



Courier™ CR100

Owner's Manual



Sherwood Scuba. Simply reliable.™

IMPORTANT

This manual contains important safety and maintenance information. Read this manual thoroughly and become familiar with all of your scuba equipment before diving.

Important information regarding the use or maintenance of your dive computer is designated, throughout this manual, by the **IMPORTANT** symbol appearing above. This manual also uses several **signal words** to designate hazards with various levels seriousness. These are:

DANGER

Indicates an imminently hazardous situation which, if not avoided, **will** result in death or serious injury. This signal word is limited to most extreme situations.

WARNING

Indicates a potentially hazardous situation which, if not avoided, **could** result in damage to or loss of equipment, serious personal injury or death.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, **may** result in minor or moderate injury. It may also be used to alert against unsafe practices.

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1.0 Introduction

This information has been developed for your safety. Please read and understand this manual completely before using your new Sherwood dive computer.

1.1 Simply Reliable

Congratulations! You are now the owner of a new Sherwood Scuba dive computer. You're about to experience the Sherwood difference in diving equipment—products that are **simply reliable**. At Sherwood, we focus on the type of diving you do, then design products that address your specific needs. The simple, purposeful designs of all Sherwood equipment provide you with reliable, trouble-free performance, dive after dive.

1.2 Key Features

Among the Courier's key features:

- The Courier fits Sherwood's CNC-3™ Compact Navigational Console. This console combines the Courier with an analog submersible pressure gauge (SPG) and easy-to-use top- and side-reading compass. The console also features clip anchors on either side, to help attach it to your BC. The Courier computer module will also fit in most other standard instrument consoles and circular wrist mounts.
- The Courier activates automatically upon descent. It need not be manually activated prior to entering the water (although we recommend doing so).
- It automatically adjusts for altitudes up to 7,882 ft/2,400 m, and is capable of functioning at depths up to 328 ft/100 m.

- The Courier displays a variety of data, including date, time of day, current, max and average depths, no-decompression dive time elapsed and remaining, and water temperature.
- The Courier provides visible alarms for violation of ascent rate, no-decompression status and mandatory decompression stops.
- If needed, the Courier can calculate deco requirements for stops as deep as 39 ft/12 m.
- The Courier's Random Access Memory (RAM) enables it to hold and display log data on ten dives.
- Depending on use, the Courier's battery can last up to several years before needing replacement. Battery replacement may be done by an authorized Sherwood dealer, or by the consumer, following the instructions appearing in this manual.

1.3 Common Sense Warnings

As is true of every piece of diving equipment—including all dive computers—the Courier's abilities are not limitless. Thus, there are certain limitations and restrictions of which you must be aware, and certain precautions you must take, when using the Courier.

WARNING

Before using your Courier, it is extremely important you read the following points—as well as similar warning and caution notices that appear throughout this manual—and follow the recommendations they provide.

Failure to do so could result in **damage to or loss of equipment, serious personal injury or death.**

- The Courier is designed for use by certified, recreational divers who have maintained a sufficient level of knowledge and skill proficiency through a combination of formal training, ongoing study and experience. It is not intended for use by persons who lack these qualifications and, thus, may not be able to identify, assess and manage the risks scuba diving entails.
- The Courier is not intended for use by commercial, military or technical divers, whose activities may take them beyond the commonly accepted depth limits for recreational diving.
- The Courier is designed for use by divers breathing normal compressed air. It does not provide a means of tracking exposure to the elevated partial pressures divers may encounter when breathing Enriched Air Nitrox (EANX).
- Although the Courier is capable of calculating decompression stop requirements, this ability is provided as a safety feature only, should recreational divers accidentally exceed the No-Decompression Limits (NDLs). Dives requiring mandatory stage decompression carry substantially greater risk than dives made well within no-decompression limits. Divers should not use the Courier to plan or execute dives that will intentionally exceed no-decompression limits.
- The Courier is designed to be used by only one diver at a time. Divers should not share a single Courier—or any other dive computer—on the same dive. Additionally, no diver should lend his or her Courier to anyone else until it calculates that no measurable residual nitrogen remains after previous dives, and is able to enter its Sleep Mode. Further, no diver should use his or her Courier for repetitive dives—unless that same Courier has accompanied him or her on all previous dives in the same repetitive dive series.

- Neither the Courier—nor any other dive computer presently available—physically measures the amount of nitrogen present in body tissues, or the rate at which this nitrogen is being absorbed or released. Instead, the Courier monitors depth and time, and uses this data to work a mathematical formula designed to emulate how individuals in good general health and whose physical characteristics do not place them among those at higher risk of decompression illness are assumed to absorb and release nitrogen from body tissues. Thus, the Courier cannot compensate for factors such as age, obesity, dehydration, cold or exertion, which experts believe place divers at greater risk of DCI. If these, or similar factors apply to you, use the Courier—and any other dive computer or dive table—with even greater caution.
- Experts still know surprisingly little regarding the exact nature and causes of decompression illness (also known as decompression sickness, DCI or DCS). Susceptibility to DCI may vary substantially from person to person and from day to day. Neither the Courier—nor any other dive table or dive computers—can guarantee that you will not suffer decompression illness. Even though you use these items correctly, you may still suffer DCI. Use your Courier conservatively, and in conjunction with other dive planning devices, such as dive tables. Do not rely on the Courier, or any similar device, as your sole means of avoiding decompression illness.

2.0 Using the Courier

The key to using the Courier correctly is learning to access, recognize and interpret the data presented in its various display modes. The Courier is capable of displaying far more data than can fit in a single screen. Thus, to help avoid confusion, it displays only that data which is relevant to a particular situation. For example, the data appearing when the Courier is in its Date/Time Set Mode is very different from that appearing when it is in Dive or Deco Mode.

The Courier is capable of presenting ten different display modes. In the balance of this manual, we will identify each of these modes, and explain:

- What the purpose of each mode is.
- How you enter and exit each mode.
- What data you will see in each mode, and how to interpret it.
- What visible warnings may be displayed in each mode, and how to respond to them.

2.1 Accessing Display Modes

There are some display modes that the Courier enters and/or exits automatically. For example, by taking the Courier under water, you automatically activate its Dive Mode. After sufficient inactivity, your Courier will automatically enter its Sleep (Battery Saver) Mode.

To access other modes, you may need to push one of the two large, red buttons appearing on the Courier's face. These are the **A** (Plan) and **B** (Log) buttons.



Figure 1: The front of the Courier, showing its Liquid Crystal Display (LCD) in Check Mode, and the two large **A** (Plan) and **B** (Log) buttons.

You will find both buttons easy to use. In some instances, you may need only press a button once and release it to achieve the desired result. In other instances, you may need to hold the button down until you get the result you wish. This manual will outline clearly which procedure to follow for each mode or task.

2.2 Sleep (Battery Saver) Mode

So long as there is sufficient battery voltage, your Courier never turns completely off. Even when it appears to be "asleep," the Courier monitors factors such as battery voltage and altitude. Nevertheless, to prolong battery life, your Courier is programmed to project data on its Liquid Crystal Display (LCD) only when absolutely necessary.

