Thank you for purchasing a CobraMarine® VHF radio. Properly used, this Cobra® product will give you many years of reliable service.

How Your CobraMarine VHF Radio Works
This radio is a VHF transceiver for fixed mounting on your boat. It gives you 2-way vessel-to-vessel and vessel-to-shore station communications, primarily for safety and secondarily for navigation and operational purposes. With it, you can call for help, get information from other boaters, talk to lock or bridge tenders and make radiotelephone calls to anywhere in the world through a marine operator.

Besides 2-way communications, in the U.S.A., the radio can provide quick access to receive seven NOAA (National Oceanographic and Atmospheric Administration) and two Canadian weather channels for alerting you to weather emergencies with a tone on a weather channel you can select for your area.

Customer Assistance
Should you encounter any problems with this product, or not understand its many features, please refer to this owner's manual. If you require further assistance after reading this manual, Cobra Electronics offers the following customer assistance services:

For Assistance In The U.S.A.
Automated Help Desk English only.
24 hours a day, 7 days a week 773-889-3087 (phone).

Customer Assistance Operators English and Spanish.
8:00 a.m. to 6:00 p.m. Central Time Mon. through Fri. (except holidays) 773-889-3087 (phone).

Questions English and Spanish.
Faxes can be received at 773-622-2269 (fax).

Technical Assistance English only.
English and Spanish. productinfo@cobra.com (e-mail).

For Assistance Outside The U.S.A.
Contact Your Local Dealer
**Introduction**

**Transceiver Controls, Indicators And Connections**

- Backlit LCD Screen
- Down Button
- Up Button
- Simplex Operation Icon
- Squelch Knob
- On-Off Power/Volume Knob
- Weather/UIC Button
- Dual-Watch Button
- Call/Set Button
- Scan Button
- DSC Distress Button (Behind Red Spring Loaded Cover)
- Microphone Cord Connection Socket
- Power Connection
- External Speaker Jack
- Global Positioning System (GPS) Jack
- Antenna Socket
- Speaker
- High/Low Power Button
- Position Coordinates – Latitude and Longitude
- Radio Status and Data Display

**Microphone With Auxiliary Controls**

- Up/Down Buttons
  - Can be used instead of those on the transceiver.
- Instant Channel 16/9 Button
  - Can be used instead of the one on the transceiver.

**Product Features**

- **Dual Power**
  - Selectable to one (1) or 25 watts output power for near or distant calling.

- **USA/International/Canada Channels**
  - Allows operation on any of the three (3) different channel maps established for these areas.

- **NOAA All Weather Channels**
  - Instant access to all of the National Weather Channels, 24 hours a day.

- **Emergency Weather Alert**
  - Can alert you with an audible tone and visual alarm if threatening weather is nearby.

- **Instant Channel 16/9**
  - Instant access to the priority Channel 16 and calling Channel 9.

- **Digital Selective Calling (DSC)**
  - Allows sending a distress message at the touch of a button as well as specific station-to-station calls.

- **Scan**
  - Lets you scan through all channels in the active channel map to find conversations in progress.

- **Dual-Watch**
  - Lets you monitor two (2) channels at once — Channel 16 and one (1) user selectable channel.

- **Controls On The Microphone**
  - Handy control buttons on the microphone let you operate one (1) handed at a distance from the radio.

- **Illuminated Buttons**
  - Helps you quickly find the buttons you need in low light conditions.

- **Mounting Kits Included**
  - Radio can be mounted on, under, or in almost any flat surface using one (1) of the included brackets.

- **Waterproof**
  - Submersible to one (1) meter of water for 30 minutes — meets JIS7 Standards.
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Important Safety Information

Before installing and using your CobraMarine VHF radio, please read these general precautions and warnings.

Warning And Caution Statements
To make the most of this radio, it must be installed and used properly. Please read the installation and operating instructions carefully before installing and using it. Special attention must be paid to the WARNING and CAUTION statements in this manual.

WARNING
Statements identify conditions that could result in personal injury or loss of life.

CAUTION
Statements identify conditions that could cause damage to the radio or other equipment.

Safety Training Information
This CobraMarine radio is designed for and classified as “Occupational Use Only.” It must only be used in the course of employment by individuals aware of both the hazards and the ways to minimize those hazards. This radio is NOT intended for use in an uncontrolled environment by the “General Population.” This radio has been tested and complies with the FCC RF exposure limits for “Occupational Use Only.” This CobraMarine VHF radio also complies with the following guidelines and standards regarding RF energy and electromagnetic energy levels as well as evaluation of those levels for human exposure:


The following WARNINGS and CAUTIONS will make you aware of RF exposure hazards and how to assure you operate the radio within the FCC RF exposure limits established for it.

WARNINGS
Your radio generates electromagnetic RF (radio frequency) energy when it is transmitting. To insure that you and those around you are not exposed to excessive amounts of that energy, DO NOT touch the antenna when transmitting and KEEP yourself and all others on your vessel the required distance away from the antenna while transmitting. SEE page 30 in the antenna requirements section for further information.

DO NOT operate the radio without a proper antenna or equivalent dummy load attached. Doing so may expose you to excessive RF energy and will damage the radio.

DO NOT transmit more than 50% of the time the radio is in use — 50% duty cycle. The radio is transmitting when the Talk button is pressed and the transmit information shows on the LCD screen.

ALWAYS use only Cobra authorized accessories.

DO NOT operate the radio in an explosive atmosphere, near blasting sites, or in any area where signs are posted prohibiting radio transmissions.

NEVER connect the transceiver to AC power. It can be a fire hazard, may cause an electric shock, and may damage the transceiver.

NEVER mount the transceiver or microphone where they might interfere with operation of your vessel or cause injury.

DO NOT allow children or anyone unfamiliar with proper procedures to operate the radio without supervision.

Failure to observe any of these warnings may cause you to exceed FCC RF exposure limits or create other dangerous conditions.
Recommendations For Marine Communication

The frequencies your radio uses are set aside to enhance safety afloat and for vessel navigation and operational messages over a range suitable for nearshore voyages. If the 25 watt maximum output of your radio isn’t sufficient for the distances you travel from the coast, consider installing more powerful radio equipment such as HF single side band or satellite radio for your vessel.

The U.S. Coast Guard does not endorse cellular telephones as substitutes for marine radios. They generally cannot communicate with rescue vessels and, if you make a distress call on a cellular telephone, only the party you call will be able to hear you. Additionally, cellular telephones may have limited coverage over water and can be hard to locate. If you don’t know where you are, the Coast Guard will have difficulty finding you if you’re using a cellular telephone.

However, cellular telephones can have a place on board where cellular coverage is available — to allow social conversations and keep the marine frequencies uncluttered and available for their intended uses.

Changes or modifications to your radio MAY VOID its compliance with FCC rules and make it illegal to use.

FCC LICENSING INFORMATION

CobraMarine VHF radios comply with the FCC (Federal Communication Commission) requirements that regulate the Maritime Radio Service.

This CobraMarine radio incorporates a VHF FM transceiver designed for use in the frequency range of 156.025 to 163.275 MHz. It requires 13.8 volts DC and has a switchable RF output power of one (1) or 25 watts.

The transceiver is capable of RTCM SC 101 DSC (Digital Selective Calling) operation. The radio operates on all currently allocated marine channels and is switchable for use according to U.S.A., International, or Canadian regulations. It features instant access to emergency Channel 16 and calling Channel 9 as well as NOAA (National Oceanic and Atmospheric Administration) All Hazards Radio with Alert that can be accessed by pressing one (1) key.

Station License

An FCC ship station license is no longer required for any vessel traveling in U.S.A. waters which uses a VHF marine radio, RADAR, or EPIRB (Emergency Position Indicating Radio Beacon), and which is not required to carry radio equipment. However, any vessel required to carry a marine radio on an international voyage, carrying a HF single side band radiotelephone, or carrying a marine satellite terminal must obtain a station license.

FCC license forms and applications for ship and land stations can be downloaded through the Internet at www.fcc.gov/forms. Forms can also be obtained by calling the FCC at 888-225-5322.

International Station License

If your vessel will be entering the sovereign waters of a country other than the U.S.A. or Canada, you should contact that country’s communications regulatory authority for licensing information.

Radio Call Sign

Currently, the FCC does not require recreational boaters to have a license. The United States Coast Guard recommends that the boat’s registration number and state of registry (e.g., Illinois 1234 AB) be used as a call sign and be clearly visible on the vessel.

Canadian Ship Station License

You need a Radio Operator’s Certificate if your vessel is operated in Canadian waters. Radio Operator training and certification is available from the Canadian Power Squadron. Visit their website (http://www.cps-ecp.ca/english/newradialcard.html), contact the nearest field office or write: Industry of Canada, Radio Regulatory Branch, Attn: DOSP, 300 Slater Street, Ottawa, Ontario, Canada K1A 0C8.

