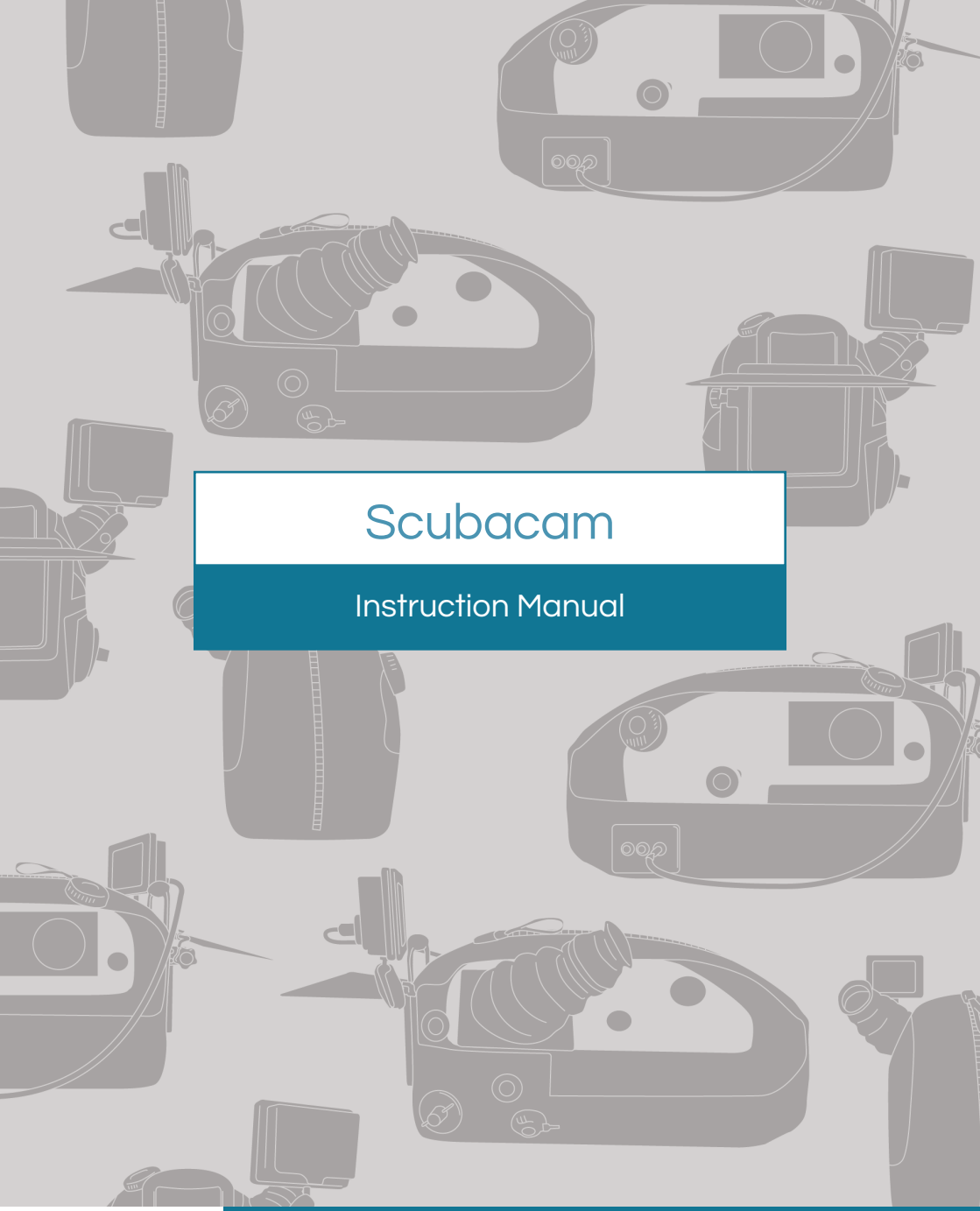

# Scubacam

## Instruction Manual

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# ! Warning !

DO NOT EXCEED THE MAXIMUM RATED DEPTH
OF 4 METERS/12 FEET.

DO NOT CLEAN USING ANY SOLVENT OR HOUSEHOLD CLEANER. DO NOT USE HIGHLY PRESSURISED AIR OR WATER. ONLY USE FRESH WATER.

