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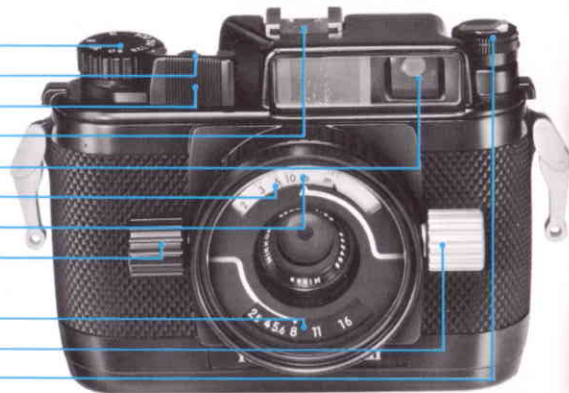
# *Nikon* **NIKONOS** **III**

## INSTRUCTION MANUAL

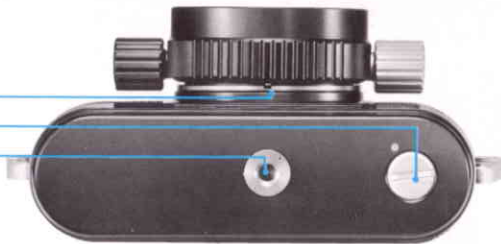
[www.orphancameras.com](http://www.orphancameras.com)

# NOMENCLATURE

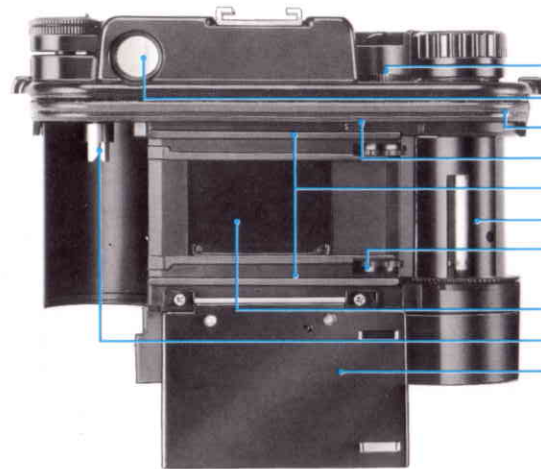
Shutter speed dial  
Safety lock  
Film-advance/shutter-release lever  
Accessory shoe  
Viewfinder  
Depth-of-field indicator  
Distance scale  
Aperture knob  
Aperture scale  
Focusing knob  
Rewind knob and rewind crank



Lens seating ridge  
Synchro-socket  
Tripod socket



2



Frame counter  
Viewfinder  
O-ring  
Film pressure plate latch  
Film guide rails  
Film take-up spool  
Film advance sprockets  
Shutter curtains  
Rewind shank  
Film pressure plate

Strap-attachment lever  
Lens seating groove

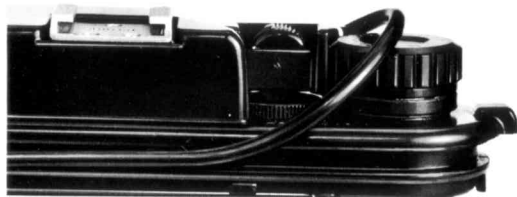


3

## CAMERA DESIGN

The special capabilities of the Nikonos III stem from the uniqueness of its construction. The camera consists of three main sections which interlock to form a completely watertight unit capable of withstanding pressure of up to 6kg/cm<sup>2</sup> (8.5 lb/in<sup>2</sup>) at depths of up to 50m (160 feet).

**Housing:** This outer section is made of die-cast aluminum alloy and specially treated for protection against the corrosive effects of salt water and underwater pressure. To ensure gripping, even with wet, bare or gloved hands, a non-slip rubber covering is applied.



**Body:** This section firmly fits into the housing. The entire assembly is made watertight through the adoption of O-ring gaskets at all joints. Mounted within are the bright-line viewfinder and most of the camera's moving mechanical parts.

