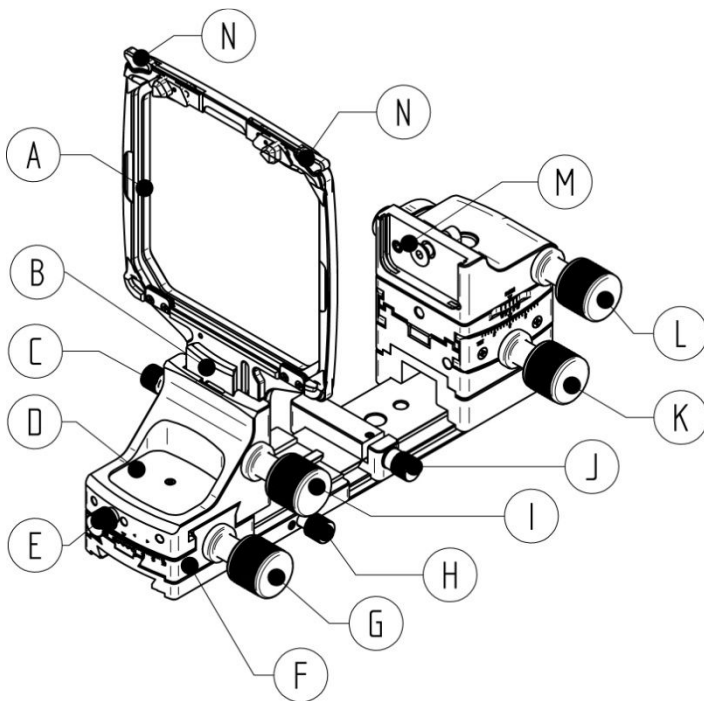
<sup>1</sup> With the bellows detached

## 2. Warnings

- ⚠ Due to the modularity of the Actus camera system, many camera-lens combinations are possible. Please beware of the collision of the rear lens element and the rear standard and/or the sensor. Always use the end stop block to prevent any possible collision (instructions on page 10). Please note that Cambo is not responsible for any damage done to the Actus, lens or camera, due to improper or careless use.
- ⚠ (Over)exposure to direct sunlight or heat sources will damage the leather bellows. Keep/store the leather bellows in a cool, dry, dust-free and ventilated place.
- ⚠ The Actus uses disc magnets to mount the bellows. These permanent magnets (magnetism N45) could cause temporary or permanent damage to equipment<sup>2</sup> sensitive to magnetism like magnetic cards (credit card, ATM card).
- ⚠ Beware that the some combinations of swing, tilt, shift and focus adjustments can dismount the bellows.

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<sup>2</sup> Please note that memory cards are not magnetic data carriers and will therefore not be damaged by static magnetic fields.



*Figure 1: Cambo Actus front view*

A	Frame Cambo SLW interface plate
B	Rise and fall unit
C	Lock rise and fall movement
D	Shift unit
E	Lock shift movement
F	Focus unit
G	Focus adjustment knob
H	Lock telescopic rail
I	Rise and fall adjustment knob
J	Lock safety stop unit
K	Tilt adjustment knob
L	Swing adjustment knob
M	Lenspanel slot
N	Slide lock Cambo SLW adapter