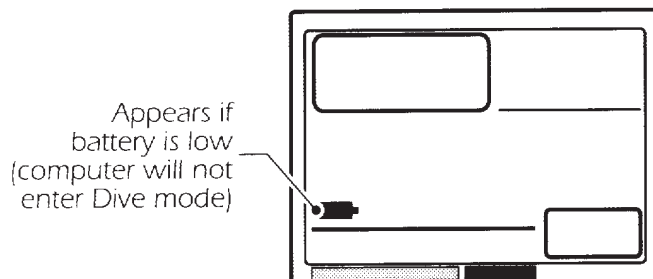


Figure 2: Sleep (Battery Saver) Mode.

To enter this mode: There is actually nothing you can do to force your Courier into Sleep Mode. If you have activated your Courier—but not taken it diving—it will return automatically to Sleep Mode after five to six minutes. If, on the other hand, your Courier calculates that there is still residual nitrogen present from previous dives, it will not enter Sleep Mode until it determines that all residual nitrogen is effectively gone.

What you will see: When the Courier is in Sleep Mode, its Liquid Crystal Display (LCD) will normally be blank, as it appears in Figure 2.

Warnings you may encounter: As shown in Figure 2, there is one warning that may appear, even though the rest of the Courier is “asleep.” This is the Low Battery warning. This warning may or may not blink on and off. The Low Battery warning means that the Courier’s battery lacks sufficient voltage to function properly.

Once the Low Battery warning appears, it will remain visible in all display modes except Log Mode. Additionally, the presence of the Low Battery warning will prevent the Courier from entering Dive Mode—a feature designed to help prevent the Courier from failing under water.

IMPORTANT

Once the Low Battery warning appears, you must return your Courier to your local authorized Sherwood distributor for battery replacement, or replace the battery yourself, following the procedures outlined later in this manual. Before replacing your Courier's battery, be sure to copy all dive log data to your log book, as the battery replacement process erases all such data from the Courier's Random Access Memory (RAM).

The battery that comes with your Courier is designed to last up to several years under normal use. Several factors may affect battery life; therefore, do not be surprised if you get significantly more or less use from your Courier's battery.

To exit this mode: You can exit Sleep Mode (i.e., cause your Courier to "wake up") by pressing either the **A** or **B** buttons, or by taking it under water.

2.3 Check Mode

When you "awaken" your Courier from Sleep Mode, the first thing it will do is enter Check Mode. In this mode, the Courier projects its full segment display. Check Mode provides you with the opportunity to test your Courier for proper function before taking it under water.

To enter this mode: From Sleep Mode, press either the **A** or **B** button, or take it under water.

What you will see: As shown in Figure 3, all pixels (picture elements) on your Courier's Liquid Crystal Display (LCD) should appear clearly during Check Mode.

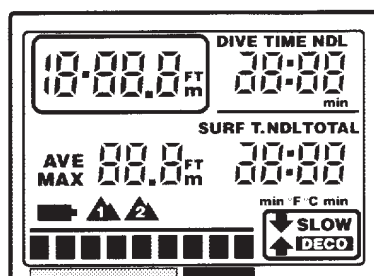


Figure 3: Check Mode.

Warnings you may encounter: There are no specific warnings that appear during Check Mode; however, you should **examine the display carefully** to make certain all pixels appear clearly.

WARNING

If all pixels do not appear clearly during Check Mode, **do not** take your Courier diving. Instead, you should return it to an authorized Sherwood dealer for immediate service. Failure to do so could result in **damage to or loss of equipment, serious personal injury or death.**

Although it is possible to take your Courier diving without first activating it on land, we do not recommend this. Instead, you should “awaken” your Courier first (by pressing either the **A** or **B** buttons), then observe it in Check Mode to help ascertain that everything is functioning properly. If you do not do so, it is theoretically possible that your Courier could give you erroneous information

under water, and you would not be aware that it was doing so.

To exit this mode: Within two to three seconds of entering Check Mode, your Courier should automatically enter either Surface or Dive Mode, depending on whether you activated the computer by pressing its **A** or **B** buttons, or by taking it under water.

2.4 Surface Mode

Assuming that you follow the recommended procedure of activating and checking your Courier before taking it under water, it will remain in Check mode for from two to three seconds, then enter Surface Mode. Your Courier will also enter Surface mode immediately upon ascending from any dive.

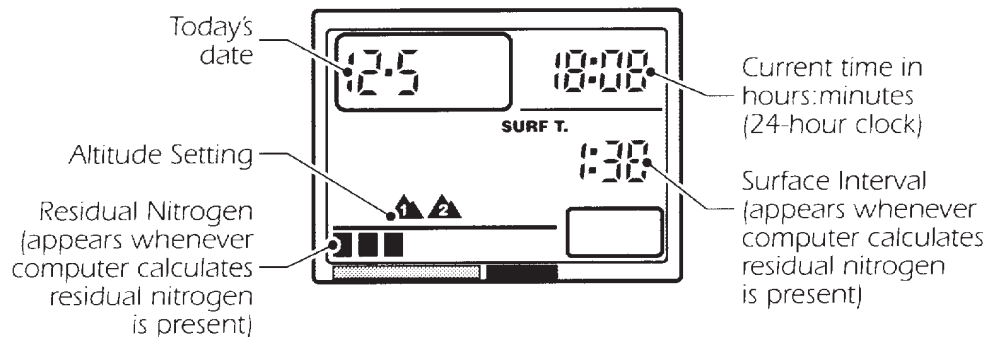


Figure 4: Surface Mode.

To enter this mode: There is no specific action you must take to get your Courier to enter Surface Mode—other than to press its **A** or **B** buttons if it is “asleep.” You will discover that Surface Mode is the Courier’s default mode whenever it is “awake” and not under water.

What you will see: If your Courier does not calculate that there is residual nitrogen present from previous dives, it will display only the current date and time.

- **Date Format**—The format the Courier uses to display the current date is that common in the USA and Japan, in which the first set of one or two digits signifies the month, and the second set of one or two digits (following the hyphen) signifies the day. Thus, a date of 11-3 would represent the third of November.
- **Time Format**—The Courier uses the 24-hour clock format, common in aviation and military service, to signify time of day. Thus, a displayed time of 13:04 would represent 1:04 PM.

12-Hour Clock	24-Hour Clock	12-Hour Clock	24-Hour Clock
12:00 AM	00:00	12:00 PM	12:00
1:00 AM	01:00	1:00 PM	13:00
2:00 AM	02:00	2:00 PM	14:00
3:00 AM	03:00	3:00 PM	15:00
4:00 AM	04:00	4:00 PM	16:00
5:00 AM	05:00	5:00 PM	17:00
6:00 AM	06:00	6:00 PM	18:00
7:00 AM	07:00	7:00 PM	19:00
8:00 AM	08:00	8:00 PM	20:00
9:00 AM	09:00	9:00 PM	21:00
10:00 AM	10:00	10:00 PM	23:00
11:00 AM	11:00	11:00 PM	23:00

If your Courier calculates that there is residual nitrogen present from previous dives, it will also display the Surface Interval Time (SURF T.) that has elapsed since ascending, and a symbolic representation of the overall quantity present on its Residual Nitrogen Bar Graph.

- **"SURF T." Format**—The format your Courier uses to display Surface Interval Time (SURF T.) is HOURS:MINUTES.

