

The
C Y P R E S
Water Resistant Kit



Instruction Manual

The water resistant CYPRES

The terms air pressure measurement and water resistant are contradictory. It is even more contradictory to make an air pressure measuring device water resistant, which has to work with a reliability of nearly 100%.

To develop a procedure for making a large number of these high-tech air pressure measurement devices subsequently water resistant (some of them have been in use for 8 years) is normally impossible. Nevertheless, we had this goal and pushed the development.

This now is possible with the CYPRES Water Resistant Kit you have purchased.

But, to do this in the appropriate way requires careful, responsible and sensitive assembly, following the instructions exactly.

Because of circumstances we have just described, we ask you to follow our instructions by 100%, and to do the best possible job.

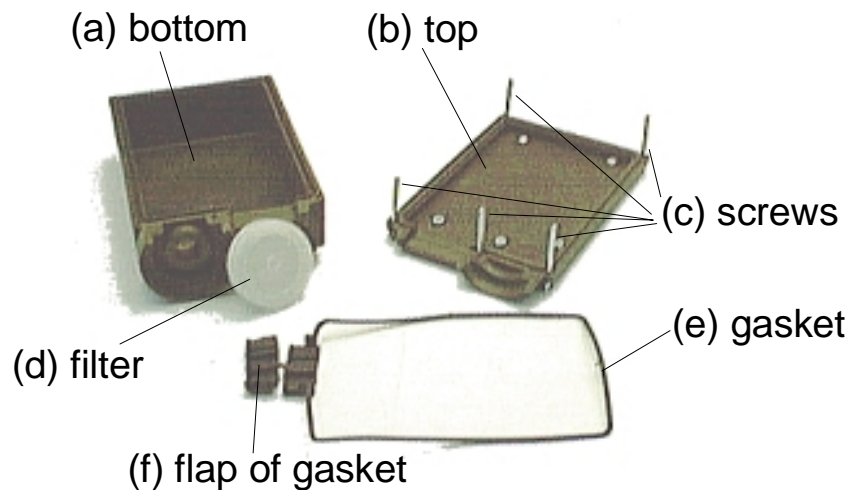
It is possible to provide sufficient protection to the CYPRES by using the Water Resistant Kit, but a small mistake in the way the procedure is performed may negate this protection.

Disclaimer:

Airtec is not responsible for any damage to a CYPRES, which was submerged in water after installation in the water resistant housing.

CYPRES installation into the water resistant housing

The Water Resistant Kit



Parts list

1	bottom housing *	1	brush
1	top *	1	non metallic tool
2	gaskets	1	5 cm ³ syringe
2	blind stoppers	2	latex covers for control unit *
10	screws, V2A	2	latex covers for plug *
10	nuts, V2A	2	latex covers for cable splice *
2	strips of capton (for dismantling)	20	alcohol pads
2	filters	1	water resistant marker
20	cable ties	1	screwdriver
1	transparent tube with 2 stoppers and one adapter		
1	bag with talcum powder		
2	stickers (blank, for serial numbers ...)		
2	stickers "last battery change ..."		
2	tubes containing 8 cm ³ of silicone		
1	spandex pouch for water resistant housing (OD color)		

* not in the box because already installed at Airtec or SSK

Important Information

First:

Right now every CYPRES that should be made water resistant has to see Airtec or SSK.

There a generell check for all important properties is done and

- the control unit and
 - the plug in the cutter cable and
 - the lower part of the cutter and
 - if existing a splice in the control unit cable
- are sealed.

Looking at these items you will realise something like a transparent plastic coating.

Please check the sealings when you easily have access.

Second:

- Only a CYPRES with undamaged cables can be made water resistant. Holes or slits in cables will allow water to find a route through the inside of the cables into the processing unit.
- After the assembly and testing of the water resistant housing, the silicone needs 12 hours time to cure completely. Do not install the housing in a rig before this time.
- The main processing unit pouch in the reserve container has to be changed to the larger pouch. Please install the new (OD green) pouch according to the instructions in the CYPRES Riggers Guide, page 9.
- As mentioned before, the mounting of the water resistant housing requires concentrated work, which has to be done without any errors.
- Once installed, the water resistant version needs more maintenance and care. Additionally, the volume of the AAD increases.