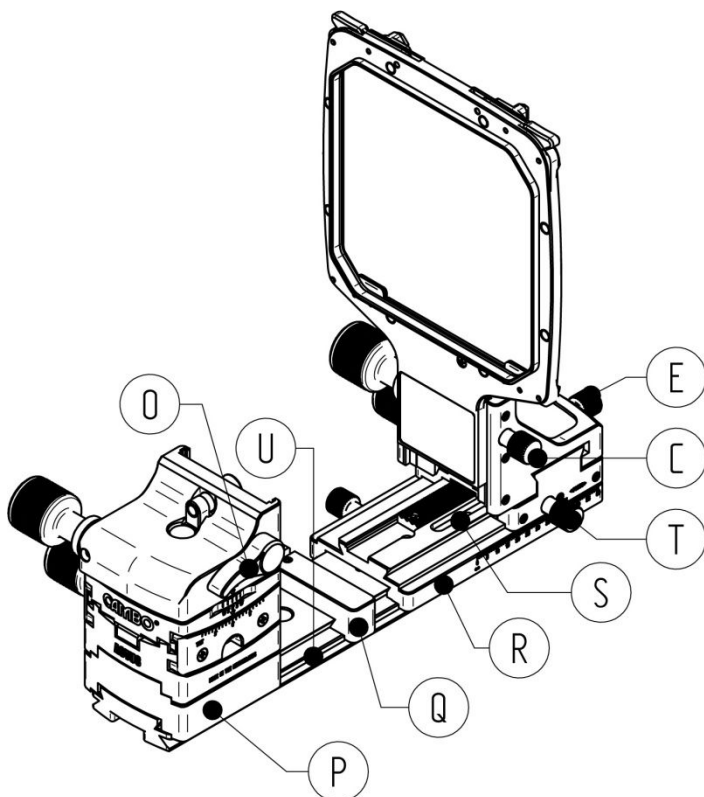


Figure 2: Cambo Actus rear view

O	Lock handle lenspanel
P	Actus DB spacer (16,5mm)
Q	Safety stop
R	Telescopic rail
S	Location end stop telescopic rail
T	Lock focus movement
U	Main Actus rail (153mm)

### 3. Installation Cambo SLW interface plate

The Actus uses the standard Cambo SLW interface plate for mounting the digital back. These interface plates are the same as used in the Cambo WRS and Ultima 23 series. To mount the interface plate please fully open the two slide locks (N). Align the SLW interface plate (V) with the frame (A) and place it in the frame at an angle of  $\pm 15$  degrees. When the plate is fully inserted close both slide locks (N).

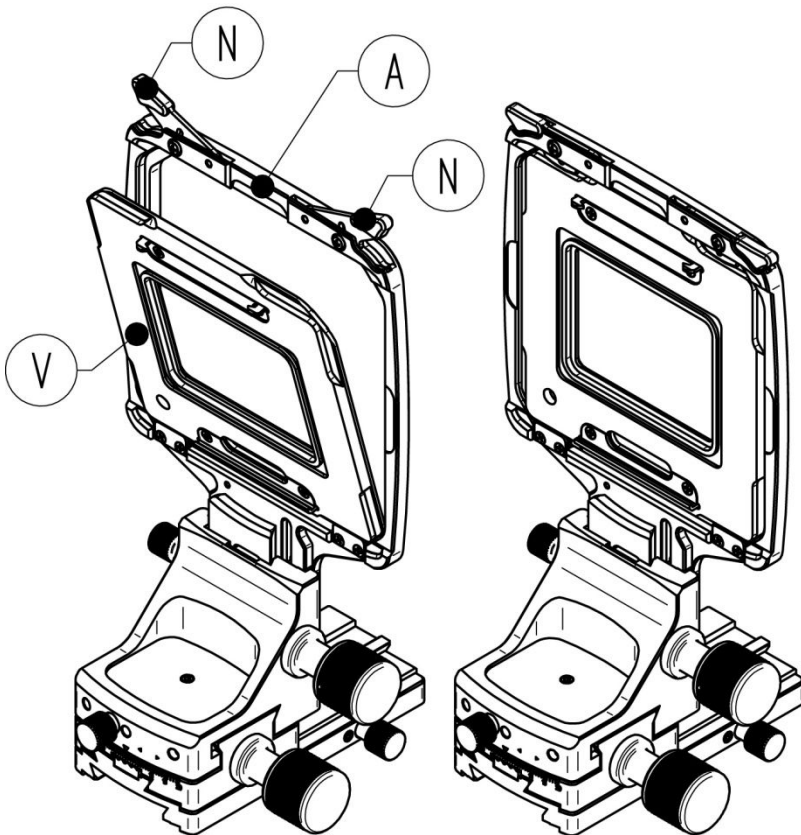


Figure 3: Mounting the Cambo SWL interface plate

Interface	DB mount type
SLW-80	Hasselblad-V interface plate
SLW-81	AFi or HY6 interface plate
SLW-87	Contax 645 interface plate
SLW-88	Mamiya 645 AFd interface plate
SLW-89	Hasselblad H interface plate
WRS-1068	Mamiya RB film
WDS-619	Groundglass/Fresnel unit

## 4. Mounting the lens-panel

To mount the lens-panel please;

