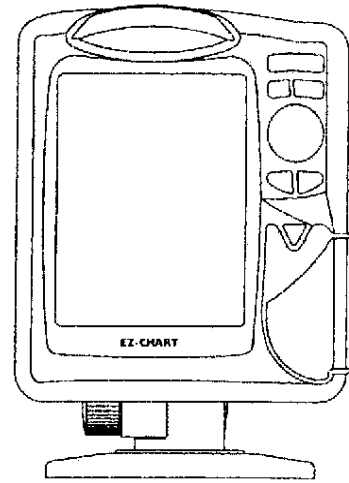# EZ-CHART

Users guide and Installation

WARNING
READ THIS NOTICE BEFORE USING THE EZ-CHART

1)The electronic chart is an aid to navigation designed to facilitate the use of authorized government charts, not to replace them.
Only official government charts and notices to mariners contain all the information needed for the safety of navigation and, as always, the captain is responsible for their prudent use.

2)The chart plotter, when installed in a vehicle, must not obstruct the driver's view, and the unit must not be used by the driver, or distract the driver's attention, while the vehicle is in motion.

The use of the EZ-Chart implies knowledge and acceptance of these warnings by the user.

Characteristics ·
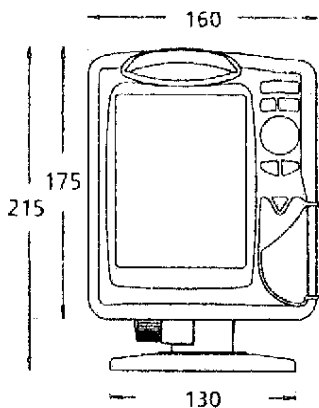
- New compact design
- Self contained GPS Plotter system (Plotter + GPS receiver + Antenna)
- Built-in world map
- 32 bit RISC processor
- EASILY upgradeable software
- Monochrome transflective Liquid Crystal Display (LCD) with high visibility under sun light
- Compatible with NAVIONICS Nav-chart cartridges
- Input voltage: from 10 to 18 VDC, with reverse polarity and over voltage protection
- Splash-proof, specifically designed for open boats
- Low power consumption < 500mA at 12V (5mA standby)
- Weight: < 1 Kg
- Size: 160x175x35 mm
- Operating temperature: 0°C to 60°C, humidity 93%
- Storage temperature: -20°C to 70°C, humidity 93%
- High sensitivity GPS receiver
- Satellite acquisition time: 2 minutes (cold), 15 minutes first fix
- GPS position accuracy 15mt. (with S.A. disabled)
- CF standard compliant
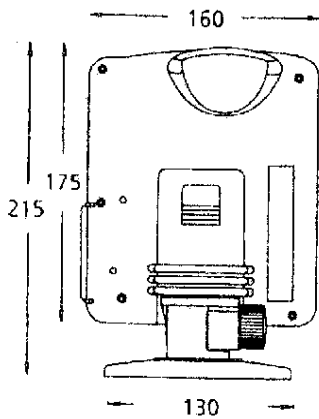
Accessories

- mounting bracket for fixed installation on boat
- removable bracket with high strength suction cup for installation on cars or boats
- bracket with power supply cable and car lighter plug
- user manual
- carrying case
- bracket protection cap

EZ-Chart unit

route .... one reversible
waypoints .... up to 20 per route
markers .... up to 99
track .... 1 track, up to 450 trackpoints

❸
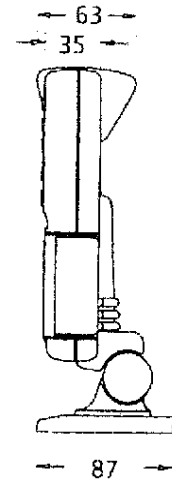
Introduction

The EZ-Chart is a graphic GPS plotter that displays your boat's current position with respect of an electronic chart. The EZ-Chart can track up to 12 satellites simultaneously.

By using an EZ-Chart and a NAVIONICS electronic chart you may never get lost again, even in bad weather conditions such as fog or rain or dark because your plotter will always display where you are and where you are heading too!

The ROUTE function will allow you to plan a trip. Using MARKERS you can mark points of interest and the TRACK function will allow you to register your actual route. NAVIONICS chart cartridges are available for all popular boating areas around the world and can be used in addition to your official paper charts. NAVIONICS chart cartridges are available from NAVIONICS authorized dealers and outlets around the world. See your local marine electronics dealer for more information. The EZ-Chart unit is equipped with accessories for installation in your boat and car.

❹
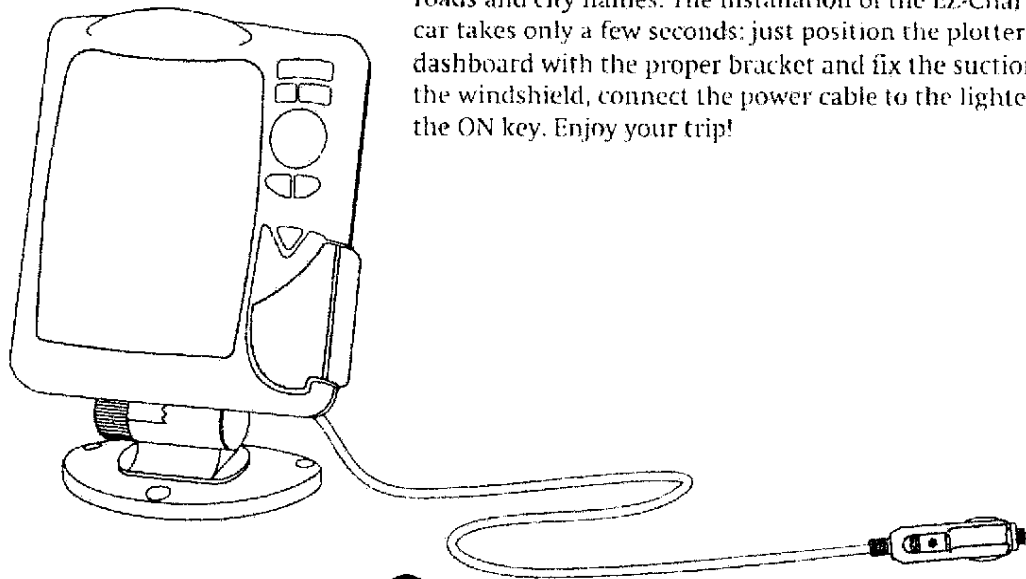
The EZ-Chart can be used also for land applications; the GPS receiver and the future NAVIONICS land charts will allow to easily display your position with respect to the most popular roads and city names. The installation of the EZ-Chart in your car takes only a few seconds: just position the plotter on the dashboard with the proper bracket and fix the suction cup to the windshield, connect the power cable to the lighter and press the ON key. Enjoy your trip!


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Installation and Precautions ·

SAFE DISTANCES: When installed on a boat and in order to avoid electromagnetic interference, the EZ-Chart unit must be positioned at least 0.15 meters away from a magnetic compass or a flux-gate sensor, such as those used on autopilots and remote electronic compasses.

