# **NAVIGATION SYSTEM**

# Contents, Accessories, and Laser

### Accessories

Please contact an Authorized Mazda Dealer if you are missing any of the following accessories.

#### Map Disc



Owner's Manual

#### CAUTION:

THIS PRODUCT IS A CLASS I LASER PRODUCT . HOWEVER THIS PRODUCT USES A VISIBLE/INVISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE THIS PRODUCT CORRECTLY AS INSTRUCTED. USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE. DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

#### Laser products:

Wave length: 650 nm Laser power: No hazardous radiation is emitted with safety protection.



Immediate

Advanced use

If necessary

# Product

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# Safety Information

- Read this owner's manual for your Navigation System carefully before using the system. They contain instructions about how to use the system in a safe and effective manner. Mazda assumes no responsibility for any problems resulting from failure to observe the instructions given in this manual.
- ■This manual uses pictographs to show you how to use the product safely and to alert you to potential dangers resulting from improper connections and operation. The meanings of the pictographs are explained below. It is important that you fully understand the pictographs and explanations in order to use this manual and the system properly.



The presence of this Warning symbol in the text is intended to alert you to the importance of heeding the operation instructions. Failure to heed the instructions may result in severe injury or death.



#### Do not keep your eyes fixed on the monitor screen or operate the system while driving.

Do not change the settings and destination locations while driving. Minimize the time spent on viewing the monitor screen and listening to the voice guidance while driving. Operating the system will distract the driver from looking ahead of the vehicle and can cause accidents. Always stop the vehicle in a safe location and use the parking brake before operating the system.

#### Always obey local traffic regulations.

Your guided route may include roads that are not open to vehicles or are closed due to traffic regulations. Comply with the local traffic regulations and take another route.

#### Do not use the unit when it is out of order.

If the unit is out of order (no image, no sound) or in an abnormal state (has foreign matter in it, is exposed to water, is smoking, or smells), then turn it off immediately and consult with an Authorized Mazda Dealer. Using the unit in out-of-order condition may lead to accidents, fires, or electric shocks.

#### ■Use the proper power supply.

This product is designed for operation with a negative grounded 12 V DC battery system.

#### Leaving children in a vehicle with the ignition key is dangerous.

This could result in someone being badly injured or even killed. They could play with power windows or other controls, or even make the vehicle move. Don't leave the keys in your vehicle with children.

# Warning

## Warning

The presence of this Warning symbol in the text is intended to alert you to the importance of heeding the operation instructions. Failure to heed the instructions may result in severe injury or death.



#### Do not disassemble.

Do not disassemble the product or attempt to repair it yourself. If the product needs to be repaired, take it to an Authorized Mazda Dealer.

#### Never attempt to play the map disc on an audio player. Do not attempt to play the map disc on other CD (DVD) player. The loud sound produced may damage your hearing and your speakers.

# Safety Information



The presence of this Caution symbol in the text is intended to alert you to the importance of heeding the operation instructions. Failure to heed the instructions may result in injury or material damage.



Do not use the product where it is exposed to water, moisture, or dust. Exposure to water, moisture, or dust may lead to smoke, fire, or other damage to the unit. Make especially sure that the unit does not get wet in car washes or on rainy days.

■ Keep the voice guidance volume at an appropriate level. Keep the volume level low enough to be aware of road and traffic conditions while driving.

Protect the Deck Mechanism. Do not insert any foreign objects into the slot of this unit.

- This navigation system should only be installed in an automobile. Do not install it in a ship, aircraft, or any other vehicles except an automobile. Do not use it detached from the vehicle.
- Do not insert or allow your hand or fingers to be caught in the unit. To prevent injury, do not get your hand or fingers caught in moving parts or in the disc slot. Especially watch out for infants.

### SOFTWARE (MAP DISC) LICENCE AGREEMENT

#### PLEASE READ THIS AGREEMENT CAREFULLY BEFORE USING NAVTECH PRODUCT

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Governing Law. The above terms and conditions shall be governed by the laws of the Netherlands, without giving effect to (i) its conflict of laws provisions, or (ii) the United Nations Convention for contracts for the international Sale of Goods.