1. Unlock the lever
2. Return the locking pin, if necessary
3. Position and slide the lens-panel in the slot
4. Lock the lever to fixate the lens-panel

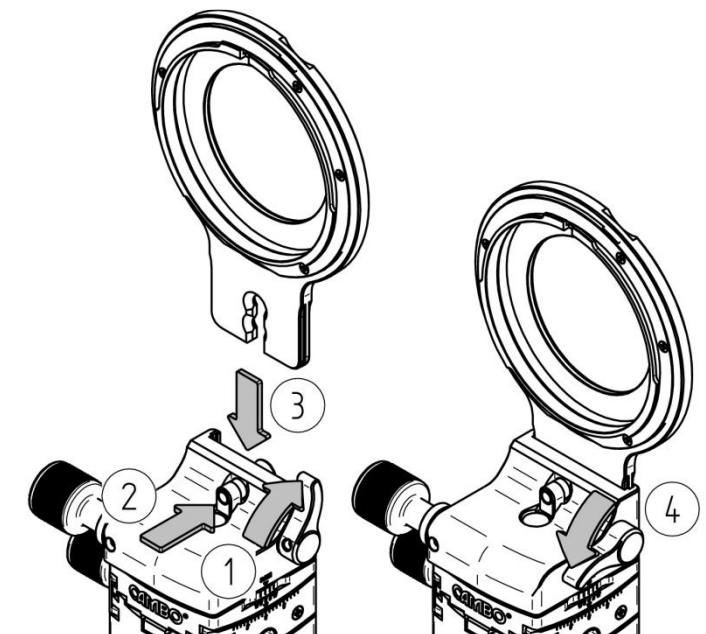


Figure 4: Mounting the lenspanel



## 5. Mounting the bellows

The front of bellows (the side with the largest ring) features an indication point, this point corresponds to a hole at the top of the lens-panel. When the indication point is aligned correctly the front ring will snap into place. After this please attach the rear-end of the bellows by aligning it with the rear standard until it snaps into place.

Please note; with first use the bellows could behave stiff, over time with use and movement the leather bellows will behave smoother. If the leather becomes dry over time, it is important to maintain the leather by keeping it moisturised to retain the smooth behaviour.

## 6. Using the Actus

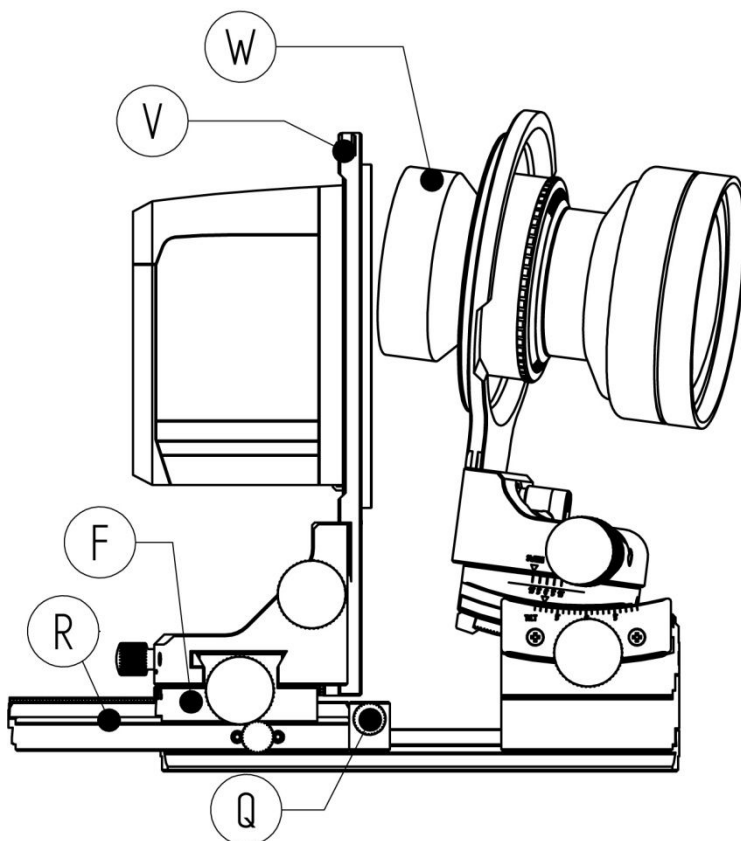
The Cambo Actus view camera features a swing and tilt of the lenspanel, and a horizontal and vertical shift of the rear standard (camera). The focus, swing, tilt and vertical shift is driven by precision geared knobs. The horizontal shift and fast focus is manually.

