

# AQUATICA™

## Digital



# OPERATING MANUAL

FOR THE AQUATICA DIGITAL  
HOUSING FOR THE CANON 7D

PRODUCT # 20065

Thank you for having selected the AQUATICA Digital Camera Housing System for your underwater photography.

The AQUATICA Digital Housing is the result of a long and continuing relationship with the most demanding underwater photographers in the world. Each housing is handcrafted, quality checked and pressure tested to a 300 feet equivalent by a small group of specially trained individuals, each of whom takes the utmost pride and satisfaction in offering the best underwater camera housing in the world.

The Aquatica Digital Housing was designed for optimum technical and optical performance and to provide easy and efficient underwater access to essential functions and controls of the Canon 7D DSLR.

This manual assumes that the user is already familiar with the Canon 7D camera. If not, please read the Canon instruction manual before attempting to use the housing.

With basic care and maintenance, your AQUATICA housing will give you a lifetime of enjoyment and satisfaction in producing underwater images.

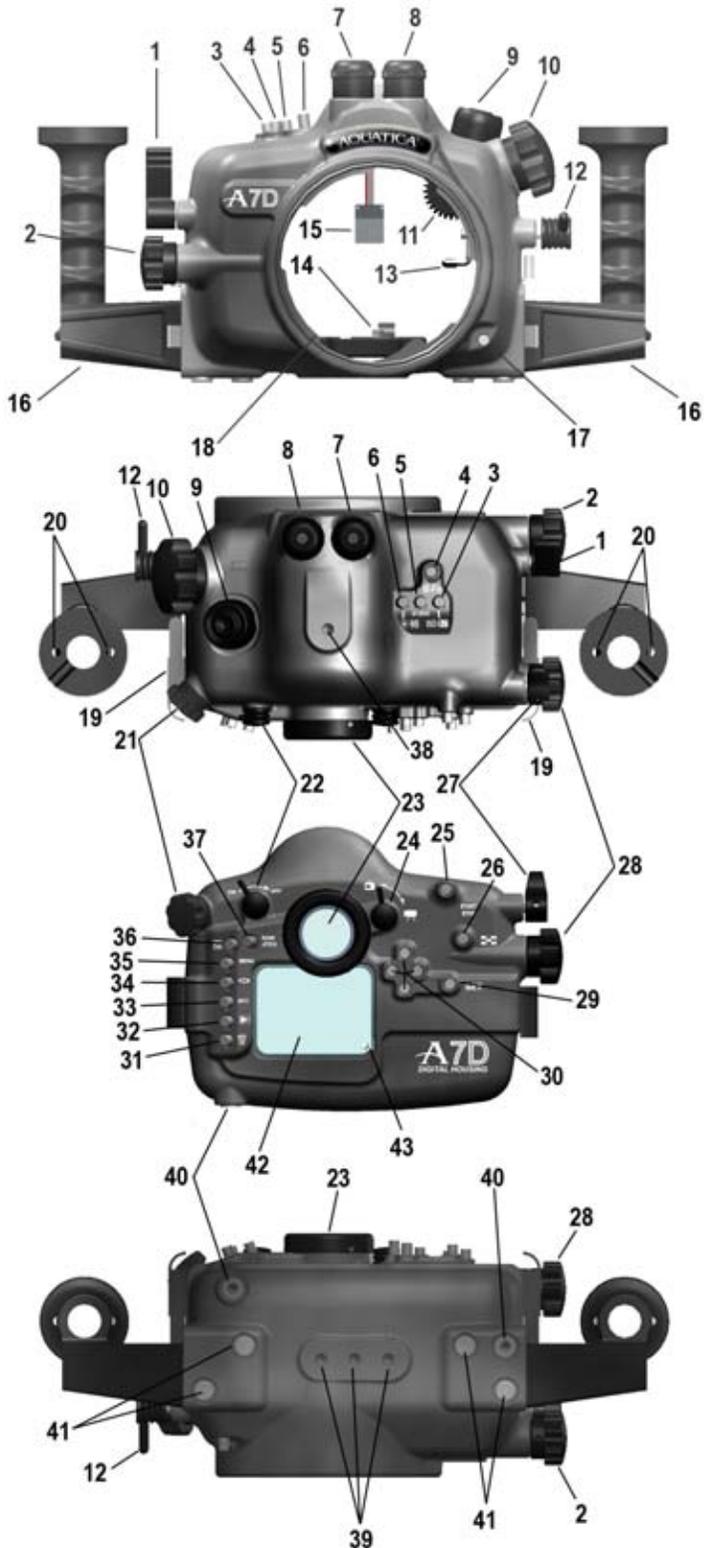
Please read this manual carefully before using your housing for the first time and note that: whenever cited the right hand is your right when using the housing.

## **SAFETY PRECAUTIONS:**

Improper transportation handling or use of this housing might cause a flood or malfunction.

