AQUATICA™
Digital
A7D MkII

OPERATING MANUAL FOR AQUATICA A7D Mk II
PRODUCT # 20077

AQUATICA™.
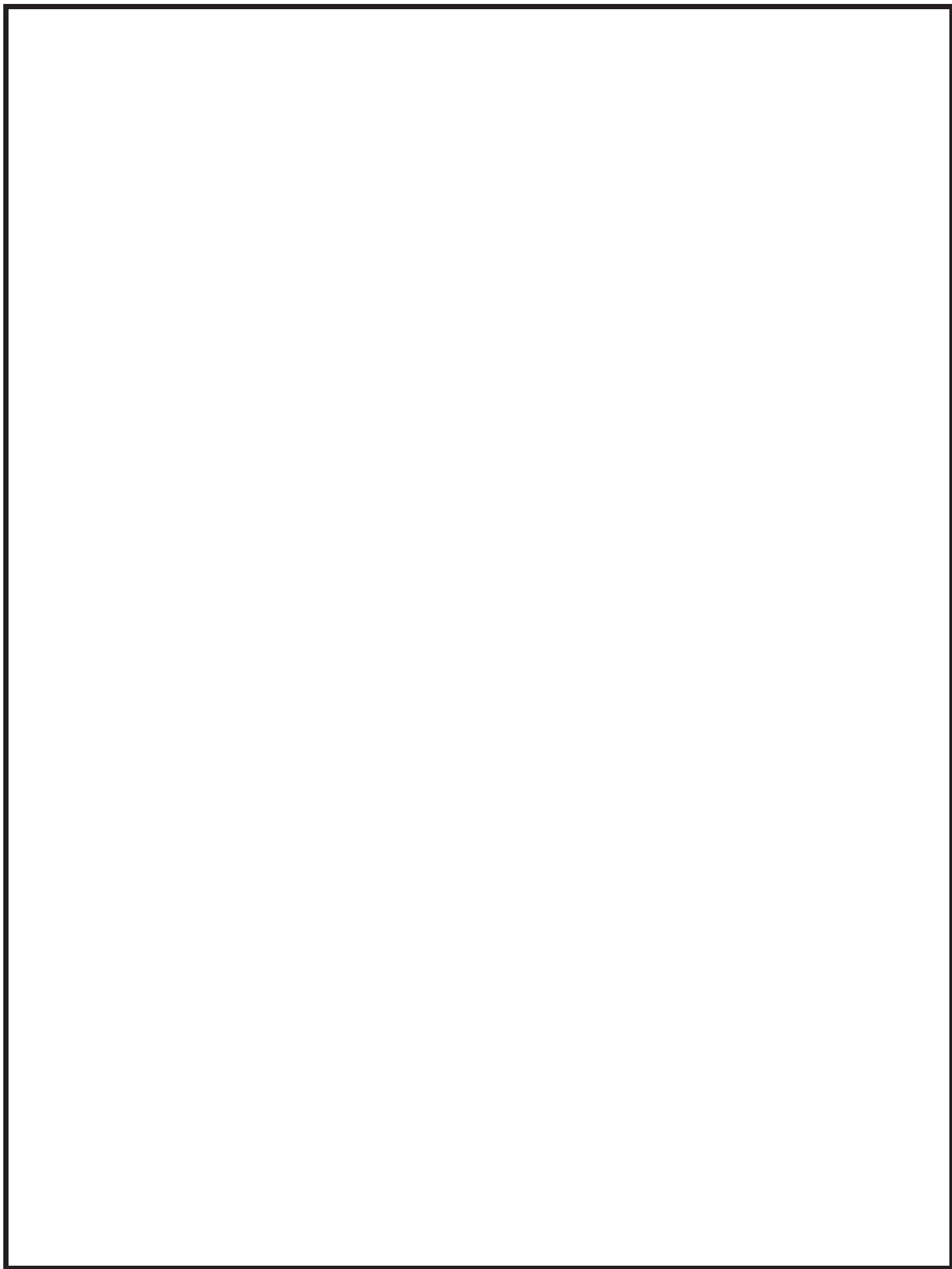
A7D MkII

Content

FOREWORD

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

The AQUATICA Digital Housing is the result of a long and continuing relationship with the most demanding underwater photographers in the world. Each housings is handcrafted, tightly quality controlled and pressure tested to a 300 feet/90m equivalent by a small group of specially trained individuals, each of whom takes the utmost pride and satisfaction in offering you 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 the essentials functions and controls of the **Canon 7D Mk II** DSLR. This operating manual assumes that the user is already familiar with the **Canon 7D Mk II** camera and its operation. If not, please read your Nikon instruction manual before attempting to use the housing.

With basic care and a regular maintenance schedule, your AQUATICA housing will provide years of enjoyment and satisfaction in producing spectacular underwater images.

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

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

- Large ergonomic and easy to operate controls for most of the manual and computerized camera
  functions, including the following controls:
  - Extended Mechanical Shutter Release Lever.
  - Large knurled knob for accessing Shutter speed control.
  - Large knurled knob for accessing Aperture control.
  - Oversized knurled knob for accessing the Focus or Zoom feature of the lens
  - Dual positions lever for accessing the AF-ON and STAR functions
  - Easy access knob for Exposure mode control (Mode)
  - Exposure Compensation
  - Focus Area Selector
  - Extended ISO sensitivity lever
  - Info & Playback
  - Menu and controls
  - Delete button access
  - Live view & Video recording access

- A quick release camera tray (saddle), for fast and easy removal of camera.

- A flexible strobes connector circuitry to suit your personal needs (see page 11&12).

- A new redesigned moisture alarm with integrated vacuum sensor

- A port locking mechanism to prevent accidental rotation of the port or extension mounted on the housing

- A complete selection of bayonet mounted ports including dome ports of 4", 6", 8" and 9.25" diameter, three flat ports and a large selection of extension rings to preserve the image quality of your lenses.

- A Lens Lock Release control that will activate the lens release button of the camera from the outside of the
  housing, this lever can be pulled out to allow the camera/lens/gear to be removed together for easy replacement
  of the camera battery.

- A comprehensive selection of focus and zoom gears to access all popular lenses useful for underwater photography,

- A choice of standard eye piece finder (included), Aqua View 180 finder (# 20054) and Aqua View 45 Finder (# 20059).

- Bulkhead entry point for external Monitors, Surveyor vacuum monitoring system or remote triggering accessories, including
  the pole mounted **RCS** remote camera system.

AQUATICA™·

A7D MkII

SAFETY RECOMMENDATIONS

Please carefully read the following precautions and recommendations:

Improper transportation, handling or use of this housing might cause a flood or malfunction. See Storage and transportation of housing and ports section on page13

Never remove, change a port or open the housing in a location where sand or similar foreign material might come in contact with an O-ring. Be wary of strong wind as it could potentially be carrying sand. Always perform a simple seal test without the camera inside after doing maintenance.

Non authorized use of third party accessories, as well as modifications and/or alterations not specifically authorized by Aquatica may affect performance, cause poor functioning of the controls or impair the sealing integrity of the housing.

Always handle port carefully, like the sensitive optics they are, protect them when not in use to avoid scratching the acrylic or glass surface of the ports and windows.

Always confirm that the ports remain properly attached before rinsing the housing. An optional port locking collars is available (#18469) for securing larger dome to the extension ring. When rinsing without a wired strobe, confirm that the bulkhead strobes connectors are sealed with their plug.

Aquatica housings can be adapted to various types of strobe connectors. These conveniently provides your camera system with access to the latest strobes technology currently available on the market.

Standard options available are:

20077-KM   Supplied with one Ikelite manual type strobe connector, for manual exposure only.

20077-KT   Supplied with an Internal Ikelite TTL circuitry and single Ikelite type strobe connector. * see dedicated intructions enclosed, if housing was ordered with this option.

20077-NK: Two Standard Nikonos type 6 pins connectors.

20077-OPT: Two optical fiber connectors with adapters to accept two Sea & Sea angled type cords or two straight type cords (INON).

20077-HYB   One Nikonos 6 pins and one Optical connector (to accept either one Sea & Sea elbow type cord or two straight standard Inon optical cords).