Recommendations For Marine Communication

- **AVOID** using or storing the radio at temperatures below -4°F (-20°C) or above 140°F (60°C).
- **NEVER** connect the transceiver to DC power greater than 16 volts or to any DC source with reversed polarity. Doing so will damage the transceiver.
- **DO NOT** cut the power cables attached to the transceiver. Improper reconnection with reversed polarity will damage the transceiver.
- **POSITION** your radio, external speakers, and cables at least three (3) feet (0.9 m) away from your vessel’s magnetic navigation compass. CHECK your compass before and after installation to be sure that it has not introduced any deviation.
- **DO NOT** attempt to service any internal parts yourself. Have any necessary service performed by a qualified technician.
- **DO NOT** drop the transceiver or microphone. Doing so may crack the case or damage a waterproof seal. Once these items have been dropped, the original waterproofing cannot be guaranteed.
- **DO NOT** use chemicals or solvents such as mineral spirits and alcohol to clean your radio. They may damage the case surfaces.

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VHF Marine Radio Procedures

User Responsibility And Operating Locations
All users are responsible for observing domestic and foreign government regulations and are subject to severe penalties for violations. The VHF frequencies on your radio are reserved for marine use and require a special license to operate from land, including when your boat is on its trailer.

NOTE
This device complies with part 15 of the FCC Rules. Operation is subject to the following two (2) conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

FCCWarnings: Replacement or substitution of transistors, regular diodes, or other parts of a unique nature, with parts other than those recommended by Cobra may cause a violation of the technical regulations of part 80 of the FCC Rules, or violation of type acceptance requirements of part 2 of the rules.

VHF Marine Radio Procedures

Maintain Your Watch
Whenever your boat is underway, the radio must be turned On and be tuned to Channel 16 except when being used for messages.

Power
Try one (1) watt first if the station being called is within a few miles. If there is no answer, switch to a higher power. This will conserve your battery and minimize interference to other users.

Calling Coast Stations
Call a coast station on its assigned channel. You may use Channel 16 when you do not know the assigned channel.

Calling Other Vessels
Call other vessels on Channel 16 or on Channel 9. (Channel 9 is preferred for recreational vessel use.) You may also call on ship-to-ship channels when you know that the vessel is listening on a ship-to-ship channel.

Voice Calling

Limits On Calling
You must not call the same station for more than 30 seconds at a time. If you do not get a reply, wait at least two (2) minutes before calling again. After three (3) calling periods, wait at least 15 minutes before calling again.

Change Channels
After contacting another station on a calling channel, change immediately to a channel which is available for the type of message you want to send.

Station Identification
Identify, in English, your station by your FCC callsign, ship name, the state registration number, or other official number at both the beginning and end of each message.

Prohibited Communications
You MUST NOT transmit:
- False distress or emergency messages.
- Messages containing obscene, indecent, or profane words or meaning.
- General calls, signals, or messages (messages not addressed to a particular station) on Channel 16, except in an emergency or if you are testing your radio.
- When you are on land.

To Call Another Vessel Or A Shore Installation Such As A Lock Or Bridge Tender:
- Make sure your radio is On.
- Select Channel 16 and listen to make sure it is not being used.

NOTE
Channel 9 may be used by recreational vessels for general-purpose calling. This frequency should be used whenever possible to relieve congestion on Channel 16.

- When the channel is quiet, press the Talk button and call the ship you wish to call. (Hold the microphone a few inches from your face and speak directly into it in a normal tone of voice — clearly and distinctly.) Say “[name of station being called] THIS IS [your vessel’s name or call sign].”
- Once contact is made on the calling channel, you must switch to a proper working channel. See the channel listing on page 14 through 15.
**Digital Selective Calling (DSC)**

Digital selective calling is a semi-automated system for establishing a radio call. It has been designed by the International Maritime Organization (IMO) as an international standard for VHF, MF, and HF calls and is part of the Global Maritime Distress and Safety System (GMDSS).

DSC will eventually replace aural (listening) watches on distress frequencies and will be used to announce routine and urgent maritime safety information broadcasts. Until DSC is fully implemented, it is still necessary to maintain a listening watch on Channel 16.

The DSC system allows mariners to instantly send a distress call with GPS position coordinates (requires a GPS receiver to be connected to the radio) to the Coast Guard and other vessels within range of the transmission. DSC also allows mariners to initiate and receive distress, urgent, safety, routine, position request, position send, and group calls between vessels equipped with DSC capable radios.

**For Example**

The vessel Corsair calling the vessel Vagabond:

**Corsair:** “Vagabond, this is Corsair.”

**Vagabond:** “Corsair, this is Vagabond. Reply 72 (or any proper working channel).”

**Corsair:** “72” or “Roger”

- After communications are completed, each vessel must sign off with its call sign or vessel name and switch to Channel 16.

**NOTE**

For best sound quality at the station you’re calling, hold the microphone at least 2 inches [5 cm] from your mouth and slightly off to one (1) side. Speak in a normal tone of voice.

**Maritime Mobile Service Identity (MMSI)**

An MMSI is a nine (9) digit number used on a marine radio capable of using digital selective calling (DSC). It is used to selectively call other vessels or shore stations and is similar to a telephone number.

For your Cobra Marine radio to operate in the DSC mode, you must enter your maritime mobile service identity (MMSI) number. See page 49 for instructions on how to enter it.

**The MMSI Number Is Available In The U.S.A. From Any Of Three (3) Sources:**

- Maritel: 1-888-Maritel (1-888-627-4835)

**In Canada, Contact:**


**To Obtain An MMSI Number Outside The U.S.A.:**

Users can obtain an MMSI from their country’s telecommunications authority or ship registry. This may involve amending or obtaining a ship station license.

**WARNING**

This equipment is designed to generate a digital maritime distress and safety signal to facilitate search and rescue. To be effective as a safety device, this equipment must be used only within communication range of a shore-based VHF marine channel to distress and safety watch system. The range of the signal may vary, but under normal conditions should be approximately 20 nautical miles.
Radiotelephone Calls

Boaters may make and receive radiotelephone calls to and from any number on the telephone network by using the services of public coast stations. Calls can be made — for a fee — between your radio and telephones on land, sea, and in the air. See pages 14 through 23 for the public correspondence (marine operator) channels.

If you plan to use these services, consider registering with the operator of the public coast station that you plan to work through. Those services can provide you with detailed information and procedures to follow.

CAUTION

You may disclose privileged information during a radiotelephone call. Keep in mind that your transmission is NOT private, as it is on a regular telephone. Both sides of the conversation are being broadcast and can be heard by anyone who has a radio and tunes to the channel you are using.

Emergency Messages And Distress Procedure

The ability to summon assistance in an emergency is the primary reason to have a VHF marine radio. The marine environment can be unforgiving, and what may initially be a minor problem can rapidly develop into a situation beyond your control.

The Coast Guard monitors Channel 16, responds to all distress calls, and coordinates all search and rescue efforts. Depending on the availability of other capable vessels or commercial assistance operators in your vicinity, Coast Guard or Coast Guard Auxiliary craft may be dispatched.

In any event, do communicate with the Coast Guard as soon as you experience difficulties and before your situation becomes an emergency. Use the emergency message procedures only after your situation has become grave or you are faced with a sudden danger threatening life or property and requiring immediate help.

If you are merely out of gas, do not send an emergency message. Drop your anchor and call a friend or marina to bring the fuel you need or give you a tow.

Marine Emergency Signals

The three (3) spoken international emergency signals are:

**MAYDAY**

The distress signal **MAYDAY** is used to indicate that a station is threatened by grave and imminent danger and requests immediate assistance.

**PAN**

The urgency signal **PAN** is used when the safety of the vessel or person is in jeopardy. (This signal is properly pronounced pahn.)

**SECURITE**

The safety signal **SECURITE** is used for messages about the safety of navigation or important weather warnings. (This signal is properly pronounced see-cure-it-tay.)

When using an international emergency signal, the appropriate signal is to be spoken three (3) times prior to the message.

If You Hear A Distress Call

You must give any message beginning with one (1) of these signals priority over any other messages. ALL stations MUST remain silent on Channel 16 for the duration of the emergency unless the message relates directly to the emergency.

If you hear a distress message from a vessel, stand by your radio. If it is not answered, YOU should answer. If the distressed vessel is not nearby, wait a short time for others who may be closer to acknowledge. Even if you cannot render direct assistance, you may be in a position to relay the message.
Marine Distress Procedure
Speak slowly — clearly — calmly.

1. Make sure your radio is On.
2. Select VHF Channel 16.
3. Press Talk button and say:
   “MAYDAY — MAYDAY — MAYDAY.”
   (Or “PAN — PAN — PAN.”
   or “SECURITE — SECURITE — SECURITE.”)
4. Say:
   “THIS IS [your vessel name or call sign].”
5. Say:
   “MAYDAY (or “PAN” or “SECURITE”)
   [your vessel name or call sign].”
6. Tell where you are:
   (what navigational aids or landmarks are near).
7. State the nature of your distress.
8. State the kind of assistance needed.
9. Give number of persons aboard and conditions of any injured.
10. Estimate present seaworthiness of your vessel.
11. Briefly describe your vessel (length, type, color, hull).
12. Say:
    “I WILL BE LISTENING ON CHANNEL 16.”
13. End message by saying:
    “THIS IS [your vessel name or call sign] OVER.”
14. Release Talk button and listen. Someone should answer.
    If not, repeat the call, beginning at Item 3 above.