Please read and follow the following precautions:

- Store and transport the housing in a sturdy, shock proof container and avoid travelling with the camera mounted inside the housing as impact forces especially on the external push buttons will be transferred to the camera.
- When travelling by air, either remove the port or open the housing to prevent pressure built up inside the housing that could force ports window to pop out or unseat O-ring seal.
- Never change a port or open the housing in a location where sand or similar foreign material might come in contact with an O-ring.
- Use of accessories or modifications and alterations unauthorized by the manufacturer may result in flooding or poor functioning of the controls.
- Be careful when opening the housing as the pressure buildup inside the housing will exaggerate the force of the latch spring. Keep fingers away from the path of the latches.
- Whenever changing ports or O-rings, perform a simple seal test with out the camera inside.
- Avoid scratching the acrylic or glass ports and windows.
- Make sure that all ports remain properly attached before rinsing the housing, especially when rinsing without a wired strobe make sure the Bulkhead connector is sealed with its plug.
- Never attempt to operate the camera in autofocus mode if a focus gear is engaged on the lens to the housing pinion gear.
- The main O-ring seals should be maintained and cleaned on a regular basis. Read and follow the *Care and Maintenance* section on this manual.
- Ensure that the spring loaded secondary lock is properly engaged on the latches to prevent their accidental opening.



- 1- Shutter Release lever
- 2- Main Dial access knob
- 3- ISO / Flash exposure compensation button
- 4- M-FN Multi Function Button
- 5- AF / Drive selector button
- 6- Metering / WB selector button
- 7- Bulkhead Connector
- 8- Bulkhead Connector
- 9- Accessory bulkhead (shown with optional hydrophone)
- 10- Focus/Zoom Control knob
- 11- Focus/Zoom Control pinion gear
- 12- Lens Release knob
- 13- Lens Release knob lever
- 14- Removable Camera Tray
- 15- Hot shoe connector
- 16- Grips (x2)
- 17- Port Release mechanism button
- 18- Bayonet Flange
- 19- Latches (x2)
- 20- Grip's Accessories mounting holes (1/4"-20)
- 21- Mode Dial access knob
- 22- On/Off switch lever
- 23- Viewfinder Eyepiece
- 24- Live View/Movie selector switch
- 25- Start/Stop Movie button
- 26- AF Point / Magnifier button
- 27- AF-ON / AF-Start & Star access lever
- 28- Quick Control Dial access knob
- 29- Set button
- 30- Multi Controller buttons array.
- 31- Erase button
- 32- Playback button
- 33- INFO activation button
- 34- Picture Style button
- 35- Menu button
- 36- Quick Control button
- 37- One Touch RAW+JPEG button
- 38- Accessory mounting hole (1/4"-20)
- 39- Accessories mounting holes (x3)
- 40- Sacrificial Anodes (x2)
- 41- Rubber Anti Skid pad
- 42- Rear LCD window
- 43- Optional Moisture Alarm LED hole