Because of the above reasons we strongly recommend installing a water resistant CYPRES only when it is really needed and not "because it may be better".

Thank you for your understanding.

I Installation

How to prepare the housing

1.



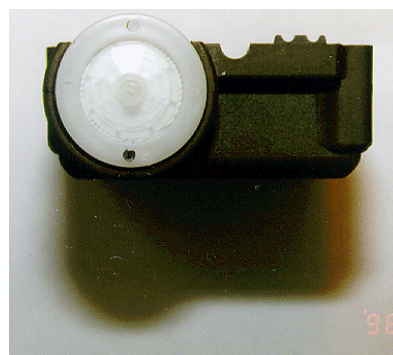
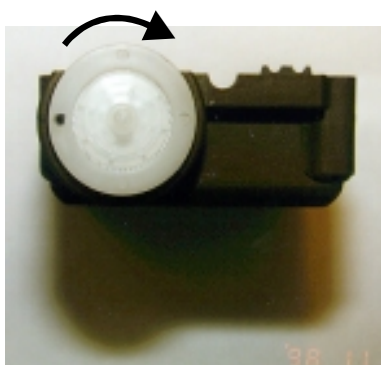
Take the CYPRES and inspect all cables for damage. Even the smallest hole will make it impossible to make this unit water resistant.

Assemble all necessary parts and the CYPRES in a well-lit working area.

2.

Turn the 5 screws (c) into the top (b) of the housing. The screws move freely when the threads have passed through the top.

3.



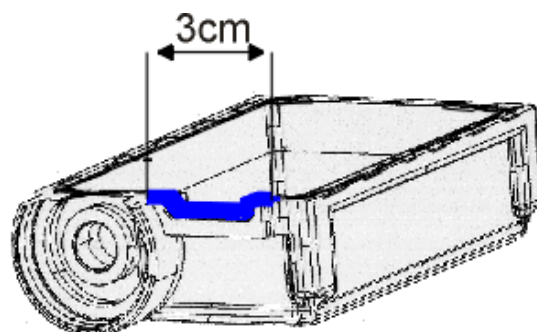
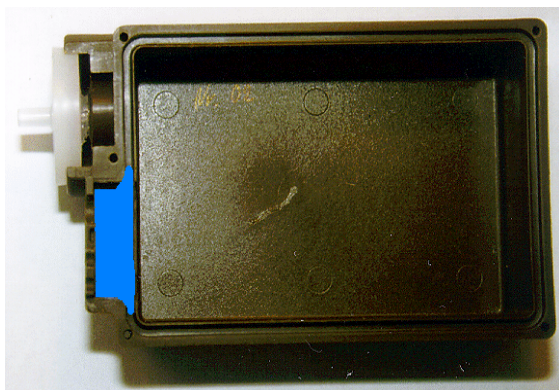
Put the filter (d) into the bottom (a) of the housing so that the marked points are aligned. Mount the filter (d) with a 3/4 clockwise turn. Overturning may damage the threads.

Guideline for sealing the gasket with silicone in step 4-13

The silicone is necessary to seal the cable entrance points. This work requires very exact and accurate work, because the cable entrance section is the most sensitive part of the system.

- General rule: More is better than less.
- Too much silicone has to be removed afterwards, but is harmless.
- Please use the silicone tubes only once. The silicone has the tendency to dry out and may not work properly the next time. Enough tubes are supplied.

4.