- **Residual Nitrogen Bar Graph**—This is a row of nine pixels that represents the overall saturation of body tissues with nitrogen. When all nine pixels appear under water, it means you have reached (or exceeded) the No-Decompression Limit (NDL). On the surface, fewer than nine pixels should appear, and the number of pixels appearing should diminish over time—as the level of excess nitrogen present in your system diminishes as your Surface Interval Time passes.

One of the greatest benefits of this symbolic representation of nitrogen levels during surface intervals is that it helps you decide how long to wait before re-entering the water. For example, should you elect to make a repetitive dive when there are more than just a few pixels appearing, you will discover that your available no-decompression dive time ends up being very short. Thus, it makes sense to wait until fewer pixels appear, and you can enjoy longer bottom times with a greater margin of safety.

If you are more than 2,624 ft/800m above sea level, your Courier will also display its current altitude settings. We will discuss these shortly.

Warnings you may encounter: There are none—other than the Low Battery Indicator discussed earlier.

To exit this mode: You can exit Surface Mode in a variety of ways. Among them:

- **Allow Your Courier to go “Back to Sleep”**—If you have awakened your Courier from Sleep Mode and take no further action within five to six minutes, it will return to Sleep Mode automatically. If your Courier has been under water in the past 24 hours, it will also go “back to sleep” once it calculates that there is no longer residual nitrogen present.

- **Enter Another Mode**—You can either take the steps outlined shortly to enter Dive Plan, Date/Time Set or Sleep Modes, or simply take your Courier under water, thus activating Dive Mode.

2.5 Using Your Courier at Altitude

Among the Courier's many features is the fact it adjusts automatically for diving at altitudes of up to 7,872 ft/2,400 m. To show that it has made this adjustment, the Courier displays its altitude settings in the form of mountain symbols with the numbers **1** and **2** on them. This is what the symbols mean:

Symbol	Altitude Range
(None)	Sea Level to 2,624 ft/800m
One Mountain Shows	2,624 ft/800m to 5,249 ft/1,600 m
Two Mountains Show (Both Mountains Flash)	5,249 ft/1,600 m to 7,882 ft/2,400 m Above 7,872 ft/2,400 m (Out of Range)

Prior to using your Courier at altitudes substantially above sea level, you should find out what the actual altitude of your dive site is, and make certain that the altitude settings your Courier displays accurately matches this height.

IMPORTANT

Do not use your Courier to dive at altitude unless the altitude settings accurately match the actual height above sea level. Doing so could cause the Courier to display inaccurate information. You should also not use your Courier to dive at altitude when both altitude setting symbols appear and flash on and off. This means that you are above an altitude of 7,872 ft/2,400 m, which is beyond the Courier's ability to function accurately.

It is also important your Courier not be in Dive Mode when making sudden, substantial changes in altitude—such as when flying in an airplane. This would most likely result from storing your Courier with wet dive gear, which might touch its external electrical contacts and fools the Courier into thinking it is under water. It can interfere with your Courier's ability to function accurately.

IMPORTANT

Do not pack or store your Courier with wet dive equipment. Doing so may cause it to erroneously enter Dive Mode and interfere with its ability to accurately process and display data.

Your Courier monitors and adjusts for changes in altitude in all modes except Dive and Date/Time Set Mode. It will display its current altitude settings in all modes except Log and Sleep Modes (in Log Mode it displays the altitude settings applicable to a particular dive).

Upon arriving at altitude, your Courier's Residual Nitrogen Bar Graph may show that there is excess nitrogen present, even though you may not have made any dives in the preceding 24 hours. It may also display a surface interval value, which later re-sets itself.

If you have obtained the Altitude Specialty Diver training which everyone should have before diving at altitudes substantially above sea level, you already understand that this should be expected. By ascending to a higher altitude from a lower one, your body will have more nitrogen saturated in body tissues than would be present had you spent the preceding 24 hours at the higher altitude. By displaying residual nitrogen and a surface interval, your Courier is merely reflecting this fact.

2.6 Dive Plan Mode

Your Courier's Dive Plan Mode enables you to answer the question, "If I enter the water right now, how long will the Courier allow me to stay at various depths while remaining within the No-Decompression Limits?" Among the benefits of activating your Courier before taking it under water is that it enables you to "scroll" through Dive Plan Mode to help better estimate and plan your dive.

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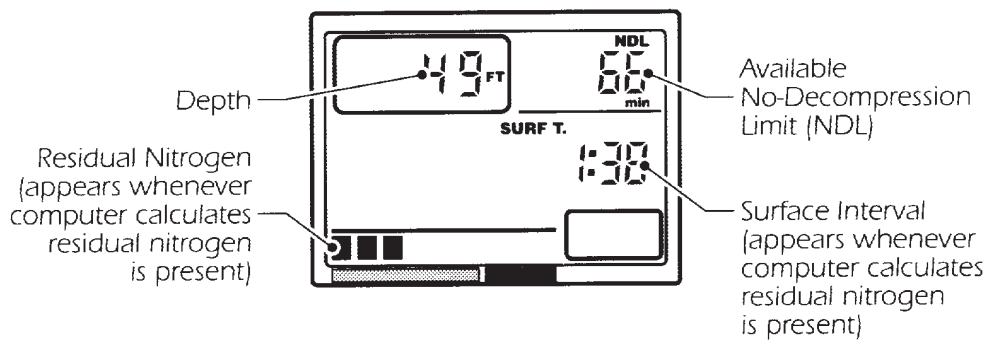


Figure 5: Dive Plan Mode.

To enter this mode: From Surface Mode, simply press the **A** button once and release it.

What you will see: When you first enter Dive Plan Mode, your Courier will display a depth of either 30 feet or 9 metres, and the allowable No-Decompression Limit (NDL), in minutes, that it projects for this depth. If you do nothing else, within four seconds, your Courier will "scroll," displaying the available No-Decompression Limit for the next 9.8 ft/3.0m depth increment. This will continue until the Courier reaches a depth of 157 ft/48m. At this point, the Courier will again display the No-Decompression Limit for 30 ft/9m, then continue "scrolling" through subsequent depths until the cycle again repeats itself.

- You can accelerate the scrolling process by repeatedly pressing and releasing the **A** button. Doing so will cause the Courier to advance to the next depth increment each time you press the **A** button (it is normal for there to be a slight delay before the available No-Decompression Limit appears).

Here are the No-Decompression Limits the Courier displays when it calculates that there is no residual nitrogen present from previous dives:

Depth (Feet)	Depth (Metres)	Time (Minutes)
30	9	200
39	12	105
49	15	66
59	18	47
69	21	35
79	24	25
89	27	19
98	30	16
108	33	13
118	36	11
128	39	9
138	42	8
148	45	7
157	48	7

If your Courier calculates that there is residual nitrogen present from previous dives, the available No-Decompression Limits it displays will be shorter. The Courier will also display Surface Interval Time and its Residual Nitrogen Bar Graph during Dive Plan Mode—just as it does during Surface Mode.

Warnings you may encounter: Depending on how much residual nitrogen the Courier calculates is present, it may not display any available No-Decompression dive time for some deeper depths. Instead, it will simply show a series of double hyphens.