1. **SHUTTER RELEASE LEVER:** Pulling the shutter release lever back part way activates the camera meter and auto focus. Pulling the lever back all the way fires the camera.
2. **MAIN DIAL ACCESS KNOB:** Rotates clockwise and counterclockwise. Use alone or in combination with other controls to select or set various camera functions or modes. In "Manual" the exposure mode controls the shutter speed settings (see camera manual).
3. **ISO / FLASH EXPOSURE COMPENSATION:** Press to select ISO speed or to select exposure correction of the flash\*  
\* (please note this is only in the event a Canon flash in a housing would be used).
4. **M-Fn MULTI FUNCTION:** press to select either the focus point or the flash exposure lock function.
5. **AF/ DRIVESLECTOR BUTTON:** press to select either AF Mode or the DRIVE modes.
6. **METERING PATTERN / WHITE BALANCE MODE BUTTON:** Press to select the appropriate metering mode and/or White Balance mode.
7. **BULKHEAD CONNECTOR:** This bulkhead connector may vary from one housing to another, due to owner preferences, (see page 9)
8. **BULKHEAD CONNECTOR:** This bulkhead connector may vary from one housing to another, due to owner preferences, (see page 9)
9. **HYDROPHONE:** This optional hydrophone is shown mounted on the accessory bulkhead provided on the Aquatica 7D housing, it will record sound while video recording underwater, it's design is made to be effective underwater and will not function properly if not immersed.
10. **FOCUS/ZOOM KNOB:** Turning allows manual focus of a single focus lens or rotation of the zoom mechanism of a lens.
11. **FOCUS/ZOOM PINION GEAR:** Engages and operates the focus or zoom gear attached to the lens.
12. **LENS RELEASE KNOB:** activates the lens release button on the camera allowing easy removal of the lens.
13. **LENS RELEASE KNOB LEVER:** Applies pressure on the camera lens lock button
14. **REMOVABLE CAMERA TRAY:** Used to attach camera and slide in housing.
15. **HOT SHOE CONNECTOR:** connects the camera to the Flash Bulkhead. Slide this Connector into the camera Hot Shoe. When detaching do not pull the cord as this might damage the electrical connections.
16. **HAND GRIPS (X2):** Left and right grip allowing the mounting of strobe arms and accessories.
17. **PORT RELEASE MECHANISM BUTTON:** Press down to release the locking mechanism when installing or removing a port or extension.
18. **BAYONNET MOUNTING FLANGE:** allows the mounting of different ports and extension rings on the housing.
19. **LATCHES:** Two heavy duty latches with safety locks to protect against accidental opening.
20. **GRIP'S ACCESSORIES MOUNTING HOLES:** Two 1/4-20 TPI holes on each grip are ready to accept TLC Base Brackets or TLC Base Ball for strobe arms or accessories.
21. **MODE DIAL ACCESS KNOB:** Rotate to select the proper shooting mode, C1, C2 and C3 can pre programmed with personal parameter and care should be taken to understand the various combination available
22. **ON/OFF SWITCH LEVER:** Rotate to turn on the camera.
23. **REMOVABLE VIEWFINDER:** A full view of the illuminated camera viewfinder displays all necessary information. This viewfinder be removed and replaced with optional Aqua View Finder for a larger displayed image.
24. **LIVE VIEW / MOVIE MODE SELECTOR SWITCH:** Rotate left or right to select Live View or the Movie mode.
25. **LIVE VIEW / MOVIE MODE START-STOP BUTTON:** Push to start or stop Live View or Movies mode.
26. **AF POINT SELECTOR / MAGNIFIER BUTTON:** Push to select the AF pattern desired or to magnify the image on the rear LCD, Spot, Center Weighted or Matrix metering options.
27. **AF-ON / AF-START / STAR ACCESS LEVER:** This lever can be pull outward or inward to access both the AF-ON feature and the Star customizable button, these are important controls for video shooting and care should be taken to fully understand their working and subtleties.
28. **QUICK CONTROL DIAL ACCESS KNOB:** It rotates clockwise and counterclockwise. It can be used alone or in combination with other controls to select or set various camera functions or modes. Refer to camera manual for in depth use.
29. **SET BUTTON:** Press to approve selection of menu or choosen mode features.
30. **MULTI CONTROLER BUTTON ARRAY.** Use to navigate through the multiples options of the menus, modes and features of the camera.

31. **ERASE BUTTON:** Press to delete images.
32. **PLAYBACK BUTTON:** Press to activate the monitor and review images.
33. **INFO BUTTON:** This button will activate the rear LCD and display all pertinent shooting information.
34. **PICTURE STYLE BUTTON:** Press to select the desired feature. (note: It is somewhat recommended to shoot in RAW format and concentrate on these option in post production).
35. **MENU BUTTON:** Press to activate menu display, scroll using main or quick dial control knob and select using SET function button
36. **QUICK CONTROL SCREEN BUTTON:** Press to activate the LCD menu display.
37. **ONE TOUCH RAW/JPEG BUTTON:** Press to add a capture of RAW or JPEG file depending on your shooting mode
38. **MOUNTING HOLE FOR ACCESSORY:** a 1/4"-20 TPI hole is supplied to accept a TLC accessory or TLC base ball for mounting a strobe arm or a modeling light.
39. **MOUNTING HOLES:** Three 1/4" X 20 holes are provided for mounting strobes trays or accessories.
40. **SACRIFICIAL ANODES:** (2X) zinc anodes are installed to protect your housing against salt water corrosion; these are made to deteriorate easier than the other strategic part of your housing, hence the name sacrificial anodes. These anodes need to be replaced by the user as needed.
41. **RUBBER ANTI SKID PADS:** Four rubber pads are provided to protect the housing and preventing it from sliding on wet decks.
42. **REAR WINDOW LCD:** This port window allows viewing of the recorder images and is used in the Live View as well as the Video mode for framing, a cutaway in the upper right corner allows the users to see the recording pilot light. Allow viewing of menus as well.
43. **MOISTURE ALARM LED MOUNTING HOLE :** A mounting hole is provided for the optional moisture alarm.



The *Aquatica Digital* housing serie is issued from the world's most technologically advanced underwater housing lineage, ergonomically designed to place all the essential camera controls under your finger tips and features the following:

- A. A port locking mechanism to prevent accidental rotation of the port or extension mounted on the housing
- B. A Lens Lock Release control that will activate the lens release button of camera from the outside of the housing, this lever can be pull out to allow the camera/lens/gear to be removed together for easy battery replacement.
- C. A quick release tray, allowing fast and easy removal of camera.
- D. Large ergonomic and easy to operate controls for most of the manual and computerized camera functions.
- E. A flexible strobes connector circuitry that allows evolution according to ones needs (see page 9).
- F. The following controls can be easily manipulated or accessed underwater:
  - Mechanical shutter release.
  - Shutter speed through the Main Dial
  - Aperture through the Quick Control Dial
  - Focus / Zoom
  - AE-L/AF-L & AF-ON and \* (star) access
  - LCD panel illumination & information display.
  - Exposure mode (Mode)
  - Exposure Compensation
  - Focus Area Selector
  - ISO sensitivity
  - Info & Playback
  - Menu, Picture Styles, quick controls & RAW/JPEG one touch button
  - Delete button access
  - Live view & Video recording access
- G. A complete selection of bayonet mounted ports including an 6", 8" and 9.25 diameter dome, two flat ports and various extension rings to preserve the image quality of your EF mount lenses.
- H. A comprehensive selection of focus and zoom gears to access all popular lenses useful to underwater photography plus a wide range of related accessories.

