

PRO *Craft*

PRO View FISHFINDER

OPERATIONS
MANUAL

by  **HUMMINBIRD**

THANK YOU

THANK YOU FOR CHOOSING YOUR PRO CRAFT FISHFINDER, MADE BY TECHSONIC INDUSTRIES, MANUFACTURER OF AMERICA'S #1 NAME IN FISHFINDERS, HUMMINBIRD. HUMMINBIRD HAS BUILT ITS REPUTATION BY DESIGNING AND MANUFACTURING TOP QUALITY, THOROUGHLY RELIABLE MARINE EQUIPMENT. YOUR PRO CRAFT PRODUCT IS DESIGNED FOR TROUBLE-FREE USE IN EVEN THE HARSHTEST MARINE ENVIRONMENT.

IN THE UNLIKELY EVENT THAT YOUR PRO CRAFT DOES REQUIRE REPAIRS, WE OFFER AN EXCLUSIVE SERVICE GUARANTEE. COMPLETE DETAILS ARE INCLUDED AT THE END OF THIS MANUAL.

WE ENCOURAGE YOU TO READ THIS OPERATIONS MANUAL CAREFULLY IN ORDER TO GET FULL BENEFIT FROM ALL THE FEATURES AND USES OF YOUR PRO CRAFT PRODUCT. ALSO, TO REGISTER YOUR PURCHASE, AND TO HELP US LEARN MORE ABOUT YOU, PLEASE FILL OUT THE WARRANTY REGISTRATION CARD IN THE CENTER OF THIS MANUAL.

WARNING! THIS DEVICE SHOULD NOT BE USED AS A NAVIGATIONAL AID TO PREVENT COLLISION, GROUNDING, BOAT DAMAGE, OR PERSONAL INJURY. WHEN THE BOAT IS MOVING, WATER DEPTH MAY CHANGE TOO QUICKLY TO ALLOW TIME FOR YOU TO REACT. ALWAYS OPERATE THE BOAT AT VERY SLOW SPEEDS IF YOU SUSPECT SHALLOW WATER OR SUBMERGED OBJECTS.

TABLE OF CONTENTS

USING THE PRO PRO CRAFT UNIT	2
How Sonar Works	2
Simulator Operation	3
What You See On Screen	4
Control Functions	7
Menu Functions	9
ADVANCED FEATURES	19
Using Diagnostic	19
MAINTENANCE AND WARRANTY	20
Maintenance	20
Troubleshooting	21
Warranty	24
Customer Support	26
Specifications	27

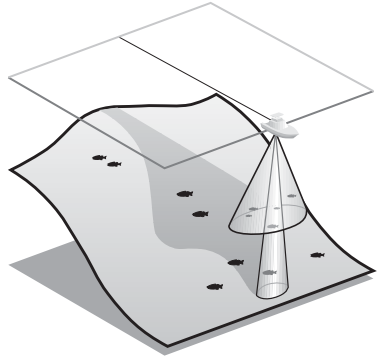
USING THE PRO CRAFT UNIT

HOW SONAR WORKS

HOW SONAR WORKS

Your Pro Craft unit uses sonar to locate and define underwater objects, define the bottom terrain, as well as determine distance.

Sonar technology is based on sound waves. Your Pro Craft unit sends out a sound wave signal. With this signal it determines distance by measuring the time between the transmission of the sound wave and when the sound wave is reflected off an object. Your Pro Craft uses the reflected signal to interpret location, size and composition of an object.



Sonar is very fast. A sound wave can travel from the surface to a depth of 240' (70m) and back again in less than 1/10 of a second. It is unlikely that your boat can "outrun" this sonar signal.

The Pro Craft unit is a dual frequency, dual beam unit, and generates two distinct sonar signals - one narrow, one wide. Each signal is optimized for a particular purpose. First, the center beam transmits at a frequency of 200 kHz in a 20 degree (narrow) symmetrical pattern for greater depth capability and excellent detail. Information from this center beam is used to draw the graphic representation of the bottom on the display.

Second, the wide beam transmits at a frequency of 83 kHz in a 53 degree (wide) symmetrical pattern for greater area of coverage. Information from the wide beam is used to accurately detect the presence and location of fish. A wide beam has a large area of coverage but limited resolution of detail. A narrow beam has excellent detail, but within a limited area of coverage.

The combination of the two beams and dual frequencies provides the combination of a large area of coverage and a high level of detail.

USING THE PRO CRAFT UNIT

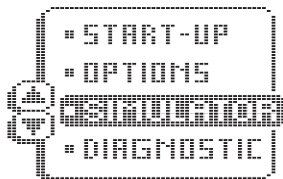
SIMULATOR OPERATION

Actual depth capability depends on factors such as bottom hardness, water conditions, and transducer installation. Units will typically read to deeper depths in fresh water than in salt water.

SIMULATOR OPERATION

The Pro Craft unit contains a simulator that allows you to use the unit as if you are on the water. The simulator is invaluable for learning how to operate the Pro Craft unit.

There are two ways to start the simulator. If the unit is powered off, press and hold the POWER button for approximately three seconds until you hear a continuous chirp.



The simulator can also be started by selecting the Simulator option on the start-up screen after you power-up the unit. When this screen is shown, simply press the DOWN ARROW until "Simulator" is highlighted. When the screen times out, the unit will be in simulator mode.

When in simulator operation, the Pro Craft unit responds to control inputs as if it is in actual operation, so feel free to experiment, or to customize the unit for your particular operation.

To exit Simulator mode, power the unit off.

When in simulator mode, the word "simulator" appears on the display, blinking on and off, indicating the information on-screen is not real sonar data.

FEATURE MEMORY

If your Pro Craft unit is installed with a transducer connected, any changes you make to the set-up or User Options (see Control Functions) while in Simulator are retained in the unit's memory. This allows you to use simulator to experiment with the various set-up options, and retain your selected settings for normal operation.

USING THE PRO CRAFT UNIT

WHAT YOU SEE ON-SCREEN

If you are using the Pro Craft unit in Simulator when no transducer is connected, any selected options are lost when the unit is powered off. The Pro Craft unit will return to Factory Settings, or options selected when last used with a transducer, if no transducer is connected.