DO NOT STORE THE HOUSING
IN DIRECT SUNLIGHT.

KEEP ZIP FREE OF DIRT & SAND, CLEAN ONLY WITH HOUSING CLOSED USING FRESH WATER OR BY GENTLY BLOWING AIR ONTO ZIP.

COVER AND PAD ANY SHARP PROTUBERANCE OR CORNERS
ON THE CAMERA BEFORE CLOSING THE HOUSING.

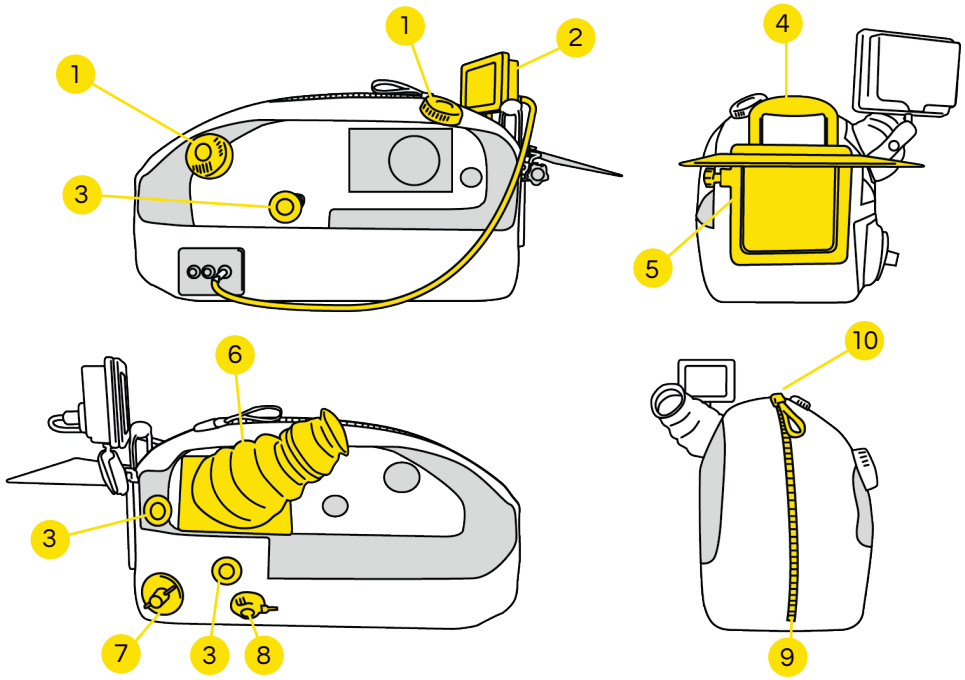
DO NOT CONNECT OR DISCONNECT CONTROL
AND VIDEO CABLES UNDERWATER.

REMOVE ANY WATCHES OR JEWELLERY WITH SHARP EDGES WHICH COULD POTENTIALLY DAMAGE THE HOUSING.

NEVER USE SHARP TOOLS OR ACCESSORIES
IN AND AROUND THE HOUSING.

BEFORE PLACING HOUSING IN WATER MAKE SURE BOTH
PRESSURE RELEASE VALVES ARE CLOSED.

# Scubacam overview




1. Pressure release valves
2. Monitor & cable
3 . Fingerstall
4. Handle
5. Front port with flag
6. Viewfinder
7. Focus/zoom manual control
8. Low Pressure (LP) valve
9. Zip
10. Zipper

Fig. 1

# Accessory list

The Scubacam comes with the following accessories:

- HD 7" onboard colour monitor.
- 2x remote lens control cable housing to surface, 10m long.
- Internal cable adapter for Heden or ARRI LCS motor.
- 2 x remote HD video signal cable housing to surface, 10m long.
- 2 x LCS cable adapter ARRI > Preston
- French flag.
- Exterior matte box.
- Diving belt with bolts to attach to bottom plate with standard diving weights under the housing.
- Airblade with 10m long pressure hose 7 meters/21 feet and first stage.
- 3 litre diving cylinder with first stage, mini pressure gauge and LP pressure hose.
- Air refilling decanting hose kit for 3L cylinder from normal 12/20L diving cylinder (DIN fitting).
- Anti-slip mat.
- Front port cleaning kit.
- Zip cleaning kit.
- Spare 9v battery for water alarm.
- Padding system to avoid stress points.
- Port cover.
- Rain X water repellent for front port.
- Drying towels.
- Sun cover.