**Lens:** The standard lens for the Nikonos III is the W-Nikkor 35mm f/2.5. The lens locks the entire camera together for safety during underwater photography. To ensure proper adjustment to the varying effects of water pressure, each lens barrel has a special spring-loaded mount.

### O-ring Gaskets

All joints of the Nikonos III are sealed by means of O-ring gaskets. These synthetic rubber rings ensure absolute watertightness and can withstand water pressure at depths down to 50m (160 feet) — as deep as you can dive with scuba equipment. As pressure increases, the seal becomes even tighter.

Periodic lubrication improves the life of the gaskets and facilitates component removal and attachment. Make it a practice to lubricate the gaskets before each underwater picture-taking session using the lubricant supplied with the camera for this purpose. Remember, a good seal is possible only if you use lubricant. (Also, see "Tips on Camera Care" on page 23.)

## LOADING THE CAMERA

### Removing the Lens

The lens in its bayonet mount locks the entire camera together; thus, it must be removed first in order to load the camera. Grasp the lens by the milled surface and pull outward slightly until the seating ridges on the lens mount are free of the seating grooves on the camera body's bayonet mount. Then rotate the lens 90° in

either direction until the focusing and aperture knobs are positioned vertically. Pull the lens firmly outward once more and the lens will slip free of the bayonet mount. It should be noted that lens removal should be performed only after the camera has been properly washed and dried.



## LOADING THE CAMERA — continued

### Removing the Body

After the lens is dismounted, the body can be removed from the housing. Position the strap-attachment levers under the lip of the body and push firmly downward to pry the body free of the housing. Once loosened, the body is lifted vertically out of the housing. It should be noted that any attempt to pry the body free of the housing prior to removal of the lens will result in damage to the camera. (Also, see "Tips on Camera Care" on page 23.)



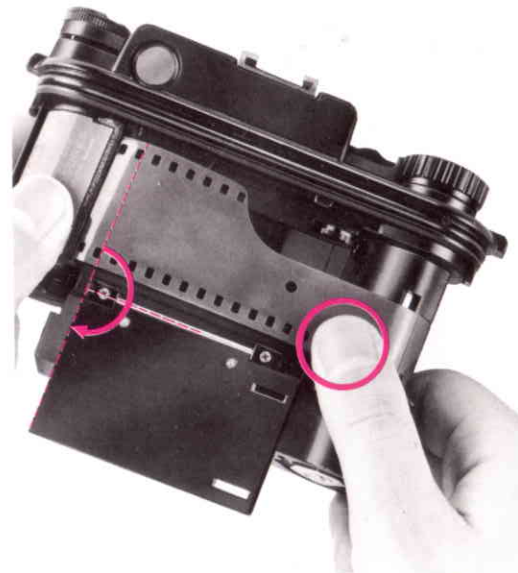
8



### Loading the Film

Push upward on the film pressure plate latch to release the plate. Then, swing the plate downward to permit placement of the film. Fit the film cartridge in the left-hand portion of the body with the film leader aligned with the film guide rails. Rotate the film take-up spool until the slot faces outward, and feed the end of the leader into the slot. Begin to slowly advance the film, checking that the leader winds smoothly on the spool and the film edge perforations engage with the film advance sprocket. When satisfied that the film is properly feeding, complete the advance stroke and close the film pressure plate.

**Caution:** Failure to seat properly may result in film slippage, incomplete closure of the film pressure plate, or uneven film travel along the guide rails.



9



## LOADING THE CAMERA – continued

### Installing the Body

The procedure for installing the body is the reverse of that for removing. Slide the body vertically into the housing until the O-ring at the lip is contacted. Now, press firmly on both sections until the lip of the body contacts the upper edge of the housing. During installation of the body, be careful not to exert excessive pressure on the shutter speed dial or film-advance/shutter-release lever.



10

### Installing the Lens

Place the lens in the camera's bayonet mount with the focusing and aperture knobs positioned vertically. Then, push the lens inward and twist it 90° clockwise until the seating ridges on the lens mount click and lock into position in the seating grooves on the camera body. For greater convenience when reading the scales, the lens may be mounted upside down on the camera.