IMPORTANT: A transducer must be connected to the Pro Craft unit in order to retain user settings selected when in simulator mode. If no transducer is detected, the unit defaults to pre-selected options when powered off.

What You See On-Screen

Your Pro Craft unit uses a 128 V x 64 H matrix FSTN LCD display. This display provides outstanding viewability in all light conditions over a wide range of temperatures.

At initial power-up, the Pro Craft unit uses settings that were set at the factory. After initial use, the Pro Craft unit will remember the settings you enter.

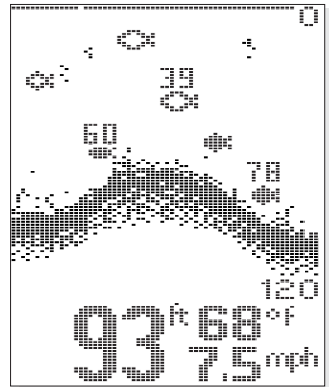
There are several elements on-screen that are common to all modes of operation.

Temperature/Speed. The initial screen layout takes one of two basic forms depending on whether the optional Temp/Speed accessory is installed. Figure A shows the default view when the Temp/Speed accessory is installed. Figure B shows the default view when the Temp/Speed accessory is not installed.

Depth. The digital depth number shows the water depth directly beneath the transducer location.

Depth Range. The depth range is shown to the right of the screen. The upper number is 0 indicating the surface of the water. The lower number is one of the nine depth ranges available that best match the depth of the water. As the

Figure A



USING THE PRO CRAFT UNIT

WHAT YOU SEE ON-SCREEN

depth of the water changes, the range changes as necessary in order to retain a bottom representation on-screen.

When in Auto mode, the horizontal line at the top of the screen is the "zero line," representing the surface of the water. Occasionally there is a gap in this line. This gap indicates the unit is updating the display even if the bottom is not visible on-screen, or if the bottom information is not changing.

New sonar information appears on the right side of the graphic area of the display and moves to the left as new information is displayed. The Pro Craft unit automatically selects the appropriate depth range to show the depth of water beneath the transducer. This range is selected so the bottom representation is typically shown about 2/3 down the display.

Bottom. The graphic depiction of the bottom provides an effective tool for understanding the composition of the bottom. If the bottom is hard and smooth, the bottom depiction is narrow and dense. If the bottom is soft mud or sand, the depiction will be thick and less dense. This indicates much of the signal is absorbed by the soft bottom. If the bottom is rocky or rugged in composition, the depiction is of varying density and textured in appearance.

Wave action also affects the bottom depiction. The information drawn is a distance measurement, so if the boat is

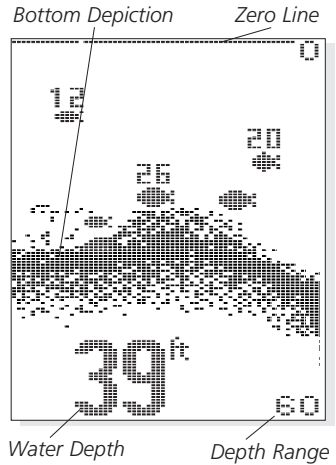
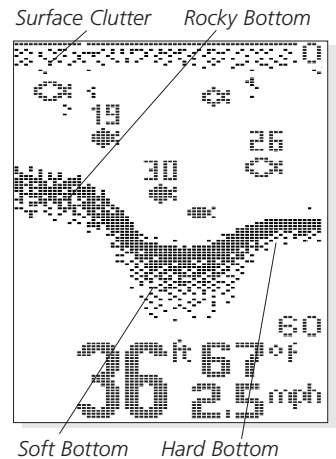


Figure B



USING THE PRO CRAFT UNIT

WHAT YOU SEE ON SCREEN

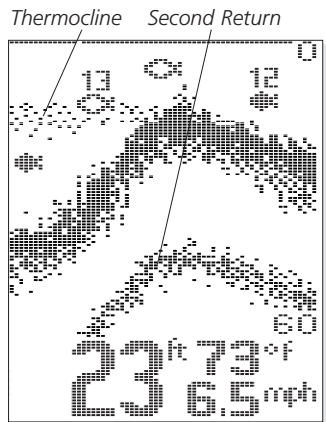
moving up and down over flat bottom, the bottom depiction often appears in regular variations that match wave timing.

Structure. Structure is defined as any object physically attached to the bottom. The sonar configuration of the Pro Craft unit is optimized to give the most accurate depiction of bottom structure possible. Grass, trees, stumps, wrecks or other debris are accurately displayed, however the depiction of these objects varies with boat speed and direction. The best way to learn to interpret structure is to operate the Pro Craft unit over a variety of known conditions and experiment with user functions to best represent those conditions on-screen.

Surface Clutter. Surface clutter is the layer of water near the surface that is rich in algae and other growth, and often is aerated by wind or wave action. This area of water interferes with sonar transmission and often appears on-screen as regular clusters of individual dots near the "0" line.

Thermoclines. Thermoclines are sharp differences in water temperature. These are easily identified by the continuous nature of the return.

Second Returns. When a sonar signal is reflected off the bottom back to the transducer, there is often enough energy left in the signal to be reflected off the surface of the water back to the bottom a second time. Second returns appear as a slightly weaker bottom representation exactly twice the depth of the primary bottom return. The second return is most likely to occur in shallow water and in areas of relatively hard bottom.



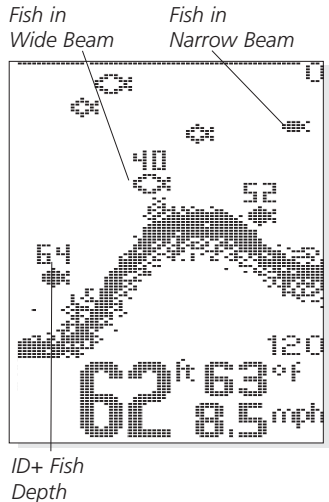
Fish ID. The Pro Craft unit uses advanced signal processing to further evaluate any sonar return between the surface and the bottom. For instance, a small school of bait fish usually appears as a dense cluster of individual dots. If the return meets certain additional criteria, a fish symbol will be assigned.