# Introduction

This housing is the top of the range "soft" underwater housing on the market today. The advantage compared to a "hard shell" housing is that it is lighter to handle and all camera functions are accessible and visible. Furthermore the soft housing can accommodate a wider range of cameras due to its adaptability. Please see Fig. 1 for a full list of functions and features

This housing is designed for the ARRI ALEXA series but can accommodate cameras of similar size or smaller. However, compared to a hard shell housing a soft housing can only go to a maximum depth of 4 meters (12 feet)

This Scubacam housing can be used for handheld work, at the water surface or underwater, and can be mounted on a normal heavy duty tripod head or on a remote

| Lens equivalents comparison chart using a flat port (seawater) | | | | | |
|---|---|---|---|---|---|
| 35 mm size image | | 16 mm size image | | 2/3 size image | |
| Focal length / Angle | | Focal length / Angle | | Focal length / Angle | |
| Above Water: | Under Water: | Above Water: | Under Water: | Above Water: | Under Water: |
| 12 / 80° | 16 / 60° | 12 / 45° | 16 / 34° | 12 / 40° | 16 / 30° |
| 16 / 65° | 21 / 49° | 16 / 20° | 21 / 15° | 16 / 30° | 21 / 23° |
| 24 / 45° | 32 / 34° | 24 / 12° | 32 / 9° | 24 / 20° | 32 / 15° |
| 35 / 32° | 47 / 24° | 35 / 17° | 47 / 13° | 35 / 115° | 47 / 86° |
| 50 / 25° | 67 / 19° | 55 / 10° | 73 / 8° | | |

Fig. 2

head for crane work. The housing is intended to shoot around water, where water splashing might occur, during heavy rain effect shots or underwater up to a depth of 4 meters/12 feet.

The port will modify the focal length of the taking lens by a factor of approximately 25%, see Fig. 2

# How to prep the scubacam

Remove watches, rings and any other accessories that could damage the Scubacam before handling it.

Carefully remove the housing from the case holding it by the front handle and rest it on the mat provided, away from sharp objects. Carefully open the zip without forcing it and make sure the inside of the housing is clear.

Connect the water alarm to the battery and test it by wetting a finger and then touching the sensor as illustrated Fig. 3

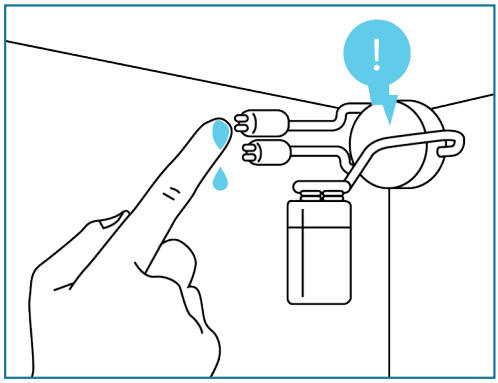



Fig. 3

# Positive pressure test and bubble check

The housing is tested by Scubacam© every time it is returned from a shoot, however, when travelling by airplane there is a possibility that damage can occur due to pressure changes in the aircraft and security checks without due care. There are two tests that you can do to make sure the housing keeps its seal.

## Positive pressure test.

Once you have taken the housing out of the case close the zip as shown in fig 4 and give two tugs. Make sure once you have done that both pressure release valves are fully closed. Now hold the housing vertically with the plate against your chest and squeeze the housing with your arms. As shown in fig 5. No air should escape.

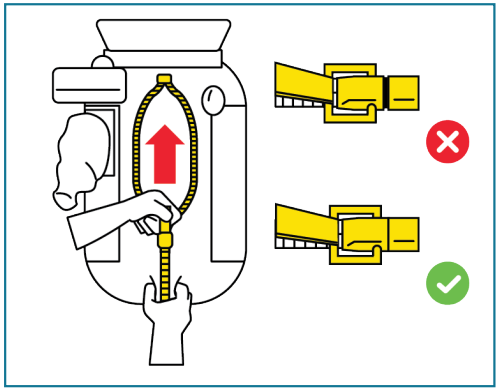


Fig. 4

## Bubble test.

You can now also dip the housing in water and gently try to submerge it, if air does not escape you will be not

