



# *Automatic* **Extension Tube**

An extension tube is an exceptionally useful tool for macro photography that enables you to convert almost any lens into a macro lens with very close focusing economically while maintaining the optical quality of your lens.

ProMaster extension tubes have no optics. They are mounted between the camera body and lens creating more distance between the lens and film plane. By moving the lens farther away from the film or CCD sensor in the camera, the lens focuses much closer allowing greater magnification of your subject. The greater the length of the extension tube, the closer the lens can focus.

ProMaster Automatic Extension Tubes couple with your camera's automatic diaphragm. Your camera will properly calculate the exposure in the TTL or AE modes with natural light. Automatic Flash TTL exposure does not function properly with an extension tube in place.

ProMaster Automatic Extension Tubes are available as a set (12mm, 20mm, and 36mm), or as individual tubes in 12mm, 20mm, 25mm, and 36mm in mounts to fit Canon EF/EFS, Nikon F, and Sony A.

## **OPERATING INSTRUCTIONS**

### **Attaching to your camera**

The extension tube attaches to your camera in the same manner as your lens. Match the indicator mark on the tube to the indicator mark on your camera and rotate until it locks.

To insure proper meter coupling, always mount the tube(s) on your camera first, then mount the lens onto the tube(s).

### **Combining tubes**

When using more than one extension tube, attach the tubes together in any order, then mount to your camera body.

### **Lens compatibility**

The best results will be obtained when using standard to semi-telephoto focal lengths or with a macro lens. Wide-angle and zoom lenses may be used, but depending on how the lens is combined with the tube the distance between front of the lens and subject may become extremely close.

### **Using with TTL AE modes**

If the extension tube is correctly attached, it not only couples with the automatic diaphragm but also with TTL meter and AE (EE) mechanism. The exposure will be automatically calculated and you can shoot normally following the camera manufacturer's directions.

### **Using in non TTL mode**

Exposure will need to be calculated manually observing the additional exposure factor added by the length of the tube.

## **When using flash**

Calculate the correct F stop value for the working distance and then add the additional exposure factor for the tube. Use this to making test shots to confirm the correct exposure.

## **Exposure Factor**

Approximate exposure factors (when using a 50mm lens)

<b>12mm</b>	<b>20mm</b>	<b>25mm</b>	<b>36mm</b>
1.5	2	2.4	3

## **Helpful Hints**

1. As focusing becomes closer your depth of field is reduced. Remember to stop down your lens to increase the depth of field and get sharper pictures.
2. As the image magnification ratio increases, your camera is more susceptible to camera shake which will impair the sharpness of your images. Be sure to use a tripod and remote release to reduce camera shake.
3. When using TTL, the illumination from the viewfinder may have a greater effect on light metering when the extension tube is attached than when shooting with the lens alone. Follow the camera manufacturer's instructions to reduce this effect.
4. The focus distance is adjusted either by changing the distance between subject and camera or by using the focus ring of the lens. If your camera focuses using the split-image matching method, an increase in the exposure factor may darken either the top or bottom half of image. In this case focus using the matte area of the focusing screen.

## **Important notes**

1. When using extension tubes your lens will not focus to infinity. The focusing range will be limited to a close focusing distance.
2. There is a reduction of transmitted light when using any extension tube, which increases as multiple extension tubes are used together. This light lost can affect the camera's ability to auto focus. Manual focusing is recommended should the lens begin to "hunt" (not lock onto the subject).
3. Nikon "D" information is not transmitted because the lens is focusing closer than it's programmed to focus.
4. N-AF Auto Extension Tubes are auto focus compatible with Nikon AF lenses including Nikon AF-S (silent wave) lenses.

Made in China

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