USING THE PRO CRAFT UNIT

CONTROL FUNCTIONS

There are three different size fish symbols used to indicate the intensity of the sonar return. While signal intensity is a good indicator of relative fish size, different species of fish have different sonar characteristics, so it is not always possible to distinguish fish size between varying species. The signal intensity is "normalized" for depth so that a small fish close to the boat does not appear as a large fish symbol.

ID+ adds an additional piece of information to help the user locate fish. On selected fish symbols, the digital depth of the designated fish is drawn to help locate the fish vertically. This is especially helpful in setting bait depths or for downrigger operation.

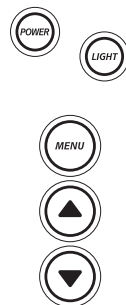


The fish symbols indicate the sonar beam the fish is detected in. This gives you a reliable indicator of side to side location of the fish relative to the boat. Fish symbols that are hollow are detected in the wide beam and are around the boat. Solid fish symbols represent fish detected in the narrow beam and are directly under the boat.

CONTROL FUNCTIONS

The Pro Craft unit uses a simple five button keypad for all user input. Press any button and an audible "chirp" confirms the control input. If a button has no function or is inappropriate for the situation, an audible "error" is heard. The unit sounds multiple chirps.

Power. The Power button powers the Pro Craft unit up for normal operation. When the unit is on, POWER turns the unit off. POWER can also be used to go directly into Simulator mode. To enter simulator, with the unit powered off, press and hold POWER for sever-



USING THE PRO CRAFT UNIT

CONTROL FUNCTIONS

al seconds until a continuous chirp is heard.

Light. LIGHT controls the unit's display backlight. With the unit powered on, press LIGHT once to turn the backlight on "high." Press LIGHT a second time to turn the backlight on "low," and a third time turns the backlight off. The backlight is very effective for low-light and nighttime operation. When the backlight is on, the Pro Craft unit will consume more power than with the backlight off. This is important when using the Pro Craft unit in a portable configuration powered by a separate battery, or when powering the unit from a trolling motor battery.

When powering the unit from a battery such as in portable applications, you can prolong the battery life by using the backlight at a minimum.

The three lower buttons, MENU, UP ARROW, and DOWN ARROW work together to control the Pro Craft unit menu-controlled user functions.

Menu. MENU displays a menu on-screen for adjustment. In normal operation, pressing MENU repeatedly cycles through all available menu headings. When a menu heading displays, the full menu appears after a short pause. A menu remains on-screen for several seconds, and can be adjusted by using the ARROW keys. If no adjustment is made in the allotted time, the menu disappears. If you want the menu to remain on-screen longer press and hold MENU—the menu will remain on-screen indefinitely. Once you release the menu button, the screen will time out. Once a menu times out, it is still considered the active menu. Press MENU to bring up the last menu used.



Arrow Keys. The UP ARROW and DOWN ARROW make adjustments to menu functions. On the left side of every menu there are UP ARROW and DOWN ARROW symbols. The symbols indicate which ARROW button has a function in a particular situation. Either one or both ARROW buttons can be used to adjust the menu function. A hollow ARROW symbol means the corresponding ARROW button has no function. Pressing that button will result in no adjustment and the "error" audible will be heard. A solid ARROW symbol means the corresponding ARROW button can be used to affect the menu adjustment.

USING THE PRO CRAFT UNIT

CONTROL FUNCTIONS

The ARROW buttons often can be used when no menu is on-screen. In these situations, pressing the ARROW button affects the function of the active (last-used) menu. This is a short-cut to menu operation. The menu appears on-screen while the adjustment is made and times out. A frequently used menu can be adjusted very quickly using this technique.



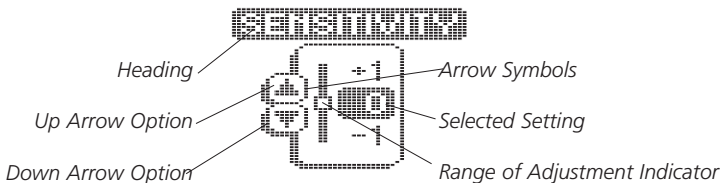
After an adjustment is made to a menu function, the menu times out after a few seconds and the unit returns to normal operation.

Menu Layout. All menus use the same basic layout. The heading at the top describes the menu function. The UP ARROW and DOWN ARROW symbols to the left of the menu indicate which buttons are available for adjustment. In menus that have several possible settings, a range of adjustment indicator shows the total range available and the current setting.

Within the menu are the options available. The selected option or current setting is highlighted in the black box. If no adjustment is made, this is the selected setting. Press an ARROW button while the menu is displayed to select another option.

Several of the menus are multi-step. In some situations if an adjustment is made, additional options become available for further adjustment. Examples of these multi-step menus are Depth Range, Depth Alarm and Zoom. See the detailed description of each function for further explanation.

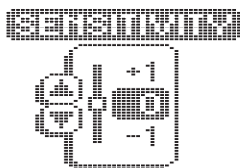
Menu Functions



USING THE PRO CRAFT UNIT

MENU FUNCTIONS

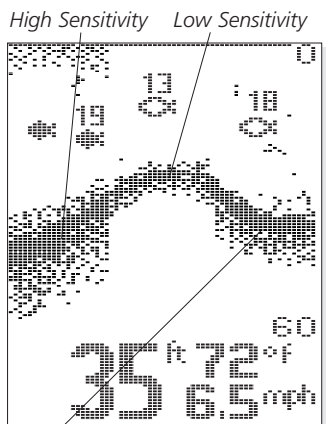
Sensitivity. The Sensitivity function controls the sensitivity of the sonar receiver. The Pro Craft unit automatically adjusts the level of receiver sensitivity based on a number of factors including the depth of the water and the level of noise present. Noise can be caused by other electronic devices, engines, trolling motors, propeller cavitation and hydrodynamic flow among others.