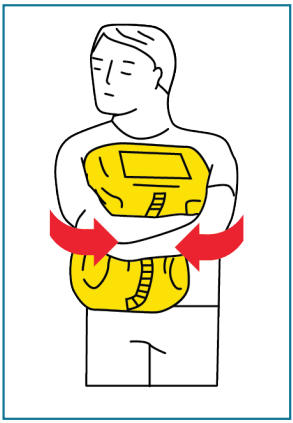


Fig. 5

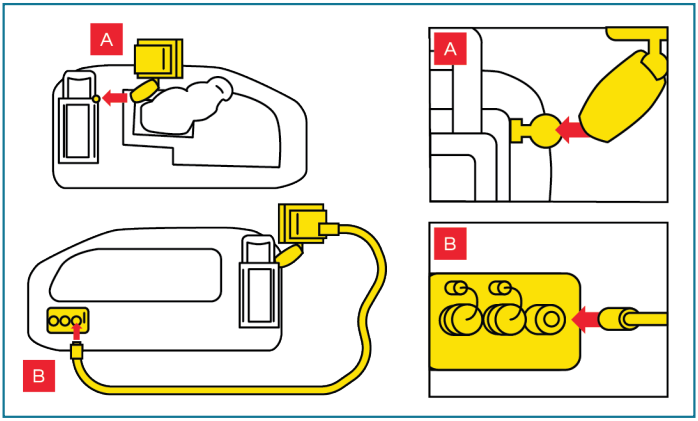



Fig. 6

able to fully do so without adding weights or forcing it (not recommended).
If for some reason you are able to submerge it, look for air bubbles escaping from the housing, that means there is damage and the housing should not be used.

DO NOT ATTEMPT TO REPAIR THE HOUSING IN ANY WAY, THIS CAN ONLY BE DONE BY A SPECIALIST AT THE MANUFACTURER.

Please note that few tiny bubbles onto the housing underwater is normal, and some larger bubbles coming from underneath the plate are common, however a constant stream of air bubbles coming from any parts of the housing is not.

Once the housing has passed the positive pressure test, rest it on the mat provided, out of direct sunlight.

Prep the camera as you normally would OUTSIDE the housing. There is no need to use a camera with a matte box. You will find a donut attached to the front port inside the housing to be secure to the lens. This avoids double reflections onto the port while filming.

Before inserting the camera into the housing make sure the port is clean from smudges or dust, wipe gently both sides as you would do with a lens. To avoid fogging you can apply some Rain X following the instructions on the bottle. You can also apply Rain X on the outside face of the port, recommended especially when doing half/half shots, to avoid water droplets sticking to the glass.

Make sure to insert the camera gently, keeping the zip opened without forcing the sides, and that the camera plate slides onto the housing dovetail, making sure the lens touches the front port. Fit the camera viewfinder into the housing eyepiece below.

Connect all cables inside the housing to the camera, each cable function is clearly labelled.

Without closing the housing, mount the onboard monitor on its support fig 6 and connect its cable accordingly. Then turn on the camera and make sure there is an image on the camera viewfinder, then check the monitor image. Remember to remove the front port protection!

Connect the LCS exterior cable to the housing and to the remote unit that will stay at the surface, then do the same with the video cable to the surface monitor and check that you receive an image on the surface monitor.

Add one or two moisture absorbing packs (silica gel) to the mesh pocket inside the housing.

Now close the zip as shown in fig 4. Giving two tugs once the zip reaches the end.

Now make sure that you can access the controls through the fingerstall or through the clear plastic.

You can connect the 3L cylinder provided to equalize pressure at depth if needed. The cylinder is shipped filled with air at a 190 bars pressure. If you need to refill the cylinder you can do so from a normal size (20L) cylinder with DIN fitting, using the decanting hose kit provided.

# Before entering the water

Make sure camera is on and everything works as it should. On the Alexa you can select a functions lock so only the record button works, This can be useful if you accidentally press a function button through the soft shell while handling the housing.

MAKE SURE THE ZIP IS CLOSED AS SHOWN IN FIG 4

Make sure all cables are connected and caps locked together as shown in fig 7 . This is important as they act as a cable restraint to avoid accidentally pulling on the connectors underwater.