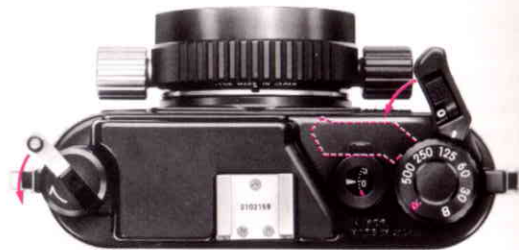
**Note:** If the lens cannot be mounted smoothly, lubricate the O-ring gasket around the lens base.



### Prior to Shooting

Set the shutter speed dial to any position except "R." Advance the film to dispose of several frames exposed during film loading (for advance operation, see pages 12 and 13), and to set the frame counter to "1." Now, you're ready to start shooting.

**Note:** Be sure to drop the rewind knob back to its recessed position. Failure to do so may result in water entering the camera when used underwater.



11

## FILM ADVANCE/SHUTTER RELEASE OPERATION

The functions of film advance and shutter release are performed via the operation of a single lever on the Nikonos III. This technique vastly simplifies camera operation for underwater photography. This lever, called the film-advance/shutter-release lever, is operated as follows:

### Film Advance Action

When pressure is released from the film-advance/shutter-release lever at the completion of shuttering, the lever swings out approximately 60° preparatory for the film advance action. The camera is now ready to be cocked and film is ready to be advanced for the next exposure. Press inward on the lever with a smooth, constant stroke until the lever reaches the end of travel. During this period the camera will be cocked, the film will advance one frame, the frame counter will advance one position, and the white dot in the frame counter will rotate and realign with the frame counter marking. Release the pressure on the lever and it will spring back slightly to the “ready” position, flush with the front of the camera body, to indicate that the camera is set for exposing the next frame.

Three special conditions should be noted concerning film advance operation. (1) When pressing the lever inward, make sure you press it as far as it will go, until the lever's stroke is com-

pleted; only then is film advance operation completed. (2) The film advance stroke can only be started from the fully extended position; shorter strokes are prevented by the internal mechanism. (3) Should the advance stroke stop during winding at the end of the roll, remove pressure from the lever, set the shutter speed dial to “R,” complete the stroke, and lock the lever (to prevent accidental shutter release during unloading) via the built-in safety lock. The camera should then be unloaded.

### Shutter Release Action

When the film-advance/shutter-release lever is in the “ready” position, parallel with the front of the camera body, it is set for shutter release. Simply squeeze the lever to release the camera's shutter for the time interval set on the shutter speed dial. When pressure is removed from the lever at the completion of shutter release, the lever will spring outward 60° for the start of the next film advance stroke.



Taken from [www.butkus.org/chinon](http://www.butkus.org/chinon)



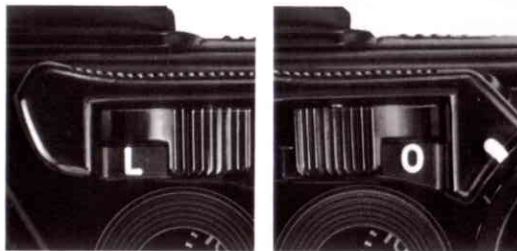
### Frame Counter

The frame counter operates automatically to show how many frames have been exposed. When the camera housing is removed for loading, the counter is reset to the start position, the red line before "0". Once the camera is loaded and the housing is in place, each film-advance/shutter-release sequence will cause the frame counter to advance one position until the maximum 20 or 36 frames have been exposed. The dial of the frame counter is indexed for each frame, with numbers at every fifth frame.



### SAFETY LOCK

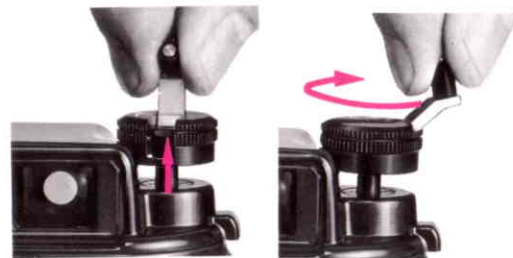
The film-advance/shutter-release lever of the Nikonos III is fitted with an easy-to-operate safety lock used to prevent accidental shuttering of the camera. To secure the lever in the "ready" position (flush with the front of the camera body), slide the safety lock toward the shutter speed dial until the "L" is visible. In this position, the camera cannot be shuttered. To disengage, slide the lock in the opposite direction until the "O" appears; the shutter can now be released.