# Introduction

### Features

This DVD Navigation System combined with the **NAVTECH's** MAP Disc has following special features:

Detailed maps are used.

Selected destinations will be displayed for easy viewing.

•Desired places or facilities can be stored in the memory.

### (Notes)

•DVD audio and video will not work by this unit.

This unit does not support all Video CD and CD formats.



#### ■Map Disc

This unit supports only DVD-SDAL-formatted map disc (SEAMLESS) that NAVTECH has specifically designed for this unit. Mazda shall not be liable for any damages caused by using other formatted discs. Make sure to use only the discs specified for this product.

### **Use This Product Safety**

#### Avoid excessive moisture

Do not expose the product to water or excessive moisture. This could cause electrical shorts, fire or other damage.

#### Extremely low or high temperatures may interfere with normal operation

The inside of the vehicle can become very hot or cold when it is parked for extended periods in direct sunlight or in cold places with the engine turned off. The navigation system may not operate normally under such circumstances. Turn off the navigation system until the inside of the vehicle has cooled down or warmed up. If the system does not operate thereafter, consult an Authorized Mazda Dealer.

### **Navigation System**

This navigation system utilizes GPS\* satellite signals, Speed sensor and Gyrosensor to track and display your vehicle's current position, and to guide you from your starting point to your destination along a calculated route.

\* : GPS (Global Positioning System) is a position detecting system utilizing the signals from GPS satellites deployed by the U.S. Defense Department.

### **Map Related Issues**

#### **Customer Service**

If you need help with the operation your Mazda navigation system, want to report a map database error or wish to obtain a new map DVD, please call 1-888-NAV-MAPS (1-888-628-6277).

#### Latest map DVD

Map content is constantly changing due to the addition of new roads, points of interest, traffic restrictions, etc. While every effort is made to supply the most accurate DVD map, it is not always possible for the DVD map to match the current roadways. Not all map areas are covered to the same level of detail. Some areas that include private roads may not be included on the database. Map DVD's are updated on a regular basis to check availability, please call 1-888-NAV-MAPS (1-888-628-6277).

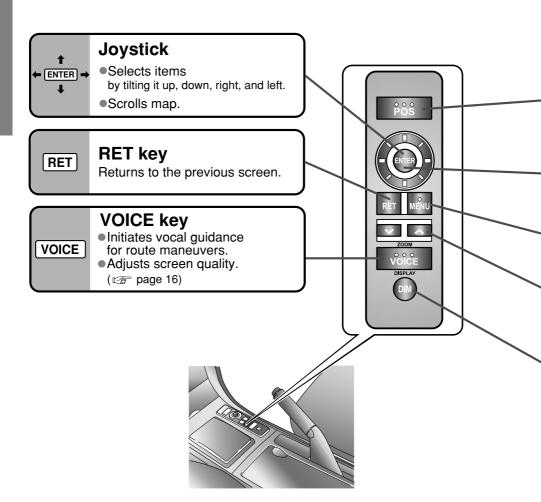


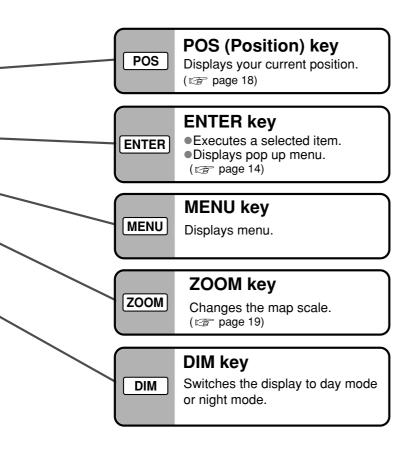
Notes

- Please have the map and software version numbers available in advance. This information can be found by using the following procedure:
  - ① Press MENU on the remote control.
  - 2 Select Setup Menu and press ENTER
  - ③ Use the remote control joystick to scroll through the menu options, select System Mamalan and press ENTER
  - ④ Select Version and press ENTER Map and software versions are now displayed.
  - •For further assistance please refer to pages 30 in the instruction book.