ENVIRONMENTS: The EZ-Chart is splashproof, but not submersible. It is essential that the rubber cover on the right side of the unit is firmly inserted in the cartridge slot; the rubber cover should be removed only when the Nav-Chart™ has to be inserted or replaced and in this case the unit must be perfectly dry.

IMPORTANT NOTE: Damage from water intrusion from the cartridge slot is specifically excluded from the warranty.

GPS: For the best satellite reception, mount your unit outside in an open area to allow the best sky visibility to the built-in antenna. If the instrument is installed as to permit full horizon visibility, the best performance will be ensured.
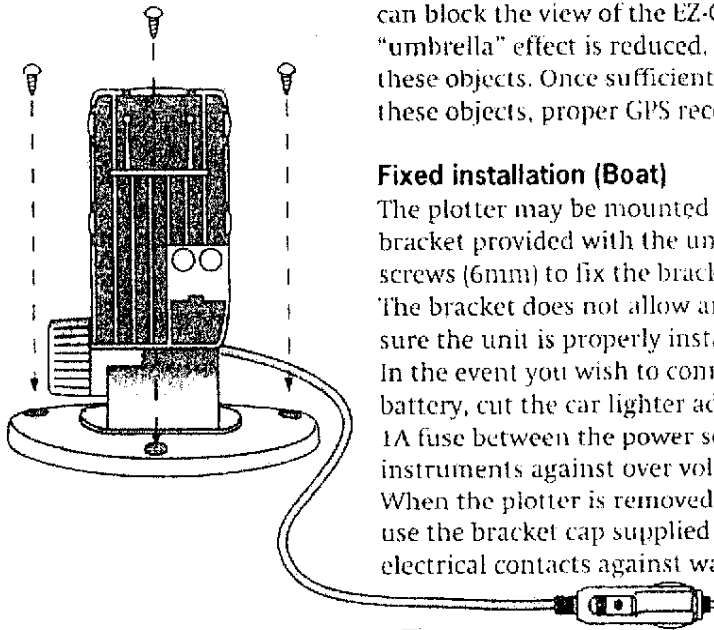
The quality of the GPS fix, especially in land use, can be adversely affected by surrouding buildings, trees and other tall objects that can block the view of the EZ-Chart and the GPS satellites. This "umbrella" effect is reduced, the farther away the EZ-Chart is from these objects. Once sufficiently outside of the "umbrella" created by these objects, proper GPS reception will return.

Fixed installation (Boat)

The plotter may be mounted on any surface using the mounting bracket provided with the unit (see figure). Use the 3 flat-head screws (6mm) to fix the bracket on to the desired mounting surface. The bracket does not allow any left or right rotation, therefore make sure the unit is properly installed for the best view angle.

In the event you wish to connect the power cable direct to the boat's battery, cut the car lighter adapter off, we recommend installing a 1A fuse between the power source and the plotter to protect the instruments against over voltages and/or over currents.

When the plotter is removed from the bracket, we recommend you use the bracket cap supplied with the EZ-Chart to protect the electrical contacts against water.


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Car installation

To allow an easy installation on your car, the EZ-Chart is supplied with an additional bracket that ends with a suction cup. When the unit is installed, make sure your windshield has enough space to allow proper road visibility.

Installation procedure is as follows:

1. Locate a flat surface on the window that allows you to position the bracket base on the dashboard as well as allow the internal GPS to have the best sky visibility (the GPS needs to track satellites and hence needs to be able to see the sky).

2. Clean the entire front window area you wish to use for unit installation. Use a good window cleaner and paper towels and dry the area completely.

3. Verify that the EZ-Chart doesn't interfere with controls, airbags and other car facilities.

4. Push the lever back on the suction cup.

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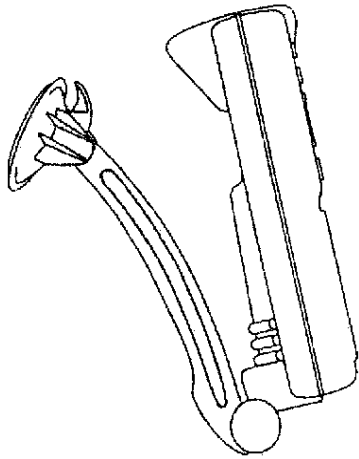
5. Place the suction cup firmly on the clean, flat glass surface and push the lever forward to adhere to the glass.
6. Make sure the unit is firmly secured and correctly positioned and that it will not fall off of the window. This step is very important to ensure safe operation while driving. Test the connection between the unit and the window several times after the installation and during use when you start up the car and on other occasions.
7. Place the mounting bracket on top of the dashboard and orient the plotter to the best position for the internal GPS antenna (see figure).
8. Plug the power cord into the lighter adapter.

Note: Some cars will disable the power supply at certain times such as when the car is turned off. If this is the case, the EZ-Chart will turn off as well.

9

Connections . . . .
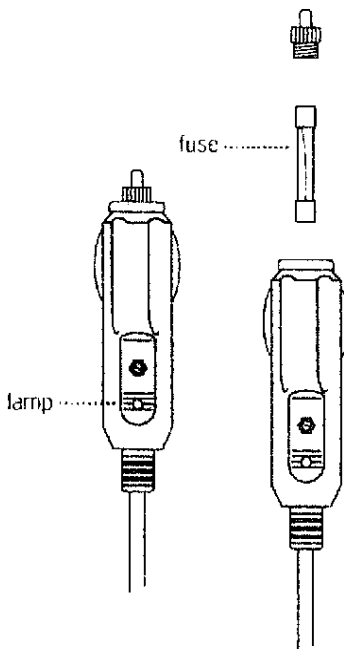
The car lighter adapter has a little lamp (LED) that turns on if the car is correctly providing the power to the bracket.
If the lamp is off:
• verify that a 12V voltage is available from the lighter plug;
• verify that the internal fuse of the adapter is OK; open the adapter and check the fuse.

If the fuse is broken, replace it with a fuse with the same electrical characteristics.
DON'T USE A BY-PASS CIRCUIT.
The fuse guarantees that the special protection circuit inside the plotter properly protects against accidental short circuits, polarity inversion and high voltages.
If you need to remove the lighter adapter the internal connections are:

red (or white)	+ (+ 12V)
black	- (ground)

fuse

lamp

10

The EZ-Chart has a diagnostic program to verify its correct performance once installation has been performed, and it can detect problems that may occur during the use of the unit. To perform these tests, switch the unit on by pressing simultaneously ON and another key (except of the CLR key).

The EZ-Chart will perform automatically a test of the entire system. As soon as the test of the memory has been performed, the program lets you verify whether each key works properly. An outline of the keyboard is displayed on the screen; press each key and note that the corresponding key on the screens turns black. If the key is defective, no change in color will be seen on the screen.

The dianostic program allows you to verify the correct connection between the GPS receiver and the unit. The position sensor should be operating and should transmit NMEA 0183 messages.