14

### UNLOADING FILM

When the frame counter indicates that the last exposure has been made, the roll of film has been fully exposed and it should be removed. Before unloading, however, the film-advance/shutter-release lever should be secured in place at the "ready" position (flush to the body) to prevent accidental exposure during unloading. To secure, perform a regular advance stroke (should binding occur, remove finger pressure and set the shutter speed dial to "R"—then complete the stroke) to return the lever to the "ready" position and, then, slide the safety lock to the right.



Set the shutter speed dial to "R" (rewind) and pull the rewind knob up until it locks in place and cannot be pushed back down. Unfold the rewind crank and turn it in the direction of the engraved arrow, using a smooth, even pressure. During film rewinding, the frame counter goes backwards. Stop when the counter reaches "0," as explained in "Loading the Camera" on pages 7 ~ 11.

**CAUTION: NEVER UNLOAD THE CAMERA UNDERWATER!**



15

## HOLDING THE CAMERA



Camera shake is one of the most common causes of unsharp pictures, especially at slow shutter speeds. Learn to hold the camera correctly and practice steady shutter squeezing. The photos show the best ways to hold the camera for sharp pictures.

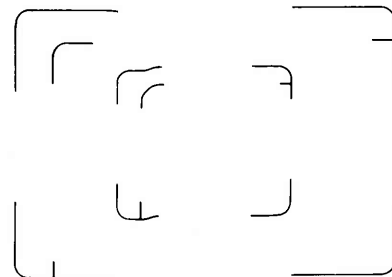
Grasp the camera firmly so that the camera rests securely in the palm of the left hand. Wrap your right hand around the camera so that the index finger rests on the advance lever. Position the camera so that the eye looks through the center of the viewfinder. From this basic stance, the camera can be easily switched from horizontal to vertical format.

Underwater, weightlessness makes steady camera holding even more difficult. Concentrate on steadiness even when using fast shutter speeds.

## VIEWFINDER

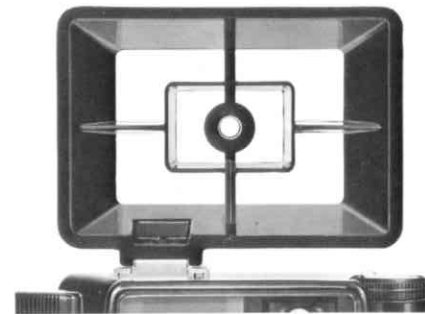
### Built-in Viewfinder

The Nikonos III is fitted with a bright-line viewfinder for use on land. As this type of viewfinder produces a field of view larger than that of the lens, framing marks are provided to indicate the area within the field that will be recorded on the film. Framing marks are for both the 35mm and 80mm lenses. In addition to the main framing marks for the two lenses, parallax correction marks are included to indicate the proper framing for subject distances as close as 0.8m (2.75 feet).



### Accessory Finders

Two accessory frame finders are available for both underwater and on-land use. These units mount securely in the accessory shoe at the top of the camera body. One unit is used exclusively with the 28mm lens, while the second unit is used with either the 35mm or the 80mm lens. Each frame finder provides the photographer with framing and centering references corrected for parallax at a close-focus of 2m (6.5 feet). For details, refer to the instructions supplied with each unit.





## FOCUSING



Since the Nikonos III is not provided with a coupled rangefinder, camera-to-subject distances are normally estimated. The depth-of-field indicator on the distance scale of each lens shows just how much error you can tolerate and still get sharp pictures. The standard 35mm lens has considerable depth of field; thus, reasonable estimates will usually result in sharp pictures.