 **CAUTION**

Do not plan dives to depths deeper than those for which the Courier is capable of displaying an available No-Decompression Limit. Doing so could cause you to exceed the No-Decompression Limits—which may, in turn, **substantially increase your risk of decompression illness.**

To exit this mode: You may exit Dive Plan Mode in a variety of ways:

- Go Diving**—Taking the Courier under water will cause it to automatically leave Dive Plan Mode and enter Dive Mode.
- Return to Surface Mode**—To do so, simply press and hold the **A** button for at least two seconds.
- Access Date/Time Set Mode**—To do so, press and hold the **B** button for at least five seconds (we will describe Date/Time Set Mode next).
- Do Nothing**—If the Courier calculates there is no residual nitrogen present from previous dives, it will return automatically to Sleep Mode within five to six minutes. If the Courier calculates there is residual nitrogen present, it will return automatically to Surface Mode within five to six minutes.

2.7 Date/Time Set Mode

A further benefit of activating and checking your Courier, prior to taking it under water, is that it enables you to make certain the date and time are set correctly. When you first use your Courier, you will most likely discover that the month, day and minute are already correct;

however, depending on your time zone, the hour may not be correct.

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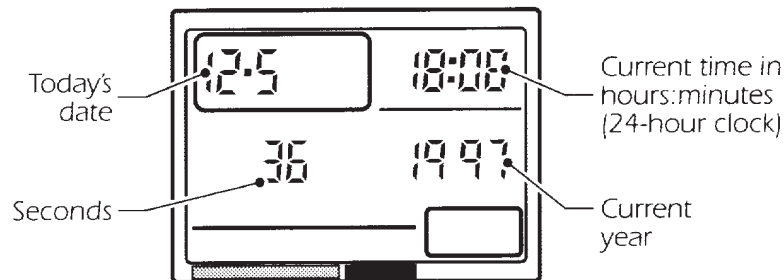


Figure 6: Date/Time Set Mode.

To enter this mode: From Dive Plan Mode, press and hold the **B** button for at least five seconds (be aware, however, that you cannot access Date/Time Set Mode within ten minutes of surfacing from a dive).

What you will see: Upon accessing Date/Time Set Mode, your Courier's Liquid Crystal Display (LCD) should appear exactly as shown in Figure 6. The digits representing the current hour, however, will be flashing on and off.

- To change the hour, simply press the **A** button. Each time you do so, the number shown will advance by one. If you press and hold the **A** button, the numbers displayed will advance rapidly. If you accidentally go past the number you were shooting for, simply continue; you will eventually cycle back through to the number desired.

- If the hour displayed is correct—or you have changed it to the correct hour and wish to proceed further—simply press the **B** button. The seconds display will now flash. You can either change this using the **A** button, or continue on to the minutes display.

By repeating this process, you will eventually cycle through all the date/time parameters shown, in the following order: hours; seconds; minutes; year; month; date.

Warnings you may encounter: None, other than those discussed previously.

To exit this mode: You may exit Date/Time Set Mode in a variety of ways:

- Return to Surface Mode**—To do so, simply complete the process of scrolling through and, if necessary, changing all the various date and time settings. You will return to Surface Mode automatically.
- Go Diving**—Taking the Courier under water will cause it to automatically leave Date/Time Set Mode and enter Dive Mode.
- Do Nothing**—If the Courier calculates there is no residual nitrogen present from previous dives, it will return automatically to Sleep Mode within five to six minutes. If the Courier calculates there is residual nitrogen present, it will return automatically to Surface Mode within five to six minutes.

2.8 Dive Mode

Among the Courier's key features is the fact it enters Dive Mode automatically upon descent. As discussed previously, we strongly recommend activating your Courier ahead of time, so that you may double check that: it is functioning properly; the date and time settings are correct; and, the dive you are planning falls well within the available No-Decompression Limits (NDLs). Nevertheless, your Courier will not "lock up" nor make erroneous assumptions regarding altitude or depth if you fail to do so.

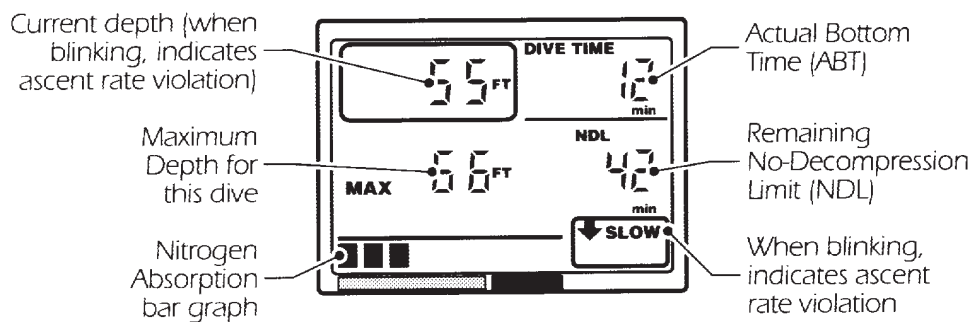


Figure 7: Dive Mode.

To enter this mode: Simply take the Courier under water. It will enter Dive Mode automatically.

What you will see: When you first enter Dive Mode, the Courier will display a variety of data, including:

- Current Depth**—The depth at which the Courier is right now.
- Maximum Depth**—The deepest point reached during this dive.
- Actual Bottom Time (ABT)**—Time spent (in minutes) under water thus far.

- **Remaining No-Decompression Limit (NDL)**—Time remaining (in minutes) before you reach the No-Decompression Limit assuming you remain precisely at your present depth. The available No-Decompression Limit will increase if you ascend; decrease if you descend.
- **Residual Nitrogen Bar Graph**—A visual representation of how much nitrogen the Courier assumes your body has absorbed. When all nine pixels appear, it means you are at or have exceeded the No-Decompression Limit.

Warnings you may encounter: While in Dive Mode, you should be alert for the following warnings:

- **No Decompression Status**—You can help remain within the No-Decompression Limits (NDLs) by monitoring both the remaining No-Decompression Limit displayed on the right-hand side of the screen and the Residual Nitrogen Bar Graph. Bear in mind that the remaining No-Decompression Limit may decrease rapidly if you descend to deeper depths.

A good way to help ensure that you remain well within the No-Decompression Limits is to make certain that the Residual Nitrogen Bar Graph does not enter its Caution Zone (i.e., displays more than six pixels). If you do find yourself entering this Caution Zone, you should immediately either: ascend to a substantially shallower depth; or, ascend to safety stop depth, make a normal safety stop, then surface and end the dive.

- **Ascent Rate Warning**—The Courier's algorithm (the formula it works to determine your nitrogen uptake and release status) assumes you keep your rate of ascent within the following limits:

Depth Range	Ascent Rate
0 ft/0m to 20 ft/6m	26 ft/8m per Minute
20 ft/0m to 60 ft/00m	39 ft/12m per Minute
60 ft/0m or deeper	52 ft/16m per Minute

If you exceed these ascent rates, the Courier will alert you in the following ways:

- The digits representing the current depth will flash on and off.
- The ascent-rate violation indicator in the lower right-hand corner of the display (a down arrow, coupled with the word SLOW) will flash on and off.

The visible ascent rate warnings will continue until you slow your ascent rate to that which the Courier finds acceptable, or until you reach a depth of 5 ft/1.5m.

To exit this mode: The Courier returns to Surface Mode automatically upon ascent.