For Example

“Mayday — Mayday — Mayday”
“This is Corsair — Corsair — Corsair” [or “Illinois 1234 AB” three (3) times]
“Mayday Corsair (or Illinois 1234 AB)”
“Navy Pier bears 220 degrees magnetic — distance 5 miles”
“Struck submerged object and flooding — need pump and tow”
“Four adults, three children aboard — no one injured”
“Estimate we will remain afloat one-half (½) hour”
“Corsair (or Illinois 1234 AB) is 26 foot sloop with blue hull and tan deck house”
“I will be listening on Channel 16”
“This is Corsair (or Illinois 1234 AB)”
“Over”

It is a good idea to write out a script of the message form and post it where you
and others on your vessel can see it when an emergency message needs to be sent.

Marine Distress Procedure — DSC

Once your radio is connected to a GPS device and is properly set-up with your
MMSI, simply lifting the red spring-loaded door and pressing the button will
automatically send a complete distress call on Channel 70. See the DSC operation
section on pages 54 through 65 for further information and page 55 instruction
on sending a manual DSC distress call.
VHF Marine Channel Assignments

Three (3) sets of VHF channels have been established for marine use in the U.S.A., Canada, and the rest of the world (International). Most of the channels are the same for all three (3) maps, but there are definite differences (see table on the following pages). Your radio has all three (3) maps built into it and will operate correctly in whichever area you choose.

The following is a brief outline of the channel assignments in the U.S.A. Channel Map.

**Distress, Safety, and Calling**
Channel 16
Getting the attention of another station (calling) or in emergencies (distress and safety).

**Calling**
Channel 9
General purpose (non-emergency) calling by non-commercial vessels. Recreational boaters are urged to use this channel to reduce congestion on Channel 16.

**Intership Safety**
Channel 6
Ship-to-ship safety messages and for search and rescue messages to Coast Guard ships and aircraft.

**Coast Guard Liaison**
Channel 22A
To talk to the Coast Guard (non-emergency) after making contact on Channel 16.

**Non-Commercial**
Channels 68*, 69, 71, 72, 78A, 79A*, 80A*
Working channels for small vessels. Messages must be about needs of the vessel, such as fishing reports, berthing, and rendezvous. Use Channel 72 only for ship-to-ship messages.

**Commercial**
Channels 1A, 7A, 8, 9, 10, 11, 18A, 19A, 63A, 67, 72, 79A, 80A, 88A*
Working channels for working ships only. Messages must be about business or needs of the ship. Use Channels 8, 67, 72 and 88A only for ship-to-ship messages.
### VHF Marine Channel Assignments

<table>
<thead>
<tr>
<th>Channel Number</th>
<th>Channel Map</th>
<th>Frequency Transmit</th>
<th>Frequency Receive</th>
<th>Power Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>•</td>
<td>156.050</td>
<td>160.650</td>
<td></td>
</tr>
<tr>
<td>01A</td>
<td>•</td>
<td>156.050</td>
<td>156.050</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>•</td>
<td>156.100</td>
<td>160.700</td>
<td></td>
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<td>03</td>
<td>•</td>
<td>156.150</td>
<td>160.750</td>
<td></td>
</tr>
<tr>
<td>03A</td>
<td>•</td>
<td>156.150</td>
<td>156.150</td>
<td></td>
</tr>
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### Use

- **01**: Public Correspondence (Marine Operator)
- **01A**: Port Operations and Commercial, VTS in selected areas
- **02**: Public Correspondence (Marine Operator)
- **03**: Public Correspondence (Marine Operator)
- **03A**: Government Only
- **04**: Public Correspondence (Marine Operator), Port Operations, Ship Movement
- **04A**: West Coast (Coast Guard Only); East Coast (Commercial Fishing)
- **05**: Public Correspondence (Marine Operator), Port Operations, Ship Movement
- **05A**: Port Operations, VTS in selected areas
- **06**: Internship Safety
- **07**: Public Correspondence (Marine Operator), Port Operations, Ship Movement
- **07A**: Commercial
- **08**: Commercial (Internship Only)
- **09**: Boater Calling Channel, Non-Commercial (Recreational)
- **10**: Commercial
- **11**: Commercial, VTS in selected areas
- **12**: Port Operations, VTS in selected areas
- **13**: Internship Navigation Safety (Bridge-to-Bridge). In U.S. waters, large vessels maintain a listening watch on this channel.
- **14**: Port Operations, VTS in selected areas
- **15**: Environmental (Receive Only). Used by class C EPIRB’s.
- **15**: Canada (EPIRB Buoys Only); International (On-Board Communication)
- **16**: International Distress, Safety and Calling
- **17**: State Controlled (U.S.A. Only)
### VHF Marine Radio Protocols

#### Channel Assignments

<table>
<thead>
<tr>
<th>Channel Number</th>
<th>Channel Use</th>
<th>Frequency Transmit</th>
<th>Frequency Receive</th>
<th>Power Limits</th>
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## VHF Marine Radio Protocols

### VHF Marine Channel Assignments

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<th>Power Limits</th>
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<td>156.225</td>
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<td>Port Operations</td>
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<td>67</td>
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<td>156.875</td>
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<td>1 Watt CAN</td>
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### VH F Marine Channel Assignments

<table>
<thead>
<tr>
<th>Channel Number</th>
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<th>Power Limits</th>
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<td>Public Correspondence (Ship to Coast). In U.S. only within 75 miles of Canadian Border.</td>
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<td>Commercial Internship only</td>
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</table>

**NOTE**

Many of the plain numbered channels, such as 01, 02, and 03, transmit and receive on different frequencies. This is termed duplex operation. The rest of the plain numbered channels and all of the A channels, such as 01A, 03A, and 04A, transmit and receive on a single frequency, which is termed simplex operation. Your radio automatically adjusts to these conditions. When in simplex operation, the A icon will appear on the LCD (see illustration on page A2).
Monitoring the weather will probably be a frequent use of your radio. The National Oceanic and Atmospheric Administration (NOAA) provides continuous, around-the-clock broadcasts of the latest weather information. Taped weather messages run every four (4) to six (6) minutes and are revised every two (2) or three (3) hours, or as needed. The Coast Guard also announces weather and other safety warnings on Channel 16 and DSC Channel 70. Smart boaters keep an eye on safety and an ear to the radio — and never let the weather catch them unaware.

**NOAA Emergency Weather Alert**

In the event of a major storm or other weather condition requiring vessels at sea or on other bodies of water to be notified, NOAA broadcasts a 1050 Hz tone that receivers such as your CobraMarine VHF radio can detect and warn you of a weather alert condition. When the Weather Alert mode on your radio is On, this signal will produce the weather alert alarm tone from the speaker and a “weather alert” message on the LCD to signal that a weather alert is being broadcast. The radio will automatically switch to Weather Radio mode.

### Test

To test this system, NOAA broadcasts the 1050 Hz signal every Wednesday sometime between 11 a.m. and 1 p.m. in each local time zone. Any receiver that can detect the weather alert tone may use this feature to verify that this feature is functioning properly.

### Weather Frequency/Channel

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</tbody>
</table>

*This frequency is no longer in use.*
Included In This Package

You should find all of the following items in the package with your Cobra Marine VHF radio:

- Transceiver
- Transceiver Surface Mount Kit
- Microphone
- Microphone Mounting Kit
- Operating Instruction Manual
- Warning Sticker
- GPS Interface Cable

* The term transceiver will be used to identify the main unit containing the LCD screen and controls. Radio will be used to identify the entire equipment including transceiver, microphone, antenna, and any attached external speakers.

Mounting And Powering The Radio

Before using your Cobra Marine VHF radio, it must be installed on your vessel.

Installing Your Radio

Choose a location for your radio where it will be conveniently accessible with the following factors in mind:

- The leads to the battery and the antenna are best kept as short as possible.
- The antenna must be mounted at least 3 feet from the transceiver.
- The radio and all speakers need to be far enough from any magnetic compass to avoid deviation due to the speaker magnet.
- There needs to be free air flow around the heat-sink fins on the back of the transceiver.

Surface Mount

A Surface Mounting kit is included with your Cobra Marine VHF radio to allow its installation on almost any flat surface.

To Mount The Transceiver On Almost Any Flat Surface:

1. Use the mounting bracket as a template to drill holes for the mounting screws.
2. Attach the mounting bracket to the chosen surface.
3. Attach the transceiver to the mounting bracket with the locking knobs.
4. Tilt the transceiver to a convenient angle and tighten the locking knobs.
Mounting And Powering The Radio

Microphone Bracket

To Install The Microphone Bracket:
Install the microphone bracket on a vertical surface near the transceiver using the supplied stainless steel screws.

Flush Mount Kit (Not Included)

A Flush Mounting kit is available as an optional accessory for your CobraMarine VHF radio to allow its installation in almost any flat surface. See page 70 for ordering information.

To Mount The Transceiver Flush In Almost Any Flat Surface:
1. Use the supplied template to mark and cut an opening in the flat surface. See page 71 for template.

**CAUTION**
Before cutting, be sure the area behind the flat surface is clear of any instruments or wires that might be damaged in the process.

2. Insert the transceiver into the opening.

3. Attach the mounting brackets to the sides of the transceiver with the adjusting screw flanges facing the back of the flat surface.

4. Tighten the adjusting screws against the back of the flat surface until the flange on the front of the transceiver is tight against the flat surface.