AQUATICA®
Digital
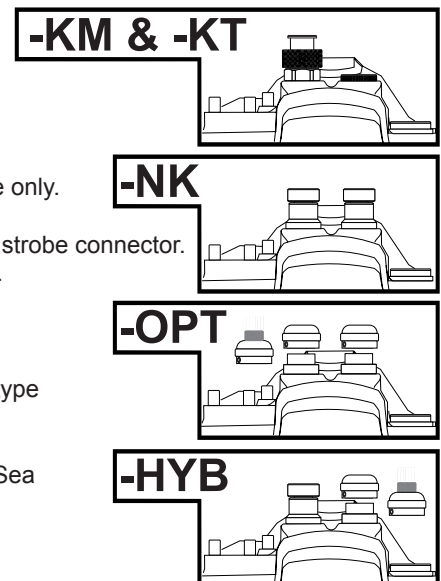
1-   Camera quick release tray (saddle).

2-   Camera tray release lever.

3-   Camera mounting screw (1/4"-20).

4-   Alignment posts.
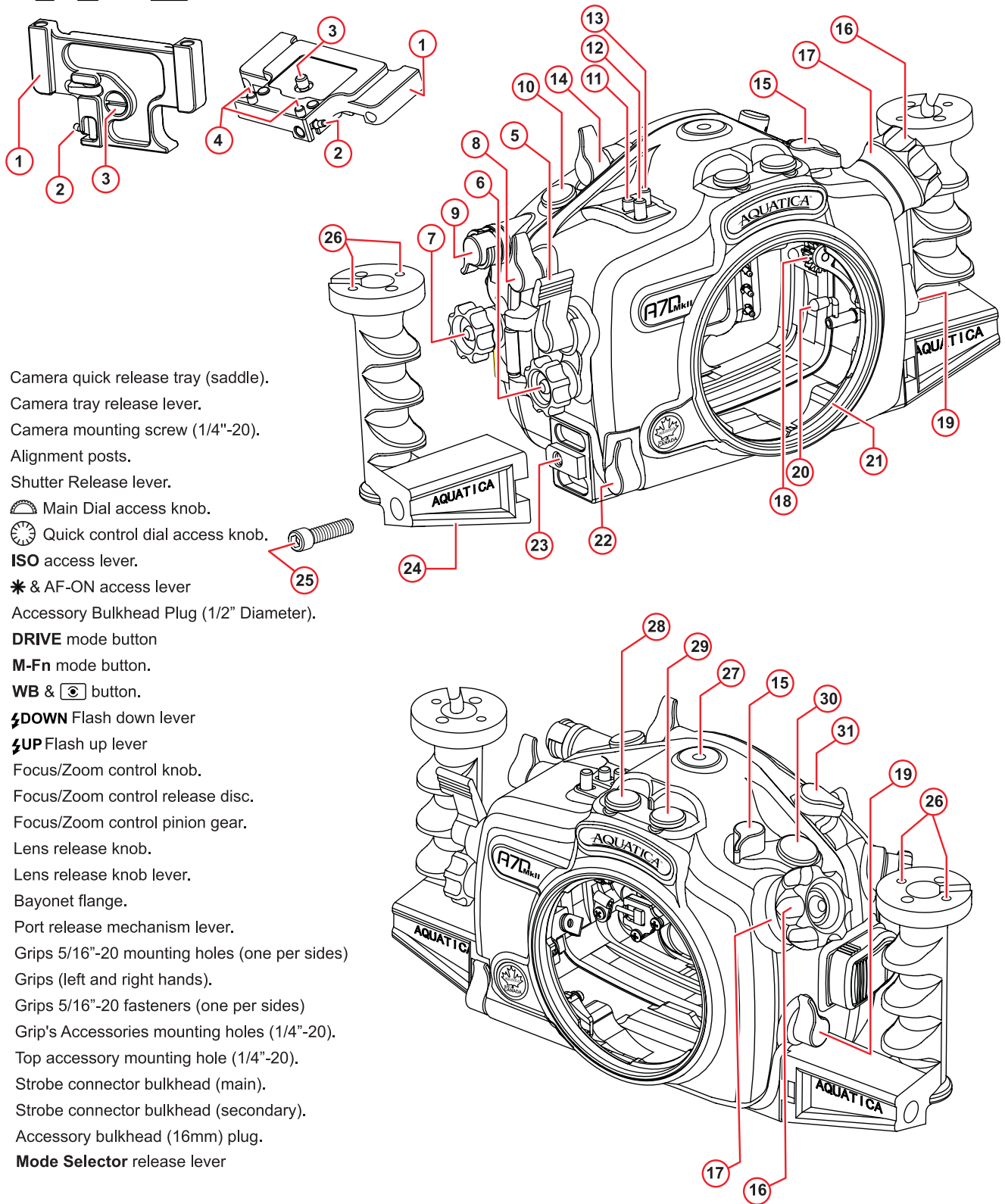
5-   Shutter Release lever.

6-   Main Dial access knob.

7-   Quick control dial access knob.

8-   **ISO** access lever.

9-   ✳ & AF-ON access lever

10-   Accessory Bulkhead Plug (1/2" Diameter).

11-   **DRIVE** mode button

12-   **M-Fn** mode button.

13-   **WB** & button.

14-   ⚡**DOWN** Flash down lever

15-   ⚡**UP** Flash up lever

16-   Focus/Zoom control knob.

17-   Focus/Zoom control release disc.

18-   Focus/Zoom control pinion gear.

19-   Lens release knob.

20-   Lens release knob lever.

21-   Bayonet flange.

22-   Port release mechanism lever.

23-   Grips 5/16"-20 mounting holes (one per sides)

24-   Grips (left and right hands).

25-   Grips 5/16"-20 fasteners (one per sides)

26-   Grip's Accessories mounting holes (1/4"-20).

27-   Top accessory mounting hole (1/4"-20).

28-   Strobe connector bulkhead (main).

29-   Strobe connector bulkhead (secondary).

30-   Accessory bulkhead (16mm) plug.

31-   **Mode Selector** release lever
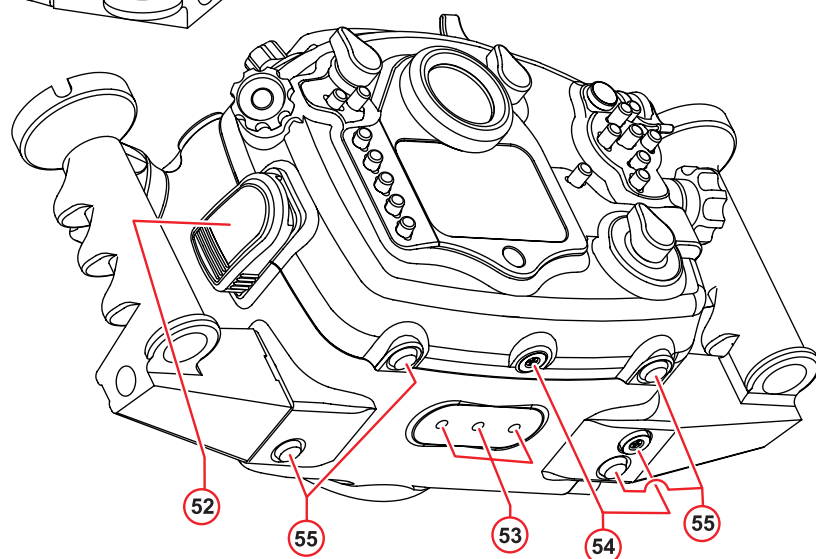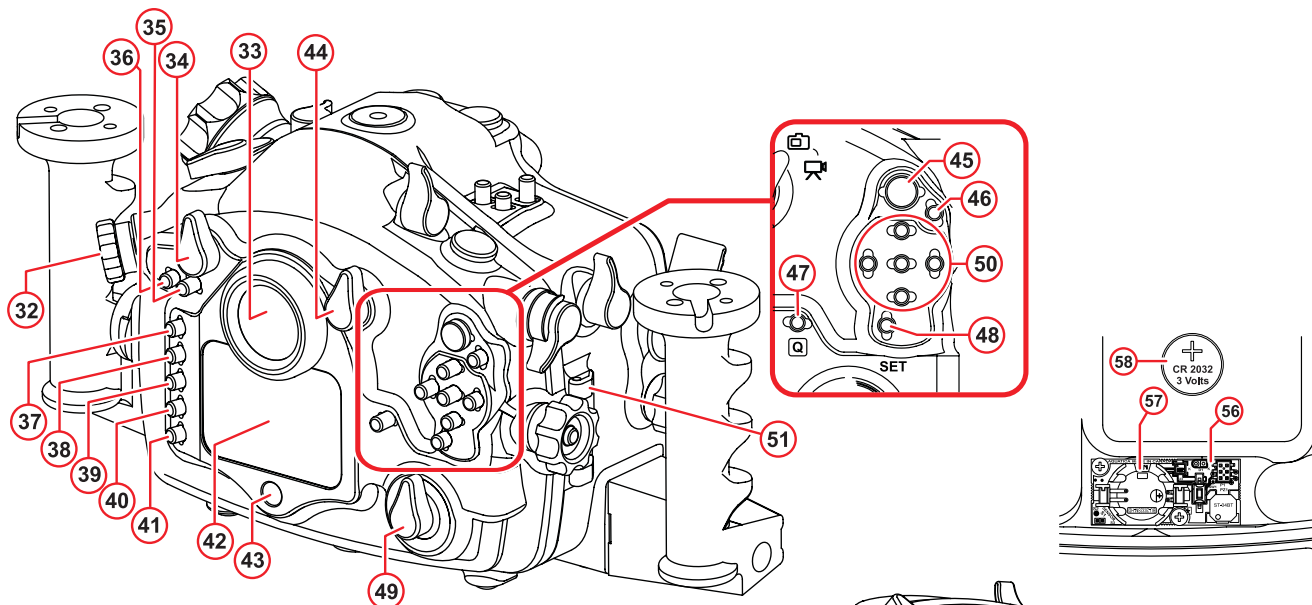
32- Mode selector access knob