Turn the focusing knob at the right side of the lens until the estimated distance appears above the white triangular distance index. As long as the subject remains within the limits of sharpness shown by the red depth-of-field pointers on the distance scale, sharp focus is assured. Depth of field decreases sharply at distances closer than 1.5m (5 feet), so it is good practice when shooting close-ups to stop down the lens to the smallest possible aperture, or measure the distance. The closest distance at which the standard 35mm lens can be focused is 0.8m (2.75 feet).

## EXPOSURE CONTROL

The amount of exposure the film receives is determined by a combination of shutter speed and aperture size. The larger the lens aperture, or the slower the shutter speed, the greater the exposure. Aperture size is expressed in f/numbers with larger numbers representing smaller apertures and vice versa (e.g., f/8 gives greater exposure than f/11).

Camera aperture and shutter speed controls are calculated so that an increase of one f/number compensates for a decrease of one step in shutter speed. The table below shows how control settings are interrelated; all combinations shown give the same exposure.

Aperture	f/2.8	f/4	f/5.6	f/8	f/11
Shutter Speed (Seconds)	1/500	1/250	1/125	1/60	1/30

The choice of control settings will depend on the result desired. A fast shutter speed will freeze motion, while a slow speed will cause image blur; for small apertures, depth of field is extended, while large apertures restrict sharp focus to the main subject.

### Setting the Shutter Speed

The numbers engraved on the shutter speed dial stand for fractions of a second (e.g., 30 represents 1/30 second). Turn the shutter speed dial until the desired number appears opposite the white shutter speed index line on the film-advance/shutter-release lever; you can change speed at any time between strokes of the lever. Speeds from 1/30 to 1/500 second plus “B” are engraved on the dial and identified by click-stops; use of intermediate settings, however, is not recommended. At the “B” setting, the shutter will remain open as long as the lever is held depressed. The “R” setting is used only when rewinding the film.



### Setting the Aperture

The aperture knob at the left side of the lens controls aperture settings and operates the depth-of-field indicator on the upper distance scale. Turn the knob until the desired f/number appears below the white triangular aperture index on the lower scale. The white line leading from the aperture knob to the aperture scale makes identification easy.



### Depth-of-Field Indicator

Depth of field can be read directly from the distance scale in either meters or feet with the aid of the depth-of-field indicator coupled to the lens aperture control knob. As you change aperture settings, two red pointers move together or apart automatically to indicate the near and far limits of sharpness at each aperture setting. For example, with the standard 35mm lens focused to 3m (10 feet) and set at f/16, the



pointers show that the depth of field extends from about 1.5m (5 feet) to infinity ( $\infty$ ).

### Depth of Field

Depth of field refers to the zone of acceptable focus extending in front of, and behind, the plane of sharpest focus. Within this zone, image blur is negligible and everything can be considered as being in sharp focus. Three factors greatly influence the depth of field: the focal length of the lens in use, the camera-to-subject distance, and the taking aperture. The smaller the aperture and the shorter the focal length of the lens, the greater the depth of field. Also, the closer the subject, the shallower the depth of field. These three factors can operate independently or in conjunction with one another, with any one factor capable of partially canceling the effects of the others.

## FLASH SYNCHRONIZATION

The Nikonos III is designed to synchronize with most types of flashbulbs at almost all shutter speeds and with electronic flash at speeds to 1/60 second. The synchro-socket at the camera baseplate has an FP contact for use with bulb-type flash units (for M, FP and MF) and an X contact for electronic flash units. The table below shows which shutter speeds may be used with different types of flashbulbs.

Contact	Flashbulb	Shutter Speed					
		500	250	125	60	30	B
FP	M						
	FP						
	MF						
X	Electronic Flash						

□: Synchronized    ■: Cannot be used

No special adapter is necessary when using the Nikonos III camera with the Nikonos Underwater Flash Unit for underwater flash photography. Simply unscrew the synchro-socket protective cap and connect the two units together. When using the Nikonos III on land, the Flash Unit Adapter is available to adapt the camera for use with regular, bulb-type flash units or electronic flash units.