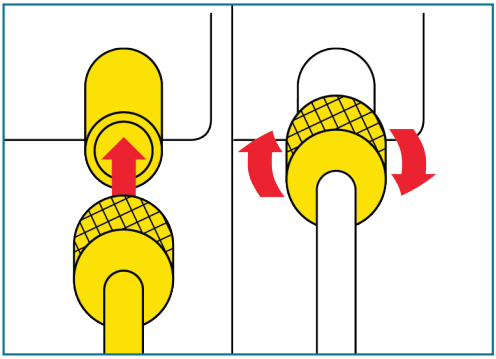


Fig. 7

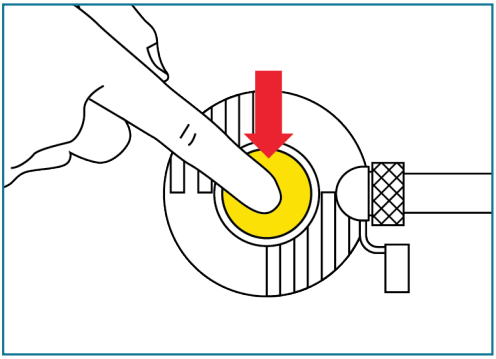


Fig. 8

Make sure the 3L cylinder is secured to the bottom plate,and that its valve is open 4 full turns. Do not open the valve more than that in case you have to quickly shut off the air supply if the Apeks LP valve gets stuck.

Test the low pressure (LP) air injection valve fig 8 by pressing gently once for just a second. Air should enter the housing through the valve. Make sure both pressure release valves are semi closed when doing so in case you over inflate the housing.

Gently close both over pressure valves fully, avoiding over tightening. Enter the water carefully, ideally someone should be in the water already to receive the housing that should be handed over with the port facing the person in the water, as shown in fig 9. This avoids the port being damaged as the housing is passed.

DO NOT DROP THE HOUSING INTO THE WATER FROM A HEIGHT, IT CAN SERIOUSLY DAMAGE THE HOUSING.

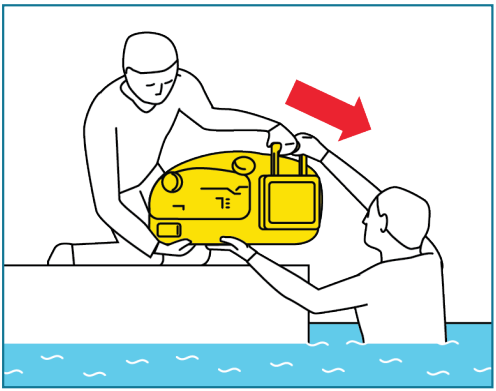


Fig. 9

## Once in the water

Air trapped inside the housing will make the housing float even if the camera is inside.

Gently open the rear valve tilting the housing down. The reason why there are two valves one frontal and one in the rear of the housing, is that when tilting up, very common in underwater filming, it is possible to release some air from the front of the housing, without having to tilt it down underwater every time. Air inside the housing will always go towards the surface, “up”.

When opening the valve do it gently letting little air escaping at any time, avoiding a sudden excessive “squeeze” of the housing that can cause damage or accidentally press buttons.

Once enough air has escaped to let the housing almost to sink, pull the housing down gently, and close the rear valve again. Once you pass one meter depth the pressure will squeeze the housing, and you will find the housing becomes more neutral in the water.

If you find that the housing is getting squeezed too much add some air pressing gently the LP inflator valve (fig 10) connected to the cylinder. Make sure you press it only once, adding air in one second increments. Be ready to open either pressure release valves in case too much air is injected.

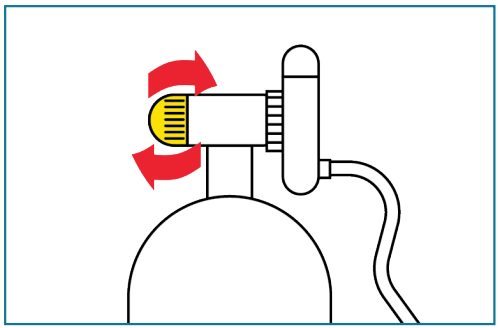


Fig. 10

Note that injecting air will increase buoyancy immediately.