33- Removable Viewfinder Eyepiece.

34- **POWER** switch.

35- **INFO** button.

36- **MENU** button.

37- ☑ Creative photo button

38- **RATE** button

39- 🔍 Index/Magnify/Reduce button

40- ▶ Playback button

41- 🗑 Erase button

42- Rear LCD Monitor port window.

43- Moisture & Vacuum sensor LED window

44- 📷 🎥 Live View mode selector

45- **Start/Stop** recording button

46- ⊞ AF Point selection button

47- Q (Quick Control) button

48- **SET** button

49- TTL Exposure control lever (Optional)

50- ✳ Multi Controller button array

51- Back door hinge

52- Latch

53- Tripod/accessories three mounting holes (1/4"-20)

54- Sacrificial anodes (2x)

55- Rubber anti skids pads (4x)

56- Moisture/pressure sensor alarm

57- Moisture/pressure sensor alarm battery compartment

58- Moisture/pressure sensor alarm battery (CR 2032, 3 Volts)

59- Spare main O-ring

60- O-ring lubricant container

61- Large hexagonal wrench

62- Warranty card

Page 4

CONTROLS IN DETAIL

1- Camera quick release tray (saddle): Used to attach camera and slide in housing.

2- Camera tray release lever: Press to release camera tray from housing.

3- Camera mounting screw (1/4"-20): Used for securing the camera to tray.

4- Alignment posts: Help maintain proper alignment of the camera on the tray.

5- 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.

6- Main Dial access knob: This knob rotates clockwise and counter clockwise. Use it 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).

7- Quick Control dial access knob: this knob rotates clockwise and counter clockwise. Use it alone or in combination with other controls to select or set various camera functions or modes. Refer to camera manual for in depth use.

8- ISO: Press on lever to engage the ISO speed value button of the camera, turn main dial knob to select value

9- Star (*) & AF-ON access lever: Pull the lever and rotate this collar to select access to the AF-ON or the STAR button access of the camera. Both the AF-ON feature and the Star are customizable button, these are important controls for video shooting and care should be taken to fully understand their working and subtleties.

10- Accessory Bulkhead Plug (1/2" Diameter): This can be used for mounting accessories such as a remote trigger, vacuum valves or monitor.

11- AF-Drive mode button: Press to engage, select the drive mode using the Quick Control access knob, or the AF area by using the Main Dial access knob.

12- M-Fn mode button: press to engage, refer to camera manual for a list of the functions that can be assigned to this button.

13- WB & Meter Mode button: Press to engage, use Quick Control dial access knob to select WB setting and/or Main Dial access knob to select the metering mode.

14- Flash down lever: Push forward to lower the camera built-in flash.

15- Flash up lever: Push forward to raise the camera built-in flash.

16- Focus/Zoom control knob: Turning allows manual focus of a single focus lens or rotation of the zoom mechanism of a lens.

17- Focus/Zoom control release disc: Lifting and rotating this disc to its resting post will retract the pinion gear (key # 18); doing so, along with pulling the lens release lever (# 19) will allows the camera and lens to be pulled out from the housing as a unit.

18- Focus/Zoom control pinion gear: Engages and operates the focus or zoom gear attached to the lens.

19- Lens release knob: activates the lens release button on the camera allowing easy removal of the lens, pulling this out along with the zoom knob release disc (# 17) will allows the camera and lens to be pulled out from the housing as a unit.

20- Lens release knob lever: Applies pressure on the camera lens lock button.

21- Bayonet flange: allows the mounting of different ports and extension rings on the housing.

22- Port release mechanism lever. Pressing will release the locking mechanism when removing a port or extension.

23- Grips 5/16"-20 mounting holes (one per sides): attachment point for the housing grips.

24- Grips (left and right hands): Removable grips for handling the housing, allows the mounting of strobe arms and accessories.

25- Grips 5/16"-20 fasteners (one per sides): Use with included hexagonal wrench (#61) for securing the grips to the housing.

26- Grip's Accessories mounting holes (1/4"-20): These are provided for mounting strobe arm or other accessories.

27- Top accessory mounting hole (1/4"-20). Mounting point for accessories or focus light.

28- Strobe connector bulkhead (main): This bulkhead connector is normally used as the main connection, configuration may vary according to an owner's preference, (see page 11)

29- Strobe connector bulkhead (secondary). This bulkhead connector is normally used as the secondary connection, configuration may vary according to an owner's preference, (see page 2).

30- Accessory bulkhead (16mm) plug: This can be used for mounting accessories such as a remote trigger, vacuum valves or HDMI monitor.

31- Mode selector release lever: This lever disengages the lock on the mode dial of the Canon 7D Mk II, once engaged; the mode dial can be rotated using the Mode Dial Access Knob (# 32).

32- Mode selector access knob: Rotate to select the proper shooting mode, care should be taken to understand the various combinations available.

CONTROLS IN DETAIL, CONTINUED

33- Removable Viewfinder Eyepiece: This Galileo type view finder offers a full view of the camera viewfinder and its information display. For an enhanced larger view, this viewfinder can be removed and replaced with one of our two optional Aqua View Finders, available in 45° & 180° version.

34- POWER switch: Rotate right or left to turn the camera power ON or OFF.

35- INFO button: This button will activate the rear LCD and display all pertinent shooting information.

36- MENU button. Press to activate menu display, scroll using main or quick dial control knob and select using SET function button.

37- Creative photo button: Press to select the picture style.

38- Rating button: Press to protect the selected image.

39- Index/Magnify/Reduce button: Press to search, magnify or reduce images, use in conjunction with Quick Control access knob and main dial knob.

40- Playback button: Press to review an image, scroll using the Quick Control access knob.

41- Erase button: press to delete images from the memory card of the camera.

42- Rear LCD Monitor port window: This port window allows viewing of the recorded images and is used in the Live View as well as in the Video mode for framing and composing. It also allows viewing of the entire menus selection as well.

43- Moisture & Vacuum sensor LED window: Gives visual access to the moisture and pressure sensor status LED.

44- Live View mode selector: Rotate left or right to select Live View or the Movie mode.