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. . . .

If the receiver is working, you will see a string of NMEA messages appearing on the screen, which indicates that the entire system is working correctly. Press CLR to freeze the messages on the screen, press CLR again to keep displaying NMEA messages.
Press ENTER to exit the diagnostic program.

ATTENTION. it is possible to clear all the internal memory contents of the unit (not the Nav-chart) and to reset the plotter to a starting point. To perform a memory reset, switch the unit on by pressing simultaneously the **ON** and **CLR** keys.
(Note: All stored waypoints and marks will be deleted when performing a memory reset.)

Cartridge installation . . . .
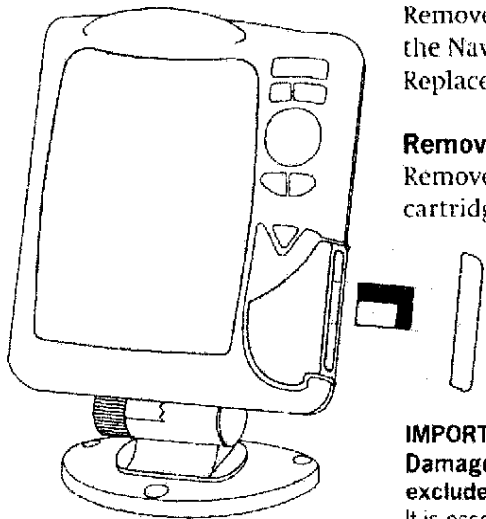
Install the cartridge into the plotter.
Remove the rubber cover on the right side of the unit and slide
the Nav-chart cartridge into the slot.
Replace the rubber cover with light pressure.

Remove the cartridge
Remove the rubber cover and pull the NAVIONICS Nav-chart
cartridge out.

IMPORTANT NOTE:
Damage from water intrusion from the cartridge slot is specifically
excluded from the warranty.
It is essential that the rubber cover of the right side of the unit is firmly
inserted in the cartridge slot; the rubber cover should be removed only when
the cartridge has to be inserted or replaced and in this case the unit must be
perfectly dry.

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The NAVIONICS electronic charts . . . .
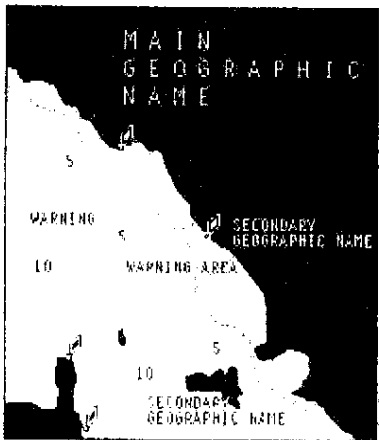
The EZ-Chart includes a built-in world map that allows
zooming from 4,096 down to 512NM.
Additional cartographic details relevant to the specific area of
navigation are available by NAVIONICS Seamless Nav-chart™
cartridges.
To display the boundaries of the charts, press **PAGE** until the
menu bar appears, select SETUP, then DISPLAY MAPS, then
press **ENTER** to confirm.
A small square will be displayed on the screen locating the
area covered by the cartridge being installed.
To increase/decrease cartographic details, press the **ZOOM**
keys.

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NAVIONICS charts contain the following information:

• Main geographic names (continents, oceans, countries).

• Secondary geographic names (cities, towns, shoals, reefs, islands, etc.).

• Navigational aids:

lights, buoys, daymarks, etc., generally referred to as navaids

╫╫ Shipwrecks

······Depth contours

Port service

10 Spot soundings in selected areas

To select the detail of the map: Press **ZOOM ▼**

To reduce the detail of the map: Press **▲ ZOOM**

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TRACK ○ ROUTE	SETUP		
DISPLAY MAPS=◄		ON	OFF
DEPTH CONT. = 5M	ON		OFF
DEPTH CONT. =►10M		ON	OFF
DEPTH CONT. 20M		ON	OFF
NAMES	ON		OFF
SCREEN AMPLIFIER	ON		OFF
OVERZOOM		ON	OFF
CALIBRATION		ON	OFF
DIST. UNITS	NAUT	METR STAT	
DEPTH UNITS	M	FT FA	
TIME	LOCAL	GMT	
BEARINGS	TRUE	MAG	
LANGUAGE	EN FR ES DE DK	IT	

↑↓	⇅	ENTER / PAGE
SELECT	CHANGE	EXIT

To display depth contours
Press **PAGE** until the menu bar is displayed on the screen, select SETUP, then select the grouping of depth contours of your interest, and then select ON/OFF.
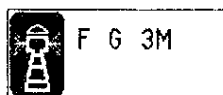
To display geographic names
Press **PAGE** until the menu bar is displayed on the screen, select SETUP, then select the NAME option, and then select ON/OFF.
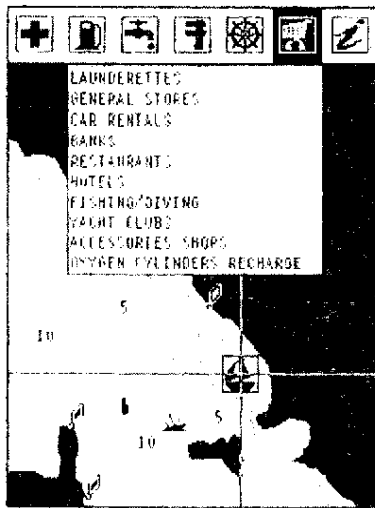
The position of a navaid is identified with the symbol

To display the navaid characteristics
Position the manual cursor on the navaid symbol and a window will pop up on the screen to display the relevant characteristics.

F G 3M

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The following symbol ⛵ identifies the presence of a port that contains services.

LAUNDERETTES
GENERAL STORES
CAR RENTALS
BANKS
RESTAURANTS
HOTELS
FISHING/DIVING
YACHT CLUBS
ACCESSORIES SHOPS
OXYGEN CYLINDERS RECHARGE

To display the port services

Zoom down to 1 NM and position the manual cursor on the icon (sailboat) relevant to the selected marina; then press **ENTER**. A window will pop up on the screen to list all the services available in that port. Select the desired icon with the arrow keys.

The following icons identify Port services:

➕ Sanitary and first aid services

🔧 Engine, boat, electronic and other repairs

🚰 Water

📝 Information and authorities.

🛒 Tourist services and shops

⚙️ Customer services

⛽ Fuel

Service coverage depends on the cartridge being used.

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Functional characteristics . . . .

Glossary of operational modes and common terms.

Navigation mode (Automatic, AUTO)

The EZ-Chart goes to navigation mode as soon as the internal GPS receiver sends a valid fix; when in navigation mode, the manual cursor is not displayed on the screen.

This mode is referenced as automatic because the unit automatically selects the chart scale and updates the boat position on the screen.

Cursor mode (manual mode, MAN)

When in manual mode, the manual cursor is displayed on the screen. It is possible to edit a route, to insert or delete marks, to display navaid information etc.