# Names and Functions

Before Use





### Switching the Display Mode

When the headlight switch is in the  $\bullet$  or  $\equiv \bigcirc$  position, the display switches to night mode.

Press the DIM key to switch to day mode.

To return to night mode, press the DIM key again.

# Before Use Activation

Insert the map disc into the unit to start the Mobile Navigation System.



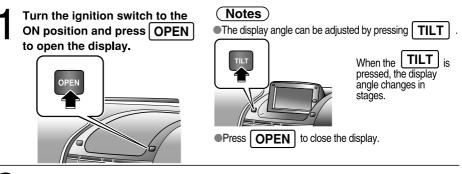
#### Map Disc

- Only map discs with a NAVTECH DVD-SDAL format that are seamless supported can be used with this unit. Use DVD-SDAL-formatted map discs (SEAMLESS) that NAVTECH has specifically designed for this unit.
  - Refer to "Handling and Care of Map Discs" to know how to handle a map disc (map page 41).

#### Notes

The map disc cannot be inserted or ejected while the ignition switch is in the OFF position.

Remember that the battery can run down if the ignition switch is kept in the ON or ACC position for a long time while the engine not running.



2

Slide the front cover down of the unit.



#### Notes

- The main unit is located in the glovebox compartment.
  Condensation may form on the optical lens or the map disc inside the unit when the temperature in the vehicle increases in a short time such as when heating the car on a cold day. This condensation may cause malfunctions. If so, then unload the map disc and do not operate the unit for approximately 1 hour. Wipe the condensation off the map disc with a soft cloth. If the unit does not operate correctly after 1 hour, then consult an Authorized Mazda Dealer.
- B Insert the map disc with the printed side facing up, and close the front cover by pushing it up.

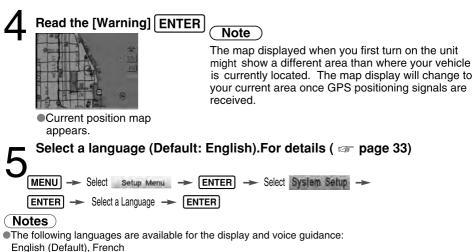








Before Use

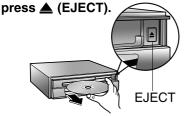


• Once selected, the system should stay with your language choice.

### **Removing the Map Disc**

### When the ignition switch is in the ACC position, slide the front cover, and

Caution

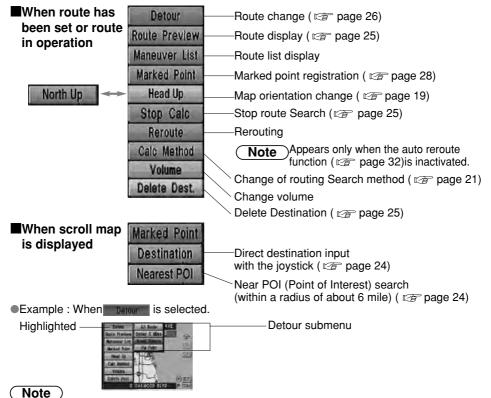


Do not get your hand or fingers caught in moving parts or in the disc slot. This can cause injuries. Children are inquisitive, try to install or remove the map disk without infants looking on.
Keep the front panel of the navigation system closed except when loading or unloading a map disc. Dust can cause malfunction.

### Pop Up Menu

Pop Up menu appears when pressing ENTER .

This function is mainly used during route searches.



This function is not available on intersection zoom maps.

# Before Use System Operation Verification

### Automatic distance correction

The mobile navigation system uses GPS data for distance correction automatically. It must be properly calibrated for accurate operation. Perform calibration in any of the following circumstances:

- 1. When using the navigation system for the very first time after installing the system.
- 2. When the navigation system is transferred to another vehicle.
- 3. When the tire pressure is changed, tires are rotated, the spare tire is used, tire size, or wheel diameter is changed.
- 4. When deleting the position correction learning results.