The user has the option of adjusting the Sensitivity higher or lower based on personal preference. You can select one of 11 sensitivity settings from -5 to +5. A setting of 0 (factory setting) has no effect on the automatic sensitivity control. Increasing the sensitivity (+1 through +5) enables the unit to display the information from progressively smaller sonar returns. By decreasing the sensitivity bias (-1 through -5), the unit effectively filters small sonar returns.

In murky or muddy water, it is often helpful to reduce the sensitivity. This prevents the display from being cluttered with sonar returns from debris or suspended particles. In very clear or very deep water, it may be helpful to increase the sensitivity since even the smallest sonar return may be of interest to the user.

To adjust Sensitivity, press MENU repeatedly until the Sensitivity heading is displayed. When the Sensitivity menu appears, use the UP ARROW to increase the sensitivity, or the DOWN ARROW to reduce sensitivity. To sequence through the available settings, press and hold either ARROW button. Release the button at the setting you want to change.



Sensitivity at "0"

USING THE PRO CRAFT UNIT

MENU FUNCTIONS

After an adjustment is made, the menu disappears and the new sensitivity setting is in affect. If additional time is needed to study a menu, press and hold the MENU button and the menu will remain on-screen indefinitely. If you need to make an additional adjustment, press the UP ARROW or DOWN ARROW button.

Depth Range. The Depth Range function controls the vertical distance displayed on the graphic area of the display. There are nine depth ranges available. The top of the range is always 0, or the surface of the water. Ranges of 0–15', 0–30', 0–60', 0–120', 0–180', 0–240', 0–360', 0–480', and 0–600' are available. In the metric version, ranges of 0–5, 0–10, 0–20, 0–40, 0–60, 0–80, 0–110, 0–150, and 0–185 meters are available. The range that positions the bottom depiction closest to the bottom of the screen, will best utilize the available display resolution.

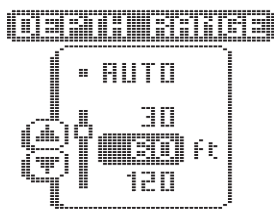


The Pro Craft unit automatically adjusts the depth range depending on the depth of the water. The unit tries to maintain the bottom depiction about 2/3 down the total range (for example, in 20' (6m) of water, the 0-30' (0-10m) range would be selected). This provides the best display resolution and therefore the best target separation possible.



The Depth Range can be adjusted manually. Press MENU repeatedly until the Depth Range menu is visible. Two options are available: Auto and Manual.

The manual setting enables you to adjust the current depth range setting. The unit no longer adjusts the Depth Range to the most appropriate range for bottom display. Often, the bottom may not be visible on-screen. The digital depth readout



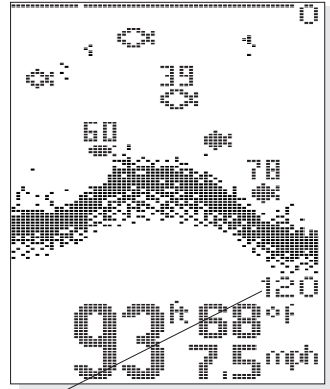
USING THE PRO CRAFT UNIT

MENU FUNCTIONS

always determines the depth of the bottom, even if it is not visible on-screen.

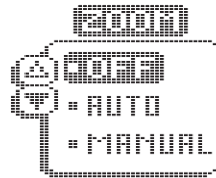
Using manual Depth Range control, you can view sonar information from the area near the surface in great detail.

To return to automatic Depth Range control, press the MENU button until the Depth Range menu appears on-screen and use the UP ARROW to select AUTO.



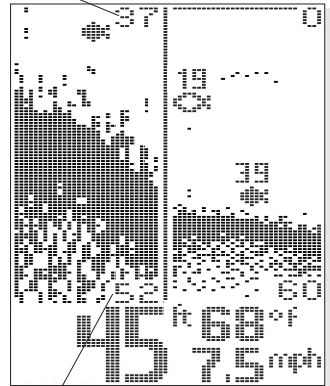
Depth Range

Zoom. Zoom is similar to Depth Range because it controls the range of information displayed on screen. Zoom, however, allows selection of ranges beneath the surface so any area of water between the surface and the bottom can be enlarged to provide more detailed information. By using the full display to show a small area of coverage, the effective display resolution is increased, and the unit's ability to separate close targets is enhanced.



Upper Zoom Limit

There are four Zoom ranges available: 7 1/2' (2m), 15' (5m), 30' (10m), and 60' (20m). These ranges are not directly user controlled but are instead dependent on the current depth range. In shallow water, when the 15' (5m) or 30' (10m) range is in use, the Zoom range is 7 1/2' (2m). If the 60' (20m) or 120' (40m) range is in use, the Zoom range is 15' (5m), if a 180'-480' (60-150m) depth range is in use, the Zoom range is 30' (10m), and if the 600' (185m) range is in use, the Zoom range is 60' (20m).

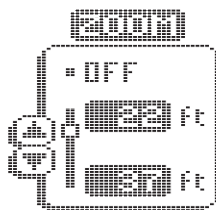


Lower Zoom Limit

USING THE PRO CRAFT UNIT

MENU FUNCTIONS

The Zoom range is shown on the left side of the screen and full range information is shown on the right side of the display. Zoom can either operate automatically, in which the Zoom range is constantly adjusted to show the bottom, or manually, in which the user controls the location of the Zoom range.



Automatic Zoom is especially helpful when looking for structure or bottom detail. The Automatic Zoom keeps the bottom in view even in quickly changing terrain, but is most useful in flatter areas without considerable depth variation. Manual Zoom provides detailed information of any area from the surface to the bottom. In manual Zoom, the Zoom range does not move as the terrain changes.

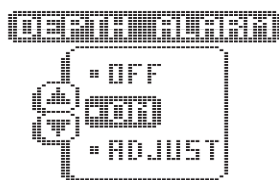
When the range is shown in the menu, the upper number represents the top of the current Zoom range. The lower number represents the bottom of the Zoom range. Use the UP and DOWN ARROW buttons to move this range. The upper number can never be less than 0 (the surface of the water), and the lower number can never be greater than the active depth range. The difference between the two numbers (the Zoom range) is preset and determined by the active depth range.