By pressing the arrow keys, the unit goes from automatic to manual mode and the screen will be centered in relation to the manual cursor.

To return to Navigation mode press **PAGE**.
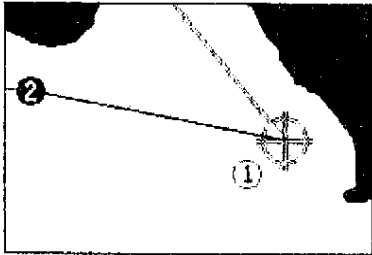
Autozoom

With the Autozoom function the EZ-Chart will always display automatically the boat's position and the target waypoint at the best available chart range. As the boat approaches the target waypoint, the u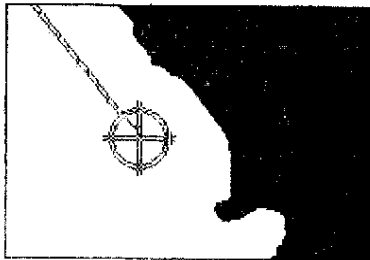nit will automatically zoom in. Once the waypoint is passed, the unit will select the best range to display boat's position and the following waypoint.

To activate the Autozoom function press **ZOOM ▼** until the following message is displayed on the screen: "AUTOZOOM ? ENTER = YES".

To deactivate the Autozoom function, press either **ZOOM** key once.

When the EZ-Chart is turned ON, and at least one waypoint has been previously entered, the Autozoom function is automatically activated.

⑲

Screen Amplifier

This function redraws the chart, in accordance to the boat course, and will automatically maintain an area 2/3rds of a screen ahead of the boat.

To activate/deactivate the Screen Amplifier function, press **PAGE** until the menu bar is displayed on the screen, select SETUP, then select Screen Amplifier and then ON/OFF.

without screen amplifier

with screen amplifier

Overzoom

The Overzoom feature allows the chart scale to expand anywhere up to 1/4 NM. The Overzoom does not provide additional chart detail, but only improves the readability of the existing information, acting as a magnifier lens. When the Overzoom is activated the unit will warn the user as follows:
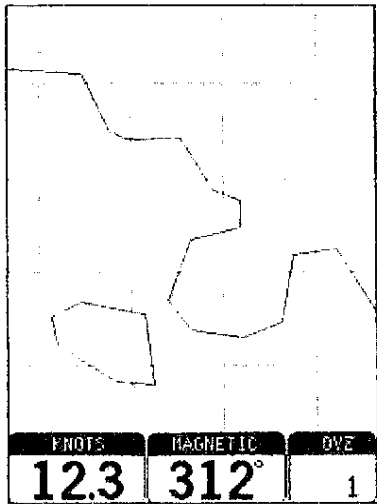- the land filling function will be deactivated;
- RANGE in the navigation window will be replaced with OVZ (blinking).

To activate/deactivate the Overzoom function press **PAGE** till the menu bar is displayed on the screen, select **SETUP**, select Overzoom and then **ON/OFF**.

KNOTS	MAGNETIC	OVZ
12.3	**312°**	**1**

㉑

Position calibration

Most position sensors have, for various reasons, intrinsic errors that cause the position of the boat to be incorrect with respect to the background display of the chart (from one to several hundred meters). This error is caused by the principle that the position system is based on.

The position calibration allows the user to manually correct the positioning error typical with any GPS assuming the latter is not errant by more than 2 NM (nautical miles) of the true position.

Press **PAGE** till the main menu bar is displayed, then select SETUP, CALIBRATION and then **ON**. A message appears to bring the cursor to the true position of the boat using the arrow keys. Pressing **ENTER** brings the GPS boat position to the point indicated by the cursor and saves the calibration in order to make use of it in future calculation.

Note: When calibration is activated the coordinates will be highlighted by a (*) for safety purposes.
To delete the calibration it is necessary to return to the Calibration option and select OFF.

Local time

With this function the user can enter the local time instead of the Greenwich time (GMT) supplied by the GPS receiver.
To enter the local time, press **PAGE** till the main menu bar is displayed, then select SETUP, TIME and then LOCAL. A window appears to allow the user for entering local time by using the arrow keys. Press **ENTER** to confirm.

Contrast

Press **PAGE** till the menu bar is displayed on the screen, then select CONTRAST, and adjust the contrast with the arrow keys.

The user can adjust the contrast at the start up (when the WARNING message is on the screen) or when the satellite window is displayed: just press the arrow keys, the contrast bar will pop up, then adjust the contrast with the arrow keys.

Brightness

Press the **ON** key to enable screen backlight.

ZOOM +/ZOOM ·
To select the chart range

ENTER
Enters a marker or confirms
selection you have made in a menu

PAGE
Turns pages of navigational data.

GOTO
It allows plotting a route to:
• manual cursor position
• a desired marker
• port
• nearest port service
• lat/lon

CLR
• Navigation mode:
  Deletes the current route.
• Cursor mode:
  Deletes last waypoint or marker
  pointed by the cursor.

CURSOR
• It moves manual cursor across the
  screen.
• It switches the EZ-Chart from
  Navigation to Manual mode.
• It allows selection under the menu.

On/Off
To turn the EZ-Chart on/off. To turn
the unit off, hold the key press for 3
seconds.
Backlight: press ON multiple times
for different levels.

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Main functions . . . .

At start-up the EZ-Chart will display a message warning the
user that the electronic chart is an aid to navigation designed to
facilitate the use of authorized government charts, not to
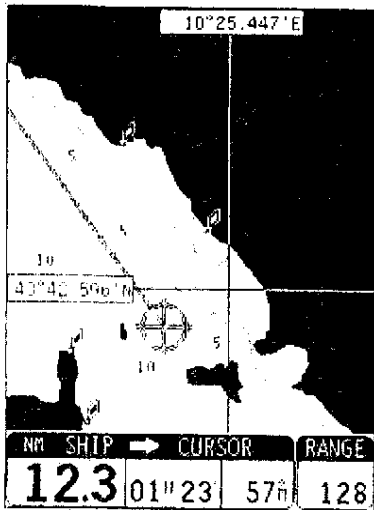replace them.

Adjust the contrast by pressing **CURSOR** or activate the
backlight with the **ON** key.
Press **PAGE** to continue; the EZ-Chart will display the GPS
information window.

The EZ-Chart can display five graphic windows, and you change
the pages by pressing the **PAGE** key.

When the fix is valid, the sequence is as follows:

**SATELLITES ▶ NAVIGATION ▶ MENU ▶ NAVIG. TO WP ▶ TRIP**

By pressing the **CURSOR** key the EZ-Chart goes to manual mode where the user is allowed to move freely around the seamless world of NAVIONICS cartography. The screen will always be centered in relation to the manual cursor; the window at the bottom of the screen displays the following data:

- Distance from boat's position to manual cursor.
- Time to arrive to manual cursor position (estimated on the current boat's speed).
- Bearing from boat's position to manual cursor
- Chart range.