45- Start/Stop recording button: This oversized red button activates recording in video mode.

46- AF Point selection button: Push to select the AF pattern, navigate using the Multi-Controller or using the Main dial or /and Quick Control access knobs.

47- Q (Quick Control) button: press to activate the Quick Control feature, navigate using the Multi-Controller or using the Main dial or /and Quick Control access knobs.

48- SET button: Press to approve selection of menu or chosen mode features.

49- TTL Exposure control lever (Optional): This lever offer exposure control over the strobes, see TTL instruction if your housing is equipped with this option.

50- Multi Controller button array: Use to navigate through the multiples options of the menus, modes and features of the camera.

51- Back door hinge: Allows the rear door of the housing to securely close.

52- Latch: Two step safety latch to secure the rear door of the housing in place.

53- Tripod/accessories mounting holes: Three 1/4" X 20 holes are provided for mounting strobes trays or accessories.

54- Sacrificial anodes (2x): zinc anodes are installed to protect your housing against salt water corrosion; these are made to deteriorate faster than the other strategic parts of your housing, hence the name sacrificial anodes. These anodes need to be replaced by the user as needed.

55- Rubber anti skids pads (4x): rubber pads are provided to protect the housing and preventing it from sliding on wet decks.

56- Moisture/pressure sensor alarm: Moisture/pressure sensor alarm: This alarm works both as a water detection device and a ambient pressure sensor.

57- Moisture/pressure sensor alarm battery compartment: This battery compartment holds the battery for the moisture/pressure sensor. Carefully read instruction regarding installation of the battery.

58- Moisture/pressure sensor alarm battery: CR 2032, 3 Volts, this battery powers the sensor. Carefully read instruction regarding its installation.

59- Spare main O-ring: A spare main O-ring is supplied with the housing.

60- O-ring lubricant container: Used for lubricating the housing O-ring.

61- Large hexagonal wrench: Use for attaching the grips (# 24) with the provided fasteners (# 25).

62. Warranty card: Please fill and return this warranty card to Aquatica as instructed.

AQUATICA
Digital

PREPARATION OF THE HOUSING

Two hand grips are provided, these attach on the sides of the housing with the supplied screws and hexagonal wrench.

Mount the necessary shoes or brackets onto the 1/4"-20 threaded holes located on the top of the hand grips. Three threaded holes of the same size are located on the bottom of your Aquatica housings for mounting accessories such as lighting support, trays, brackets or tripod. A similar sized hole, located on the top the housing, allows the mounting of a video light, focusing light, or buoyancy compensating devices.

Mount your strobes and their arms on the housing and connect the sync cord to the housing's strobe bulkhead. Before using electrical type sync cords, carefully read the section (page 11) pertaining wired connection and refer and follow your strobe manufacturer manual and their recommendations.

For proper handling and maintenance of O-rings be sure to read the section titled "Maintenance of the housing and ports" (page 12 & 13).

PREPARATION OF THE PORTS

Underwater photography typically requires the use of a dome port for Wide Angle or a flat port for close up and macro photography. Your lens and subject selection should dictate the type of port you select. Flat Macro Ports are available in three (3) version (product # 18426, 18428 or 18429), and Dome Ports in four (4) sizes ranging from 4" to 9.25" (Product # 18405, 18407, 18409 or 18410).

There are occasions where an extension ring might be required to either, optimize the optical performance of a dome, or for adding sufficient space to accommodate a longer macro lens:

Macro Port Extension Rings: These aluminum rings extend the internal space of a Flat Macro Port, some shorter macro lens do not require using one, but longer lenses (100mm and longer) will need one in order to provide the necessary space to accommodate them.

Dome Port Extension Rings: When using a wide angle or zoom lens, the Dome Port may require the use of an extension ring, this is done both for physically accepting the lens and to closely match the position of the optical center of the dome and the lens as can possibly be done.

The Aquatica 6" and 8" dome ports have removable dome shade, without the shade, a circular 180° Fisheye lenses can be used to its full potential, when using standard type of lenses, the use of a dome shade is highly recommended as it improve contrast, reduce glare and offer an added protection for the dome delicate surface

A comprehensive lens chart listing 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, Please refer to the Canon Type 2 Lens Chart available on our website:
http://www.aquatica.ca/en/products_zoom.html

Cleaning 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 glass ports with an appropriate lens cleaner.

Lubricating the port and extension ring O-ring seal:

Before using a port or extension ring, remove the O-ring on the rear and lightly coat it with silicone grease, clean its groove before installing it back.

For more information concerning the care and maintenance of your ports and their O-rings, please refer to the section titled "Maintenance of the housing and ports" Starting (page 14).

CAMERA PREPARATION AND INSTALLATION

To open the rear door of the housing,start by pressing on the latch cover and rotating the latch body downward.

Important Note: Prior to installing the camera in the housing, remove the rubber eye cup, the camera strap and clips, and/or any object that might obstruct installation, third party camera strap hookup should be removed. It is advisable before inserting the camera in the housing, and in order to save valuable time underwater, to preset your camera shootting preferences in advance,
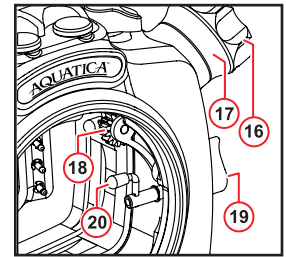
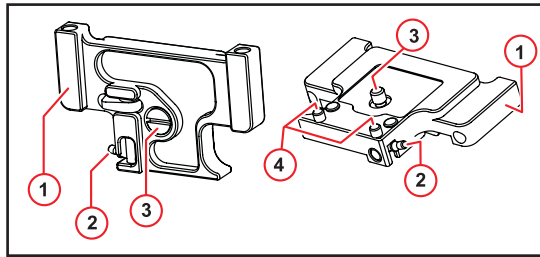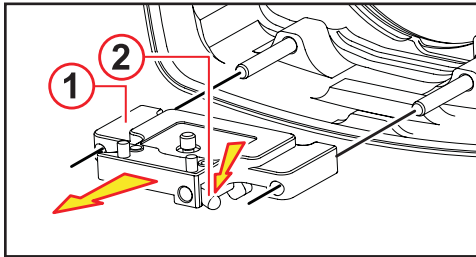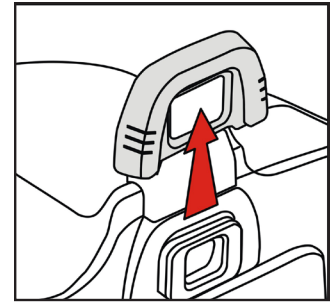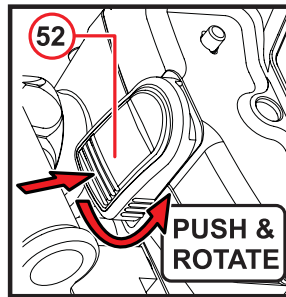1- Remove the quick release tray (# 1) from the housing by pressing down on the lever (#2) and pulling the tray out as shown bellow. Carefully place the camera on it, making sure that the camera is properly aligned and secured against rotation or movement on the alignment pin (# 4) . Align the Tripod Socket of the camera with the mounting screw (# 3). Tighten the mounting screw securely while ensuring that the camera position is not altered.

2- Pull out the lens release lever (#19) and zoom/focus knob assembly by lifting and rotating the disk (# 17) so that it rest on the dowel pins underneath as per.

3 - If using the optional Hydrophone connect the plug to the camera audio jack, and tuck the rubber flap of the microphone plug cover safely out of the way.

4 - Slide the quick release tray (# 1) back into place; it will lock itself into place.