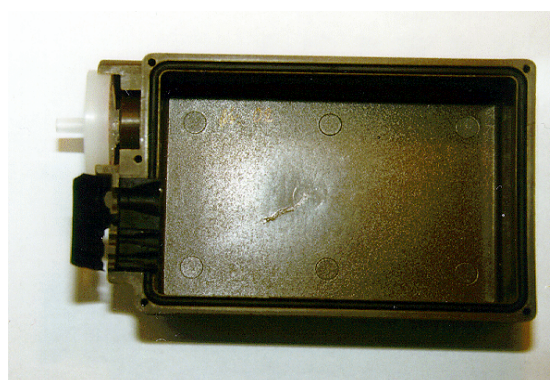
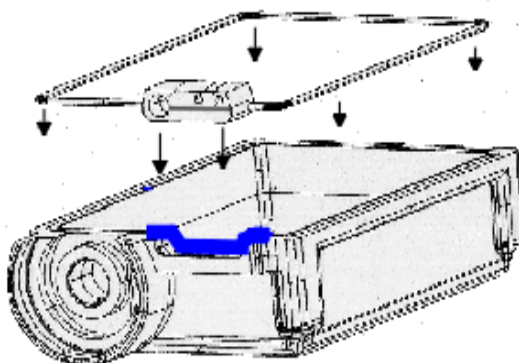


Take the silicone tube, twist of the cap, open the tube with the cap and mount the nozzle. Hold the tube upright and roll up the tube from the bottom until silicon appears on top of the nozzle.

Apply the **silicone** (length apx. 3cm, minimum width approx. 8mm) to the cable entrance section as shown (**blue section**) on the photo. The complete bottom of the cable entrance section should now be covered with a flat layer of silicone. The silicone has to reach the gasket groove at both sides and must not have any gaps.

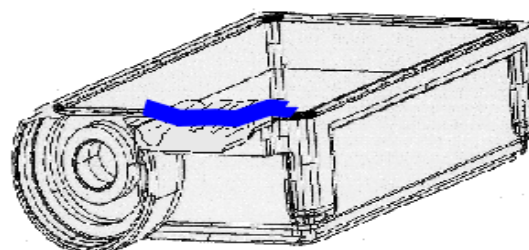
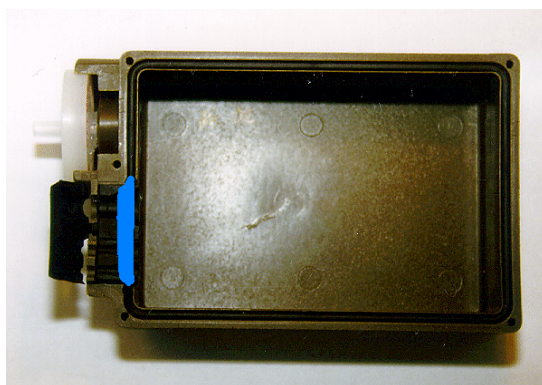
Put the cap of the tube on top of the nozzle to avoid the silicon to drying up during the time of your work.

5.



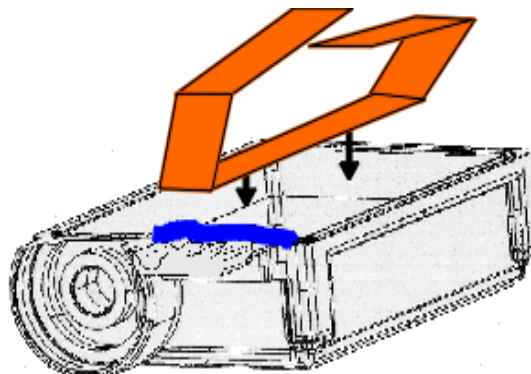
Take the gasket (e) and put into the groove. First press the part of the gasket which covers the cable entrance into place, ensuring that the layer of silicone underneath is evenly spread. Place the rest of the gasket into the groove, taking care not to twist it.

6.



Apply another strip of silicone onto the gasket as shown. Carefully remove any surplus silicone on the inside of the housing.

7.



Place the supplied brown strip of capton (appx. 1cm x 18cm) into the bottom case as shown. The strip has to be placed at the edge of the control unit cable. The capton strip must not obstruct the filter pressure entrance point (round metal area).

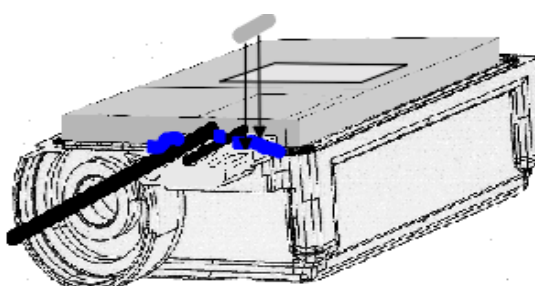
Place the capton strip **not** in front of the filter entrance.
Place it like in the sketch above.