Warning Sticker

FCC regulations require that the Warning Sticker supplied with this radio be applied to a spot where it is easily seen by the radio operator. Be sure the location is clean and dry before applying the sticker.

Electrical Power Connection

Your CobraMarine VHF radio is powered from the vessel's 13.8-volt negative ground direct current electrical system (12-volt nominal). A fused power connection lead is provided at the back of the transceiver.

To Connect To A Power Source:
1. Attach the black power wire to a negative ground.
2. Attach the fused red power wire to the positive side of the power system.

**CAUTION**
A reverse polarity connection will damage the radio.
Antenna Requirements And Attachment

Antenna Requirements
Your CobraMarine VHF radio requires an external marine antenna to send signals into the air and to receive them. The radio is arranged to use any of the popular marine VHF antennas, but it is up to you to choose which antenna to use.

Since it represents the link between your radio and the outside world, Cobra suggests you purchase the best quality antenna, coaxial cable, and connectors you can. This is best accomplished with the advice and guidance of a knowledgeable dealer who can assess the variables involved with your particular boat and preferences.

WARNING
Compliance with FCC requirements for Radio Frequency Exposure is the responsibility of both the antenna installer and the radio operator.

Safe Maximum Permissible Exposure (MPE) Radius
To avoid health hazards from excessive exposure to RF energy, FCC OET Bulletin 65 establishes an MPE radius of 10’ (3 m) for the maximum power of your radio with an antenna having a maximum power gain of 9 dBi. This means that all persons must be at least 10’ (3 m) away from the antenna when the radio is transmitting.

Installation Requirements
A) An omnidirectional antenna with a gain not greater than 9 dBi must be mounted at least 16.4’ (5 m) above the highest deck where people may be during radio transmissions, measured vertically from the lowest point of the antenna. This provides the minimum separation distance to comply with RF exposure requirements and is based on the MPE radius of 10’ (3 m) plus the 6.6’ (2 m) height of an adult.

B) For vessels without structure to mount the antenna as described in A, it must be mounted as follows AND all persons must be outside the 10’ (3 m) MPE radius during radio transmissions. The antenna must be mounted so that its lowest point is at least 3.3’ (1 m) vertically above the heads of all persons during radio transmissions.

Radio Operator Requirements
Do not transmit when anyone is within the MPE radius of the antenna unless that person or persons are shielded from the antenna by a grounded metallic barrier. This is especially important on vessels with antennas mounted as described in B where no one may be within 9’ (2.8 m) horizontally from the base of the antenna during transmissions.

FAILURE TO OBSERVE THE ABOVE LIMITS MAY EXPOSE THOSE WITHIN THE MPE RADIUS TO RF ENERGY ABSORPTION IN EXCESS OF THE FCC MAXIMUM PERMISSIBLE EXPOSURE. IT IS THE RADIO OPERATOR’S RESPONSIBILITY TO INSURE THAT MPE LIMITS ARE HEeded AND THAT NO ONE IS WITHIN THE MPE RADIUS DURING TRANSMISSIONS.

Antenna Lead Attachment
Once the antenna is installed, the Coaxial Cable Lead can be attached to the socket at the back of the transceiver.

CAUTION
Attempting to transmit without an antenna attached will damage your CobraMarine VHF radio.
External Devices And Connections

Your Cobra Marine VHF radio is set up to connect auxiliary devices for navigation, convenience, and added versatility. As is the case with the antenna, choosing these devices is best done with the advice and guidance of a knowledgeable dealer. Standard connectors are provided on the front and back of the transceiver.

**Microphone Attachment**
Connect the Microphone to the cord socket located at the right side of the front of the transceiver.

To Connect The Microphone Attachment:
1. Align the connector and push it firmly into the socket.
2. Tighten the captive nut to hold the connector in place.
3. Slide the waterproof sleeve over the nut until it seats in the recess around the socket.

**External Speaker (Not Included)**
An External Speaker can provide greater volume to hear messages than the speaker incorporated in the Cobra Marine transceiver.

To Install An External Speaker:
Connect the speaker lead to the standard jack on the back of the transceiver.

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Global Positioning System (GPS) Device (Not Included)
Cobra strongly recommends that you obtain and connect a GPS device to your Cobra Marine VHF radio. By having a GPS connected, your position will be continuously indicated on the LCD and, most importantly, it will be included automatically in any DSC distress message you may need to send. That will take the "search" out of "search and rescue."

To Install A GPS Device:
1. Install the GPS device in a convenient location according to its manufacturer’s directions.
2. Bond the NMEA out negative wire to the black wire of the GPS interface cable.
3. Bond the NMEA out positive wire to the red wire of the GPS interface cable.

**NOTE**
When bonding the wires, make sure connections are secure and properly insulated.

4. Connect the new combination cable to the GPS device and to the back of the transceiver.

**NOTE**
Satellite acquisition time is dependent on the GPS device.
Getting Started

Refer to the foldout on the front cover of this manual to identify the various controls and indicators on your radio.

Throughout this manual you will be instructed to press or to press and hold buttons on the transceiver or on the microphone. Press means a momentary press, then release; press and hold means to hold the button.

Tones And Alarms

When your Cobra Marine VHF radio is On, you can expect to hear the following tones and alarms. The volume of these sounds is controlled by the circuitry in the radio and is not affected by the volume set with the On-Off Power/Volume knob.

Confirmation Tone

Single high-pitched beep confirms all button presses except the Talk button. It can be turned On or Off. See set-up routines on page 40.

Error Tone

Single low-pitched beep indicates an invalid button press.

DSC Distress Alarm

Loud, continuous, low-pitched series of closely spaced, three (3) beep groups. Press any button to turn it Off. This alarm sounds for:

- Distress call send, receive, and acknowledgement
- Distress relay call received
- All ships call received

NOTE

This alarm sounds only for DSC distress calls on Channel 70. It does not sound for voice calls on Channel 16 — you still must listen for those.

DSC Geographical Alarm

Loud, continuous, medium-pitched, high-low tones (warble) — sounds when a geographical call is received. Press any button to turn it Off.

DSC Position Request Alarm

Medium-loud, continuous, low-pitched series of closely spaced, four (4) beeps [three (3) short – one (1) long] groups — sounds when a position request call is received. Press any button to turn it Off.

DSC Individual Alarm

Medium-loud, continuous, medium-pitched, two (2) beep groups — sounds when an individual call is received. Press any button to turn it Off.

Weather Alarm

Medium-loud, continuous, medium-pitched series of one-half (1⁄2) second beeps spaced one-half (1⁄2) second apart — sounds when weather alert is turned On and NOAA sends a 1050 Hz weather alert tone on the selected weather channel. Press any button to turn it Off.

Power On-Off

Transceiver power can be turned On or Off by the On-Off Power/Volume knob on the transceiver.

To Turn Your Radio On Or Off:

Turn the On-Off Power/Volume knob on the transceiver until you hear and feel a click.

When the radio is powered On, the confirmation tone will sound.

The radio will return to the settings in effect when it was last powered Off, the LCD will show the corresponding information, and all controls will be operative. The radio will then be in Standby mode.
Volume
The On-Off Power/Volume knob on the transceiver controls the speaker volume. The volume adjustment applies only to what you hear from the speaker and does not affect the volume of your outgoing messages. That is controlled by the circuitry of your radio.

To Increase The Volume:
Turn the On-Off Power/Volume knob clockwise.

To Decrease The Volume:
Turn the On-Off Power/Volume knob counter-clockwise.

Squelch
Squelch control filters weak signals and radio frequency noise so that you can more clearly hear the signals you want. You can think of it as a variable barrier that blocks what you don’t want to hear.

To Squelch Your Radio:
1. With the Squelch knob turned fully counter-clockwise, turn the On-Off/Volume knob clockwise until you hear a hissing (noise) sound.
2. Turn the Squelch knob clockwise until the hissing sound stops.
   Turning the Squelch knob further clockwise (higher bearer) will filter weak and medium strength signals until only the strongest signal can get through at the highest squelch setting.

To Receive Weaker Signals:
Turn the Squelch knob counterclockwise (lower bearer). If the squelch is set so that you can hear a continuous hissing sound, the scan and dual-watch functions will be blocked.

Standby And Receive
Standby mode is the usual mode for the radio whenever it is turned On.

From Standby Mode, You Can:
- Change your radio’s settings using set-up routines.
- Receive messages on the current channel as well as DSC messages.
- Receive NOAA alerts if Weather Alert mode is turned On.
- Switch to Transmit mode using the Talk button.

While the radio is in Standby mode, the Receive mode is entered whenever a strong enough signal to break squelch is sent to the radio. You will hear the message through whichever speakers are connected to the radio.

To Change The Channel You Are Listening To You Can Choose One (1) Of The Following:
- Press the Up/Down buttons. This will take you to the next higher or lower VHF channel. For rapid advance, press and hold the Up or Down button.
- Press the Channel 16/9 button. This will take you to Channel 16 with one (1) press and to Channel 9 with a second press. Additional presses will toggle between Channels 16 and 9.
- Press the Weather/UIC button. This will toggle the radio between Standby mode and Weather Radio mode. When in Weather Radio mode, the Up/Down buttons will change the weather channel.
Set-Up Routines

Settings Menu
The Settings menu in the CobraMarine VHF radio allows you to turn On and Off many of its features, to adjust other features to suit your preferences, and to enter your user MMSI number.