5 - If using hot shoe triggerred strobes, insert the hot shoe as illustrated
(if the housing is equipped with the optional Ikelite TTL circuitry, please refer to its separate instruction sheet.)
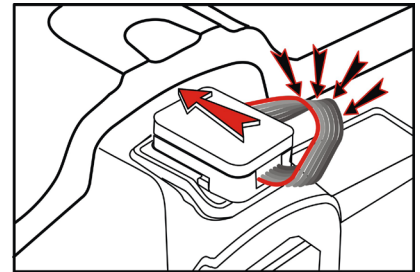
CLOSING OF THE HOUSING

Once the camera is securely installed in the front half of the housing, you should confirm the following:

- That the main O-ring on the housing is clean, lubricated and properly seated for a positive seal. Inspect the sealing surface and confirm that it is clean and free from any scratches or physical damage. **(see the CARE AND MAINTENANCE of O-rings section Page 12)**

- Rotate the latch body (# 52) into the right position, close the rear door of the housing and engage the latch by rotating it to a stop, the safety cover will engage to prevent accidental rotation. To test that this safety feature is engaged, try to rotate the latch without pressing on the safety tab, it should not rotate.

- Visually check that the O-ring remained properly seated and no obstruction is present

- Confirm that the ON/OFF lever (# 34) and LV switch (# 44) are properly positioned and working properly.
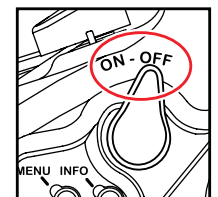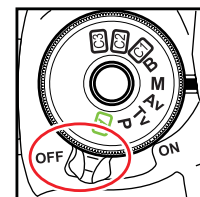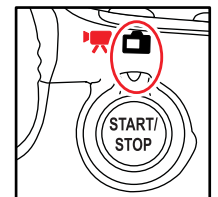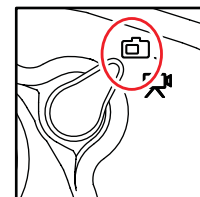
CAUTION: In the event that you should feel any unusual resistance when attempting to close the rear door, do not force the closure. Reopen, inspect carefully for any potential obstruction and try again.

AQUATICA
Digital
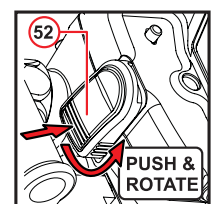
PREPARATION AND INSTALLATION OF THE LENS

There are a number of lens gear available and various way of mounting them to a lens, all depending on their design. Using the right gear and correctly mounting it on the lens is a very important step for a smooth operation of the Zoom or Focus control. Carefully follow the directions found on each gear packaging. Please note that the use of Canon EF and EF-S compatible lenses is mandatory. A comprehensive list of the supported lenses for this housing and their respective gears and domes ports is supplied along with this manual. The lens charts are regularly updated as newer lens are made available, for the latest available version of this housing lens chart please visit our Lens Chart section at **http://www.aquatica.ca/en/products_zoom.html**

Notes: On some lens /dome port combination, a close up lens (Diopter) might be required or desirable. This is intended to correct the minimum focusing distance of the lens so that it can focus on the virtually projected image created by the dome. Refer to the appropriate lens chart to see if a diopter is required for your lens/port combination.

Zoom lenses: Mount the gear on the lens zoom ring. The housing focus/zoom control (key #9) then becomes the exclusive method of controlling the zoom. Focusing of the lens is then achieved by using the camera's autofocus system, or on certain Wide Angle zoom lens, it will be possible to access the manual focus via a dedicated port extension ring equipped with a manual focus access knob

Prime Lenses: They can be used in Auto Focus or if a focus gear is available for this particular lens, it can be operated in manual focus. For Manual operation, the camera focus selector need to be set to the manual focus position, then a focusing gear (if available for this lens) will need to be mounted on the lens.

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

Gear installation on the lens:

Slip-on gears (gears without mounting screws): Slide the gear over the lens and align on the Focusing or Zoom ring or push until the gear cannot move any further up the lens.

Gears with adjustment screws: Tighten the set screws lightly and evenly, approximately ½ a turn at a time, carefully working your way around the gear until all the screws are equally tightened, verify that the zoom and/or focus mechanism rotate smoothly and that the gear remains concentric with the lens body.

CAUTION: Do not over-tighten the set screws, doing so might bind the lens and restrict the rotation of the Focus or Zoom ring and possibly damage the lens mechanism. Conversely under-tightening these screws might cause the gear to slip or lose its alignment.

LENS INSTALLATION
Note: Always take extra precaution to protect the sensor from airborne dust or particles whenever installing or removing a lens.

With the camera installed the housing, push the lens release lever (#20) into the proper position so has not to obstruct it operation later, through the port opening in the front of the housing install the lens in the normal recommended way. If the lens is equipped with a zoom or focus gear, confirm that the gears are properly installed and aligned. Check the meshing of the lens gear with the pinion gear (#18) on the housing by rotating the Focus/Zoom control knob (key #16) several times to make sure the gear rotates smoothly and does not slip.

CHANGING A LENS (REMOVING A LENS)
The Aquatica Housing provides two methods for removing and replacing a lens. It can be done either from the front by removing the port or through the rear, by removing the camera mounted on its quick release tray (key # 1)

From the front: unlock and remove the port and/or extension ring (see chapter: Mounting a port and/or Extension ring on the housing). If a gear is mounted on the lens, access to the camera lens release button is still possible using the lens release lever (key #19) on the housing.
Or
Pull out the Lens Release Lever (key #19) out of the way, lift and rotate the Zoom Focus Release Disc (key #17) clear, open the housing back cover, remove the hot shoe from the camera and pull out the complete camera & lens from the housing, replace the lens and reinstall in the reverse order.
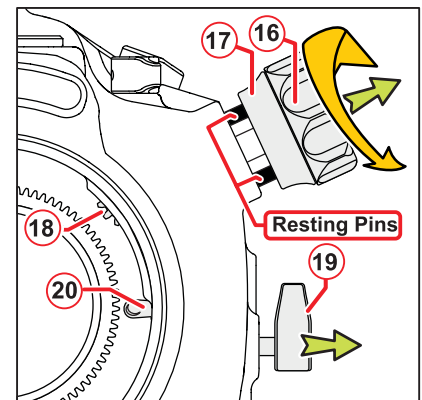
FOCUSING MODE

Various focusing options are offered on the Canon 7D Mk II, these can be accessed by either navigating through the menus or by pressing the following buttons.

11-   Drive Mode selection button, also used for AF Operation/Af method selection.

12-   M-Fn button, gives access to the AF area

46-   AF Point Selection button

9-   (*) Star /AF-ON lever

Once a button is engaged, use the Main control knob (# 6), Quick Command knob (# 7) or Multi Controller buttons (# 50) to slect the desired options.

For more detailed information concerning the operation of the different focus modes consult the Canon ® instruction book for the 7D Mk II. Taking full advantage of the AF-ON and Star (*) lever access on the housing dedicated lever (# 9) can also greatly contribute to the performance of the autofocus performance underwater.

MOUNTING A PORT AND/OR EXTENSING RING ON THE HOUSING

This AQUATICA A7D Mk II Digital housing features a locking bayonet mount (# 21).

Safely mounting a Port or extension on the housing requires that the O-ring be clean, lubricated, be properly seated in its groove and that the opposing sealing surface be clean and free of any physical damage.

To mount a port or extension ring on the housing:
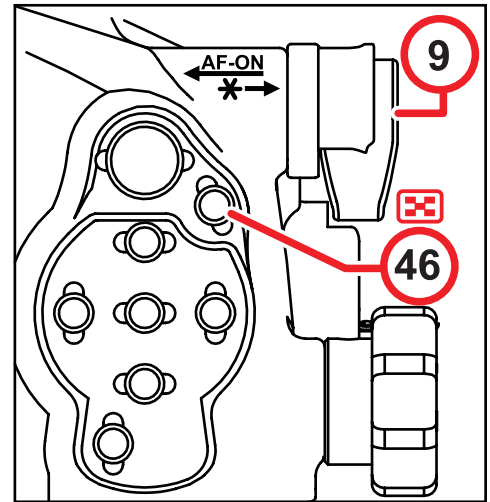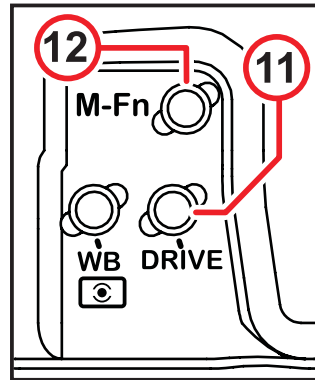
1. Place the housing on its back on a soft and steady surface.