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Satellite screen . . . .
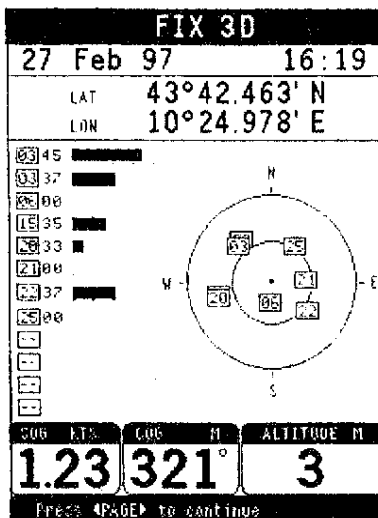
At start-up, the satellite window displays how many and which satellites are being tracked by the EZ-Chart's built-in GPS receiver.
The outer circle represents the horizon, the inner one identifies a 45° elevation in relation to the horizon, the central circle points to the zenith.
The small circles with numbers in represent the satellites available.
As soon a satellite is tracked, the number in the circle is displayed in reverse. The graphic bars displayed on the left of the screen identify the signal quality; the longer is the bar, the higher is the quality of the signal. On the left of each bar there are two digits that indicate, numerically, the signal quality relevant to that satellite. The higher the value, the better the satellite.
Additional information:
- Day, month, year, local or Greenwich time (at first start-up the EZ-Chart is initialized with Greenwich Mean Time)
- Position (lat/lon)
- Data on current satellite situation (numbers and fix)
- SOG, COG and Altitude

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Latitude & Longitude relevant to the boat's position is displayed as soon as three satellites are tracked and a 2D fix is obtained. The altitude value is available only if four satellites are tracked and a 3D fix is performed. As soon as a valid fix is available, the EZ-Chart will automatically go into the Navigation mode and displays the boat's position on the best chart range available; the window at the bottom of the screen will indicate boat's course & speed plus chart range.

The GPS receiver is initialized in Italy. The time for the first fix will depend therefore on the areas you want to navigate; within the Mediterranean Sea the EZ-Chart will get the first fix in less than 12 minutes, in other areas of the world it can take up to 30 minutes.

Once the unit gets the first fix, the time for following fixes is normally within a minute or two.

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Navigation window
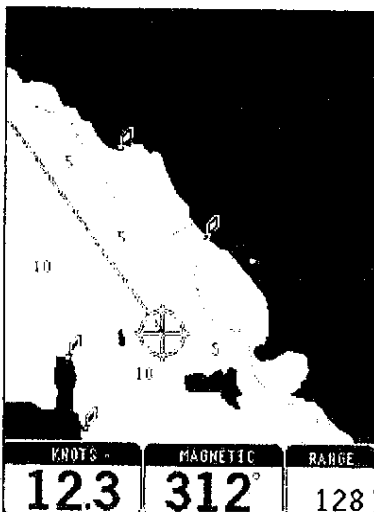
This window is activated as soon as the fix is OK and the boat's position is displayed on the screen

Speed, course and chart range is displayed at the bottom of the screen if no route is being followed.

By using the **ZOOM+** key it is possible to change the chart range.

KNOTS	MAGNETIC	RANGE
12.3	312°	128

KNOTS	KM	➡ WP 1	RANGE
12.3	312	-- H --	1
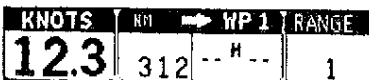
If a route is plotted on the screen, the data window will display the following information:
• speed
• range to the next waypoint
• time to arrive to the next waypoint
• chart range

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Menu . . . .

TRACK ❍ ROUTE SETUP

The bar, displayed at the top of the screen, allows selection among the following options:

TRACK: to activate/deactivate the tracking function and to delete a track.
**CONTRAST**: to adjust the screen contrast.
ROUTE: to delete, reverse and display route information.
SETUP: to activate/deactivate the following parameters/functions.

• display map boundaries
• depth contour (below 5 meters, 10 meters, above 20 meters)
• names
• Screen Amplifier
• Overzoom
• Position calibration
• depth units
• units (NM , Km/h, Knots),
• Local/GMT time
• True/magnetic
• Language (EN FR ES DE IT DK)

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Navigation to a waypoint window . . . .
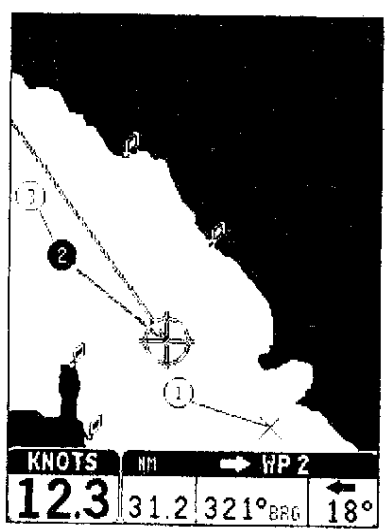

When this window is activated, the active route leg will be deleted from the screen and replaced with a line that constantly connects boat's position to the current target waypoint.

The data at the bottom of the screen includes the following:

• Boat Speed.
• Distance from boat's position to target waypoint.
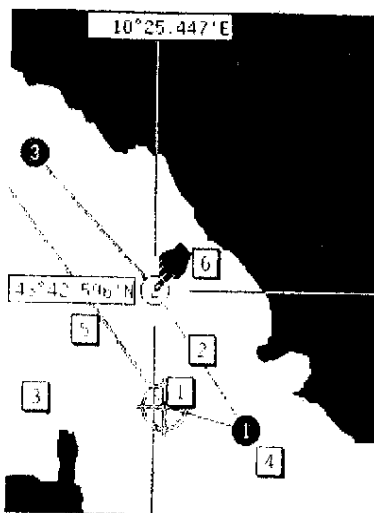• Bearing from boat's position to target waypoint.
• Steering angle.

Trip window . . . .
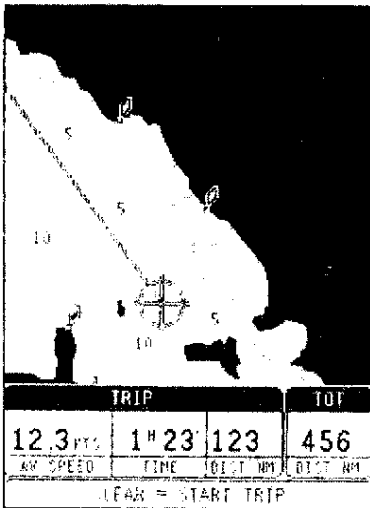
The data at the bottom of the screen relevant to your trip:

a) Average speed.
b) Time elapsed from the departure.
c) Trip distance (partial counter).
d) Total distance.

To reset the a), b) and c) counters press the **CLR** key.

Route . . . .

The EZ-Chart can manage navigation to follow a planned route.
The **GOTO** key allows the user to plot a route.
The figure indicates how a route is displayed on the EZ-Chart's screen.

1 - Boat position
Boat's position is displayed in accordance to the data received from the GPS receiver.

2 - Leg
The route segment between 2 waypoints.