To Enter The Settings Menu:
Press and hold the Call/Set button. The Settings menu will appear on the LCD. After entering the Settings menu, you can scroll through it to make as many entries as you like. Whenever the setting selection arrow appears in a feature portion of the menu, it will point to the setting that was in effect when you entered the menu. When you are finished with changes, you can exit the Settings menu and return to Standby mode.

To Exit The Settings Menu:
1. Use the Up/Down buttons to scroll down to EXIT at the bottom of the menu.
2. With the arrow pointing to EXIT, press the Call/Set button to return the radio to Standby mode.

NOTE
Basic set-up routines are described here. For set-up routines that apply specifically to a particular function, they are included in the section for that function.

LCD Backlight
The LCD has a backlight lamp to make it visible in the dark. This lamp can be adjusted for brightness or turned Off.

To Adjust The Backlight Level:
1. Enter the Settings menu and scroll to LAMP ADJ (lamp adjustment) with the Up/Down buttons.
2. Press the Call/Set button and observe the current backlight setting — HIGH, MEDIUM, LOW or OFF.
3. Use the Up/Down buttons to switch to the setting you want.
4. Press the Call/Set button to select the backlight setting.
5. Use the Up/Down buttons to switch to EXIT.
6. Press the Call/Set button to return to the Settings menu.

When the backlight is turned On to any intensity, the lamp will be lit whenever the radio is On.

LCD Contrast
The LCD backlight will not be visible in daylight, but the LCD Contrast can be adjusted to make it easier to read in different light conditions.

To Change The Contrast:
1. Enter the Settings menu and scroll to CONTRAST with the Up/Down buttons.
2. Press the Call/Set button and observe the current contrast setting — a number between one (1) and 16.
3. Use the Up/Down buttons to change the number up or down.
4. Press the Call/Set button to select a contrast level.
5. Use the Up/Down buttons to scroll to EXIT.
6. Press the Call/Set button to return to the Settings menu.
Set-Up Routines

Confirmation Tone

The Confirmation Tone sounds when your Cobra Marine VHF radio is turned On and to confirm all button presses except for the Talk button. If you would prefer not to hear the Confirmation Tone, you can turn it Off and On as you choose.

To Turn The Confirmation Tone On Or Off:
1. Enter the Settings menu and scroll to KEY TONE with the Up/Down buttons.
2. Press the Call/Set button and observe the current confirmation tone setting — On or Off.
3. Use the Up/Down buttons to switch to the setting you want.
4. Press the Call/Set button to select the setting.
5. Use the Up/Down buttons to scroll to EXIT.
6. Press the Call/Set button to return to the Settings menu.

Time Offset

All VHF, DSC, and GPS activities use a 24-hour clock and Coordinated Universal Time (UTC) which was formerly known as Greenwich Mean Time (GMT). Time Offset uses your connected GPS to gather time inputs. For time inputs to be converted to local time, you need to enter the hour offset of your local time zone from Greenwich. (See world city time zone chart on page 24.)

To Change The Time Offset:
1. Enter the Settings menu and scroll to TIME OFFSET (time offset) with the Up/Down buttons.
2. Press the Call/Set button and observe the current setting.
3. Use the Up/Down buttons to change to the setting for your local time zone.
4. Press the Call/Set button to select the setting.
5. Use the Up/Down buttons to scroll to EXIT.
6. Press the Call/Set button to return to the Settings menu.

NOTE
If you leave the time offset at zero (0), the LCD will show the time as UTC. If you enter the hour offset for your time zone, the LCD will show the local time. In either event, DSC messages will always be based on UTC.

U.S.A./International/Canada Channel Maps

Three (3) sets of VHF Channel Maps have been established for marine use in the U.S.A., Canada, and the rest of the world (International). Most of the channels are the same for all three (3) maps, but there are definite differences (see table on pages 14 through 23). Your radio has all three (3) maps built into it and will operate correctly in whichever area you choose.

To Set Your Radio For The Area In Which You Will Be Using It:
1. From Standby mode, press and hold the Weather/UIC button. The radio will shift one (1) channel map and the active channel map will show on the top line of the LCD.
2. Repeat step 1 to shift to the next channel map(s) in the sequence USA, INT (International), CAN (Canada) then back to USA.

The radio will return to Standby mode each time the button is released.
Voice Transmission

Transmit mode gives you the ability to communicate with safety services, other vessels, and shore stations. When you use this capability, be sure to follow the procedures and to observe the courtesies that govern its use so everyone benefits. (The tables on pages 14 through 23 will help you select the proper channels.)

Before pressing the Talk button to transmit a message, you should select the appropriate channel and transmit power output.

Channels

You can transmit voice messages on most VHF Channels. Refer to the VHF marine channel assignments on pages 14 through 23 to select a channel according to the type of message you are going to send.

To Change The Channel You Can Choose

From One (1) Of The Following:

- Press the Up/Down buttons. This will take you to the next higher or lower VHF channel. (When on Channel 88A, the next higher channel is Channel 1 and vice versa.) For rapid advance, press and hold the Up or Down buttons. (The confirmation tone will sound only for each button press, not during rapid advance.)

- Press the Channel 16/9 button. This will take you to Channel 16 with one (1) press and to Channel 9 with a second press. Additional presses will toggle between Channel 16 and Channel 9. Press and hold the Channel 16/9 button to return to Standby mode.

Transmit Power Output

Your radio can Transmit selectively at 1 or 25 watts of power. Cobra suggests you maintain the low power setting for short-range communications and to avoid overpowering nearby stations with your signal. Use the high power setting for long-range communications or when you do not receive a response to a signal sent at 1 watt.

To Toggle Between The High And Low Power Modes:

Press the High/Low Power button. The LCD will show which mode is in effect.

Some channels are restricted to use at a maximum of one (1) watt. Your radio will automatically set the power to Low Power mode when you select those channels.

While using the U.S.A. channel map, if, in an emergency, you need to increase the output power on Channel 13 and Channel 67 for your signal to be heard, you can override the Low Power mode by pressing and holding the High/Low Power button.

Transmit A Message

To Transmit A Message:

1. Check to see that your unit is set to a proper channel for the type of message you plan to send.
2. Toggle to the low power setting.
3. With the microphone about two (2) inches [five (5) cm] from your mouth, press and hold the Talk button and speak into the microphone. Transmit will be indicated on the LCD.
4. Release the Talk button when you are finished speaking. Your unit can only operate in either the Transmit or the Receive mode at any given time. You will not hear the response to your message unless the Talk button is released.

NOTE

If the Talk button is held down for five (5) minutes, the radio will automatically cease transmitting to prevent unwanted signal generation. As soon as the Talk button is released, it can be pressed again to resume transmission.
**NOAA All Hazards/Weather Radio And Alert**

NOAA broadcasts Weather information as described in the NOAA weather channels section on page 25 of this manual. You can listen to one (1) or two (2) of these receive-only channels at any time.

**NOTE**

Usually only one (1) or two (2) of the weather channels will be operating in any given location. You will need to select the channel with the strongest signal in your location. This is the channel the radio will scan for the weather alert signal.

To Listen To The Weather Channels:

1. From Standby mode, press the Weather/UIC button. The unit will enter the Weather mode and show it on the LCD.
2. Press the Up/Down buttons to change the weather channels — hold the button for fast advance.

To exit the Weather mode and return to Standby mode, press the Weather/UIC button again.

**Weather Alert Set-Up**

You must have Weather Alert mode turned On to benefit from the Weather Alert condition signal described in the NOAA weather channels section on page 25.

To Turn Weather Alert On:

1. Enter the Settings menu and scroll to WX ALERT (weather alert) with the Up/Down buttons.
2. Press the Call/Set button and observe the current setting — ON or OFF.
3. Use the Up/Down buttons to change to the setting.
4. Press the Call/Set button to select the setting.
5. Use the Up/Down buttons to scroll to EXIT.
6. Press the Call/Set button to return to the Settings menu.

**Advanced Operation**

Cobra has incorporated several features in your CobraMarine VHF radio to give you quick access to the voice calling channels and to let you monitor more than one (1) channel at once.

**Channel 16/9**

This function gives you quick access to calling Channel 16 or Channel 9 from any operational mode.

To Switch To Channel 16 Or Channel 9:

1. Press the Channel 16/9 button to change to Channel 16.
2. Press the Channel 16/9 button again to change to Channel 9.

Additional presses of the Channel 16/9 button will toggle back and forth between the two (2) channels.

To exit the Channel 16/9 mode and return to the previous channel, press and hold the Channel 16/9 button.

While at Channel 16 or Channel 9 in the Channel 16/9 mode, you can also press the Up/Down buttons to change to other channels. In that event, another press of the Channel 16/9 button will switch your radio to Channel 16 and the sequence will start over at step 1.
Advanced Operation

Dual-Watch

**Dual-Watch** gives you one (1) button access to scan the two (2) locations of most importance to you. Channel 16 will always be included as a scanned location. The remaining location will be the VHF channel in effect when you enter **Dual-Watch** mode.

**NOTE**
The radio must be squelched for dual-watch to function. See page 36 for squelch procedure.

**To Enter Dual-Watch Mode:**
1. In **Standby** mode, use the **Up/Down** buttons to go to the channel you want to add as the second location to be scanned.
2. Press the **Dual-Watch** button.