For still images, it is recommended to temporarily fix the shift, tilt, swing and/or focus adjustments using the associated locking knobs.

## 7. Setting the infinity hard-stop

To set the infinity position of the lens please perform the following steps;

- Mount the desired lenspanel and lens
- Set the fine focus to the infinity mark at the focus scale
- Unlock the fast focus slider (knob H, figure 1)
- Frame a (horizon) view point that is clearly at infinity
- Slide the fast focus slider until the infinity point is in focus
- Lock the fast focus slider
- Now the fine focus slider for this particular lens is set to infinity, the hard-stop aligned with the infinity mark

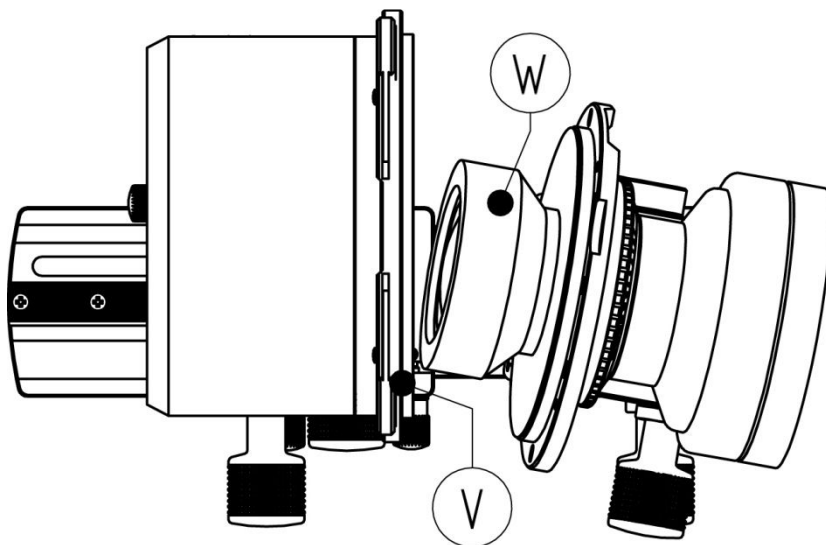


*Figure 5: Safety stop to prevent collision*

## 8. Collision safety stop

To prevent a collision between the rear lens element, interface plate and/or sensor, please use the safety stop (Q, figure 5). Please note that when you swing or tilt the lens in combination with shift or rise/fall the rear element will be closer to the interface plate. Please set the focus unit (F) to the end stop of the telescopic rail (R) as indicated in figure 5, now lock the focus unit. Please slide the telescopic rail (R) towards the rear element (W) until there is still some clearance between the interface frame (V) and the rear element. Lock the telescopic rail at this setting. The last step is to slide the safety stop against the locked telescopic rail and lock the safety stop.

With the safety stop correctly in place an adjustment of the telescopic rail or the focus unit will not result in a collision of the rear lens element and the interface plate or sensor. Please note that the position of the safety stop is different for each lens, so when you change lenses keep in mind to change the position of safety stop accordingly.



*Figure 6: Safety stop to prevent collision, top view*

## 9. Conversion Actus DB

It is possible to change the standard Actus<sup>3</sup> (for DSLR and mirrorless system cameras) to a Actus DB version. Screw S (M2x4 DIN 912, figure 7) prevents the telescopic rail (R) from sliding of the main rail (U). This screw can be removed when it is aligned correctly with the hole in the telescopic rail. Please use an Allen key 1,5mm to remove the screw. With the screw removed the rear standard of the Actus can slide of the main rail. Place the new rear standard, align the hole and screw hole of R and U, and screw in the screw S.

<sup>3</sup> The rear element conversion is possible for the Actus models with the serial number C69050 (DEC-2015) and higher.

Please note that the DB version of the Actus uses spacer block (P) to align the optical axis with the centre of the sensor of the digital back. The assembly of this spacer block uses the supplied screws Y (M3x30 ISO 14581).