Keep the release valves in the semi closed position, NOT FULLY CLOSED. This will make sure air can escape immediately in case you inject too much air. If the LP valve gets stuck on open and air keeps being injected inside the housing, stay calm and IMMEDIATELY SHUT OFF the cylinder valve first, then open either release valves to let air out until neutral buoyancy is restored.

## Once out of the water

Make sure to rinse the housing with fresh water when the housing is used at sea, even if used just at the surface since air contains some salt too. Salt, once dry, can corrode the materials of the scubacam and damages the zip.

Rest the housing on its mat and dry the housing gently with a soft towel, without touching the zip, as material from the towel can get stuck in the zip.

It is normal to find some drops of water inside the housing, this is due to condensation. Anything more than a small spoonful is either a sign of a leak, one of the valve suffering damage, or the zip not closed properly.

## Housing care

Handle the housing carefully, always holding it by the handle in the front and supporting from the bottom as shown in fig 11.

Do not hold the housing by the zip

Do not leave the housing in direct sunlight.

After use close the zip and wash it with clean fresh water, ensuring the zip teeth are free from sand, grit and dust. Then lubricate the teeth with a beeswax stick or the special zip lubrication provided.

DO NOT USE ANY TYPE OF OIL, GREASE OR WD40.

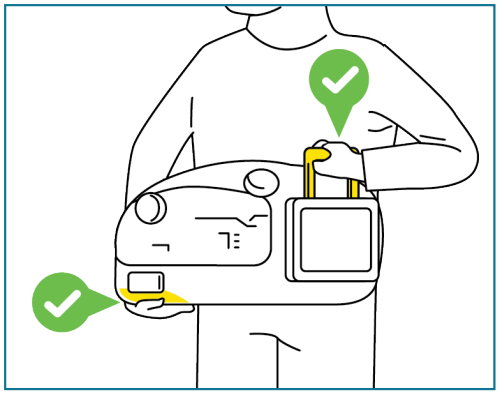


Fig. 11

If the zip snags then clear the teeth before closing further – never force the zip. Rinse with fresh water and let dry naturally, do not use a heat gun or a light fixture like an open face lamp. Using a hair dryer is acceptable, but only if done keeping a good distance from the housing material.

Clean the front port with the dedicated fluid, dry the housing before putting it back in the case. Leave the zip open. Leave pressure release valves open.

Make sure the housing is resting inside the case without any sharp object near to it. Make sure the housing is totally dry before storing it in the case with no sharp creases. Contact with oil, petrol, paraffin, diesel and other similar fuels or solvents (including sun cream) will perish the material and should be avoided, it may also damage other parts of the housing. Any contaminants should be washed off immediately with soapy water and the housing should then be rinsed in clean water, to minimize the damage.

The housing should be stored away from direct heat, sunlight or sources of ozone like electrical motors.

# Troubleshooting

| Problem | Solution |
|---|---|
| Zip is stuck when attempting to close. | Pull back the zip gently and check for debris, gently lubricate zip with zip fluid lubrication. |
| Zip is stuck when attempting to open. | Gently wriggle zip. Inspect for debris stuck in the zip, pull back and forth gently. |
| Onboard monitor not working. | Ensure the cable is properly connected and the camera is on. The monitor has no batteries so it gets power from the camera. |
| Rcs not working. | Check connection, if problem persists change cable. |
| LP inflator Apeks valve stuck OPEN. | Disconnect LP hose immediately and shut off cylinder valve OR open overpressure release valve then shut off cylinder valve. The most common cause of a stuck LP inflator valve is poor maintenance. If the housing is not rinsed or soaked after diving in salt water, salt crystals and mineral deposits can form that can later cause the valve to stick in the "on" position. Another potential cause of a stuck LP inflator valve is sand, silt or other sediment in the valve mechanism. This can occur if the housing is left on sand surface. |

| Problem | Solution |
|---|---|
| LP inflator Apeks valve doesn't inflate. | Check the cylinder valve is open and the cylinder has air. Check the LP hose is connected properly to the LP Apeks valve. |
| Video signal to surface monitor not showing. | Make sure camera is on and image appears on viewfinder or onboard monitor, if problems persist change cable. |

The majority of problems can be avoided if proper pre dive checks are performed as previously indicated. If you are not sure ask people with more experience.

Only use the housing underwater if you are SCUBA certified and have sufficient training & experience