## TIPS ON CAMERA CARE

1. After using the camera in salt water, and whenever dirty, rinse it thoroughly in fresh running water to remove any residue. Then dry with a soft cloth before opening. Never dry the camera by heating.
2. Do not submerge the camera in water with the synchrosocket protective cover removed. And whenever using the Flash Unit, make sure that the flash connector is securely attached to the camera before entering the water.
3. O-ring gaskets should be protected from cuts or scratches, as might be caused by grains of sand. Whenever the gaskets appear to be worn, they should be replaced. Spare gaskets for the lens mount and the lip of the body are furnished with the Nikonos III. Replacement of other gaskets should be left to an authorized serviceman.
4. Should the lens or body be accidentally dropped in salt water during loading (or at any other time when the interior is exposed), rinse immediately in fresh water and take the unit to a Nikon Service Center or Dealer as soon as possible.
5. Do not attempt to adjust the focusing knob or aperture knob past the end limits of travel; forcing these knobs will result in damaging the lens mechanism.
6. Never attempt to change lenses, open the camera, or load/unload film underwater.
7. Lubricate all gaskets and the flash contact after each dive.



## TIPS FOR UNDERWATER PHOTOGRAPHY

The underwater world is a challenging dimension for the photographer, amateur and professional alike. And part of this challenge is the mastering of new skills essential for even the most basic underwater photography. The following are some tips designed to help beginners improve their underwater pictures. With a little practice and experimentation you will learn to get good results consistently.

### Visibility

Underwater visibility varies depending on several factors, including the degree of turbidity of the water, the amount of light reflected at the water surface, and the reflectivity of the bottom. Since visibility decreases with increased subject-to-camera distance, move in as close as possible to your subject and use lenses with the widest possible field of view. Shooting at close distance will also make colors more life-like and improve sharpness and contrast.

*Photo: A. TATEISHI*

### Focusing

The refractive index of water is  $\frac{4}{3}$  that of air. Thus, objects underwater will appear 25% closer and 33% larger than they actually are. This condition has the effect of increasing the focal length of the lens and narrowing the field of view. For practical purposes, however, this situation makes no difference as the photographer and camera lens are both equally influenced by refraction and will "see" alike underwater. Measured distances, on the other hand, should be reduced by 25% before being set on the lens distance scale (e.g., set focus for 3m when measured distance is 4m).

*Photo: J. COOKE*







## TIPS FOR UNDERWATER PHOTOGRAPHY — continued

### Exposure

For accurate underwater exposures, a water-tight exposure meter is essential. If a meter is unavailable, however, the following procedure will generally give satisfactory results: Measure the light above water and use the exposure setting for depths up to 1m (3 feet); for each additional 1m (3 feet), open the lens diaphragm one full stop. For photography below 6m (20 feet), use of a flash unit is essential.

Whenever possible, shoot with the camera pointed horizontally; shooting straight down places the light source behind the camera, resulting in flat, low-contrast pictures.

*Photo: J. COOKE*

### Film

Generally, the choice of film for underwater use will be guided by the same considerations as in ordinary photography. When underwater visibility is poor, however, fast films are a must.

### Filters

Red light is absorbed rapidly underwater, resulting in pictures with an overall greenish or bluish cast. To avoid this effect when using color film, use an amber filter such as the A2 or the A12. With black-and-white film, try sharp-cut series filters like the Y44, Y48, Y52 or O56. These filters improve contrast by cutting underwater "haze" and absorbing colors that spoil the effect of black-and-white photos.

*Photo: A. TATEISHI*





## UNDERWATER FLASH PHOTOGRAPHY

The light transmission characteristics of water are similar to those of a strong blue-green filter—colors at the warm end of the visible-light spectrum (i.e., red, orange and yellow) are selectively absorbed. And the deeper below the surface, the greater the amount of absorption. When diving, however, this condition is often difficult to discern because the diver “remembers” colors as they appeared above the surface. Color film, on the other hand, does not have this “memory” and, thus, reproduces colors in the true greenish or bluish cast in which they appear.

At depths greater than 3 meters (10 feet), flash photography with the Nikonos Underwater Flash Unit becomes almost essential for natural, lifelike color photographs. And to reduce the influence of water coloration on the light as it travels to the subject and back to the camera, close working positions are a must. Mount the unit with the light source positioned above the camera and at an angle of 45° to the optical axis. Use of FP-type flashbulbs is particularly

recommended because of their reddish emission and slightly longer flash duration.