2.9 How the Courier Measures Actual Bottom, Surface Interval Times

Although the Courier automatically enters Dive Mode as soon as you take it under water, it does not begin to record Actual Bottom Time (ABT) until you descend below 5 ft/1.5m. Conversely, it assumes Actual Bottom Time ends and Surface Interval Time (SIT) begins as soon as you ascend above 5 ft/1.5m.

However, as Figure 8 shows, if you spend less than ten minutes at the surface, or above a depth of 5 ft/1.5m, then descend again, the Courier will count both descents—and the surface interval between them—as part of the same dive.

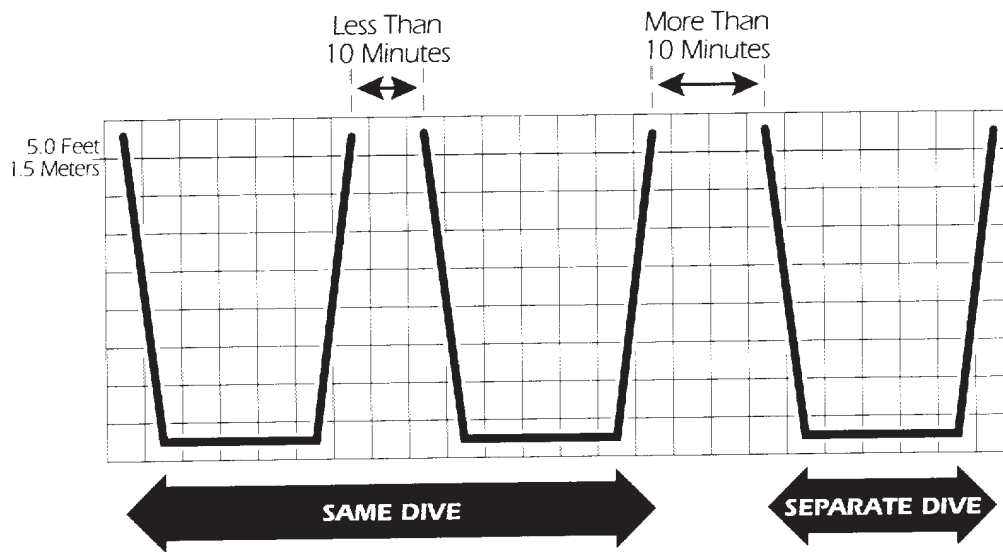


Figure 8: How the Courier measures Actual Bottom Time and Surface Interval Time.

2.10 Time/Temp Mode

If, during the midst of a dive, you are curious as to the current time and temperature, the Courier can provide you this information.

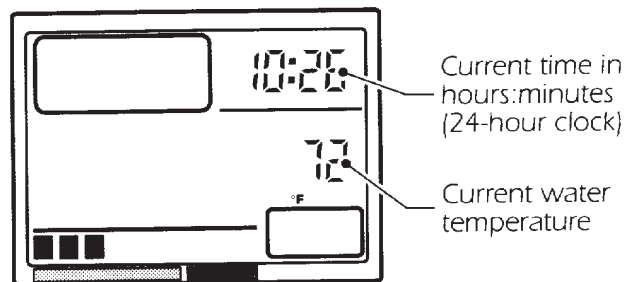


Figure 9: Time/Temp Mode.

To enter this mode: Press and hold the **A** button.

What you will see: The Courier will display the current time, using the 24-hour clock, and water temperature. The Residual Nitrogen Bar Graph will continue to appear as well.

Warnings you may encounter: None.

To exit this mode: Discontinue holding down on the **A** button. The Courier will return to Dive Mode.

2.11 Deco Mode

Should you accidentally exceed the No-Decompression Limits, the Courier can provide you with decompression stop information.

CAUTION

Decompression diving is widely believed to entail substantially greater risk of decompression illness than dives made well within No-Decompression Limits (NDLs). The Courier provides decompression stop information solely as a contingency in case divers accidentally exceed the No-Decompression Limits. **It is not designed or intended for use as a tool to plan or execute dives that participants know, going in, will entail mandatory decompression.**

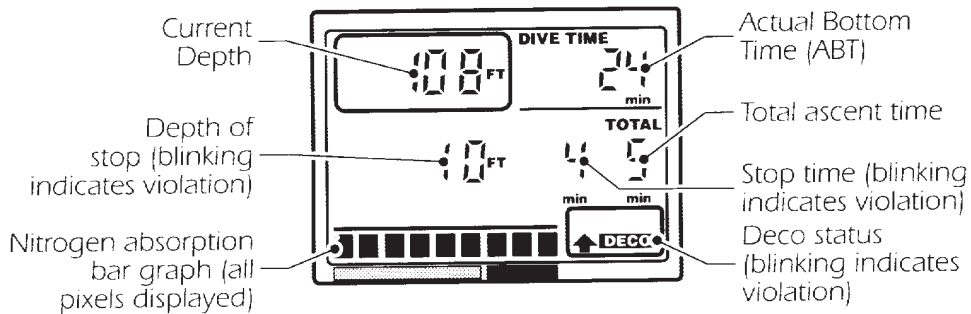


Figure 10: Deco Mode.

To enter this mode: You enter Deco Mode automatically by exceeding the No-Decompression Limits.

What you will see: As soon as you enter Deco Mode, all nine pixels of the Residual Nitrogen Bar Graph and the Deco Status indicator in the lower right-hand corner of the display will flash for several seconds. As this happens, the display itself will change from Dive Mode to Deco Mode. While in Deco Mode:

- The digits representing Current Depth and Actual Bottom Time (ABT) will display the same as they do while in Dive Mode.
- All nine pixels of the Residual Nitrogen Bar Graph and the Deco Status indicator in the lower right-hand corner of the display will appear.
- In place of maximum depth, a stop depth of 10 ft/3m, 20 ft/6m, 30 ft/9m or 39 ft/12m will appear.

 **CAUTION**

Do not ascend above the indicated stop depth until either a shallower stop depth appears or the Courier returns to its normal no-decompression Dive Mode. Failure to do so will result in missed decompression, and will substantially increase your risk of decompression illness.

- A stop time will appear, showing how long (in minutes) you are to remain at the indicated stop depth.
- A total ascent time will also appear. This indicates the total of the time you must spend (in minutes) at the current stop, time required at shallower stop depths (if any), plus ascent time required between stops.

Be aware that it is possible to make stops at depths deeper than those indicated; however, you may find doing so greatly increases the time you must spend at each stop. For example, let's say that the indicated stop is five minutes at 10 ft/3m. You choose, however, to make your stop at 15 ft/5m. You may discover that, by doing so, it takes seven or eight minutes (or more) before your "five minute" stop clears and the Courier returns to Dive Mode.

Warnings you may encounter: In so far as the Courier is not designed nor intended for planned decompression dives, you should consider the very fact you are in Deco Mode as a significant warning in itself. Once you enter this mode, you should further be alert to the possibility of a Deco Stop Violation warning.

A Deco Stop Violation takes place when you either ascend shallower than the indicated stop depth or do not spend sufficient time there before ascending. Here is how the Courier alerts you to such violations:

- The digits indicating Stop Depth and Stop Time, along with the Deco Status indicator, flash on and off. This will continue as long as you remain shallower than the indicated Stop Depth.