**Dual-watch** will be indicated on the LCD and the radio will scan between Channel 16 and the second dual-watch location you selected. A signal on any one (1) of the two (2) channels will stop the scan to allow you to listen to the traffic on the channel. The channel number will be displayed on the LCD.

**To Exit Dual-Watch Mode:**
Press the **Dual-Watch** button. The radio will return to **Standby** mode.

**During Dual-Watch (while receiving an incoming transmission), You Can Choose From The Following:**
- Press the **Talk** button to remain on that dual-watch location and return to **Standby** mode.
- Press the **Up/Down** buttons to resume scanning dual-watch locations.

If you do not press any buttons, your radio will automatically resume scanning dual-watch locations when the incoming transmission is complete.

**During Dual-Watch (while not receiving a transmission):**
Press the **Talk** button to communicate on the last dual-watch location scanned and return to **Standby** mode.

---

Scan

During **Scan**, the radio will rapidly switch from channel to channel through all the channels. Whenever any activity is detected, the radio will stop the scan for ten (10) seconds to allow you to listen briefly on that channel. It will then continue to scan unless you switch out of the **Scan** mode.

**NOTE**
The radio must be squelched for **Scan** mode to function. See page 36 for squelch procedure.

**To Enter Scan:**
From **Standby** mode, press the **Scan** button.

The radio will immediately begin to scan the entire channel map selected in the active channel map. **SCAN** will show on the LCD.

**To Exit Scan:**
From **Scan** mode, press the **Scan** button. This will return the radio to **Standby** mode on the last scanned channel.

**During Scan (while receiving an incoming transmission), You Can Choose From The Following:**
- Press the **Talk** button to remain on that channel and end scanning. This will return the radio to **Standby** mode.
- Press the **Up/Down** buttons to resume scanning. If you do not press any buttons within ten (10) seconds, your radio will automatically resume scanning.

**During Scan (while not receiving a transmission):**
Press the **Talk** button to communicate on the last channel scanned and return to **Standby** mode.
DSC Set-Up

Digital selective calling — DSC — employs digital RF signals which tend to carry further and be less susceptible to distortion from noise and atmospheric conditions than analog ones. The result is greater range and more reliable message delivery per watt of output power.

But, that is not the only advantage of DSC equipped radios. Those radios are set up to interface with GPS and to automate many of the operations involved in sending and receiving messages. That results in more compact and accurate messages and less congestion of the airwaves.

The price of these benefits to the user is the time it takes to do the required set-up to make the DSC features work. A little time spent when your radio is new will pay dividends over its life.

These procedures use the Settings menu. Refer to page 38 for information on entering and exiting the Settings menu.

User MMSI Number

This nine (9) digit number is similar to a telephone number in that it is a unique identifier for you and your vessel. DSC uses this number in every message it sends and receives. That is why your radio will not operate in the DSC mode until you enter your MMSI Number. You should enter it as soon as you receive it from one (1) of the issuing agencies listed on page 9.

To Enter Your MMSI Number:

1. Enter the Settings menu and scroll to USER MMSI with the Up/Down buttons.
2. Press the Call/Set button and the blinking cursor will appear at the first digit under USER MMSI ID ENTRY.
3. Use the Up/Down buttons to scroll through the number list to that digit of your number.
4. Press the Call/Set button to select the digit and the blinking cursor will move to the next digit of the number.
5. Repeat steps 3 and 4 until all nine (9) digits of your MMSI number are entered.

NOTE

Press the High/Low Power button to backspace and erase the last selected number.

6. Check that you have entered the number correctly.
7. Press and hold the Call/Set button to return to the Settings menu.

If You Incorrectly Enter Your MMSI Number

You can repeat steps 1 through 7 to correct it. HOWEVER, YOU CAN DO THIS ONLY ONCE! A third attempt to enter an MMSI number will result in an error message as shown.

Pressing the Call/Set button from the error message will return the radio to the Settings menu.

Once the error message appears, the radio will still operate in all non-DSC modes. But you will have to return the radio to Cobra Electronics (see product service on page 69 for details) for reset before you can enter your MMSI number and use the radio in DSC mode.

Because the MMSI number is so important to DSC operation, this limitation is imposed on all DSC capable radios to prevent constant changes and the potential introduction of errors in the process. If, for any reason, it is necessary to change the MMSI number in the radio more than once, you can return it to Cobra Electronics for reset.
If You Transfer Your Radio To A Different Vessel

Contact the MMSI issuing agency from which you obtained your number and change the information associated with your number to correspond to vessel in which it will be mounted.

To View Your MMSI Number At Any Time:
1. Enter the Settings menu and scroll to USER MMSI with the Up/Down buttons.
2. Press the Call/Set button and the blinking cursor will appear at the first digit of your already entered number under USER MMSI ID ENTRY.
3. Press and hold the Call/Set button to return to the Settings menu.

DSC Scanning

If you choose not to have your radio scan Channel 70, you can turn DSC Scanning Off. If you do so, you can still send DSC messages, but will not hear DSC alarms nor receive DSC messages except when you are tuned to Channel 70 or you have sent a distress message.

The acknowledgement to the distress message will be received whether DSC Scanning is On or Off.

To Turn DSC Scanning On Or Off:
1. Enter the Settings menu and scroll to DSC SCAN with the Up/Down buttons.
2. Press the Call/Set button and observe the current setting — ON or OFF.
3. Use the Up/Down buttons to select the setting that you want.
4. Press the Call/Set button to return to the Settings menu.

Group MMSI Number

Nautical organizations such as yacht clubs and the organizers of events such as regattas can establish Group MMSIs. These allow a message to be sent automatically to all members of the group without having to call each one individually.

Each member of the group must enter the Group MMSI number in his radio in order to receive group messages.

To Enter A Group MMSI Number:
1. Enter the Settings menu and scroll to GROUP MMSI with the Up/Down buttons.
2. Press the Call/Set button and the blinking cursor will appear at the first digit under GROUP MMSI ID ENTRY.
3. Use the Up/Down buttons to scroll through the number list to that digit of your number.
4. Press the Call/Set button to select the digit and the blinking cursor will move to the next digit of the number.
5. Repeat steps 3 and 4 until all nine (9) digits of the group MMSI number are entered.

NOTE
Press the High/Low Power button to backspace and erase the last selected number.

6. Check that you have entered the number correctly.
7. Press and hold the Call/Set button to return to the Settings menu.

The group MMSI is established by modifying the MMSI assigned to one (1) of the group members. The last digit of that member’s MMSI number is dropped and a zero (0) is inserted at the beginning. For example, member MMSI number 366123456 becomes group MMSI number 036612345.

Group MMSIs can be entered and changed any number of times without encountering the need to have your radio reset.
Position Request Reply Type
The ability to send your position to another station is an added feature of DSC radios that have GPS attached. It is handy for rendezvous and rescue situations. Your CobraMarine VHF radio allows you to choose whether to have the radio automatically respond to all Position Requests it receives or to alert you to a Position Request and allow you to choose whether to respond or not — manual reply.

To Set The Position Request Reply Type:
1. Enter the Settings menu and scroll to POS RPLY (position reply) with the Up/Down buttons.
2. Press the Call/Set button and observe the current setting — AUTO or MANUAL.
3. Use the Up/Down buttons to change the setting.
4. Press the Call/Set button to select the setting.
5. Use the Up/Down buttons to scroll to EXIT.
6. Press the Call/Set button to return to the Settings menu.

Individual Directory
DSC calling allows you to call another vessel or station directly if you know its MMSI number. Your CobraMarine VHF radio allows you to store up to 10 names and their associated MMSI numbers for quick access.

To Enter Or Edit Names And MMSI Numbers In The Directory:
1. Enter the Settings menu and scroll to INDV DIR (individual directory) with the Up/Down buttons.
2. Press the Call/Set button to enter a memory location (1-10).
3. Use the Up/Down buttons to scroll through the memory locations to one you want to select.

Location 01
NAME: RENEE
MMSI: 02
DSC Operation

Sending DSC calls is done from menus similar to the Settings menu. Whereas entering the Settings menu required a press and hold of the Call/Set button, the sending menus appear with a press of the Distress button.

All received DSC calls will sound one (1) or another of the alarms to alert you to them. See pages 34 through 35 for descriptions of the different alarms. Pressing any button will turn Off the alarm while maintaining the received call information on the LCD.

Sending Distress Calls

The ability to send and receive Distress calls and their acknowledgements on Channel 70 can literally be a lifesaver for you or another mariner.

![Distress Button]

**NOTE**

The DSC call will:

- Sound the distress alarm at all receiving stations.
- Inform receiving stations of your identity (MMSI).
- Inform receiving stations of your position if you have a GPS device connected or you have manually entered your position.

It will not provide the receiving stations with other distress information such as the nature of your problem, number of persons aboard, injuries, or the like. For that, you will have to communicate by voice on Channel 16 with the station that acknowledges your DSC distress call.