Once manual Zoom is selected, the display appears the same as in Auto Zoom, but the zoom range does not change automatically.

To disable Zoom, press the MENU button until the Zoom menu is on-screen. Use the UP ARROW to highlight Off, and let the menu time out.

When the unit is powered off, the Zoom menu returns to Zoom Off.

Depth Alarm. The Pro Craft unit contains an audible alarm to warn you of shallow water depths. The alarm is adjustable to depths of 2' (.6m) to 99' (30m). When the alarm is enabled, an audible alarm sounds if the water beneath the boat is equal to or less than the selected alarm depth. The



USING THE PRO CRAFT UNIT

MENU FUNCTIONS

alarm sounds continuously for about five seconds, and then intermittently to remind you that you are still in shallow water.

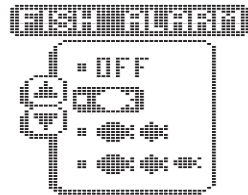
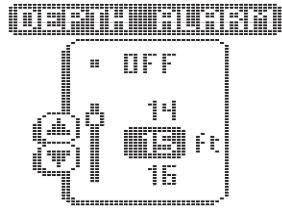
Fish Alarm. The Fish Alarm alerts you to the presence of fish, or other targets not connected to the bottom. The Fish Alarm has three different settings that correspond to the three different size fish symbols shown on-screen.

The default setting is "OFF." With the "Large fish only" setting, the Pro Craft unit alarms on only those targets that are represented by the large fish symbols. The Pro Craft unit can be set to alarm on only large and medium fish, or set to alarm on all fish.

Once the Fish Alarm is enabled, the Pro Craft unit emits an audible beep when the selected size fish symbol appears on-screen. The sound is slightly different for each of the three fish symbol sizes, so with practice, it is possible to distinguish the size of the detected fish without looking at the unit.

Triplog. Triplog provides a running log of information based on input from the Temp/Speed sensor.

Since Triplog requires information from the Temp/Speed sensor to operate, if this sensor is not detected by the Pro Craft unit, the Triplog menu will not appear as an option.



Set for large fish only



Set for large and medium fish



Set for all fish



USING THE PRO CRAFT UNIT

MENU FUNCTIONS

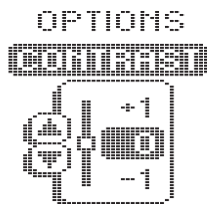
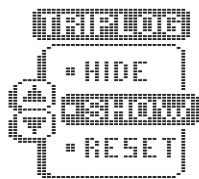
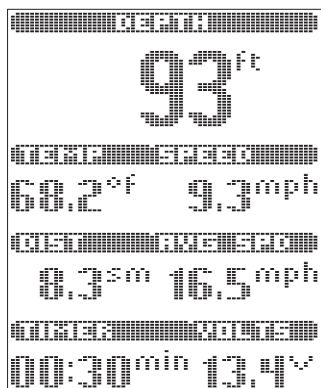
Triplog provides seven pieces of information: the current digital depth, water surface temperature, current boat speed, the distance traveled since the Pro Craft unit was powered up or reset, the average speed, the total time elapsed since power-up or reset, and the input voltage from your boat's electrical system.

The time, speed and distance calculations are useful for tracking your progress on a trip. The input voltage is useful for determining the condition of the charging system of the boat. When used in a portable application or whenever the Pro Craft unit is operated from a battery source, the voltage number can be used to determine battery life. The Pro Craft unit will operate at voltages from 10 to 20 VDC. Voltages in excess of 20 or less than 10 VDC cause the unit to power off.

Options. The Options Menu is a series of linked menu functions used initially to set your preferences. Once your preferences are selected, it is unlikely these functions need to be accessed during the normal operation of the product.

The Options menu works differently than other menu functions in that all of the options must be cycled through in order to return to normal operation. There are twelve. Option menus: Contrast, Display Speed, Bottom Black, Fish ID, Numeral Size, Diagnostic, Units, Speed Offset, Depth Offset, and Reset.

Contrast. The Contrast function allows the user to control the level of contrast of the LCD display. The Pro Craft unit will automatically adjust the display contrast to compensate for changing



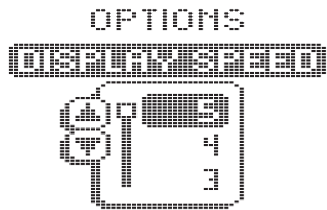
USING THE PRO CRAFT UNIT

MENU FUNCTIONS

ambient temperatures; however, some situations may occur where manual adjustment will provide a higher level of contrast.

Eleven contrast settings, +5 to -5, are possible. The display contrast will change as the adjustment is made so the optimum level of contrast can be achieved. Use the ARROW buttons to highlight the desired selection. The Pro Craft unit will reset to the factory setting when the unit is powered off.

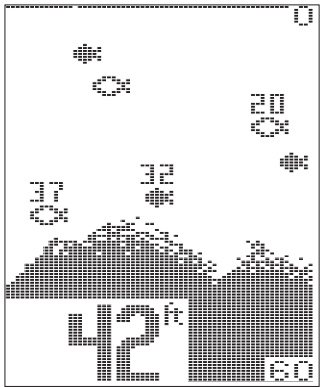
Display Speed. Display Speed controls the rate at which the graphic information moves across the display. There are 5 possible speeds; the fastest rate (5) is the factory setting. Keep in mind that the closer the update rate matches your boat speed, the more accurate is the graphic depiction of the terrain beneath your boat.



Use the UP and DOWN ARROWS to select the desired update rate. The Display Speed setting is remembered when the unit is powered off.

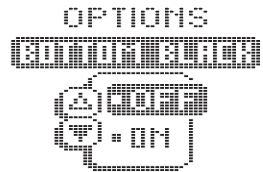
Bottom Black. There are two selections available: OFF and ON. The factory setting is OFF. With this setting, the Pro Craft unit displays the bottom

Bottom Black View



using Structure ID. This

allows you to determine the texture and relative hardness of the bottom. Selecting Bottom Black "ON" causes the unit to blacken in the display below the bottom. This gives the user easiest recognition of the bottom location, even from a great distance.