The capton strip makes it easier to remove the CYPRES from the housing later.

8.

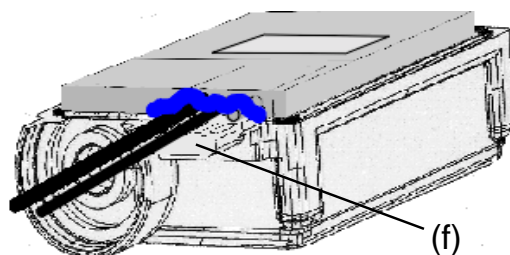
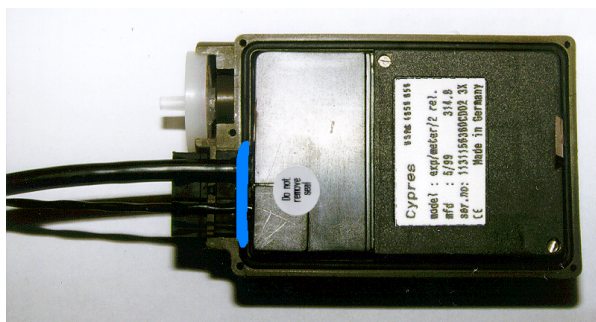
Place the CYPRES carefully into the housing.

9.



If the CYPRES is a 1-pin model, seal the remaining empty cutter cable routing with the supplied rubber ("blind") stopper.

10.

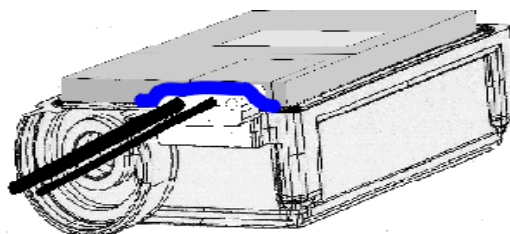
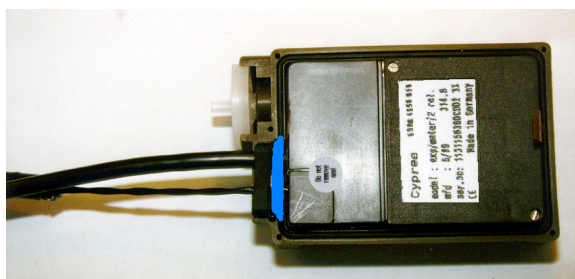


Apply another strip of silicone onto the cables and the gasket as shown.

11.

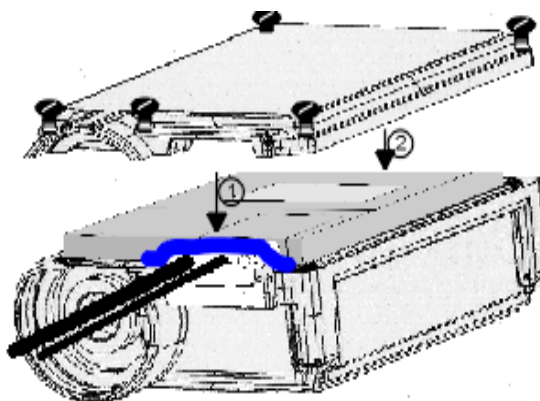
Take the flap of the gasket (f), turn it by 90° and move it upwards through the control unit and the cutter cable. Then place it onto the cable and the silicone strip.

12.



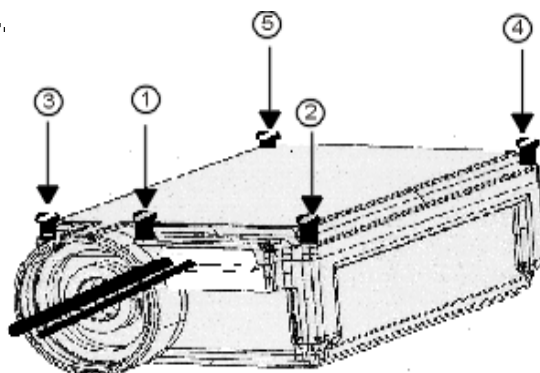
Apply another strip of silicone onto the upper side of the closed gasket.