### Notes

- •Start the driving after closing the opening screen as much as possible. The system is ready to start during opening screen.
- •The vehicle position indicator may disappear temporarily after the speed is increased depending on the vehicle model. This is a normal phenomenon indicating that the system is calculating the distance correction.

### Resetting automatic distance correction

Drive the vehicle in an open area for approximately 30-minutes at a speed over 20 kph (12.5 MPH) while receiving GPS signals.

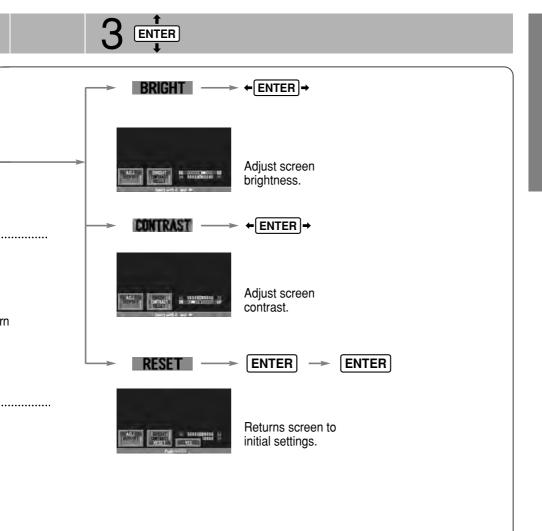
### Notes

Make sure the GPS reception indicator is illuminated on the map screen.



GPS reception indicator

### Before Use (Screen Quality Adjustment 2 VOICE Press and hold ENTER ENTER **Open** [Display Select ADJ. Menu] Screen quality adjustment SHEROCORD I Select DISP OFF Screen display turns off. Screen off Press any button to return to screen display. 461 Select DAY MODE / NIGHTMODE headlights OFF - DAY MODE Day / Night AG.J headlights ON - NIGHT MODE mode selector When the headlights are on, daytime mode can also be selected (if extra screen brightness is required under certain nighttime conditions). This selection can only be done when the headlights are on. Press **ENTER** to switch between day and night modes.



# Before Use Understanding Map Display

#### **Current position map**

Shows the current position of your vehicle on the scale selected.

#### **Route and flags**

When the route has been set, the blue line represents the route and the following two flags appear on the map.

201 m

Destination point flag (black/white) Start point flag (green)

#### Guide mode map

(en route guidance) Shows the road you are driving on in an enlarged scale.

 It is necessary to set this function (r page 32).

#### Intersection zoom map

(en route guidance)
Shows an enlarged map as you approach an intersection.
It is necessary to set this function

(🖙 page 32).

#### Point of divergence map

(en route guidance) Shows an approaching point of divergence such as a turning point or exit while on an expressway.

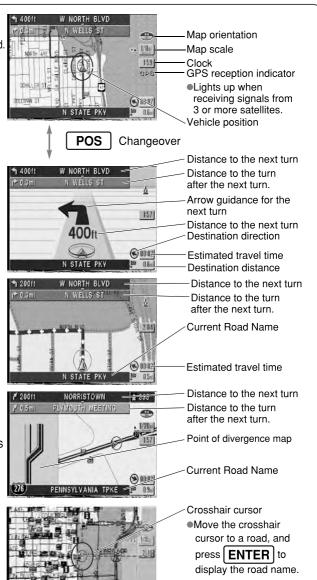
### Scroll map

Appears when operating

during displaying a current position map.

•This map can be scrolled with the crosshair cursor.

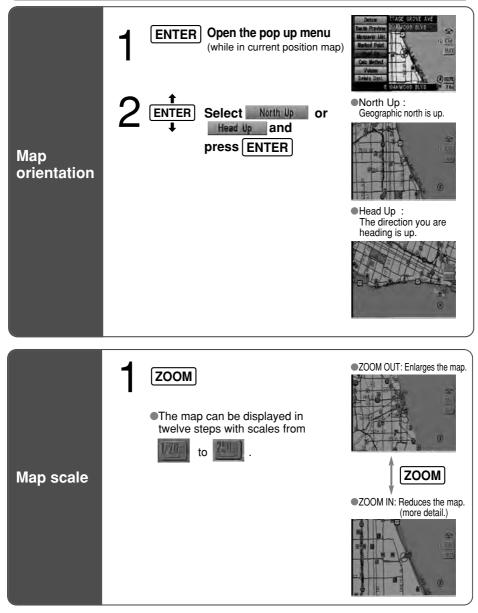




• When the system shows no route available to reach your designated point, the destination may be set near the designated point. If so, please be aware that a point with a destination flag 🔤 is not the point that you designated as your destination.