If you find yourself in Deco Stop Violation, descend to or below the indicated Stop Depth and remain for the time shown. If conditions make this impossible, make your stop between 3–7 ft/1–2m, and remain there until the Courier returns to Dive Mode (this may take considerably longer than the display suggests it will).

CAUTION

If you cannot correct an indicated Deco Stop Violation, the warnings will continue for five minutes after surfacing. At this point, you will not be able to use the computer **at all** for the next 24 hours. The computer will be inoperable.

To exit this mode: Complete the indicated decompression, then surface.

2.12 Log Mode

The Courier's Random Access Memory (RAM) can store and display data for up to ten dives. This makes it possible for users to make a series of dives, then later transfer key dive data to a separate log book.

To enter this mode: From Surface Mode, press and release the **B** button.

What you will see: As shown in Figure 11, Log Mode consists of two separate display screens. These alternate back and forth with one another every four seconds.

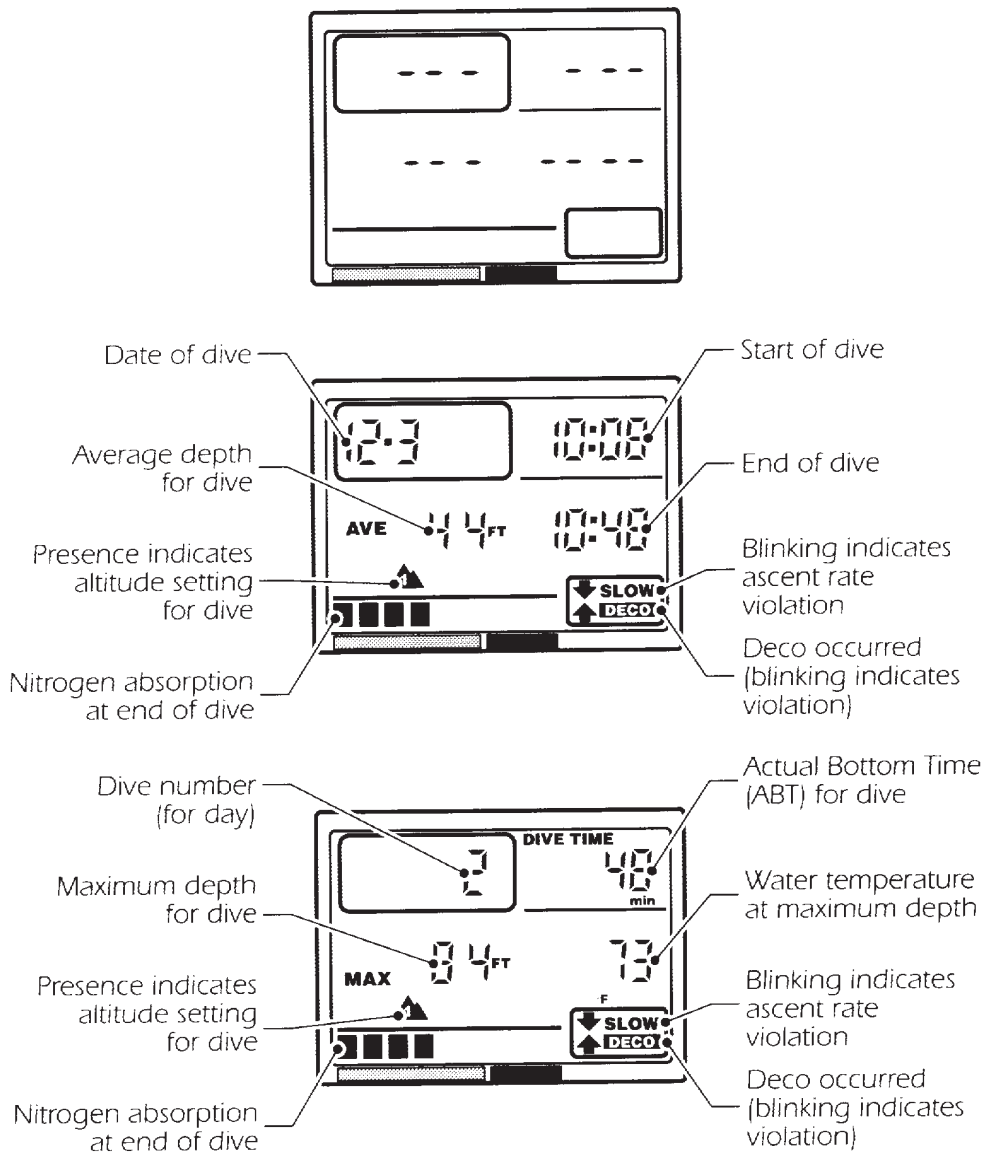


Figure 11: Log Mode displays. When new, or after having replaced the battery, your Courier will display the “all clear” screen shown in the top illustration. Otherwise, the Courier alternates back forth between the second and thirds screens every four seconds.

Be aware that, when your Courier is new, or has just had its battery replaced, it will contains no dive data. Therefore; the Log Mode display will consist solely of horizontal dashes, as shown in Figure 11.

When actual dive data is present, here is what each screen tells you:

- **Screen One**—The Courier displays data for: date of dive; average dive depth; start of Actual Bottom Time (ABT); and, end of Actual Bottom Time (ABT).
- **Screen Two**—The data presented includes: dive number (for that particular day); maximum dive depth; Actual Bottom Time (ABT, in minutes); and, water temperature at maximum dive depth.

Some data will appear on both screens. This includes:

- **Altitude Setting**—The altitude setting, if any, that applied during this dive.
- **Residual Nitrogen Bar Graph**—As it appeared at the end of the dive

Warnings you may encounter: Log Mode also provides a record of many of the warnings that appeared during the dive.

- **Ascent Rate Warning Indicator**—If two or more Ascent Rate Violations occurred consecutively during the dive, Ascent Rate Warning Indicator will appear and flash on and off.
- **Deco Status**—If a dive exceeded the No-Decompression Limits, the Deco Status indicator will appear. If a Deco Stop Violation took place, this indicator will flash on and off.

To exit this mode: You can exit Log Mode in a variety of ways, including.

- **Go Diving**—The Courier will automatically enter Dive Mode.
- **Return to Surface Mode**—You can do so by simply pressing and releasing the **A** button, or by holding the **B** button down for at least two seconds.

- **Do Nothing**—If the Courier calculates there is no residual nitrogen present from previous dives, it will return automatically to Sleep Mode within five to six minutes. If the Courier calculates there is residual nitrogen present, it will return automatically to Surface Mode within five to six minutes.

2.13 “Out of Range” Warning

It is inconceivable that anyone who uses a Courier for its intended purposes would ever encounter this warning.

To do so, a diver would have to:

- Exceed a depth of 328 feet/100m.
- Exceed an Actual Bottom Time (ABT) of 599 minutes.
- Incur a decompression obligation that required stops beginning at depths deeper than 39 ft/12m.

Were a Courier to encounter any one of these conditions, most of the data normally displayed would be replaced by a series of horizontal dashes, and the entire display face would flash on and off. The Courier would then be unusable for the next 24 hours.

WARNING

A Courier displaying an “Out of Range” Warning is incapable of displaying other critical information such as depth, time, Ascent Rate and Deco Stop Violations, and required decompression stops. For this reason, you should not—under any circumstance—use a Courier in such a way that would cause the “Out of Range” Warning to be displayed. Under such conditions, the risk of **serious personal injury** or **death** would be substantial.