13.



Starting at the cable entrance, place the top of the housing gently on the bottom, making sure that the rest of the gasket remains firmly in place.

14.



Turn the screws through the bottom housing and mount the nuts. Tighten all screws very gently and evenly. Then begin the final mounting by tightening screws 1-2, then 3-4, then # 5. All screws have to be tight.

15.

Allow the silicone to set. This takes approx. 60 minutes. Don't loosen the screws of the box during this time.

The sealings of

- the control unit
 - the plug in the cutter cable
 - the end of the cutter itself
 - - if necessary - the splice in the control unit cable
- are already done at Airtec or SSK.

Right know every CYPRES that should become water resistant has to see Airtec or SSK and the above mentioned sealings are executed there.

- END OF INSTALLATION -

II Test Procedure

A watertight test has to be performed 60 minutes after the end of installation or later.

Please be sure that all parts of the CYPRES are well prepared:

- the **CYPRES** is checked and fulfills all installation criteria (page 4)
- the **filter** of the housing is correctly installed (step 3)
- the **housing** containing the CYPRES processing unit is sealed with the gasket and silicone (step 4 to step 14)
- the **control unit cable splice seal**, if existing, is not damaged
- the **control unit seal** is not damaged
- the **plug connection seal** of the field replaceable cutter is not damaged
- the **sealing of the lower end of the cutter** is not damaged.

16.

Ensure that the CYPRES is **switched off.**

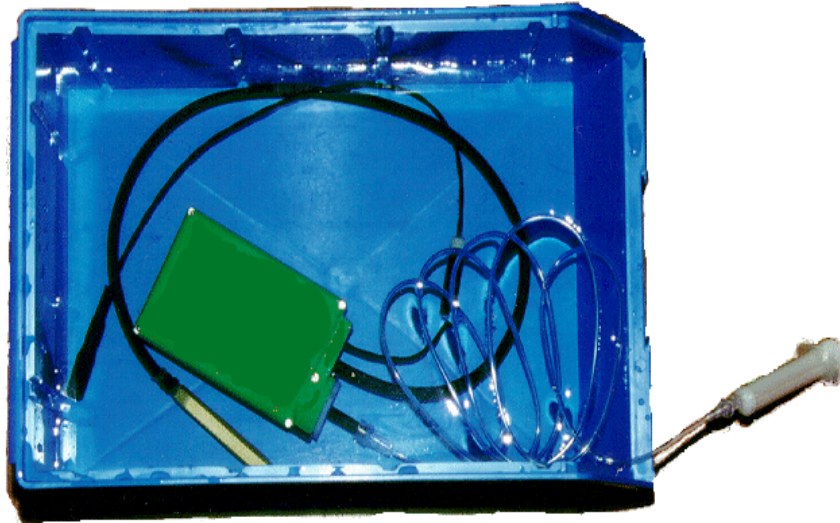
17.

Take a container with a diameter minimum 35cm and fill it with a minimum of 10cm water.

18.

Fill the supplied syringe with approx. 5 cm³ air. Connect the syringe with the filter of the water resistant housing using the supplied transparent tube. Put the supplied little black adapter (consisting of a piece of PE tube) between the filter and the transparent tube.

19.



Place the water resistant housing containing the switched off CYPRES and all cables, the cutter and the sealed control unit into clean water. Remove any bubbles sticking to the case by moving the case around in the water.

20.

Carefully observe the unit under water for a period of 15 minutes.

IMPORTANT!!

Should any rising bubbles appear (especially at the cable entrance section), a leak is indicated! In this case the unit should be removed from the water immediately. Dry all parts thoroughly, open the housing, remove the CYPRES and put it in a dry place.