The Pro Craft unit remembers the Bottom Black setting when powered off.

USING THE PRO CRAFT UNIT

MENU FUNCTIONS

Fish ID. There are three selections available: OFF, ID+ ON, and ADJUST. The factory setting is ID+ ON. With Fish ID OFF, sonar returns are displayed as "raw" information. There is no interpretation made by the unit. Selecting ID OFF also disables the fish alarm.

ID+ ON enables the Pro Craft unit to interpret the raw sonar data and, using a variety of techniques, depict appropriate target returns as one of three different size fish symbols. Further identification shows whether the fish is in the wide or narrow beam. The Pro Craft unit also displays the depth beneath the surface with the corresponding fish symbol.

Selecting Adjust and making incremental changes enhances the fishfinder's ability to identify sonar returns as fish symbols.

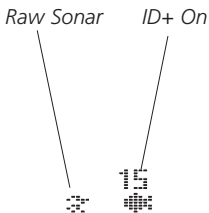


Increasing the value to a number greater than zero shows more fish symbols on-screen. In this case smaller sonar returns will be depicted as fish symbols. This is useful for identifying many smaller sonar returns (such as baitfish) as fish symbols.

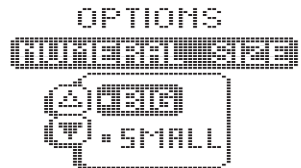


Decreasing the value to a number less than zero shows fewer fish symbols on-screen. In this case smaller sonar returns are disregarded. This is useful for eliminating many small sonar returns when seeking larger species of fish.

The Pro Craft unit remembers this selection even when the unit is powered off.



Numeral Size. Two options are available: BIG and SMALL. The factory setting is BIG. With this setting, the digital depth and speed and temp numerals are drawn large enough to be read from across



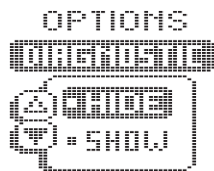
USING THE PRO CRAFT UNIT

MENU FUNCTIONS

the boat. The big numerals occupy space on the display that could be used for the graphics area. Hence, the small numerals option. With small numerals selected, a greater amount of the display area is available for the graphic view. This effectively increases the display resolution of the unit.

Numeral Size settings are remembered when powered off.

Diagnostic. Two options are available: HIDE and SHOW. The factory setting is HIDE. Selecting SHOW brings up the Diagnostic screen. See the *Using Diagnostic* section for more information.

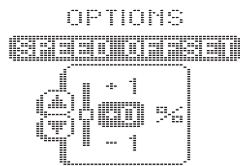


Units. The Units function allows the user to select the units of measurement for the depth and speed readout. FEET/MPH (feet/statute miles per hour) and FEET/KTS (feet/nautical miles per hour), are available. The Pro Craft unit remembers this selection even when the unit is powered off.



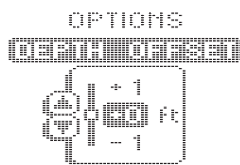
Speed Offset. The Speed Offset option allows the user to compensate for differences in hull design, and its effect on the accuracy of the speed measurement.

If there is a discrepancy between the indicated speed and another speed measurement device on the boat, the speed measurement can be varied to improve accuracy. Remember, the speed paddle wheel measures speed through the water, not speed over ground.



Speed offset is remembered after power is disconnected.

Depth Offset. The Depth Offset allows the user to select the point on the boat from which the depth measurement is made. Selecting a positive value adds distance to the measurement. If the transducer is mounted 3 feet beneath the waterline, a positive 3 will show the correct depth from the surface of the water.



USING THE PRO CRAFT UNIT

USING THE DIAGNOSTIC FEATURE

Another frequent use of depth offset is to show the depth beneath the deepest point of the hull. A negative value equal to the distance from the transducer location and the deepest point of the hull will have the same effect as mounting the transducer at the deepest point.

Depth offset is remembered after power is disconnected.

Reset. With the many User Options available to customize the Pro Craft unit, it is easy to configure the unit in such a way that it is detrimental to a particular use. By using the Reset function, all variable or user-controlled features of the Pro Craft unit are returned to the factory settings.



The Reset function is an important first step in troubleshooting problems to ensure that a user selected setting is not the cause for the perceived problem.

USING THE DIAGNOSTIC FEATURE

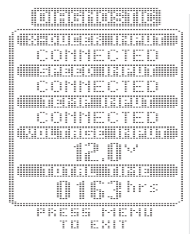
The Pro Craft unit contains a powerful diagnostic tool that can aid in determining the cause of a problem.

To use the Diagnostic feature, select the Diagnostic feature on the start-up menu on the initial screen. Diagnostic can also be accessed through the Options menu.

Self Test. Initially, the Pro Craft unit will perform a self-test. This test confirms the operation of all internal circuitry. At the conclusion of the test, one of two messages will appear. PASSED indicates the internal test discovered no failures, FAILED indicates a significant internal problem was discovered and the unit requires factory service. A code number appears that tells repair personnel where the problem is.



Transducer Connection. The first connection tested is Transducer input. If a transducer is detected, the mes-



ADVANCED FEATURES

USING THE DIAGNOSTIC FEATURE

sage CONNECTED appears. If a series of dashed lines is shown, no transducer is connected or there is a problem with the transducer or cable.

If you are using multiple transducers, switch between transducers to confirm the connections for each.

Boat Speed/Water Temperature Connection. Other connections tested include the boat speed and surface water temperature sensors. These accessory sensors can be purchased independently or together as a single sensor (see the Humminbird Accessories catalog). If the sensors are connected and working properly, a "connected" message appears.

The speed input feature only works when the boat is in motion as the paddle wheel on the speed sensor must rotate to be detected.

Voltage Input. Another connection tested is the voltage input, and is especially helpful in diagnosing input voltage problems. The current input voltage is displayed. If voltage fluctuations or power supply in excess of 20 VDC or less than 10 VDC is suspected, use the diagnostic screen to confirm input voltage. Often, small outboard motors do not effectively regulate voltage when operated at high engine speeds.