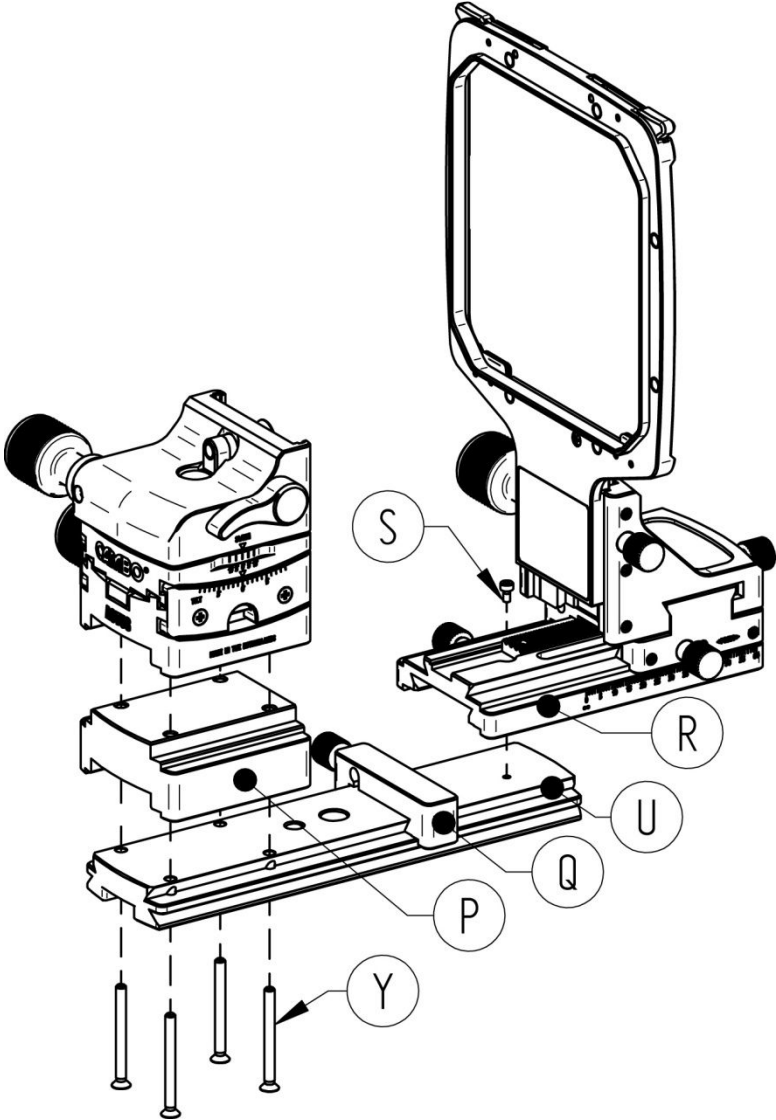


Figure 7: Conversion Actus DB

## 10. Actus accessories

AC = Actus (Mirror-less, (D)SLR camera's)

DB = Actus DB (digital back)

FB = Actus fixed mount Sony E

### Actus lenspanels

Code:	Name:	Description	Compatible		
Black finish ▼			AC	DB	FB
99070710	ACB-0	Lensplate #0 hole (black finish)	●	●	●
99070711	ACB-1	Lensplate #1 hole (black finish)	●	●	●
99070713	ACB-39	Lensplate M39 threading (black finish)	●		●
99070714	ACB-LR	Lensplate Leica-R bayonet (black finish)	●		●
99070715	ACB-HA	Lensplate Hasselblad bayonet (black finish)	●		●
99070716	ACB-RZ	Lensplate Mamiya RB-RZ bayonet (black)	●		●
99070717	ACB-NF	Lensplate Nikon F-lens bayonet (black finish)	●		●
99070720	ACB-CA	Lensplate Canon EF(s) bayonet (black finish)	●		●
99070719	ACB-P645	Lensplate Pentax 645 bayonet (titanium finish)	●		●
Titanium finish ▼					
99070730	ACT-0	Lensplate #0 hole (titanium finish)	●	●	●
99070731	ACT-1	Lensplate #1 hole (titanium finish)	●	●	●
99070733	ACT-39	Lensplate M39 threading (titanium finish)	●		●
99070734	ACT-LR	Lensplate Leica-R bayonet (titanium finish)	●		●
99070735	ACT-HA	Lensplate Hasselblad bayonet (titanium finish)	●		●
99070736	ACT-RZ	Lensplate Mamiya RB-RZ bayonet (titanium finish)	●		●
99070737	ACT-NF	Lensplate Nikon F-lens bayonet (titanium finish)	●		●
99070740	ACT-CA	Lensplate Canon Ef(s) bayonet (titanium finish)	●		●
99070739	ACT-P645	Lensplate Pentax 645 bayonet (titanium finish)	●		●