## PREPARATION OF THE HOUSING

### **1. Attach Grip Bracket to the housing:**

The housing comes with two Grips for both right and left hand grips which should be installed on the sides of the housing with the supplied screws and Allen key. Occasionally remove the grips and lubricate the screws (see Care and Maintenance: of the housing.)

Depending on which strobe system you are using, you can mount the necessary shoes or brackets onto the 1/4"-20 threaded holes on the top of the hand grips. The AQUATICA® line of Technical Lighting Control® strobe arm is recommended.

There are also three (3) 1/4"-20 threaded holes on the bottom of the housing that can be used for various mounting application trays or tripod. As well there is another hole on top front half of the housing for mounting accessories such as a video or focusing light.

Mount your strobe and connect the sync cord to the housing's strobe bulkhead. Be sure to read the section titled "Care and Maintenance: of the O-rings."

### **2. Lubricate the Main O-ring Seal:**

Before use, carefully inspect the Main O-ring seal in its groove on the front half of the housing to confirm that it is free from scratches or foreign material. When needed lubricate the O-ring with a light coat of Aquatica O-ring Lubricant.

When replacing the O-ring place the entire O-ring over the O-ring groove and start by pushing the O-ring in the corners. Work your way around the O-ring making sure it is snugly sitting in the groove.

For proper handling and maintenance of O-rings be sure to read the section titled "*Care and Maintenance: of the O-rings.*"

## PREPARATION OF THE PORTS

### **1. Select the correct port:**

Depending on whether you've decided to shoot macro or wide angle photography, you will be installing either a flat Macro Port (product # 18426 or 18428), or a Dome Port (Product # 18405, 18407 or 18409). See *lens chart for the suggested port and accessories*.

**Macro Port Extension Rings:** If you intend to use a longer Macro lens than the Canon EF-S 60mm you will require an additional extension ring. This extension rings fit between the Macro Port and the housing to provide the extra space necessary for the longer lens. See *lens chart for the suggested port and accessories*.

**Dome Port Extension Rings:** When using a wide angle or zoom lens, the Dome Port may require the uses of an extension ring to closely match the optical center of both the dome and the lens. See *lens chart for the suggested port and accessories*.

In order to reduce glare, maximize contrast and offer physical protection to the dome, the use of a dome shade is highly recommended. See *lens chart for the suggested dome shade*.

A comprehensive list of the lenses supported and their required extensions and/or accessories is supplied at the end of this manual. For the latest updated version of this lens chart, you can refer to the Lens Chart for the Aquatica 7D housing on [www.aquatica.ca](http://www.aquatica.ca)

### **2. Clean the port:**

Dirt, grease or fingerprints on the port especially on the inside, can adversely affect the quality of the image. Acrylic ports should be cleaned with plastic cleaner and the glass ports should be cleaned with lens cleaner. For more details be sure to read the section titled "*Care and Maintenance: of the Ports.*"

### **3. Lubricate the port O-ring seal:**

Before using the port, remove the O-ring on the rear of the port and lightly coat it with silicone grease. For more details be sure to read the section titled "*Care and Maintenance: of the O-rings.*"

## PREPARATION OF THE LENS

Depending on the lens used, there are a number of gear options possible. Using the right gear (s) and correctly mounting them on the lens is very important for a smooth housing operation. Follow the installation directions included with each gears carefully. The use of EF types lenses is mandatory.

A comprehensive list of the lenses supported and their required gears is supplied at the end of this manual. For the latest updated version of this lens chart, you can refer to the Lens Chart on [www.aquatica.ca](http://www.aquatica.ca)

**Notes:** If the camera is set in manual focus a focus gear must be mounted on the lens. If you are using a zoom lens with a zoom ring the camera must be on auto focus, also note that if using a dome port you may need to install a closeup diopter on the lens to correct the minimum focusing distance of the lens so that it will be able to focus on the virtually projected image created by the dome. See *lens chart for the suggested diopter, if required for your lens/port combination*.

### **Gear installation:**

Mounting the gear over the focus or zoom ring of the lens.

(a) For Slip-on gears (gears without mounting screws): Slide the gear over the lens and align the gear with the front of the lens focusing ring.