Remove the silicone on the housing with the supplied brush and one of the alcohol-pads. Prepare a new gasket, and repeat the whole procedure from step 1 to step 20.

Please note that the air pressure inside the case may move the top of the case. If this happens and, within a few seconds of placing the case under the water some small bubbles appear at the gasket **on the longer sides of the case**, it is okay. This does not mean that the casing is leaking. Because the air pressure inside is higher than the water pressure outside, only the air can leave the case, water cannot get inside.

This is the normal physical pressure compensation under water. When the pressure inside the case and the water pressure outside is compensated, the top of the case will set down closely on the gasket again. No more bubbles will appear.

21.

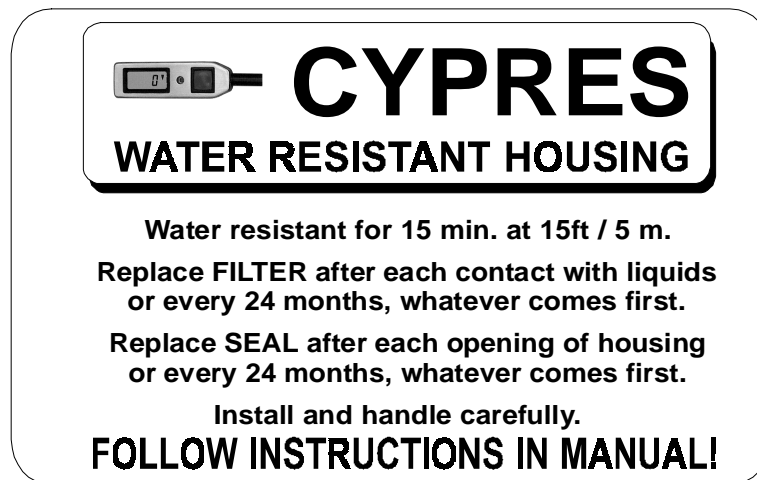
If no leakage appears, remove from water and dry the outside of the case. The water resistant CYPRES will be ready for installing into the rig after a **curing period of 12 hours**. This time is needed for the complete cure of the silicone and is necessary to assure that the unit stays water resistant through the complete range (depth and time).

The mounting of a waterproof casing can be repeated numerous times, as long as you follow exactly the instructions of this manual.

The use of a "silver sleeve" on the control unit is possible by sliding it over the control unit as normal.

It is extremely important that the entire procedure is done extremely carefully, following the instructions 100%.

The water resistant CYPRES in use



- Water resistant for 15 minutes at a water depth of up to 15ft / 5m.
- After a cutter has been in contact with salt water, the cutter should be rinsed briefly with fresh water.
- Exchange the filter after each contact with water, but no later than after 24 months.
- Renew the sealing gasket after each opening of the housing, but no later than after 24 months.
- In order to exchange the filter the housing need NOT be opened. Turn the filter out in anti-clockwise direction and insert the new filter as described at point 3 of this instruction manual.

If you have a plug on your cutter cable (field replaceable cutter) and you have to renew the cutter, please follow the instructions on the next page.

Replacement of the field replaceable cutter

- Make sure the CYPRES is switched off
- Use a sharp knife to cut the silicone along the line between the grey and the black part of the plug.
- You should then unplug the old cutter and replace it by a new one. (See CYPRES user's guide chapter 6.3.)
- In order to make the plug waterproof you should use the silicone provided in your Water Resistant Kit and cover the grey end of the plug as well as approximately 1 cm of the cable.
- Make sure, that the silicone already on the black side of the plug and the new part on the grey side form an integrated whole. This might easily be achieved by overlapping the silicone slightly and then smoothing it with your fingertips.
- You should then use one of the cable ties also provided in your Water Resistant Kit and place it around the cable on the grey side, pull it tight and cut off the surplus. (This can also be seen on the black side of your plug.)
- Allow it to dry for 24 hours before installing it into the rig.

Notes about the storage of the water resistant housing after removal of the CYPRES

- Remove all silicone from the housing either with the brush or the non metallic tool.
- Do not mount the top again. Store both parts separate. This allows the top to regain it's original curved shape.

Trade Marks

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