### Actus camera mounts

Code:	Name:	Description	Compatible		
			AC	DB	FB
99100780	AC-780	Bayonet Kit for Canon Eos body	●		
99100783	AC-783	Bayonet Kit for Nikon F-mount body	●		
99100786	AC-786	Bayonet Kit for Sony E-mount body	●		●
99100785	AC-785	Bayonet Kit for Leica-M mount body	●		
99100788	AC-788	Bayonet Kit for Micro Four-Third body	●		
99100789	AC-789 <sup>4</sup>	Bayonet Kit for Micro Four-Third body (high flange)	●		
99100790	AC-790	Bayonet Kit for Fujifilm X-mount body	●		

<sup>4</sup> For MFT camera bodies that need more clearance, like the Olympus OM-D E1, 5 and 10.

99012111	SLW-80	Hasselblad-V interface plate	●
99012115	SLW-81	AFi or HY6 interface plate	●
99012113	SLW-87	Contax 645 interface plate	●
99012114	SLW-88	Mamiya 645 AFd interface plate	●
99012112	SLW-89	Hasselblad H interface plate	●
99161598	WRS-1068	Mamiya RB film	●
99161609	WDS-619	Groundglass/Fresnel unit	●

## Actus bellows

Code:	Name:	Description	Compatible		
			AC	DB	FB
99030210	AC-210	Standard bellows (150mm extension)	●		
99030212	AC-212	Wide angle bellows (40mm extension)	●		
99030214	AC-214	Extended bellows (250mm extension)	●		
99030250	ACDB-250	Standard DB bellows (150mm extension)		●	
99030252	ACDB-252	Wide angle DB bellows (50mm extension)		●	
99030252	ACDB-254	Extended DB bellows (250mm extension)		●	

## Actus rails

Code:	Name:	Description	Compatible		
			AC	DB	FB
99080330	AC-330	Actus rail 300mm (black finish)	●	●	
99080345	AC-345	Actus rail 450mm (black finish)	●	●	

## Actus rear standards

Code:	Name:	Description	Compatible		
			AC	DB	FB
99100310	ACB-310	Rear Standard, 32HR/35HR/40HR/35XL/43XL (non-rotating bayonet mount) / (black finish)	●	●	●
99100950	ACB-950	Conversion Kit Rear Standard Actus DB	●	●	●

## Actus accessories

Code:	Name:	Description	Compatible		
			AC	DB	FB
99100356	AC-356	Actus level unit	●	●	●
99080389	AC-389	Actus infinity lock protector	●	●	●

## Actus complete camera body

Code:	Name:	Description	Colour	
			Black	Titanium
99100700	ACTUS-B	Actus Camera Body Black	●	
99100702	ACTUS-B2	Actus Camera Body with Canon EF Mount	●	
99100704	ACTUS-B4	Actus Camera Body with Nikon F Mount	●	
99100706	ACTUS-B6	Actus Camera Body with Sony E Mount	●	
99100708	ACTUS-B8	Actus Camera Body with Fujifilm X Mount	●	
99100700	ACTUS-T	Actus Camera Body Titanium		●
99100702	ACTUS-T3	Actus Camera Body with Canon EF Mount		●
99100704	ACTUS-T5	Actus Camera Body with Nikon F Mount		●
99100706	ACTUS-T7	Actus Camera Body with Sony E Mount		●
99100708	ACTUS-T9	Actus Camera Body with Fujifilm X Mount		●
99080389	ACTUS-DB	Actus "Digital Back" Camera Body Black	●	

### Cambo Fotografische Industrie B.V.

Cambo R&D April 2015

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