As many additional factors can influence the success of your underwater flash exposures, learn by experimenting under as many different conditions as possible.



## CLOSE-UP PHOTOGRAPHY

The merits of underwater close-up photography become self-evident when we consider the rapid deterioration of image quality as the subject-to-camera distance increases underwater. Using close-up techniques (with or without flash), visibility, color balance and light intensity are at a maximum for the subject being photographed; thus, the lens may be stopped down to the smallest possible aperture for the maximum depth of field.

The Nikon close-up outfit for the Nikonos III provides all the equipment necessary to perform close-up photography with any of the three Nikkor lenses: 28mm f/3.5, 35mm f/2.5 and 80mm f/4. This equipment includes the close-up lens for mounting in front of the camera lens, three accessory field frames (one for each lens) used when composing, and the frame support bracket mounted on the camera and used to determine subject-to-camera distance. Close-up photography via this equipment is greatly simplified.

As depth of field is very shallow in close-up photography, use of the smallest apertures is strongly recommended. Flash illumination via the Nikonos Underwater Flash Unit will be helpful, in this respect, permitting the use of the larger f/numbers for the greatest depth of field.



## NIKONOS III LENSES

### UW-Nikkor 15mm f/2.8

The UW-Nikkor 15mm f/2.8 lens provides a super-wideangle (94°) field of view, with exceptional close focusing. Thus, you can move right in on the subject without fear of image cut-off. And with the large maximum aperture of f/2.8, low levels of illumination are less of a problem. The optics are corrected exclusively for underwater aberrations and provide excellent underwater photographs. This lens cannot be used out of water. Nikon Integrated Coating (NIC) applied.

Picture angle: 94°

Lens construction: 9 elements in 5 groups

Minimum aperture: f/22

Closest focus: 0.3m (1 ft); scale graduations in meters and feet

Viewfinder: Accessory optical finder available

### UW-Nikkor 28mm f/3.5

This UW-Nikkor lens is designed for exclusive underwater use, being corrected for maximum sharpness in this medium. The wideangle field of view (59°) is ideal for close-up photography without image cut-off. The distance scale is marked in optical underwater distances instead of true distances. Supplied with plastic protector. Cannot be used out of water. NIC applied.

Picture angle: 59°

Lens construction: 6 elements in 5 groups

Minimum aperture: f/22

Closest focus: 0.6m (2 ft); scale graduations in meters and feet



### W-Nikkor 35mm f/2.5

The W-Nikkor 35mm f/2.5 lens is the standard lens for the Nikonos III. As with all lenses for the Nikonos III, the optical elements are sealed via a watertight front element for optimum pressure resistance. Additionally, the lens barrel features the special spring-loaded mount that reinforces the interlocking action of the major components of the Nikonos III. This lens may be used both in and out of water for maximum versatility. Threaded lens front accepts a variety of accessories. NIC applied.

Picture angle: 46°30' (underwater); 62° (on land)

Lens construction: 7 elements in 5 groups

Minimum aperture: f/22

Closest focus: 0.8m (2.75 ft); graduated in meters and feet

### Nikkor 80mm f/4

The Nikkor 80mm f/4 lens, with its underwater picture angle of 22°45', adds telephoto photography capability to the Nikonos III. When used on land, the picture angle is 30°20'. As with the W-Nikkor 35mm f/2.5 and UW-Nikkor 28mm f/3.5 lenses, this unit can be used for close-up photography via the equipment provided in the Nikon close-up outfit. NIC applied.

Picture angle: 22°45' (underwater); 30°20' (on land)

Lens construction: 5 elements in 5 groups

Minimum aperture: f/22

Closest focus: 1m (3 ft); graduated in meters and feet



## NIKONOS III ACCESSORIES

Nikon offers a full range of accessories for both underwater and on land picture-taking with the Nikonos III. In addition to the lenses, flash unit, frame finders and close-up outfit already mentioned, the following are available:

### Lens Hood

A special lens hood is available for the W-Nikkor 35mm f/2.5 lens. The hood screws into the front of the lens. This accessory is also used to mount 52mm screw-in filters to either the 35mm lens or the 80mm lens; the filters screw directly into the front of the hood.

