

PENTAX[®]

645

EXTENSION TUBE 645



The Helicoid Extension Tube is a close-up and copy work accessory furnished with a helicoidal thread to enable free change of photographic magnification with a single unit. In actual use, it is inserted between the camera body and the lens. As the helicoid is extended, the subject at a near distance may be photographed in a much larger image.

The Pentax 645 SLR facilitates close-up photography as the change in subject size can be directly viewed within the SLR viewfinder. When utilizing the Pentax Helicoid Extension Tube, the magnification from 0.57X to 1.05X is permitted with a standard 75mm lens. This range is almost equivalent to that obtained by using No. 2 and No. 3 of the Auto Extension Tube-A 645 Set.

In the event this tube is used in combination with an A645 lens, proper exposure is not available with the aperture ring set to A (auto) position.

- Through the combination with the Adapter 645 for 67 Lens, a 67 lens can be attached to this Helicoid Extension Tube 645. Aperture ring should be set to the respective f-stops.

SPECIFICATIONS:

Camera: Pentax 645

Compatible lenses: 645 lenses except 300mm f/4.

67 interchangeable lenses through use of

Adapter 645 for 67 Lens.

Dimensions: 77mm (max. dia.) x 43.7 ~ 67.4mm (depth)

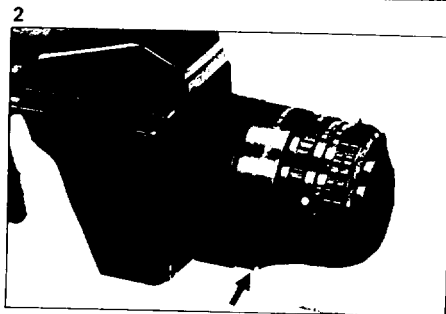
Weight: 205g.

Accessory: Case (HG-90)

ASSEMBLY



- (1) After removing the lens from the camera body, attach the Helicoid Extension Tube to the body mount. Match the red dot on the lens mount of camera body with the red dot on the tube, then turn the tube clockwise until it automatically locks. Make sure that it has completely locked by turning the tube slightly counterclockwise.



- (2) Mount the lens to the Helicoid Extension Tube. To remove the lens from the Helicoid Extension Tube, rotate the lens counterclockwise by 65 degrees while depressing the lock release button (indicated by an arrow mark) of the tube. Please note that the lock release button is different from the lens lock release button on the camera body, both in shape and position.

After turning the Helicoid Extension Tube, aperture should be closed to the desired automatic aperture value (with AF function even if the aperture is locked at A (auto)).

Focusing and Exposure Control

Focus the subject by rotating the focusing ring of the 645 lens or Helicoid Extension Tube, with the lens aperture fully open. Then, set the aperture at the desired f-stop. In close-up photography with high magnification, we recommend moving the camera itself back and forth to facilitate focusing.

The proper exposure is obtainable by setting the aperture ring to the appropriate f-stop according to the exposure value measured with the aperture stopped down.

Film-to-subject Distance

There is no mark indicated on the Pentax 645 camera body to show the position of the film plane. To precisely measure the film-to-subject distance, use the red line on the top cover of the body which approximately indicates its position. Consult the close-up table on the next page to know the correct film-to-subject distance depending on the desired magnification or picture area.

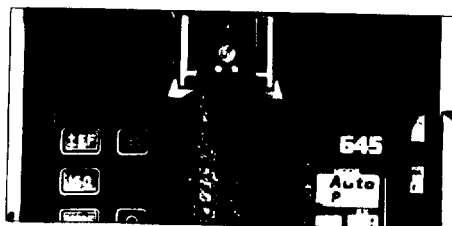
According to the abovementioned line on the top of the camera, you can set this distance using a ruler or measuring tape.

Using Close-up Table

Depending on the requirements of your close-up work, first determine: a) the picture area, b) the film-to-subject distance, or c) the magnification, all of which are provided in tables for your reference.

Exposure Factor

As the Pentax 645 camera incorporates a TTL (through-the-lens) exposure meter, proper exposure can be obtained by using that built-in meter. Consequently, you will smoothly carry out your photographing operation without hindrance even if you don't remember the exposure factor in the close-up table. Keep in mind that more exposure is always required for a close-up work than an ordinary shooting of the same subject from a distance.