### To Begin Sending A DSC Distress Call:

1. From Standby mode, lift the spring-loaded red door on the transceiver and press the Distress button under it. This will open the Distress menu with the arrow pointing to SEND. You will have three (3) choices:
   - Send the distress call automatically with either no position information if a GPS is not connected or with the position provided by a connected GPS.
   - Manually enter your position, then send the distress call.
   - Abort the distress call process and return to Standby mode.

### To Send An Automatic Distress Call:

Press and hold the Distress button.

### To Send A Manual Distress Call:

1. Use the Up/Down buttons to move the arrow to MANUAL.
2. Press the Call/Set button to go to the position entry screen.
3. Use the Up/Down buttons to manually set the position of your vessel.
4. Press the Call/Set button to send the message.
5. Press and hold the Distress button.

### To Abort The Distress Call Process:

If you pressed the Distress button by mistake or if you have not received an acknowledgement and want to discontinue the automatic resending of your distress message:

1. Use the Up/Down buttons to move the arrow to EXIT.
2. Press the Call/Set button to return to Standby mode.

The distress alarm will sound to let you know that the message is being sent. At the end of the transmission, the radio will maintain a watch on Channels 16 and Channel 70 for an acknowledgement. Press any button to turn Off the alarm and return to Standby mode.

If an acknowledgement is received, the distress alarm will sound again and the responding party’s MMSI number will show on the LCD.

If no acknowledgement is received, the radio will resend the message at approximately four (4) minute intervals until an acknowledgement is received or you abort the distress call.

---

**Sending Distress Calls**

The ability to send and receive Distress calls and their acknowledgements on Channel 70 can literally be a lifesaver for you or another mariner.

**NOTE**

The DSC call will:

- Sound the distress alarm at all receiving stations.
- Inform receiving stations of your identity (MMSI).
- Inform receiving stations of your position if you have a GPS device connected or you have manually entered your position.

It will not provide the receiving stations with other distress information such as the nature of your problem, number of persons aboard, injuries, or the like. For that, you will have to communicate by voice on Channel 16 with the station that acknowledges your DSC distress call.

### To Begin Sending A DSC Distress Call:

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   - Manually enter your position, then send the distress call.
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Press and hold the Distress button.

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5. Press and hold the Distress button.

### To Abort The Distress Call Process:

If you pressed the Distress button by mistake or if you have not received an acknowledgement and want to discontinue the automatic resending of your distress message:

1. Use the Up/Down buttons to move the arrow to EXIT.
2. Press the Call/Set button to return to Standby mode.

The distress alarm will sound to let you know that the message is being sent. At the end of the transmission, the radio will maintain a watch on Channels 16 and Channel 70 for an acknowledgement. Press any button to turn Off the alarm and return to Standby mode.

If an acknowledgement is received, the distress alarm will sound again and the responding party’s MMSI number will show on the LCD.

If no acknowledgement is received, the radio will resend the message at approximately four (4) minute intervals until an acknowledgement is received or you abort the distress call.
Receiving Distress Calls

If your vessel is within range of a DSC Distress call, the radio will receive the call, sound the distress alarm, and switch to Channel 16.

When A Distress Call Is Heard:
1. Press any button to turn Off the alarm and return to Standby mode.
2. Read and write down the distress information on the LCD (there may or may not be position data shown), then determine whether you should answer the call.
3. Respond, if appropriate, by pressing and holding the Talk button to transmit on Channel 16.

NOTE
Your radio will automatically switch to Channel 16 upon receiving a DSC distress call.

Regarding Distress Relay Calls

Your radio cannot send Distress Relay calls. Only large ships and shore stations with specially equipped radios can send these calls.

Receiving Distress Relay Calls

Your radio will respond to a received Distress Relay call in the same way as it will to a distress call.

Sending An All Ships Calls

A DSC All Ships call is used for the same urgency and safety purposes as the Pan and Secure voice calls as well as to send routine messages to all stations at once. It will reach all stations within range of your radio. If you have an urgent, but not life-threatening, situation or a safety warning to broadcast to all vessels in your area, this is the type of call to use. It should be used judiciously for routine calls.

To Send An All Ships Call:
1. In Standby mode, select a channel on which you want to communicate for a routine call. (The radio will use Channel 16 for urgent and safety calls.)
2. Press the Call/Set button to enter the Call Send menu.
3. Use the Up/Down buttons to scroll to ALL SHIPS.
4. Press the Call/Set button to move to the message type menu.
5. Use the Up/Down buttons to select a message type — URGENCY, SAFETY or ROUTINE.
6. Press the Call/Set button to send the message.
7. Depending on the type of message you chose, the radio will automatically switch to a voice channel.
   a. After urgency and safety calls, the radio will switch to Channel 16 and wait for you to press the Talk button to send the urgent or safety message by voice.
   b. After a routine call, the radio will switch to the channel you selected in step 1 and wait for you to press the Talk button to send the routine message by voice.

DSC equipped radios that receive your message will be automatically switched to Channel 16 or the channel you selected to hear your voice message.

To return to Standby mode without sending a message, use the Up/Down buttons to scroll to EXIT and press the Call/Set button.
Receiving An All Ships Call

All Ships calls sent by stations within range of your radio will sound the distress alarm on your radio and switch your radio to Channel 16.

When An All Ships Call Is Heard:
1. Press any button to turn Off the alarm and return to Standby mode.
2. Read and write down the MMSI of the vessel sending the call as well as the date and time of the call in case you will want to respond.
3. Listen to the voice message sent on the channel your radio was switched to by the incoming all ships call.

Sending A Geographical Call

Your radio cannot send Geographical calls. Only large ships and shore stations with specially equipped radios can send these calls.

Receiving A Geographical Call

Geographical calls are sent by specially equipped radios to all stations in a particular geographical area to alert only those stations of the call and not stations in unaffected areas. If you are in an area to which a Geographical call is made, it will sound the geographical alarm on your radio and switch your radio to the channel chosen by the sending station.

When A Geographical Call Is Heard:
1. Press any button to turn Off the alarm.
2. Read and write down the MMSI of the vessel sending the call as well as the date and time of the call in case you will want to respond.
3. Listen to the voice message sent on the channel your radio was switched to by the incoming geographical call.
4. Press one (1) of the following three (3) buttons to switch from geographical call receive to Standby mode: Call/Set button, Channel 16/9 button, or Talk button.

Sending An Individual Call

The DSC Individual call feature allows you to notify one (1), and only one (1), station that you want to communicate with that station. It does not alert all other stations within range that you will be sending a message as a voice call on Channel 16 or Channel 9 would.

To Send An Individual Call:
1. In Standby mode, select a channel on which you want to communicate.
2. Press the Call/Set button to enter the Call Send menu.
3. Use the Up/Down buttons to scroll to INDIVIDUAL.
4. Press the Call/Set button to move to the individual directory.
5. Use the Up/Down buttons to select the name you want to call from the directory.
6. Press the Call/Set button to send the message or return to Standby mode if EXIT was chosen.

If the radio you are calling sends back an automatic DSC response of “able to comply,” the individual alarm will sound. Wait for a voice message from the called station.

If the called radio does not send an “able to comply” response, your radio will wait eight (8) seconds and resend the message.

If an “unable to comply” response or no reply is received, your radio will go to the Unavailable menu.

At the Unavailable menu, you can choose SEND or EXIT with the Up/Down buttons. If you choose SEND, your radio will restart the individual call. If you choose EXIT, you will be returned to the individual location on the Call Send menu.
**Receiving An Individual Call**

When another station makes an **Individual** call to your radio, the individual alarm will sound, the caller will be identified on the LCD, and your radio will be switched to the channel selected by the caller. Press any button to turn **Off** the alarm.

**To Receive An Individual Call:**
Press the **Talk** button and greet the caller — almost as if you were answering the telephone.

**Sending A Group Call**

Sending a **Group** call is very similar to sending an individual call, except that the group MMSI is used and the resend and DSC responses do not apply.

**To Send A Group Call:**
1. In **Standby** mode, select a channel on which you want to communicate.
2. Press the **Call/Set** button to enter the **Call Send** menu.
3. Use the **Up/Down** buttons to scroll to **GROUP**.
4. Press the **Call/Set** button to move to the send or exit menu.
5. Use the **Up/Down** buttons to select **SEND** or **EXIT**.
6. Press the **Call/Set** button to send the message or return to the **Call Send** menu if **EXIT** was chosen.

All radios will be switched to the channel selected in step 1. Press and hold the **Talk** button to send your voice message to everyone in the group. Anyone in the group can now also transmit on that channel.

**Receiving A Group Call**

When another station makes a **Group** call to your radio, the individual alarm will sound, the caller will be identified on the LCD, and your radio will be switched to the channel selected by the caller, just as for an individual call. Press any button to turn **Off** the alarm.

**To Receive A Group Call:**
1. Listen for the group voice message.
2. Press the **Talk** button and respond only if appropriate.

**Sending A Position Request**

**Position Request** mode enables a DSC radio to obtain the position (latitude and longitude) of a station that has a GPS device connected to the DSC radio at that station.

**To Request The Position Of Another Station:**
1. In **Standby** mode, select a channel on which you want to communicate.
2. Press the **Call/Set** button to enter the **Call Send** menu.
3. Use the **Up/Down** buttons to scroll to **POS REQST** (position request) on the menu.
4. Press the **Call/Set** button to enter the **Individual Directory** menu.
5. Use the **Up/Down** buttons to scroll to the name of the station whose position you want to request.
If The Station You Called Chose Not To Reply:

NO REPLY will show on your screen.