### Rubber Lens Protector

This unit is a combination lens protector and lens hood for the 35mm lens. It slides over the front of the lens for protection when using the lens underwater.

### Plastic Lens Protector

A special plastic lens protector is available for mounting on the front of any of the Nikkor lenses: 28mm f/3.5, 35mm f/2.5 and 80mm f/4. The resiliency of this unit effectively protects the lens against damage from scratches or bumping against solid underwater objects.

### AG Bulb Adapter

This accessory adapts the Nikonos Underwater Flash Unit to accept AG-type flashbulbs. The adapter fits conveniently into the bulb socket of the flash head.



### Lens Cases

Two types of leatherette lens cases are available for Nikonos III lenses. The larger case accepts the Nikkor 80mm f/4 lens, while the other accepts either the UW-Nikkor 28mm f/3.5 or the W-Nikkor 35mm f/2.5 lens.

### Camera Case

This semi-soft leatherette case is fully water-repellent and treated to resist the effects of mildew and fungus. Provided with a noncorroding zipper. The camera case accepts the camera body with either the W-Nikkor 35mm f/2.5 or UW-Nikkor 28mm f/3.5 lens (and lens cap) attached.

### Underwater Viewfinder

Two special plastic frame finders and one optical finder are available as accessories for use with Nikonos lenses underwater. The optical finder is for exclusive use with the UW-Nikkor 15mm f/2.8 lens, providing the same field of view as the lens. Of the plastic frame finders, one is for exclusive use with the UW-Nikkor 28mm f/3.5 lens, while the second is used with either the W-Nikkor 35mm f/2.5 or the Nikkor 80mm f/4 lens. Plastic frame finders provide framing and centering at a close-focus point of 2 meters (6 feet). Each finder is supplied with its own leatherette case for storage when not in use.

### Flash Unit Adapter

This accessory adapts the Nikonos III camera body to accept synchronization cords used for flash photography with either bulb-type flash units or electronic flash units; for flash photography, the flash unit is mounted on the camera's accessory shoe. The Flash Unit Adapter may not be used underwater.

### O-Ring Lubricant

The Nikonos III comes with a supply of gasket lubricant and a set of spare gaskets. The lubricant should be applied periodically to the camera gaskets to ensure maximum watertightness. When the tube of lubricant supplied with the camera is used up, additional tubes may be purchased at your Authorized Nikon Dealer.

## FEATURES / SPECIFICATIONS

**Type of camera:** 35mm amphibious camera  
**Picture format:** 24mm x 36mm (35mm format)  
**Lens mount:** Nikonos spring-loaded bayonet type  
**Lenses available:** W-Nikkor 35mm f/2.5 as standard; three additional lenses from super wideangle to telephoto  
**Shutter:** Vertical-travel (downward) focal-plane type; speeds from 1/30 to 1/500 sec. and "B"; shutter released via special film-advance/shutter-release lever  
**Flash synchronization:** Direct when using Nikonos Underwater Flash Unit; manual with others, via adapter mounted in synchro-socket in base of camera  
**Range**  
M and MF bulbs: 1/30 sec.  
FP bulbs: 1/500 ~ 1/60 sec.  
Speedlights: 1/60 ~ 1/30 sec. and "B"

**Accessory shoe:** Built into top of body  
**Viewfinder:** Bright-line viewfinder built into body; used with 35mm and 80mm lenses  
**Film winding:** Via single-stroke, combination-action lever; lever also used for shutter release  
**Frame counter:** Shows number of frames exposed (additive type); automatically reset to start position (2 frames before "0") when camera is opened; film advance indicator built into counter  
**Film rewinding:** Manual via film rewind crank  
**Weight:** 620g (without lens)  
780g (with standard lens on land)  
270g (with standard lens underwater)  
**Dimensions:** 144 x 99 x 47mm