2. Place the port or extension ring inside the bayonet 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. Rotate the port clockwise until it stops. Do not force it. If there is too much resistance take the port off, check the O-ring and see that the port or extension are properly seated before attempting to rotate again.

6. Try to rotate counter clockwise to confirm that the port or extension is safely locked on the housing.

7. When using large dome port such as the 6", 8" and 9.25" with an extension, uses of the optional extension ring to port locking collar (# 18469) is recommended, this add another layer of safety by preventing the larger dome port from rotating during manipulation or transportation to the dive site.
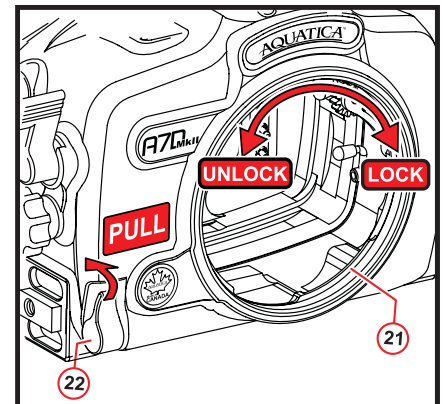
To remove a port or extension from the bayonet, press the port release lever (#22) and rotate the port or extension counter clockwise, carefully pull the port or extension off the bayonet.

Note: It is recommended that you familiarize yourself with this procedure by trying it without the camera in or the back cover attached to the housing; this to better visualize the internal functioning of the bayonet and port.

AQUATICA
Digital

CONNECTING LIGHTING EQUIPMENT

Mounting the strobe arms will require that the necessary shoes, brackets or Base Ball be attached to the threaded holes located on the top of the hand grips (key # 26). Use of the Aquatica Delta 3 Strobe Arm System is recommended.

Three 1/4"-20 threaded holes on the bottom (key # 53) of this housing can be used for various mounting applications. A similar sized 1/4"-20 hole with thread is located on top of the housing (key # 27), and is ready to accept a 1"/25mm Technical Lighting Control Delta 3 (# 77651) for adapting a small dive light or an additional strobe arm can be attached using a clamp.

USING WIRED CONNECTORS

Internal switch board circuit:

If your Aquatica housings was delivered with electrical type strobe connectors, it will have a single or double strobe connections which will be connected to a switchboard inside the housing. The following chapter explains the various options available and the limitation of current underwater strobe technology.

When preparing the sync cord, be sure to lubricate the O-ring on the sync cord's connector with a light coat of the strobe manufacturer original O-ring lubricant, also advisable is to put a light coat of O-ring lubricant on the threads of this connector to help prevent threads from freezing up. Some electrical sync cord are known to use dissimilar metal in their construction, these can create an unwanted electrolytic reaction. Whenever using sync cord with metal fitting, it is recommended that they be removed, cleaned and the threads lubricated on a daily basis.

Canon Digital cameras are setup with a flash circuitry that only allows one eTTL flash to be connected directly to the camera, Canon TTL Protocol will not allow two TTL flashes to be electrically connected directly, no matter if it is a Canon flash or any other brand. The multiple flashes approach preferred by Canon prevents additional flashes, or strobes from being connected directly to the camera in eTTL mode, exposure will stop to function and a camera freeze is likely to happen. Two underwater strobes can only be connected electrically if a TTL converter is interfaced between the camera and the strobe. If seeking TTL exposure, Optical triggering is an accurate and inexpensive way to consider (see next chapter)
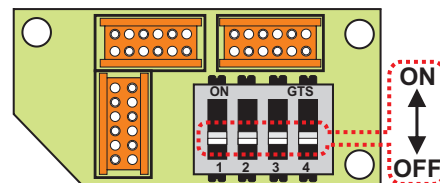
The main connector (on right side) is wired through a switch board that can be configured for full manual flash exposure or setup to be compliant with the latest TTL converter on the market. The secondary connector (left side if installed) is wired in a full manual configuration and cannot be used for eTTL operation. By default you housing is delivered with the switch on the board set to full manual (down) position. If eTTL exposure is desired then it can be made in either of two methods:

1) Using a single flash from Canon or other brand (that is eTTL compatible with your camera) in a third party dedicated underwater housing, which will be connected with a TTL cord to the Nikonos 6 pins main connector of your Aquatica housing.

2) Using an external eTTL converter connected to the main connector of your Aquatica housing, one or two underwater strobes with TTL cords can then be connected to this converter, (check with your dealer or the strobes manufacturer to see if the strobes and converter are compatible between themselves).

Set up instruction for eTTL operation: Using the tip of a pen push all the switches to the ON (up) position, this will activate the connections on your main bulkhead connector allowing TTL 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 connection are disabled and only the ground and sync are left active, this will allow two under water strobes or housed flashes to be connected directly via the main and secondary bulkhead.

--------------------- NOTE ----------------------

If your housing was delivered with an Internal Ikelite TTL circuit, please refer to the separate instruction sheet enclosed your housing documents.

For Aquatica housing with the optional Ikelite integrated conversion circuitry

The A7D Mk II model # 20077-KT is a housing is equipped with an Ikelite designed and patented TTL conversion circuitry. Once attached to the housing, you should turn the strobe on first before turning the power on the camera.

When used with current Ikelite DS Strobes, the TTL Conversion Circuitry provides real flash exposure with over and underexposure compensation from +1 1/3 to - 1 1/3 f-stops in 1/3 stop increments. The Conversion Circuitry also offers Manual exposure control with 3 f-stops of under exposure control in 1/2 stop increments. The Conversion Circuitry is powered by the Ikelite DS Strobe when connected to the housing with the 4103.51 single or 4103.52 dual sync cord. When using two strobes with the dual sync cord, the primary strobe connected to the cord without the red band, must be turned on to power the Conversion Circuitry. Always keep both strobes connected to your dual sync cord underwater.

Setting the Conversion Circuitry Strobe ID Switch

Inside the back cover of the A7D Mk II housing is a switch for setting the DS Strobe ID. Set the switch to the Model of DS Strobe being used.

Use **(A) for DS-51** or **(B) for DS 161,160, 125 & 200.** Whenever using two Ikelite strobes of different models such as a DS51 and a DS161, set the ID switch to (A) DS51 or the smaller strobe.
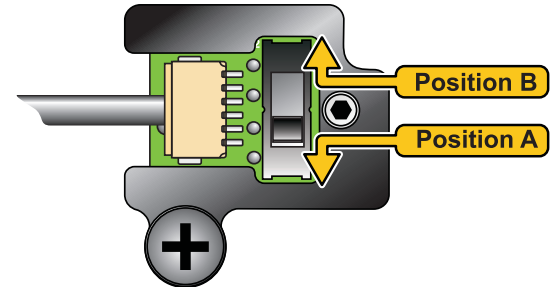
Using the Conversion Circuitry (Set DS Strobe to TTL mode)

Mode and Compensation Dial (see illustration)
Note that the TTL compensation values are located in the yellow band. Manual compensation values are located in the black band. Rotate the Dial to switch between TTL and Manual Modes.

TTL Mode compensation values are indicated in the yellow band. Place the Setting Indicator to TTL for NO Compensation. Rotate the dial either direction to select +/- compensation. Place the Setting Indicator to the desired compensation value. Note that in TTL, compensation values are in 1/3 f-stops.

Manual Mode compensation values are indicated in the black band. Rotate the Dial to place the
setting indicator to the desired compensation value. Note that in manual mode, compensation values
are in 1/2 f-stops from (F) full power to -3 f-stops. Set DS Strobe to TTL mode. This will allow the strobe power to be varied in manual mode.

Attaching the Flash Connection for external strobes

When using an external strobe, connect the housing hotshoe connector. Slide the connector into the hotshoe mount on the camera from the back of the camera as shown. Slide the connector forward until it stops. Make sure the hotshoe is all the way forward in the camera mount to assure a good connection.