(b) For gears with mounting screws: Tighten lightly the three set screws evenly. Tighten each screw approximately ½ a turn working around the gear until all the three (3) screws are tightened, and the gear is concentric with the lens body.

**CAUTION:** Do not over-tighten these screws, as this might bind the lens, thus restricting the rotation of the focus ring and/or damaging the lens. Conversely under-tightening these screws might cause the gear to slip or loose alignment.

Rotate the focus ring several times to make sure it moves smoothly and the gear does not slip before closing the housing

**WARNING:** If the lens is a not of the USM type, never attempt to operate it with the camera in autofocus mode and with a mounted focus gear engaged. This might cause serious damage to your lens focusing motor.

**Zoom lenses:** When using a zoom lens, the gear should be mounted on the zoom lens control. The housing focus control then becomes the zoom control. Focusing of lens is achieved by using the camera's autofocus system.

## CAMERA PREPARATION AND INSTALLATION

1. **Important Note:** prior to installing the camera in the housing: Please remove the rubber protective guard from the viewfinder on your camera before using the housing. remove the camera strap, and/or any object that might obstruct installation or get in the way of that attach the strap should be removed or tucked away
2. Pull out the lens lock lever (key # 12) on the front of the housing and the mode dial knob (key # 21)

3. Remove the saddle from the housing and carefully place the camera on it and ensure the camera is properly installed and aligned as follows:

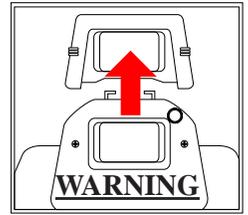
a) Align the Tripod Socket of the camera with the mounting screw. Tighten the mounting screw securely while ensuring that the camera position is not altered. set arresting block as per drawing at right.

c) On the rear cover of the housing, position the ON / OFF (key # 22) in the ON position and do the same to the camera.

d) Also on the rear cover, position the LIVE VIEW / MOVIE mode lever (key # 24) to Live View on the housing and do the same on the camera

e) **Important:** if using optical fiber type cords, pop the flash up and guide the camera carefully until the flash is properly positioned in front of the optical port reflectors.

f) Slide the quick release tray back into place and lock as per drawing at right.



### **CLOSING OF THE HOUSING**

Once the camera is secure on the saddle inside the front half of the housing, simply:

1. Slide the housing's hot shoe connector onto the hot shoe base of the camera, as seen in photo at right.

### ***Before closing the housing always ensure that:***

1. The main O-ring on the front half of the housing is clean, lubricated and properly seated for a positive seal.
2. The sealing surface on the rear half of the housing is clean and free from any scratches or physical damage.
3. All cords or wires are tucked in so that they do not interfere with the closing of the housing.
4. The ON/OFF & Live View / Movie levers are in the same position on both the camera and the housing .

### ***To close the housing simply:***

- i. Join the front and rear halves of the housing using the two dowel pins at the bottom of the housing as a guide.
- ii. Hold the housing with both hands and look around the sealing surface to ensure that the O-ring remained properly seated and that no cords, wires are caught between the edges.
- iii. Close the two sides latches simultaneously. Reverse the process to open housing

**CAUTION:** if you feel any resistance as you attempt to close the latches, do not force the closure. Check for an obstruction and try again.

- iv. Verify that the safety locking mechanisms of the latches are properly engaged to avoid any accidental opening.

With the camera inside the housing, push the lens release lever (key # 12) into the proper position, install the lens prepared with the gears through the port opening in the front of the housing. Ensure that the lens mounted gears are properly installed and aligned. Rotate the focus / zoom control knob to ensure that the gears are properly meshed, do not grind and that their rotation is smooth.

**Note:** To avoid damaging the auto-focus mechanism of the camera when using standard EF type lenses, you should always set the Focus Control to "M" Manual for testing the proper meshing of a focusing gears. this procedure is not required with USM type lenses.

### **CHANGING A LENS (REMOVING A LENS)**

Two different methods can be used for removing/replacing a lens.

The lens mounted gears may restrict the view and ease of access to the lens release button on the camera body. The AQUATICA 7D Digital Housing features a lens release lever (key # 12) that is designed to trigger the lens release button of camera to allow easy removal of lens.

To remove a lens, remove the port, simply rotate Lens Release Lever (key # 12) downward to press the camera body lens release, hold and turn the lens to remove.

Or pull out the lens release lever (key # 12) out of the way, open the back cover remove hot shoe from camera and pull out the complete camera & lens, replace the lens and reinstall.

### **MOUNTING THE PORT**

Before mounting the Port on the Housing always ensure that the port O-ring is clean, lubricated and properly seated in its groove and that the sealing surface on the Housing is clean and free of physical damage.