You will have two (2) choices:

- RESEND the request.
- EXIT the Position Request mode.

To Resend Your Position Request:
1. Use the Up/Down buttons to scroll to RESEND.
2. Press the Call/Set button.

To Exit The Position Request Mode:
1. Use the Up/Down buttons to scroll to EXIT.
2. Press the Call/Set button to return to the Individual Directory menu.
3. Use the Up/Down buttons to scroll to EXIT.
4. Press the Call/Set button to return to the Call Send menu.
5. Use the Up/Down buttons to scroll to EXIT.
6. Press the Call/Set button to return to Standby mode.

Choose one (1) of the following:

- If You Receive A Position:
The requested position with the station name and MMSI will show on your screen.
Press the Call/Set button to return to Standby mode after you have noted the station’s position.

- If The Station You Called Cannot Send Its Position:
NO POS DATA (no position data) will show on your screen.
1. Press the Call/Set button to return to the Individual Directory menu.
2. Use the Up/Down buttons to scroll to EXIT.
3. Press the Call/Set button to return to the Call Send menu.
4. Use the Up/Down buttons to scroll to EXIT.
5. Press the Call/Set button to return to Standby mode.

6. Press the Call/Set button.
Sending A Position Send

Position Send uses your connected GPS in similar fashion to the position request function, except that you initiate the activity to let another station know where you are.

To Send A Position Send Message:
1. In Standby mode, select a channel on which you want to communicate.
2. Press the Call/Set button to enter the Call Send menu.
3. Use the Up/Down buttons to scroll to POS SEND (position send).
4. Press the Call/Set button to enter the individual directory.
5. Use the Up/Down buttons to select the station to which you want to send your position.
6. Press the Call/Set button to send your position. After your position is sent, the LCD will show POS SEND (position send). You will have two (2) choices.
   - Resend your position to the same station.
   - Exit from Position Send mode.

Receiving A Position Send

When another station sends you its position in Position Send mode, the individual alarm will sound and the station’s name and position will be shown on the LCD. Press any button to turn Off the alarm and return to Standby mode.
### Specifications

#### General
- **Number of Channels**: All U.S.A., Canadian, International and all NOAA Weather Channels
- **Channel Spacing**: 25 kHz
- **Modulation**: 5 kHz Max.
- **Input Voltage**: 13.8 VDC
- **Current Drain**:
  - Stand-by: 20 mA
  - Receive: 200 mA
  - Transmit: 5A @ High power, 1A @ Low
- **Temperature Range**: -20˚C to 60˚C
- **Unit Dimensions**: 6.25” x 2.25” x 7.125” (15.9 cm x 5.7 cm x 18 cm)
- **Unit Weight**: 2 lbs., 6.8 oz. (1100 g)

#### Receiver
- **Frequency Range**: 156.050 to 163.275 MHz
- **Receiver Type**: Double Conversion Super-Heterodyne
- **Sensitivity**:
  - 20 dB Quieting: 0.35 uV
  - 12 dB Sinađ: 0.30 uV
- **Adjacent Channel Selectivity**: -60 dB
- **Intermodulation and Rejection**: -60 dB
- **Spurious and Image Rejection**: -60 dB
- **AF Output**: 4 Watts @ 8 Ohms

#### Transmitter
- **Frequency Range**: TX 156.025 to 157.425 MHz
- **RF Output Power**: 1 and 25 Watts
- **Spurious Emissions**: -60 dB High, -55 dB Low
- **Microphone Type**: Electret
- **Frequency Stability**: +/-10 ppm
- **FM Hum and Noise**: 40 dB

### Operating Your Radio

#### Maintenance
Very little maintenance is required to keep your Cobra Marine VHF radio in good operating condition.
- Keep the radio clean by wiping with a soft cloth and mild detergent. Rinse with fresh water. Do not use solvents or harsh or abrasive cleaners, which could damage the case or scratch the LCD screen.
- If the radio is exposed to salt water, rinse it in fresh water at least once a day to prevent build-up of salt deposits, which could interfere with button operation.

#### Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause(s)</th>
<th>Solution(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No display on LCD when radio is turned On</td>
<td>Improper power connection</td>
<td>Insure power connections are proper and secure</td>
</tr>
<tr>
<td>Will transmit at one (1) watt, but not at 25 watts</td>
<td>Selected channel is limited to one (1) watt</td>
<td>Switch to another channel</td>
</tr>
<tr>
<td>Will not transmit</td>
<td>Selected channel is limited to receive only</td>
<td>Switch to another channel</td>
</tr>
<tr>
<td>No sound from speaker</td>
<td>Volume level is too low or squelch level is too deep</td>
<td>Readjust volume and squelch</td>
</tr>
<tr>
<td>No answer to calls</td>
<td>Out of range of other station, Signal is blocked by terrain</td>
<td>Switch to high power (25 watts) or move closer Move until you have a “line-of-sight” to the other station</td>
</tr>
<tr>
<td>DSC distress cannot be sent</td>
<td>MMSI (DSC self-identification) number is not entered</td>
<td>Enter your MMSI number</td>
</tr>
</tbody>
</table>
Limited 3-Year Warranty

For Products Purchased In The U.S.A.

Cobra Electronics Corporation warrants that its CobraMarine VHF radio, and the component parts thereof, will be free of defects in workmanship and materials for a period of three (3) years from the date of first consumer purchase. This warranty may be enforced by the first consumer purchaser, provided that the product is utilized within the U.S.A.

Cobra will, without charge, repair or replace, at its option, defective radios, products or component parts upon delivery to the Cobra Factory Service department, accompanied by proof of the date of first consumer purchase, such as a duplicated copy of a sales receipt.

You must pay any initial shipping charges required to ship the product for warranty service, but the return charges will be at Cobra’s expense, if the product is repaired or replaced under warranty. This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

Exclusions: This limited warranty does not apply:

1. To any product damaged by accident.
2. In the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs.
3. If the serial number has been altered, defaced, or removed.
4. If the owner of the product resides outside the U.S.A.

All implied warranties, including warranties of merchantability and fitness for a particular purpose are limited in duration to the length of this warranty. Cobra shall not be liable for any incidental, consequential or other damages; including, without limitation, damages resulting from loss of use or cost of installation. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

For Products Purchased Outside The U.S.A.

Please contact your local dealer for warranty information.

Trademark Acknowledgement

Cobra®, CobraMarine®, Nothing Comes Close to a Cobra®, and the snake design are registered trademarks of Cobra Electronics Corporation, USA.

Cobra Electronics Corporation™ is a trademark of Cobra Electronics Corporation, USA.

Product Service

If you have any questions about operation or installing your new CobraMarine VHF product, or if you are missing parts…

Please call Cobra first! DO NOT RETURN THIS PRODUCT TO THE STORE!

See customer assistance on page A1.

If your product should require factory service, please call Cobra first before sending your radio. This will ensure the fastest turn-around time on your repair. You may be asked to send your radio to the Cobra factory. It will be necessary to furnish the following to have the product serviced and returned:

1. For warranty repair include some form of proof-of-purchase, such as a mechanical reproduction or carbon of a sales receipt. If you send the original receipt, it cannot be returned.
2. Send the entire product.
3. Enclose a description of what is happening with the radio. Include a typed or clearly printed name and address of where the radio is to be returned.
4. Pack radio securely to prevent damage in transit. If possible, use the original packing material.
5. Ship prepaid and insured by way of a traceable carrier such as United Parcel Service (UPS) or Priority Mail to avoid loss in transit to: Cobra Factory Service, Cobra Electronics Corporation, 6500 West Cortland Street, Chicago, Illinois 60707 U.S.A.

6. If the radio is in warranty, upon receipt of your radio it will either be repaired or exchanged depending on the model. Please allow approximately three (3) to four (4) weeks before contacting Cobra for status. If the radio is out of warranty, a letter will automatically be sent informing you of the repair charge or replacement charge.

If you have any questions, please call 773-889-3087 for assistance.
Flush Mount Template / Plantilla para montaje empotrado

Optional Accessories

You can find quality Cobra products and accessories at your local Cobra dealer, or in the U.S.A., you can order directly from Cobra.

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM 210-001</td>
<td>Flush Mount Kit</td>
</tr>
</tbody>
</table>

**Ordering From U.S.A.**

Call 773-889-3087 for pricing or visit www.cobra.com.

**For Credit Card Orders**

Call 773-889-3087 [Press one from the main menu] 8:00 a.m. to 6:00 p.m. Central Time, Monday through Friday.

**Make Check or Money Order Payable To**

Cobra Electronics, Attn: Accessories Dept.,
6500 West Cortland Street, Chicago, IL 60707 U.S.A.

**To Order Online**

Please visit our website: www.cobra.com

**CAUTION**

Before cutting, be sure the area behind the flat surface is clear of any instruments or wires that might be damaged in the process.

**PRECAUCIÓN**

Antes de cortar, compruebe que no haya instrumentos o cables en el área detrás de la superficie plana, que puedan resultar dañados durante el proceso.

Use the supplied template to mark and cut an opening in the flat surface.

Use la plantilla suministrada para marcar y cortar el agujero en la superficie plana.