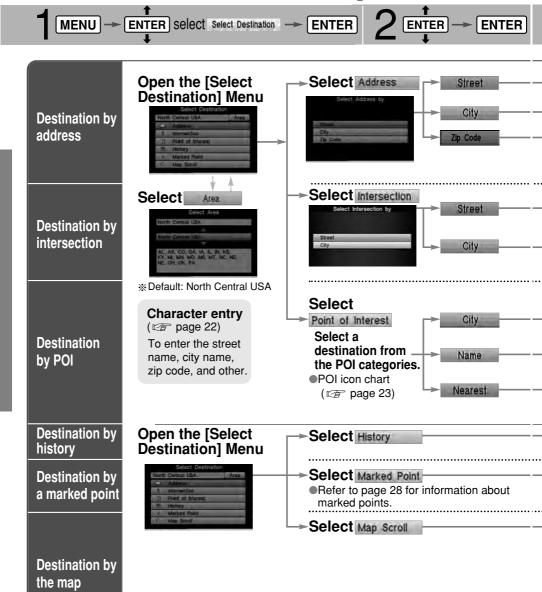
## Changing the Map Orientation/Scale

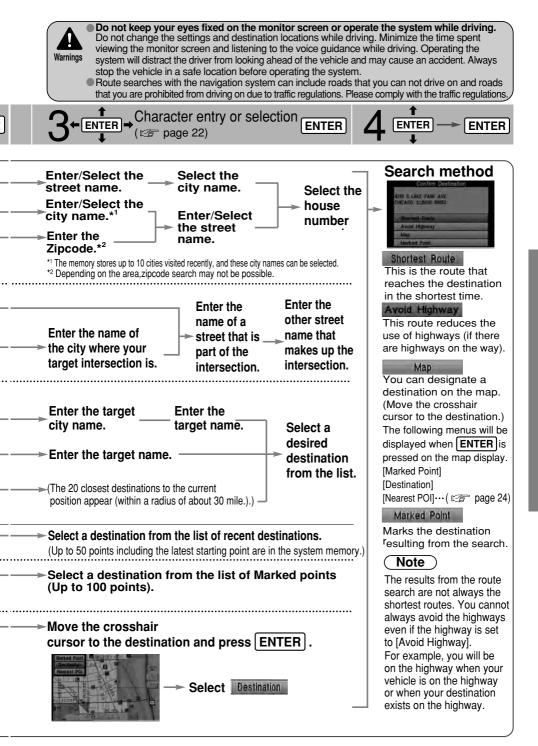
Warning Do not keep your eyes fixed on the monitor screen or operate the system while driving Do not change the settings and destination locations while driving. Minimize the time spent viewing the monitor screen and listening to the voice guidance while driving. Operating the system will distract the driver from looking ahead of the vehicle and may cause an accident. Always stop the vehicle in a safe location and use the parking brake before operating the system.



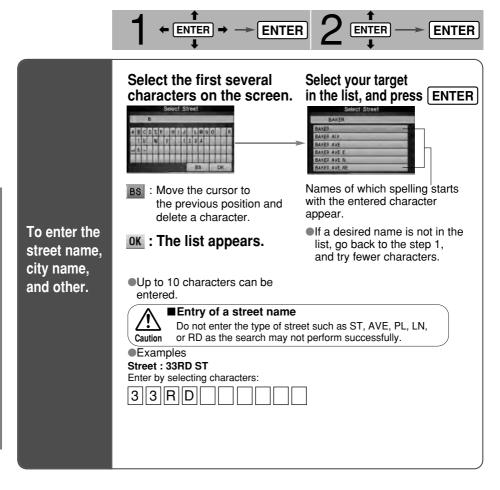
# **Destination Entry and Route Search**