The *AQUATICA 7D Digital* Housing features a locking bayonet mount (#17). To mount the port or extension ring simply:

1. Place the housing on its back on a soft steady surface.
2. Place the port or extension ring inside the main port of the housing. Align one of the four alignment notches with the opening of the housing.
3. Place your hands on opposite sides of the port or extension ring.
4. Push with even force on both sides of the port or extension ring until you feel it snap into place. Make sure the bayonet is completely inside the housing.
5. Finally press the port lock button down, turn the Port clockwise until it stops and then release the port lock button. Do not force it. If there is too much resistance take the port off, check the O-ring and retry.
6. Check to ensure for the proper seating and sealing of the port or extension and that it is safely locked on the housing.

**Note :** It is recommended that you familiarize yourself with this mount by trying it without the camera, this will allow you to see the inside view of the bayonet mount and of the ports or extension rings in the housing.



## MOUNTING AND ATTACHING FLASHES

The Aquatica housing for the Canon 7D offer a choice of connectors in order to take full advantages of available strobes on the market. Standard choice available are:

- 20065: Two Nikonos type manual connectors.
- 20065-OPT: Two optical fiber connectors to accept two Sea & Sea elbow type cords or two straight type cord (INON).
- 20065-HYB One Nikonos Manual connector and one Optical connector to accept either one Sea & Sea elbow type cord or two staright standard optical cords.
- 20065-KM One Ikelite manual type connector

Optional also are: S6 type connectors and available in the summer 2010, the Nikonos type 6 pins connectors

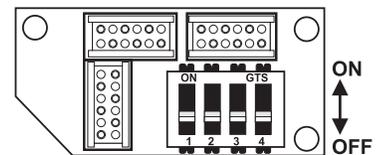
Depending on which strobe system you are using, you can mount the necessary shoes or brackets or Base Ball onto the threaded holes on the top of the hand grips. Use of the Aquatica Technical Lighting Control Strobe Arm System is recommended.

There are also three 1/4"-20 threaded holes on the bottom of the housing that can be used for various mounting applications. For example, A mounting tray can be fitted on the bottom of the housing. A 1/4"-20 threaded hole on top of the front half of the housing will accept an Aquatica bracket or Base Ball that can hold a small dive light or a strobe arm.

### Internal switch board circuit:

Your Aquatica 7D Pro Digital housing might be supplied with two Nikonos type connectors which are in turn connected to a switch board circuit. Optional Ikelite bulkheads connectors are also available.

When preparing the sync cord be sure to lubricate the O-ring on the sync cord's connector with a light coat of Aquatica O-ring lubricant, Also advisable is to put a light coat of O-ring lubricant on the threads of this connector.



Your Canon Digital camera design does not allow flashes to be connected directly to the camera and be used in eTTL unless they are original Canon flashes in third party housing with the required connector and cords.

On your housing you will find two bulkhead connectors, the main and secondary connectors are wired through a switch board that will allow you to eventually evolves as underwater strobes technology does in the future. By default you housing is delivered with the switch board set to full manual, if the eTTL exposure is desired then it can be made in either of two methods:

- 1) By using a single flash from Canon or other brand (that is eTTL compatible with your camera) in a underwater housing connected with a proper 6 pins TTL cord to a compatible 6 pins connectors on your Aquatica housing.
- 2) By using an external eTTL converter connected to a 6 pins connector on your Aquatica housing to which one or two underwater strobes with compatible TTL cords are then connected to this converter, (check strobe and converter manufacturer for compatibility).

**Set up instruction for eTTL operation:** Using the tip of a pen push the switches 1, 2, 3 & 4 to the ON (up) position, this will activate the connections on your main 6 pins bulkhead connector allowing eTTL communication between the camera and the housed flash or eTTL converter.

**Set up instruction for manual operation:** All switches must be in the OFF (lower) position, in this case all eTTL connections are disabled and only the ground and sync are left active, this will allow two underwater strobes or housed flashes to be connected directly via the main and secondary bulkhead.

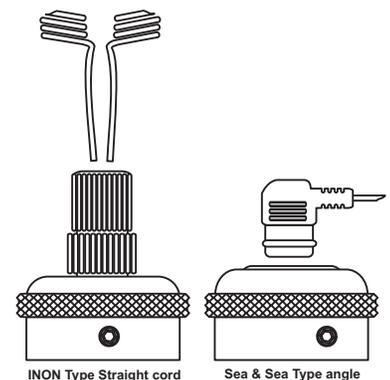
### FOR OPTICAL CONNECTORS

The housing with optical connectors are supplied with adapter for typical straight cord used by INON and various strobe manufacturers and angled Sea & Sea type cords, select the desired connection and install on the optical port base, tighten the set screw into place with the supplied hexagonal wrench.

In order to to use Optical triggering, the built-in flash of the camera need to be in the up position, this is done at time of installation. Select the proper sync mode (rear, slow, etc.).

**Note:** it is advisable to turn the camera off when travelling to your dive site in order to avoid useless drain of the camera and strobes the batteries. Field testing as shown that mixing different brands of strobes give unreliable result and should be avoided. Also noteworthy is the fact that many strobe offer Optical triggering, but TTL is only available with thoses that offer S-TTL type of signal, please check carefully prior to purchasing your strobes to make sure that they are indeed able to provide TTL exposure.