3 - Track
It is displayed as a dashed line: it permits you to record your actual boat's track.

4 - Waypoint

All waypoints are identified by a circle and a number.
The EZ-Chart will display the "PROXIMITY TO WAYPOINT"
message on the screen to warn the user that in about 25 seconds
they are about to approach the next target waypoint. The
message "END OF ROUTE" is displayed when he nears the last
waypoint of the route.
The first waypoint is identified by the symbol "X". The target
waypoint (the next point the boat is navigating to) is identified
by a black circle with the relevant number written in reverse.

5 - Heading Vector

This vector indicates graphically the current route of the boat.
If the boat course is steady, the heading vector indication is
meaningless.

6 - Cursor

It allows the movement of the manual cursor across the screen;
the relevant geographic coordinates (latitude and longitude) are
displayed in two small windows. When the EZ-Chart goes to
automatic mode, the manual cursor disappears.

How to make a route

To create a route press the **GOTO** key and select one of the
options displayed in the **GOTO** menu.
Once you have made the selection, the EZ-Chart will insert a
waypoint on the selected position and the route will be initially
composed by a leg that connects your boat's position to that
waypoint.
If you wish to enter additional waypoints, press the **GOTO** key,
select one of the options displayed on the **GOTO** menu; once
the selection is made, the new waypoint will be added to the
existing route.

NOTE: The EZ-Chart can manage only one route a time; the creation of a
new route will automatically delete the route previously entered.
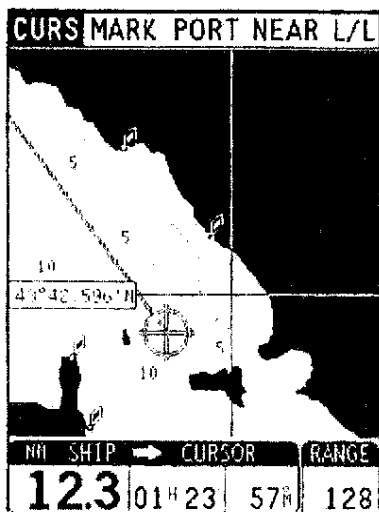
Route to the manual cursor position

Press **CURSOR** to go to Manual mode.
Press **GOTO**, select **CURSOR** and press **ENTER**.
The EZ-Chart will insert a new waypoint at the cursor position and a new leg will be added to the existing route; if no waypoint had been previously entered, the leg will be connected to your boat's position. The EZ-Chart will automatically activate the Autozoom function as soon as it goes to Navigation mode.
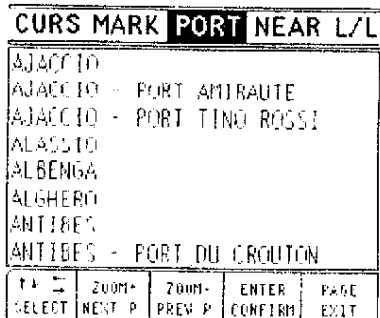
37
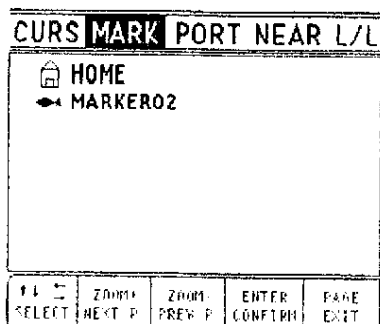
Route to a marker

Press **GOTO**, select MARKER and press **ENTER**.
The EZ-Chart will display the marker catalogue (the last 6 markers used will be highlighted at the top of the screen) and will allow for marker selection.
Select a marker, press **ENTER** to confirm or **PAGE** to exit.
The EZ-Chart will insert a waypoint in the marker position and will append the new leg to the existing route; if no route was on the screen, the leg will connect the waypoint to the boat's position. The EZ-Chart will automatically activate the Autozoom function as soon as it goes into the Navigation mode.

Route to a Port

Press **GOTO**, select PORT and press **ENTER**.
The EZ-Chart will display the port catalogue (the latest 6 ports used will be highlighted at the top of the screen) and will allow for port selection.
Select a port, press **ENTER** to confirm or **PAGE** to exit.
The EZ-Chart will insert a waypoint in the port position and will append the new leg to the existing route; if no route was on the screen, the leg will connect the waypoint to the boat's position.

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The EZ-Chart will automatically activate the Autozoom function as soon as it goes to Navigation mode.
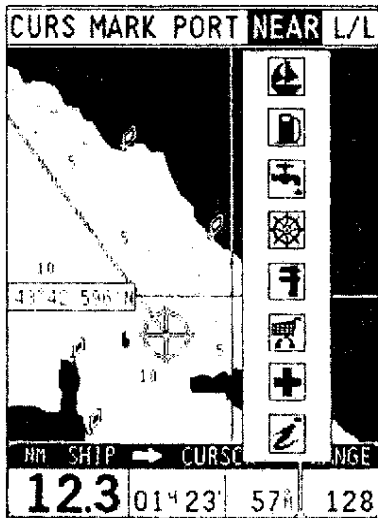
Route to nearest service

ATTENTION: This option is available only with NAVIONICS cartridges that include the Port Service feature.

Press **GOTO** and select NEAR; the EZ-Chart will display the port service catalogue and will allow for service selection.
Select the desired service, press **ENTER** to confirm or **PAGE** to exit.
The EZ-Chart will search for and then display the 3 ports that contain the selected service nearest to the boat's position (if in Automatic mode) or to the manual cursor (if in Manual mode). Using the arrow keys, you can highlight one port a time and check the relevant distance and time to arrive (estimated at the current boat speed). Press **ENTER** to confirm selection.
The EZ-Chart will insert a waypoint in the port position and will append the new leg to the existing route, if in manual mode, or delete the existing route and create a new one if in automatic mode; if no route was on the screen before activating.

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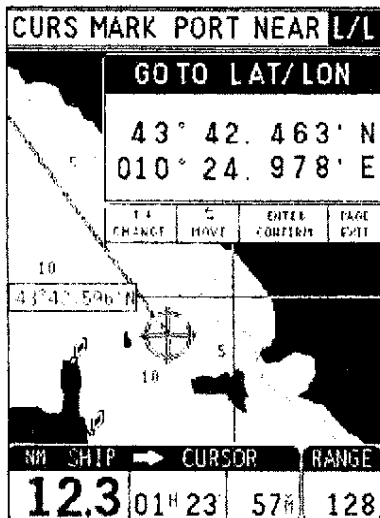
The **GOTO** NEAR function, the new leg will connect the waypoint to the boats position if in Automatic mode or to the manual cursor if in manual mode. The EZ-Chart will automatically activate the Autozoom function as soon as it goes to the Navigation mode.