Using Non-Ikelite or Ikelite Non-DS Strobes (Strobe 50, 100A, 200, 400) with this Housing

The Conversion Circuitry is automatically disabled when used with a Non-Ikelite or Non-DS Strobe. These Strobes can be used in their manual mode utilizing any power settings provided on the Strobe.

For a complete list of compatible models of strobes, please check with Ikelite (www.ikelite.com) to confirm that your strobe is compatible with this TTL circuitry
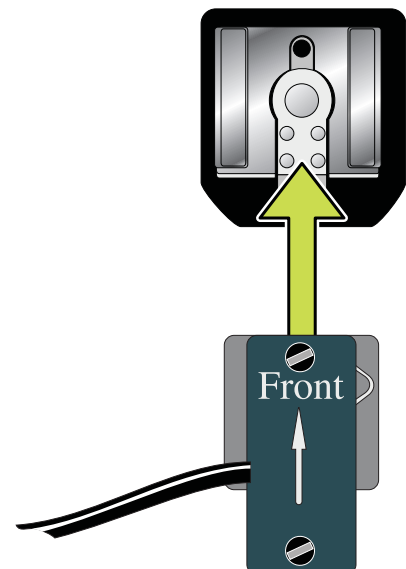
USING OPTICAL CONNECTORS

This Aquatica housing can be supplied with optical type strobe connection:

Version –OPT is fully optical, having dual optical type of connection. Included is one (1) dual adapter for typical straight cord used by INON and various other optical sync cords manufacturers and two (2) Sea & Sea/Olympus type of angled cord plug, select the desired connection and install on the optical port base, tighten the set screw into place with the supplied hexagonal wrench.

Version –HYB is supplied with one optical and one Classic Nikonos type of strobe connectors. As well as the Nikonos electrical connector, Included is one (1) dual adapter for typical straight cord used by INON and various other optical sync cords manufacturers and one (1) Sea & Sea/Olympus type of angled cord plug, select the desired connection and install on the optical port base, tighten the set screw into place with the supplied hexagonal wrench.

To use optical triggering, the built-in flash of the camera need to be in the up position, this can be done at time of installation or later by pressing the flash actuator button (# 15) to release it.

If ambient light images need to be taken simply push the flash actuator lever (#14) to close the internal flash.

Note: it is advisable to turn the camera and external strobe off when travelling to your dive site to avoid useless drain of the camera and strobes batteries.

NOTE: Field testing has shown that mixing brands of optically triggered strobes is unlikely to give reliable TTL results, therefore it is suggested that when mixing different makes of strobe, that they be used in manual mode.

On the –HYB version, installing the hot shoe will disengage and prevent the built in flash of the camera from coming up when needed. Tuck the hot shoe and its ribbon wire safely away from the path of the built in flash. Always confirm the raising and lowering of the built flash before entering the water and do test exposure to insure that everything is operating as it should.

INON Type Straight cord   Sea & Sea Type angle
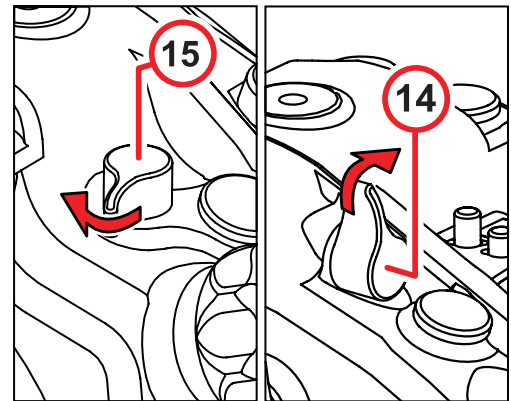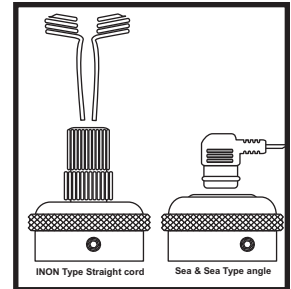
MAINTENANCE OF HOUSING AND PORTS

When changing ports or O-rings, a simple seal test without the camera inside should be performed. 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 staffer are familiar with this procedure and advise them to manipulate only by using the grips provided with the housing.

When replacing the main sealing 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. Avoid going solely in one direction as doing so will stretch the O-ring material and possibly prevent it from properly seating.

CARE AND MAINTENANCE

TO SERVICE O-RINGS OF THE HOUSING, PORTS AND EXTENSION RINGS

1. Removing an O-ring: Never use a sharp instrument when removing an O-ring as this may damage the sealing surface of the groove or the O-ring itself. A dedicated O-ring tool, a dull pointed object or the edge of a credit card usually works well.

2. Once removed, the O-ring should be inspected for damage. Carefully check that it is free of nicks or cuts and that it retains its original round profile. O-rings that appear to be damaged should be immediately replaced with new ones and the damaged one permanently discarded.

3. Rinse the O-ring with fresh water and dry it with a clean lint free cloth.

4. Clean the O-ring groove (the channel where the O-ring sits) with a cotton swab. Be sure to remove any lint the cotton swab may leave behind. Inspect the groove for damage.

5. Wipe the matching sealing surface part of the housing with a clean lint-free cloth.

Maintenance of housing and ports

6. Lubricate the O-ring with a thin layer of Aquatica O-ring lubricant (# 19213) until it appears to be smooth and shiny. Do not over lubricate. Use just enough lubricant so the O-ring will pull smoothly through your fingers. Excessive amounts of grease will only serve to attract and trap dirt onto the o-ring.

7. Confirm that the Port and extension ring O-rings are properly and evenly seated in their O-ring groove.

8. To reinstall the clean and lubricated main O-ring of the housing, first 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.

The internal O-rings on the housing controls are not user accessible, while these O-rings are not as susceptible to damage as they are not exposed, rinsing properly with fresh water to flush out salt crystals and sand residues will be the proper way to assure trouble free operation, Aquatica recommended yearly maintenance of the internal O-ring. Authorized service center, both the continental USA and Europe, are available to the users for this service. Prior to sending the housing, always check for the closest service center to you on our website www.aquatica.ca

WARNING: Use only petroleum free O-ring lubricant such as our # 19213 Aquatica O-ring Lubricant, petroleum based lubricant, used by some manufacturers for lubricating their Silicone made O-rings can and will cause the O-ring material to swell, this will render the O-ring difficult to install and likely will result in the O-ring being damaged or pinched with dire consequence.

 # 19213 Aquatica Lubricant for O-ring

Port maintenance:
Your ports are an essential part of the optical formula in underwater photographic system; As such they should be treated with the same attention as the delicate camera lenses you own. Care should be taken to avoid scratches on the dome and macro ports lens surface. Acrylic is softer than glass, so minor exterior marks are often unavoidable. However, since the indices of re-fraction for acrylic and water are almost identical, these should not 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 dome lenses only with soft lint free tissue. Dust on the interior surfaces of the port can be removed with a soft camel hair brush or a with 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 high pressurized air from a dive tank is not recommended, the force of the air stream may easily dislodge a port lens or its sealing O-ring. It is advisable that your ports be removed and their O-ring serviced after every dive.

Maintenance of the housing mechanical components:

After every salt water dive, your housing system requires that it be soaked and/or rinsed in fresh water. It should soak for a minimum of 30 minutes. Operate all the controls several times, while soaking, to dislodge any trapped salt water residues.

Periodically remove the hand grips for storage and transportation and to avoid having the thread of the attachment bolts fuse on to the housing. Unscrew, clean and lubricate the bolts with a small amount of WD-40 or Zinc based lubricant.

WARNING: Use WD-40 or any lubricant carefully, sparingly and only on metal to metal surfaces. WD-40 or other petroleum based lubricant can damage the acrylic on the ports, the optical surfaces of a lens or O-rings.