Remember not to install the hot shoe if shooting optically triggered strobes (HYB version) as this hot shoe disengages the internal built-in flash of the camera and prevent this later from triggering. Always do a few test exposures once you finished setting up the strobes



## TAKING A PICTURE

Following are the basic techniques. For more information and advanced photography please study the Canon 7D instruction manual.

**NOTE** \*The quick and main dial control can access a wide range of modification to the current functions allowing the users to conveniently position vital controls at their fingertip.

1. Rotate the Mode dial knob (key # 21) and select the desired exposure mode. Options in sequence are: Programmed AE (P), Shutter Priority AE (Tv), Aperture Priority AE (Av) or Manual Exposure (M).

**Note:** When using a flash, it is recommended that the camera be used only in Single Frame Motor Drive or there is the possibility that the camera will fire before the flash can recycle.

3. Push the Metering Pattern Knob (key# 6) and select the metering system symbol you wish to use in the rear LCD panel.
4. Pull the Shutter Release Lever partially back. This will activate the camera's meter and autofocus system.
5. If using manual focus use the Focus Knob (key # 10) on the housing or on the flat port to focus.
6. If using the Manual or Shutter mode adjust the main dial knob (key # 2) or Quick dial (key # 27) to set the exposure.
7. Pull the Shutter Release Lever (key # 1) the rest of the way until the camera fires.

Shooting tip:

The lever in the rear right portion of the housing (key #27) can be used to access the AF-ON and/or the \* (star) buttons, just pull outward or inward to access the desired one, these two buttons can be modified to conform to your personal style of image making, careful reading of the Canon 7D manual is recommended to pull the maximum out of these features



## USING THE HOUSING

Whenever changing ports or O-rings, it is highly advisable to perform a simple seal test without the camera inside. Strapping a weight to the housing and lowering the unit to a depth of 30 to 50 feet of water for at least 10 minutes will assure you that the seating of the new port or o-ring is proper. This test, though time consuming and often considered unnecessary, may save your camera equipment from irreparable water damage. The housing is now ready for the dive.

**CAUTION:** Never jump into the water with the housing. It is best to have the system handed to you after you have made your entry, or have it lowered to you on a rope. Make certain that ropes of other equipment stay clear of the system. Never handle the housing by grabbing the port or if using one, the Aqua View Finder, make sure that boat staff are familiar with this procedure and advise them to manipulate only by using the grips provided with the housing.

When photographing, be sure to respect the environment. Avoid damaging marine life or manipulating sea creatures to obtain a pleasing photo. The housing is slightly negatively buoyant so that you can lay it down on the bottom, but avoid laying it on living coral or other delicate marine life.

### Changing the memory card

Always take care to thoroughly dry the housing before opening it to change memory card. Wipe the housing off with a dry towel. If possible it is suggested that the housing be blown dried by directing an air nozzle around the main o-ring before opening.

Rest the housing on its front with the lens facing down, be careful to protect the port surface, release the two side latches simultaneously. Lift the rear part of the housing and place it in a secure location. This minimizes the possibility of any residual water falling into the housing and on to the camera when the housing is opened or damage to the sealing surface.

### TRANSPORTING THE *AQUATICA Pro Digital* housing

Store the *AQUATICA Pro Digital* housing in a sturdy, shock proof container. When travelling by air, remove or loosen the port. This allows for equalization of the air pressure inside the housing to the external air pressure. Failure to do so may cause serious damage to the acrylic ports. Avoid travelling with the camera mounted in the housing. If you must do so, remove the lens as external pressure can damage the camera.

## CARE AND MAINTENANCE

### **Of the housing:**

After each and every salt water dive, your housing system should be soaked or rinsed in fresh water. The housing system should soak in fresh water for at least 30 minutes. During this soaking period reach into the water and operate all the controls several times.

Be sure to remove the housing's main o-ring and clean it after every use. Refer to Maintenance: Of the O-rings. To ensure that the hand grips won't fuse on to the housing due to the exposure to salt water, it is also a good practice to occasionally remove the hand grips. Clean and lubricate the bolts with a small amount of WD-40.

**WARNING:** Use WD-40 carefully, sparingly and only on metal to metal surfaces. WD-40 can damage the acrylic on the ports, the optical surfaces on lens as well as the O-rings.

### **Of the Ports:**

Care should be taken with the Dome Port and Macro Port to avoid scratches on the lens surface. The acrylic port is softer than glass so minor exterior scratches are often unavoidable. However, since the indices of refraction for acrylic and water are almost equal the scratches will not seriously impair image quality. Internal scratches (air side) must be avoided as they do not fill in with water and will affect the quality of the image.