3.0 Additional Cautions and Warnings

You now know most of what you need to get started using your Courier in as safe a manner as possible. There are a few more things we need to cover, however, before you take your Courier into the water for the first time.

WARNING

Before using your Courier, it is extremely important you read the following points and follow the recommendations they provide. Failure to do so could result in **damage to or loss of equipment, serious personal injury or death.**

3.1 General Handling

- Do not store the computer in hot and/or humid environments. The pressure transducer is sensitive to both heat and humidity. If impaired, it may cause display of incorrect altitude or depth data.
- When in hot and/or humid environments, dip the computer in water for several minutes to cool it to room temperature before using it. Similarly, allow the computer to completely warm to room temperature if it is cold and, again, do not take it under water immediately after doing so. Failure to follow these instructions may result in damage to the Courier.

- The Courier's Liquid Crystal Display (LCD) may darken if left in a hot environment (such as on a car's dashboard). It will return to normal once allowed to cool; however, extensive exposure to heat may shorten LCD life.
- Be aware that weather-related changes in air-pressure can cause incorrect display of altitude settings. Be sure to check indicated altitude settings against actual altitude before use.
- Other than for battery replacement, following the procedures outlined in this manual, the Courier is not to be disassembled by anyone other than Sherwood or its authorized dealers. Unauthorized disassembly will violate the warranty.
- If the Courier does not appear to be functioning properly—in any manner—**do not** use it to dive. Return it to your authorized Sherwood dealer for repair.

Battery

- All Courier functions may cease within two to three days of the Low Battery Indicator first appearing. Always have low batteries replaced promptly.
- A depleted battery that is left in a Courier for a long period of time may leak. Again, have batteries replaced promptly.

While Diving...

- Check battery level prior to diving. Remember the computer will not enter Dive Mode if the Low Battery Indicator appears.
- Do not "push" the No-Decompression Limits (NDLs). Make safety stops before ascending. If you accidentally exceed the No-Decompression Limits, make your decompression stops longer than those indicated. Check your breathing gas supply at all stop depths.

- Remember that the Courier does not monitor breathing gas supply. You must monitor this yourself, on every dive, using a submersible pressure gauge or equivalent device.
- Do not rely solely on this—or any other—dive computer. Take a back-up dive computer or tables (along with a separate means of monitoring depth and dive time).
- Be aware that the Courier makes assumptions regarding residual nitrogen based on altitude settings. Avoid making abrupt changes in altitude following a dive, as doing so may be very dangerous.
- The Courier **does not** have a “Time to Fly” function. We recommend you follow current medical recommendations for flying after diving, or wait until the Courier is capable of re-entering Sleep Mode (whichever is longer) before flying in an aircraft or driving to a higher altitude.

4.0 Care and Maintenance

This section covers the general care and maintenance procedures you should follow before, after and between dives, and the procedure for changing batteries. General maintenance procedures include:

- Rinse the Courier thoroughly in fresh water following every dive.
- Do not use cleansers, chemicals or solvent to clean the Courier. Use a soft cloth to gently wipe dirt or water stains from the computer.
- The glass display may be damaged (and its water resistance impaired) if exposed to: solvents such as alcohol or gasoline; cosmetic products such as hair spray or liquid soaps; alkaline substances; aromatic hydrocarbon solvents; and, halogenated hydrocarbon solvents.

- Store the Courier in a cool, dry location. After diving, wipe the computer dry and store it in a location separate from other damp items.

Battery Replacement

You should replace the battery in your Courier whenever the Low Battery warning symbol, described earlier in this manual, appears. If you encounter any other problems with your Courier that you suspect, but are not certain, may be caused by a low battery, consult an authorized Sherwood dealer. Your Sherwood dealer may also replace the battery for you, if you do not feel comfortable doing so yourself.

What you will need—Before beginning the battery replacement procedure outlined here, make certain you have the following items ready.

- A replacement battery (obtainable from authorized Sherwood dealers)
- Silicone grease (the type normally used in scuba equipment service).
- Paper towels, or—better still—lint-free industrial wiping cloths
- Cotton swabs
- Denatured alcohol (use in conjunction with cotton swabs to remove unwanted deposits of dirt and grease)
- A pencil with an erase tip in good condition
- A large coin

You should also have at your disposal a suitable working area. This area should be clean and well lit, and as far away as possible from excessive moisture and wind-blown sand, dirt, rain or salt spray. A dive boat is not a good place change your Courier's battery.

Replacement procedures—Here are the steps to follow to replace your Courier's battery, using the items described above.

1 Begin by removing the Courier from its console boot. To do so with the Sherwood CNC-3™ console, first pull the submersible pressure gauge partially out of the console, as shown in Figure 12. Now place your thumb inside the hole normally occupied by the pressure gauge and use it to push the computer module out.

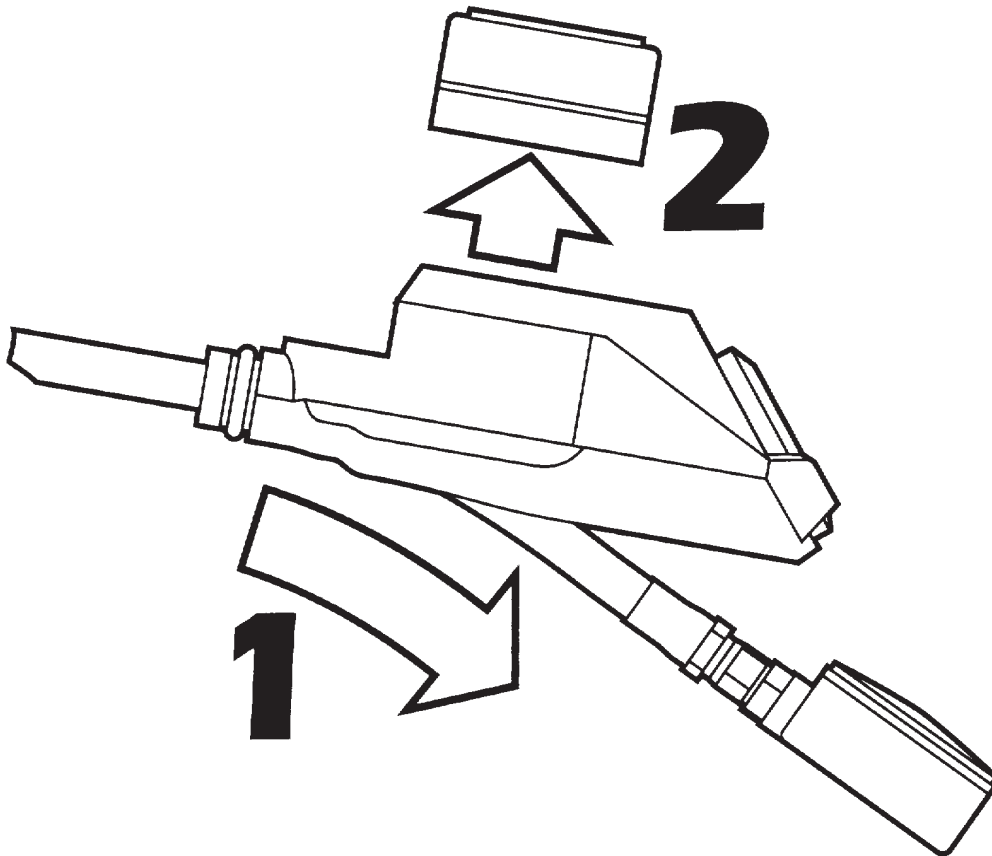


Figure 12: Procedure for removing Courier from its console.