Route to Lat/Lon

If the coordinates of a waypoint are known, it might be useful to input them numerically instead of graphically.
Press **GOTO**, select L/L and press **ENTER**.
The EZ-Chart will display a window that permits entering the Latitude and Longitude relevant to the new waypoint, manually. Once the desired value has been entered, press **ENTER** to confirm or **PAGE** to exit.
The EZ-Chart will insert a waypoint in accordance with the data input by the user and will append the new leg to the existing route; if no route was on the screen, the leg will connect the waypoint to the boat's position. The EZ-Chart will automatically activate the Autozoom function as soon as it goes to Navigation mode.

40
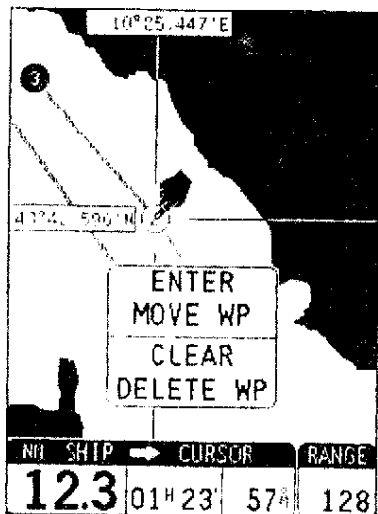
To delete a waypoint in a plotted route

In manual mode, it is possible to delete one or all waypoints by pressing the **CLR** key repeatedly until the message "NO MORE WAY POINT" is displayed on the screen. If the waypoint to delete is positioned outside the screen (not displayed), the EZ-Chart will display the message "WP outside the screen"; press **ENTER** to confirm.
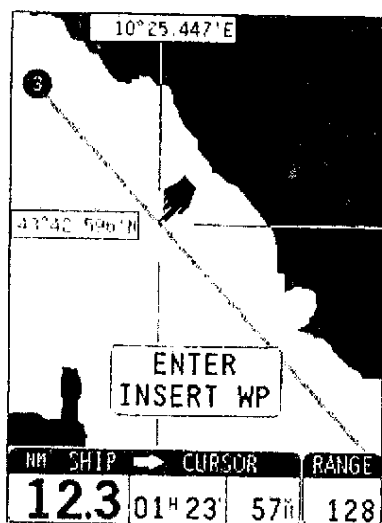
To delete the entire route

In navigation mode, it is possible to delete the entire route by pressing the **CLR** key. Press **ENTER** to confirm.

Editing a route in Manual mode

Sometimes it is necessary to modify the position of a waypoint or to delete a single waypoint; the EZ-Chart allows the user to perform these tasks in a very simple way and with few keystrokes.

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* To delete a waypoint in a plotted route
  Position the cursor exactly on the waypoint to be deleted and press **CLR** to confirm.

* To move a waypoint in a plotted route
  Position the cursor exactly on the waypoint to move. Press **ENTER** to confirm. Use the arrow keys to move the selected waypoint to the new position and press **ENTER** to confirm. The waypoint will be displayed in the new position and a new route will be drawn.

* Insert a waypoint in the plotted route
  Position the cursor exactly on the route segment that you wish to modify and press **ENTER** to confirm. Move the cursor to the desired position with the arrow keys and press **ENTER** to insert the new waypoint.

Route functions from the Route menu
- Route info
- Reverse route

Route info
To display the navigation data relevant to the plotted route press **PAGE** until the menu bar is displayed on the screen. Select ROUTE and then ROUTE INFO.

Press **ENTER** to open ROUTE INFO windows; the first window contains the following information:

WP N.	Progressive waypoint number; starting waypoint is 0.
Dist NM	Distance between the current and the starting waypoint.
Time	Time of arrival to the next waypoint.
Fuel/liter	Fuel consumption.

NOTE: Time and fuel consumption is displayed only if the average values relevant to the boat's speed and fuel/h are entered by using the menu at the bottom of the screen.

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Reverse the route direction
Press **PAGE** until the menu bar is displayed on the screen; select ROUTE, then REVERSE, and then press **ENTER**.
The numbering of waypoints will be automatically reversed and you will be able to navigate in the opposite direction.

Track ·

The tracking function allows you to record your boat's actual track. It is possible to activate/deactivate the tracking function multiple times in the course of the navigation: in this event, the track segments will be automatically connected to each other to make one single track line.

Start a track
To activate the tracking function, press **PAGE** until the menu bar is displayed on the screen; select TRACK, then select TRACK START, press **ENTER** to confirm.

Stop a track
To deactivate the tracking function, press **PAGE** until the menu bar is displayed on the screen; select TRACK, then select TRACK STOP, press **ENTER** to confirm.

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Delete all tracks
To delete the current track, press **PAGE** until the menu bar is displayed on the screen; select TRACK, then select DELETE, press **ENTER** to confirm: a message will be displayed on the screen asking to press **ENTER** to confirm track deletion.

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Markers

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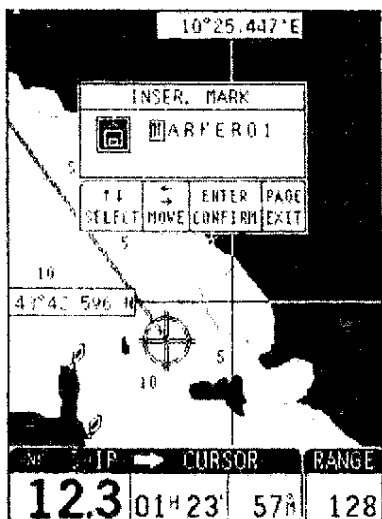
With the EZ-Chart it is possible to enter and store small symbols (markers) for your use to denote points of interest (i.e.: submerged wrecks, fishing spots, etc.).

Each marker can be assigned a shape and an 8-character name. The HOME marker is normally used to identify the starting point of the trip and hence can be used to find quickly the way to get back "home".
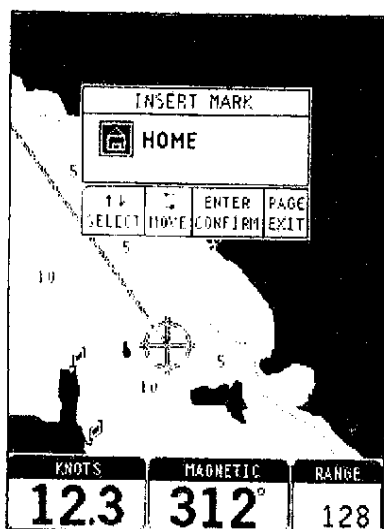
CURSOR MODE
Insert a marker
Move the cursor to the desired point and press the **ENTER** key. Select the desired shape and name and press **ENTER** to confirm. A new marker will be automatically entered at the position selected by the user.

NOTE: Marker names are only displayed if the selected chart range is below 32NM.

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Delete a marker
Position the cursor exactly on the marker to clear. Press **CLR** to confirm.

Modify marker shape/name
Position the cursor on the marker of interest; a window will pop up on the screen to display current marker shape/name. Press **ENTER** to confirm marker editing and use **CURSOR** to select the desired new shape/name. Press **ENTER** to confirm.

NAVIGATION MODE
Insert a marker
To enter a new marker, just press **ENTER**; select the desired shape and name of the marker with the arrow keys and then press **ENTER** again, to confirm. A new marker will be automatically be entered at the boat's position.