Clean the dome using only products recommended for cleaning acrylic and a soft lint free cloth. Dust on the interior surfaces of the port can be removed with a soft camel hair brush or a blower brush. Caution must be taken when using aerosol devices as not to spray the lens material with the liquid propellant as this may seriously affect the optical properties of the port. Use of pressurized air from a dive tank is not recommended, the force of the air stream may easily dislodge a port or O-ring. It is advisable that ports should be removed and serviced after every dive.

### **Of the Latches:**

The two latches of the *AQUATICA Pro Digital* are designed to have a locking action to prevent accidental opening. Always ensure that the locking mechanism is secure. Watch for the build-up of corrosion or salt residue around the latches. This will appear as a white material. Lubricate the latches with a small amount of WD-40 to remove the corrosion or salt residue build-up.

### **Of the O-Rings:**

The O-rings that need to be maintained on a regular basis are the main housing O-ring and the O-ring on the lens port. The main O-ring should be cleaned on a daily basis and the port O-ring should be cleaned daily or each time the port is changed.

### **Of the sacrificial anodes:**

The two anodes attached to the bottom parts of the housing are there to prevent corrosion due to electrolysis, as time goes they will deteriorate and need replacement, contact your dealer for replacement (parts # 19220).

### **TO SERVICE O-RINGS ON THE HOUSING MAIN O-RING, PORTS AND EXTENSION RINGS**

1. Remove the O-ring. It is important never to use a sharp instrument when removing an O-ring as this may damage the O-ring groove or the O-ring itself. A bobby pin or edge of a credit card works well.
2. Once the O-ring is removed, it should be examined for damage. Check to make sure that the O-ring is free of nicks and cuts and that it retains its original round profile. O-rings that appear to be damaged should be discarded immediately and replaced with new O-rings.
3. Rinse the O-ring with fresh water and dry it with a clean lint free cloth.
4. Clean the O-ring groove (where the O-ring sits) with a Q-tip. Be sure to remove any lint the Q-tip may leave behind. Inspect the groove for damage.
5. Wipe the part of the housing that the O-ring seals against with a clean lint-free cloth.
6. Re-grease the O-ring with a thin layer of O-ring grease until it appears to be smooth and shiny. Do not over grease it. Use just enough grease so the O-ring will pull smoothly through your fingers. Excessive amounts of grease will only serve to attract dirt to the o-ring.
7. Make sure that the O-ring is properly (evenly) installed in the O-ring groove.
8. To reinstall the clean and lubricated O-ring, place the entire O-ring over the groove and start by pushing the O-ring in at each corner then, push the O-ring at each side and finally, work in the rest of the O-ring. Never start at one end and work your way around the O-ring. This places uneven tension on the O-ring which may cause the O-ring to stretch resulting in excess O-ring, which will have no place to go.

There are internal O-rings on the housing controls as well. These O-rings are not as susceptible to damage as they are not exposed but they do require yearly maintenance and are not user serviceable. The housing should be returned to AQUATICA or to an authorized AQUATICA service facility for this annual maintenance. Check for the closest service center on our website [www.aquatica.ca](http://www.aquatica.ca).

An internal moisture alarm can be installed in your AQUATICA 7D Digital housing (Product # 20023). This moisture alarm is powered by an easily replaced **CR 2032** battery. Please read the instruction sheet provided for your moisture alarm prior to installing the battery.



# AQUATICA<sup>TM.</sup>

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## Digital

# WARRANTY

PLEASE READ CAREFULLY

**One year Limited Warranty.**

Thank you for purchasing an AQUATICA manufactured product! Your AQUATICA housing is handcrafted by a small group of specially trained individuals - each of whom takes the most pride and satisfaction in offering you the best underwater camera housings in the world. All AQUATICA products are guaranteed against defects in material or workmanship for (1) one full year from the date of purchase for consumer use. these same products when used commercially will carry a 90-day warranty. No statutory warranty applies. Camera housed in AQUATICA housings are not covered under this warranty and ANY WATER DAMAGE SUSTAINED DUE TO INSTALLATION ERROR OR ANY OTHER REASON IS NOT THE RESPONSABILITY OF AQUATICA. Therefore the appropriate insurance should be maintained by the user.

Warranty does not apply to replaceable seals or damages to impacts or abrasive surfaces. Warranty applies only to products purchased from authorized AQUATICA dealers and does not extend beyond the original retail purchaser. Unauthorized modifications or repairs will automatically void this warranty. this applies to removal of serial numbers and AQUATICA identification labels.

To obtain service during or after the warranty period you must notify AQUATICA at 514-737-9481 and ship BY REGISTERED MAIL (INSURED) **ONLY**, enclosing your proof of purchase to:

AQUATICA  
3025 De Baene  
Montreal (Quebec)  
H4S 1K8

Mark clearly on your package "Canadian goods returned for repair"

Do not ship by any other means.  
Unauthorized packages will be refused.

YOUR SERIAL NUMBER \_\_\_\_\_