2 Turn the Courier face down to expose its battery compartment door, as shown in Figure 13.

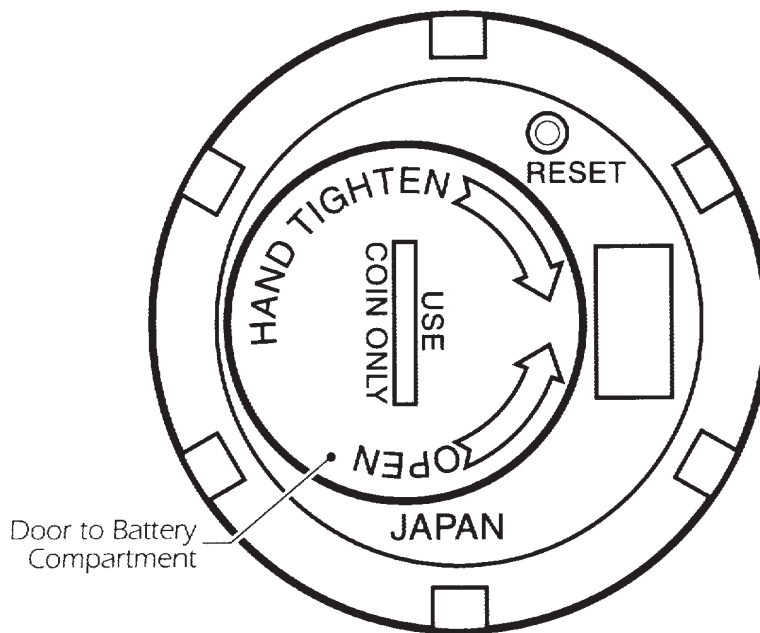


Figure 13: The back of the Courier module, showing the location of its battery compartment door.

- 3** Using a large coin, remove the battery compartment door by turning it in a counterclockwise direction.
- 4** Note the condition of the old battery and battery compartment. If you detect any signs of leakage, such as a build up of corrosion, remove—but do not replace—the old battery. Instead, take the Courier to an authorized Sherwood dealer for further service.
- 5** If the old battery appears in good condition, remove it by turning the computer module right side up, and allowing the battery to drop out.
- 6** Clean the battery contacts using the pencil eraser. If you detect any build up of dirt or grease in the area where the compartment door O-ring makes contact, remove it using a cotton swab soaked in a small amount of denatured alcohol.

- 7** Remove the O-ring from the battery compartment door. To do so, pinch the sides of the O-ring with your thumb and forefinger until a slight bulge appears. Use this bulge to lift the O-ring. **Do not** use any sharp objects to pry the O-ring off the door.
- 8** Install the new battery in the exact same position as the old one occupied. The negative side of the battery should face the inside of the computer; the positive side should face the battery compartment door.

IMPORTANT

Be sure to touch the battery on its sides only. Avoid getting grease or fingerprints on either the top or bottom (positive and negative contacts). If you do, use a cotton swab soaked in a small amount of denatured alcohol to remove the contamination. When the alcohol dries, further clean the contacts using the pencil eraser.

- 9** Use a clean paper towel or wipe to remove any dirt or excess grease from the O-ring. Inspect the O-ring carefully for any signs of nicks, cracks, flat spots or deformities. If necessary, obtain a replacement O-ring from an authorized Sherwood dealer.
- 10** The O-ring should have a smooth, shiny appearance. If it appears dry, apply a very light coating of silicone grease.
- 11** Use a cotton swab to remove any dirt or grease from the area on the battery compartment door where the O-ring normally rests. Put the O-ring back in place.

12 Replace the battery compartment door. To avoid cross threading, first turn the door **counterclockwise** until you hear the threads "click" together. Now gently turn the door clockwise until it is fully seated. If you feel any unusual resistance while turning, stop, remove the door, then try again. If you feel no unusual resistance, continue turning the door until it firmly seats itself (hand tighten only, using a large coin).

13 Once the battery compartment door is back in place, press and release the RESET button above and to the right of the the battery compartment, on the back side of the Courier. (If need be, use the tip of a partially unfolded paper clip to depress the RESET button.) To confirm that the Courier's memory has, in fact, been reset, turn the computer over. Its face should display a date of 1-1 and a time of 0:00. You will now need to reset the correct date and time, as outlined on pages 20–22.

5.0 Warranty

5.1 One Year Limited Warranty

Sherwood warrants that Sherwood Scuba dive computers purchased from authorized Sherwood Scuba dealers shall be free from defects in materials and workmanship under normal sport, skin and scuba diving use and with proper maintenance and care for a period of one (1) year from date of original purchase. Under this limited warranty, Sherwood will either repair or replace, at its sole option, any original equipment or parts that fail to perform as intended. When this limited warranty is in force, it covers the cost of necessary replacement parts. Labor charges are not included and must be paid by you.

- You must save the original purchase receipt. It is proof of when the dive computer was purchased.
- This limited warranty applies only to the original purchaser and is not transferable. Sherwood makes no warranty or representation regarding the performance of any products used in conjunction with Sherwood's products.
- This limited warranty applies only to dive computers sold through authorized Sherwood Scuba dealers. Authorized Sherwood Scuba dealers do not sell dive computers through mail order.
- This limited warranty shall be void if the dive computer has been misused, abused, altered, neglected, lost, or changed. The warranty applies only to normal sport, skin or scuba diving use.
- This limited warranty shall be void if the product has been modified, or if repairs are performed by anyone other than an authorized Sherwood Scuba dealer.
- Equipment in question should be returned, prepaid, to your authorized Sherwood dealer, along with proof of purchase.
- This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.
- If you have any questions concerning the One (1) Year Limited Warranty, please address them to:
 - Customer Relations
 - Sherwood Scuba, Warranty Department
 - 2111 Liberty Drive
 - Niagara Falls, NY 14304-3744
 - USA

5.2 Disclaimer/Limitation of Remedy

Some states do not allow limitations on how long an implied warranty lasts or do not allow exclusion of incidental or consequential damages, so the following limitations or exclusions may not apply to you.

Sherwood expressly limits any and all dive computer warranties, expressed or implied, to the one year term of the limited warranty as set forth above. All remedies are waived unless claim is made within the applicable twelve (12) month period.

Your remedies are limited to those contained herein and are in lieu of all other remedies, whether based on breach of warranty or contract, negligence, strict product liability or other tort. Sherwood specifically disclaims liability for any consequential, special or indirect damages arising out of the use of your dive computer.

5.3 Locating Service and Support

Your authorized Sherwood Scuba dealer that sold you this dive computer will be able to assist you with additional questions regarding product operation, warranty and service. Please take a moment to record your authorized Sherwood Scuba dealer's name, address and telephone number here, if it is not already noted. □

(Place dealer stamp in box)

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