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Delete a marker

Position the cursor exactly on the marker to clear and press **CLR** to confirm.

Route to a marker

See route functions.

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Use with land cartography (land mode) . . . .

WARNING
READ THIS NOTICE BEFORE USING THE EZ-CHART

The chart plotter, when installed in a vehicle, must not obstruct the driver's view, and the unit must not be used by the driver, or distract the driver's attention, while the vehicle is in motion.

The use of the EZ-Chart implies knowledge and acceptance of this warning by the user.
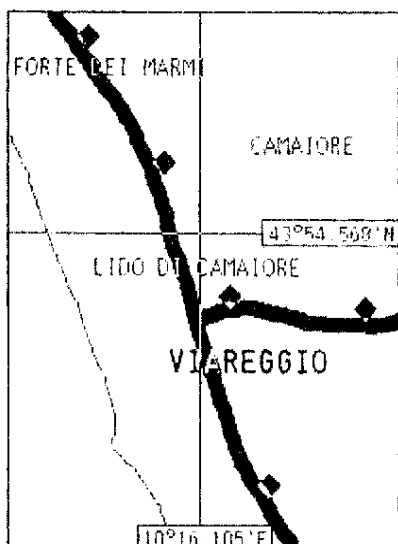
The EZ-Chart is now a valuable instrument also when used and installed in a car. The GPS receiver and the new NAVIONICS land charts will allow you to easily display your position with respect to the most popular roads and city names. The installation of the EZ-Chart in your car takes only a few seconds: just position the plotter on the dashboard with the proper bracket and fix the suction cup to the front window, connect the power cable to the lighter and press the ON key. Enjoy your trip!
When a land cartridge is inserted into the unit, the EZ-Chart will automatically set in "land mode". All the major features will not change with respect to the marine mode and you can still plot a route, insert markers, record your actual track and activate all the other functions as when in marine mode.

NOTE: The quality of the GPS fix can be adversely affected by surrouding buildings, trees and other tall objects that can block the view of the EZ Chart and the GPS satellites. This "umbrella" effect is reduced, the farther away the EZ-Chart is from these objects.
Once sufficiently outside of the "umbrella" created by these objects, proper GPS reception will return.

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The only differences are as follows:

SETUP menu
The SETUP menu will change as follows:
- Display maps **ON/OFF**
  Enables/disables the map boundaries.
- Highways **ON/OFF**
  Enables/disables display of major roads.
- Other roads **ON/OFF**
  Enables/disables display of other roads.
- Road names **ON/OFF**
  Enables/disables display of road names.

ATTENTION: The display of road names automatically turns **OFF** as soon as both Highways and other roads have been selected **OFF**

- City names **ON/OFF**
  Enables/disables display of city names.
- Screen amplifier **ON/OFF**
  Activate/deactivate the Screen Amplifier function.

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- Position calibration **ON/OFF**
  Allows for entering position calibration offset.
- Dist. units NAUT/METR/STAT
  Allows for unit distance selection.

NOTE: The unit selected in land mode is independent from the unit selected in marine mode.

- Local /GMT
  Permits entering local time.
- Language (English, French, Spanish, German, Italian)
  Permits changing the language selection.

E80/A12
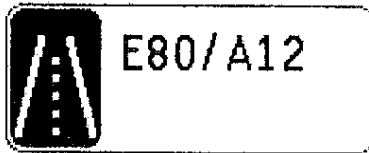
Display of road name
To display the road name, position the manual cursor on the road symbol and a window will pop up on the screen to display the relevant characteristics.

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Main messages . . . .

END OF ROUTE
The boat has passed the last waypoint of the route.

NO AVAILABLE MARKERS
All markers available have been used.

NAME ALREADY PRESENT.
Two markers cannot be saved with the same name;
use another name.

POOR GPS COVERAGE
Searching satellites or poor satellite coverage.
The plotter is not receiving a valid fix from the GPS.

INVALID FIX
The GPS is not tracking a sufficient number of satellites for
computing boat's position.

WAYPOINT OVERSHOOT

The boat has passed the line perpendicular to the
current route leg.

NO MORE WAYPOINTS

All waypoints available to make a route have been used.

Troubleshooting . . . .

The EZ-Chart doesn't turn on

Make sure that the unit is powered at a voltage between
10 - 18 VDC. Check the fuse.

The EZ-Chart doesn't get a valid satellite fix

Make sure that no metal obstacles are positioned around the
unit and acting as a shield to the EZ-Chart antenna. If after 15
minutes the EZ-Chart doesn't get a valid fix, then turn the unit
off and restart it on again.

The EZ-Chart won't turn off

If after a key press of at least 3 seconds the unit does not turn
off, remove the EZ-Chart from its bracket and replace it on it
again.

The EZ-Chart screen gets dark after a long exposure to direct sunlight

A contrast adjustment is required: press **PAGE** till the menu bar
is displayed on the screen, select CONTRAST and then use the
UP and DOWN arrow keys for contrast adjustment.

The EZ-Chart doesn't respond to any command

Try to turn it off, then on again; if the problem reoccurs, the internal backup memory probably contains some invalid data. To erase the memory and turn the plotter ON, press the **ON** and **CLR** keys simultaneously.

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Navaid information

ABBREVIATIONS FOR LIGHT		ABBREVIATIONS FOR COLOUR	
AL	alternating	**AM**	amber
F	fixed	**B**	black
FLL	fixed and flashing	**BL**	blue
FL(..)	group flashing	**G**	green
FL	single flashing	**OR**	orange
IQ	interrupted quick	**R**	red
OC	single-occulting	**VL**	violet
OC(..)	composite group occulting	**W**	white
Q	continuous group	**Y**	yellow
ABBREVIATIONS FOR PERIOD		ABBREVIATIONS FOR RANGE	
..S	xx seconds	**..M**	xx nautical miles

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Glossary ....

Azimuth - The angle from the horizon to a satellite or other object.

Bearing (BRG) - Compass direction from the boat position to the destination.

Coordinates - Description of position in term of latitude and longitude.

COG - Course Over Ground. Direction of movement relative to a ground position.

GMT - Greenwich Mean Time (GMT) (Universal Time)

GPS - Global Positioning System The constellation of navigation satellites that orbit the earth and transmit precise time and position information. A GPS receiver uses this information to triangulate a position fix. Each GPS satellite transmits its precise location and the start time of transmission. A GPS

receiver acquires the signal and measures the interval between transmission and receipt to determine the distance between the receiver and the satellite. Once the receiver has computed range for at least 3 satellites, the boat's position can be determined.

Heading - The direction in which the boat is moving, track or ground course (due to wind, current, forth).

LEG - A segment of a route included between waypoints.

Position fix - Position coordinates as computed by the plotter.

S.O.G - Speed Over Ground. Speed at which the boat is moving in respect to the earth.

Waypoint - Indicates an important point in the route (often one in which a turn is made).

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Summary ....

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