Use Diagnostic while running the boat at high speeds to show the voltage gain. Also, if you are using the Pro Craft unit in portable configuration or from the trolling motor battery, Diagnostic can be used to evaluate the health of the battery by showing the current voltage.

Total Time. The total time category indicates the total time the unit has been in use since shipped from the factory. It is normal for some hours to appear in the total time when the unit is new due to factory testing. While this is often of interest to the user, it is primarily a diagnostic tool for the repair technician should the unit need service.

MAINTENANCE

Your Pro Craft unit is designed to provide years of trouble free operation with virtually no maintenance. Follow these simple procedures to ensure your Pro Craft unit continues to deliver top performance.

MAINTENANCE AND WARRANTY

MAINTENANCE/TROUBLESHOOTING

- If the unit comes into contact with salt spray, simply wipe the affected surfaces with a cloth dampened in fresh water. Do not use a chemical glass cleaner on the lens. Chemicals in the solution may cause cracking in the lens of the unit.
- When cleaning the LCD protective lens, use a chamois and non-abrasive, mild cleaner. Do not wipe while dirt or grease is on the lens. Be careful to avoid scratching the lens.
- If your boat remains in the water for long periods of time, algae and other marine growth can reduce the effectiveness of the transducer. Periodically clean the face of the transducer with liquid detergent. Pivoting the transducer up in the bracket may allow better access for inspection or cleaning.
- If your boat remains out of the water for a long period of time, it may take some time to wet the transducer when returned to the water. Small air bubbles can cling to the surface of the transducer and interfere with proper operation. These bubbles dissipate with time, or you can wipe the face of the transducer with your fingers after the transducer is in the water.
- Never leave the Pro Craft unit in a closed car or trunk—the extremely high temperatures generated in hot weather can damage the electronics.

TROUBLESHOOTING

Do not attempt to repair the Pro Craft unit yourself. There are no user serviceable parts inside, and special tools and techniques are required for reassembly to ensure the waterproof integrity of the housing. Repairs should be performed only by authorized Humminbird technicians.

Many requests for repair received by Humminbird involve units that do not actually need repair. These units are returned “no problem found.” If you have a problem with your Pro Craft unit, use the following troubleshooting guide before sending your unit in for repair. The Pro Craft unit contains several tools that can aid in determining if there is a problem and how to isolate and repair the problem in many cases.

MAINTENANCE AND WARRANTY

TROUBLESHOOTING

1. Nothing happens when I turn the unit on.

Check the power cable connection at both ends. Be sure the cable is connected correctly to a reliable power source—red lead to positive, black lead to negative or ground. Ensure the power available at the mount is between 10 and 20 VDC. If the unit is wired through a fuse panel, ensure the panel is powered. Often accessory fuse panels are controlled by a separate switch or the ignition switch. Also, often a fuse can appear to be good when in fact is not. Check the fuse with a tester or replace it with a fuse known to be good.

Check the power connection to the Pro Craft unit. It is possible to force the power cable connector into the cable holder incorrectly. If the connector is reversed, the unit will not work. Examine the contacts on the back of the unit to ensure there is no corrosion. Finally, ensure the unit is firmly seated on the mount. The electrical contacts are not made until the unit is fully seated.

Ensure the metal cable retainer is properly installed in the mount. If not, the power connected may push out when the unit is put on the mount.

2. There is no transducer detected.

The Pro Craft unit has the ability to detect and identify that a transducer is connected. If, at power up, a message indicates “transducer not connected,” only simulator operation is possible. First, ensure that an appropriate transducer connector is positioned correctly in the connector holder, and that the unit is fully seated on the mount. The Pro Craft unit will work with the standard dual-beam transducer.

Second, inspect the transducer cable from end to end for breaks, kinks, or cuts in the outer casing of the cable. Also ensure the transducer is fully submerged in water. If the transducer is connected to the unit through a switch, temporarily connect it directly to the unit and try again. If none of these items identifies an obvious problem, the transducer itself is probably the problem. Be sure to include the transducer if returning the unit for repair.

3. There is no bottom reading visible on the display.

There are a number of possible causes for this condition. If the loss of bottom information occurs only at high boat speeds, the transducer needs adjusting. If

MAINTENANCE AND WARRANTY

TROUBLESHOOTING

the digital depth readout is working but there is no bottom visible on-screen, it is possible the depth range has been adjusted manually to a range lower than what is needed to display the bottom. Also, in very deep water, it may be necessary to manually increase the sensitivity setting to maintain a graphic depiction of the bottom.

If you are using a transducer switch to connect two transducers to the Pro Craft unit, ensure the switch is in the correct position to connect a transducer that is in water. (If a trolling motor transducer is selected and the trolling motor is out of water, no sonar information appears.)

If none of the above solve the problem, inspect the transducer cable from end to end for breaks, kinks, or cuts in the outer casing of the cable. If the transducer is connected to the unit through a switch, temporarily connect it directly to the unit and try again. If none of these items identifies an obvious problem, the transducer itself may be the problem. Be sure to include the transducer if returning the unit for repair.

4. When in very shallow water, I get gaps in the bottom reading and inconsistent digital depth indication.

The Pro Craft unit will work reliably in water 2' (.6m) or deeper. The depth is measured from the transducer, not necessarily from the surface.

5. The unit comes on before I press POWER, and won't turn off.

Check the transducer cable—if the outer jacket of the cable has been cut and the cable is in contact with bare metal, you need to repair the cut with electrical tape. If there is no problem with the cable, disconnect the transducer from the unit and see if the problem is corrected, to confirm the source of the problem.

6. I get gaps in the reading at high speeds.

Your transducer needs adjusting. If the transducer is transom-mounted, there are two adjustments available to you—height, and running angle. Make small adjustments and run the boat at high speeds to determine the effect. It may take several tries to optimize high speed operation. This can also be a result of air or

MAINTENANCE AND WARRANTY

TROUBLESHOOTING/WARRANTY

turbulence in the transducer location caused by rivets, ribs, etc.