Sacrificial anodes:

Two anodes (#54) are attached to the bottom parts of the housing to prevent galvanic corrosion due to electrolysis, as time goes they will deteriorates and need replacement. Contact your dealer to order replacement (parts # 19220).
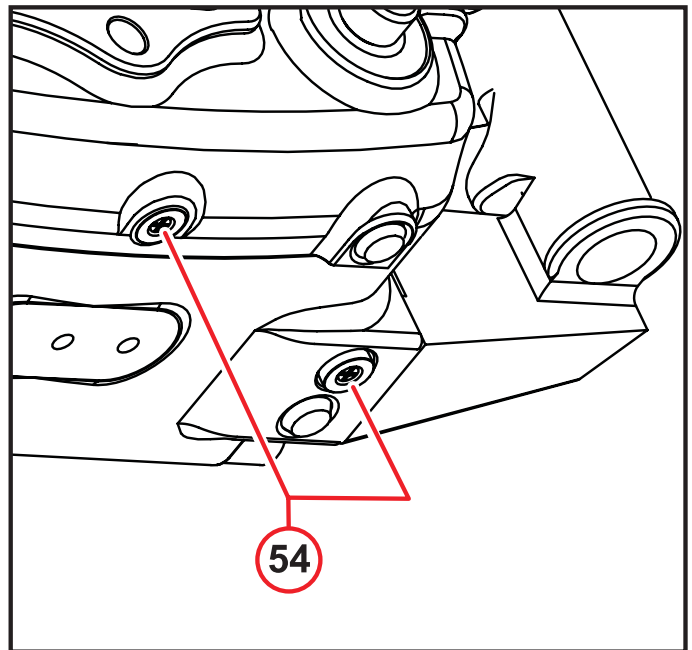
STORAGE AND TRANSPORTATION
Store and transport the housing in a sturdy, shock proof container and avoid travelling with the camera mounted inside the housing. In the event of an impact, especially on the external push buttons, this could potentially be transferred to the camera controls and damage them.

When travelling by air or in situation where atmospheric pressure changes are foreseen, remove the port, the eye piece or open the housing. Doing so allows equalization of the air pressure inside the housing with the external one. Failure to do so may cause internal pressure built up which could potentially force ports or acrylic windows to pop out or potentially unseat their O-ring seal.

AQUATICA
Digital

Aquatica A7D Mk II
For Canon 7D MkII

AQUATICA ™

Digital

Made in CANADA

Replacement Viewfinder
19218 INCLUDED

Aqua View 45° Finder
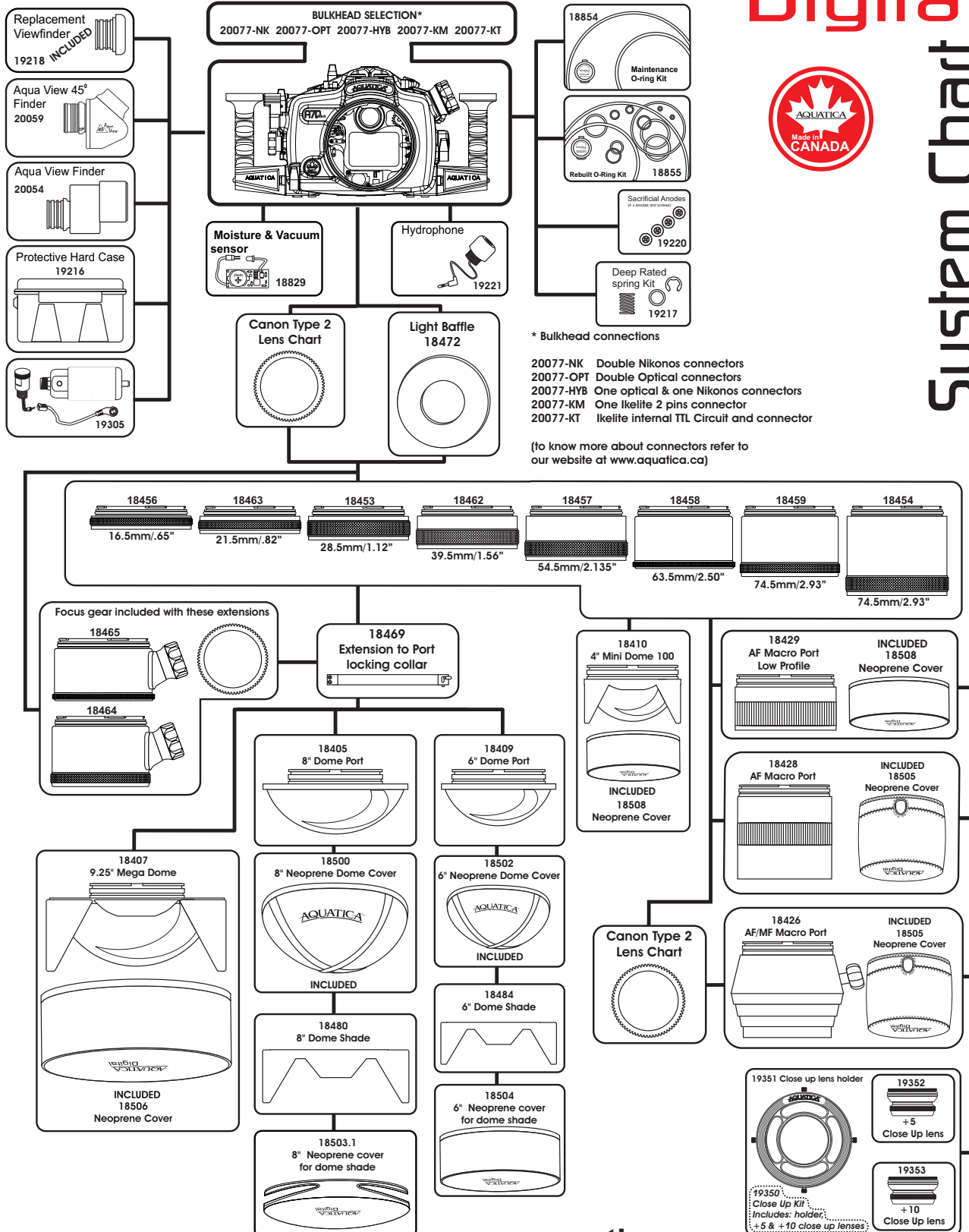20059

Aqua View Finder
20054

Protective Hard Case
19216

19305

BULKHEAD SELECTION*
20077-NK 20077-OPT 20077-HYB 20077-KM 20077-KT

Moisture & Vacuum sensor
18829

Hydrophone
19221

Canon Type 2 Lens Chart

Light Baffle
18472

18854

Maintenance O-ring Kit

Rebuilt O-Ring Kit   18855

Sacrificial Anodes
(4 x anodes and screws)
19220

Deep Rated spring Kit
19217

* Bulkhead connections

20077-NK   Double Nikonos connectors
20077-OPT   Double Optical connectors
20077-HYB   One optical & one Nikonos connectors
20077-KM   One Ikelite 2 pins connector
20077-KT   Ikelite internal TTL Circuit and connector

(to know more about connectors refer to
our website at www.aquatica.ca)

18456	18463	18453	18462	18457	18458	18459	18454
16.5mm/.65"	21.5mm/.82"	28.5mm/1.12"	39.5mm/1.56"	54.5mm/2.135"	63.5mm/2.50"	74.5mm/2.93"	74.5mm/2.93"

Focus gear included with these extensions

18465

18464

**18469
Extension to Port locking collar**

18410
4" Mini Dome 100
INCLUDED
18508
Neoprene Cover

18429
AF Macro Port
Low Profile
INCLUDED
18508
Neoprene Cover

18405
8" Dome Port

18409
6" Dome Port

18428
AF Macro Port
INCLUDED
18505
Neoprene Cover

18407
9.25" Mega Dome
INCLUDED
18506
Neoprene Cover

18500
8" Neoprene Dome Cover
INCLUDED

18502
6" Neoprene Dome Cover
INCLUDED

Canon Type 2
Lens Chart

18426
AF/MF Macro Port
INCLUDED
18505
Neoprene Cover

18480
8" Dome Shade

18484
6" Dome Shade

18503.1
8" Neoprene cover for dome shade

18504
6" Neoprene cover for dome shade

19351 Close up lens holder

19352
+5
Close Up lens

19350
Close Up Kit
Includes: holder,
+5 & +10 close up lenses

19353
+10
Close Up lens

www.aquatica.ca

AQUATICA ™
Digital

AQUATICA™

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 RESPONSABILLITY 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_____

AQUATICA
Digital