CLOSE-UP TABLES (645 lenses)

● Normal Position

645 lens	Magnification	Helicoid extension	Distance scale set at	Picture area (mm)	Film-to-subject distance (mm)	Exposure factor
45mmF2.8	0.97	Minimum	∞	43×58	221	×1.9
	1.11	"	0.45	37×51	223	×2.1
	1.50	Maximum	∞	28×37	229	×6.2
	1.63	"	0.45	25×34	233	×2.7
55mmF2.8	0.78	Minimum	∞	53×72	256	×2.3
	0.97	"	0.45	43×58	253	×2.7
	1.20	Maximum	∞	35×47	255	×3.2
	1.39	"	0.45	30×40	259	×3.7
75mmF2.8	0.57	Minimum	∞	73×98	328	×2.2
	0.75	"	0.45	56×75	310	×2.7
	0.88	Maximum	∞	47×64	304	×3.1
	1.06	"	0.45	39×53	303	×3.7
LS 75mmF2.8	0.57	Minimum	∞	73×98	328	×2.2
	0.70	"	0.75	59×80	313	×2.6
	0.88	Maximum	∞	47×64	304	×3.1
	1.01	"	0.75	41×55	303	×3.5
150mmF3.5	0.29	Minimum	∞	142×192	856	×2.0
	0.43	"	1.4	96×130	711	×2.5
	0.45	Maximum	∞	92×125	699	×2.6
	0.59	"	1.4	71×95	641	×3.3

58mm Reverse Adapter 645



Reverse Attachment 645

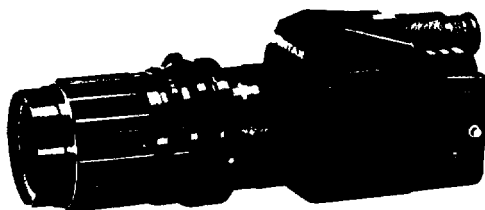


Greater than Life Size Close-up Photography
When taking macrophotographs of more than 1X (life size) with use of any lens, we recommend attaching the lens in reverse position so as to improve its focusing ability. In this case, such optional accessories as 58mm Reverse Adapter 645 and Reverse Attachment 645 can be used in combination with the Helicoid Extension Tube 645.

● Reverse Position

645 lens	Magnification	Helicoid extension	Picture area (mm)	Film-to-subject distance (mm)	Exposure factor
55mmF2.8	1.93	Minimum	22×29	278	×6.7
	2.35	Maximum	18×24	296	×9.1
	3.40	"	42×57	303	×3.4
75mmF2.8	0.99	Minimum	32×43	308	×4.7
	1.30	Maximum	36×49	305	×4.1
LS 75mmF2.8	1.15	Minimum	28×38	314	×5.4
	1.46	Maximum	"	"	"

CLOSE-UP TABLE (67 lenses)



Adapter 645 for 67 Lenses

When using a 67 interchangeable lens with Pentax 645 body, first attach the Adapter 645 for 67 Lens to the Helicoid Extension Tube, and mount a Pentax 67 lens on the adapter. In this case, automatic aperture control and open-aperture metering cannot be made; use stop-down metering method. The compatible 67 lenses are 55mm through 200mm.

Two 67 lenses: LS 90mm f/2.8 and Shift 75mm f/4 (when the lens is shifted) are not compatible with this adapter.

● Normal Position

67 lens	Magnification	Helicoid extension	Distance scale set at	Picture area (mm)	Film-to-subject distance (mm)	Exposure factor
90mmF2.8	0.48	Minimum	∞	87 × 117	414	× 1.9
	0.68	"	0.65	61 × 82	376	× 2.4
	0.74	Maximum	∞	56 × 76	371	× 2.6
	0.94	"	0.65	44 × 60	362	× 3.1
105mmF2.4	0.42	Minimum	∞	100 × 135	499	× 1.9
	0.55	"	1	75 × 102	452	× 2.3
	0.64	Maximum	∞	65 × 87	434	× 2.5
	0.78	"	1	53 × 72	420	× 2.9
マクロ 135mmF4	0.32	Minimum	∞	128 × 173	734	× 1.9
	0.63	"	0.75	66 × 88	571	× 3.1
	0.50	Maximum	∞	83 × 112	611	× 2.5
	0.81	"	0.75	51 × 69	549	× 3.8



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