7. My unit loses power at high speeds.

Your Pro Craft unit has over-voltage protection that turns the unit off when input voltage exceeds 20 VDC. Some outboard motors do not effectively regulate the power output of the engine's alternator and can produce voltage in excess of 20 volts when running at high RPMs. The Pro Craft unit displays input voltage in the Diagnostic screen. Use this readout to determine if the voltage exceeds 20 VDC.

8. The screen begins to fade out. Images are not as sharp as normal.

Check the input voltage using Diagnostic. The Pro Craft unit will not operate on input voltages below 10 VDC.

9. The display shows many black dots at high speeds and high sensitivity settings.

You are seeing noise or interference caused by one of several sources. Noise can be caused by other electronic devices. Turn off any nearby electronics and see if the problem goes away. Noise can also be caused by the engine. If engine noise is causing the interference, the problem will intensify at higher RPMs. Increase the engine speed with the boat stationary to isolate this cause. Propeller cavitation can appear as noise on-screen. If the transducer is mounted too close to the propeller, the turbulence generated can interfere with the sonar signal. Ensure that the transducer is mounted at least 15" (38cm) from the prop.

HUMMINBIRD ONE YEAR FULL WARRANTY

First year repairs (from original date of purchase) on your Pro Craft unit are absolutely free. This does not include physical damage to the unit or its accessory items. Any modification or attempt to repair the original equipment or accessories by unauthorized individuals will void the warranty. Return the warranty registration card and retain your bill of sale for warranty verification. Accessories not manufactured under the Humminbird

MAINTENANCE AND WARRANTY

WARRANTY AND SERVICE POLICY

trade name are not covered by our warranty. The customer is responsible for shipping charges to Humminbird. Humminbird will provide ground UPS or Parcel Post shipping back to the customer free of charge. This warranty applies to the original purchaser only.

This warranty is in lieu of all other warranties expressed or implied and no representatives or persons are authorized to provide for any other liability in connection with the sale of our products. Humminbird reserves the right to perform modifications or improvements on its products without incurring the obligation to install the changes on units previously manufactured, sold, delivered, or serviced.

THIS IS A FULL WARRANTY AS DEFINED BY THE FEDERAL WARRANTY ACT, EFFECTIVE JULY 4, 1975.

SERVICE POLICY

This Service Policy is valid in the United States only. This applies to Humminbird units returned to our factory in Eufaula, Alabama, and is subject to change without notice.

All repair work is performed by factory-trained technicians to meet exacting factory specifications. Factory serviced units go through the same rigorous testing and quality control inspection as new production units.

Even though you'll probably never need to take advantage of our incredible service guarantee, it's good to know that we back our units this well. We do it because you deserve the best. We will make every effort to repair your unit within three working days from the receipt of your unit. This does not include shipping time to and from our factory. Units received on Friday are usually shipped by Wednesday, units received Monday are usually shipped by Thursday, etc.

We reserve the right to deem any product unserviceable when replacement parts are no longer reasonably available or impossible to obtain.

After the original warranty period, a standard flat rate service charge will be assessed for each repair (physical damage and missing parts are not included). Please call our Customer Support Department to verify the ser-

MAINTENANCE AND WARRANTY

CUSTOMER SUPPORT

vice charge for your unit.

If charges are not prepaid, the unit will be returned C.O.D. If you are experiencing problems related to bottom or depth readings, please send your transducer along with your unit when sending for repair.

CUSTOMER SUPPORT

If you have any questions, call our Humminbird Customer Support Hotline:
1-334-687-0503

Throughout the U.S. and Canada, hours are Monday-Friday, 8:00 a.m. to 5:00 p.m. Central time.

If, after reading "Troubleshooting," you determine your unit needs factory service, please attach a description of the problem and send it with the unit to the address below.

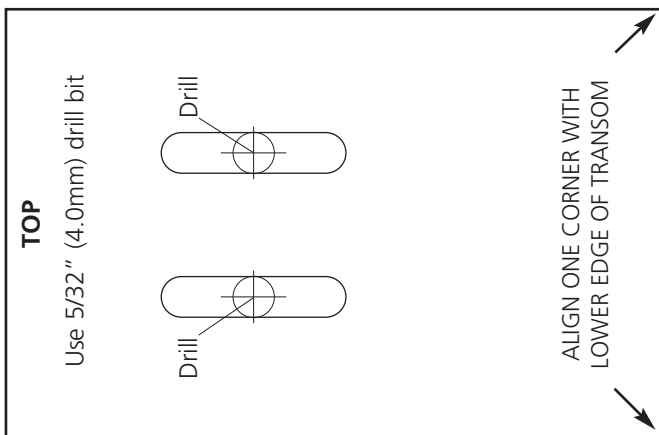
If you are including a check, please attach it to the unit.

**Humminbird
Service Department
Three Humminbird Lane
Eufaula, AL 36027
USA**

Further information on Humminbird products can be found at:

www.humminbird.com

Remove and use for
Transducer Installation



SPECIFICATIONS

Operating Frequency	.200 kHz and 83 kHz
Power Output	.250 Watts (RMS) 2000 Watts (Peak to Peak)
Area of Coverage	.Narrow: 20° at -10 db Wide: 53° at -10 db
Power Requirement	.12 VDC
Display	.FSTN LCD
LCD Matrix	.128 V x 64 H Pixels
Viewing Area	.2.90" V x 2.35" H (7.3cm V x 5.97cm H)
Mounting	.Quick Disconnect Mount
Unit Size	.6 3/4"H x 6 1/4"W x 4 1/4"D (17.1cm H x 15.9 cm W x 10.5 cm D)
Transducer (Standard)	.XT-6-20
Transducer Cable Length	.20' (6 meters)
Depth Ranges	.15', 30', 60', 120', 180', 240', 360', 480', & 600' (5, 10, 20, 40, 60, 80, 110, 150 & 185 meters)
Zoom Ranges	.7 1/2', 15', 30', & 60' (2, 5, 10 & 20 meters)