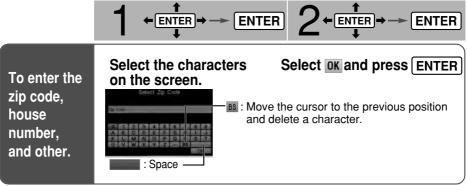
If you would like to go back to your start point, select the [History] in the [Select Destination] Menu, after that, select a green flag icon as a destination.





# **Character Entry**





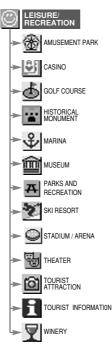
# POI Icons on Maps / Zipcode Entry

### POI (Point of Interest) Icons

The following are POI icons shown on maps.



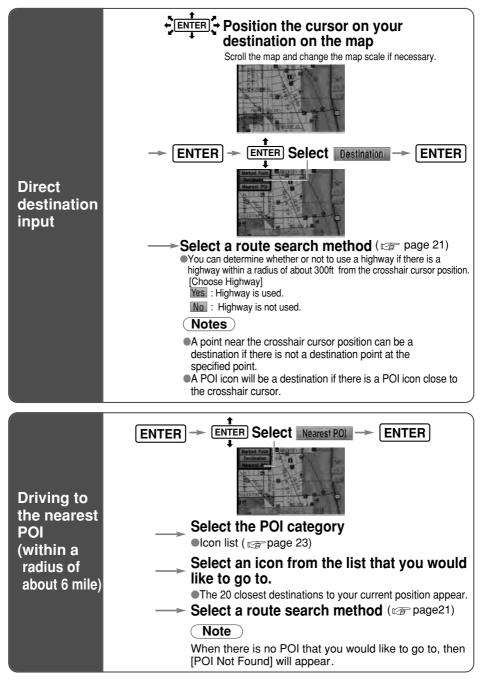




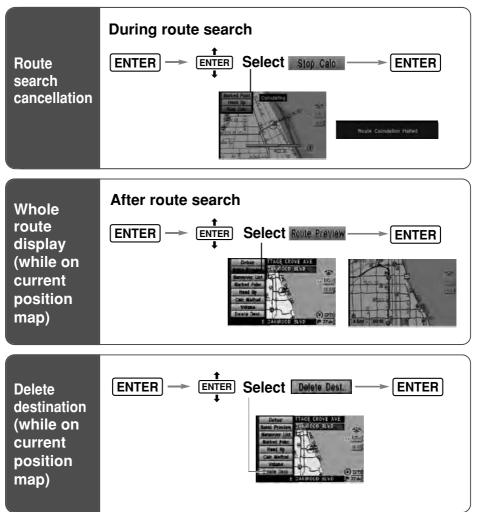


AIRPORT BUS STATION FERRY TERMINAL Generation LIGHT RAIL TRAIN STATION

# Direct destination input

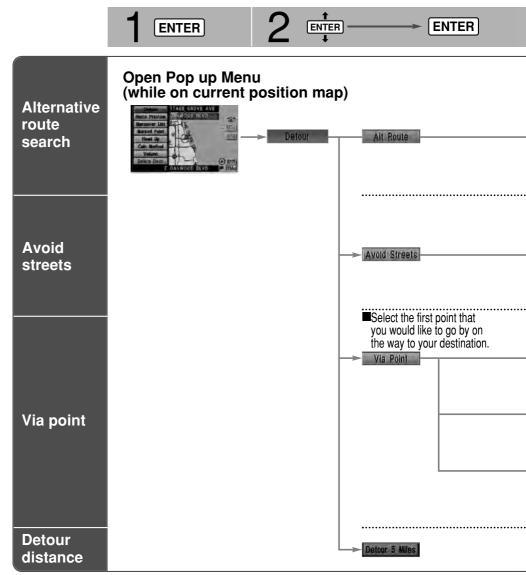


# After routing



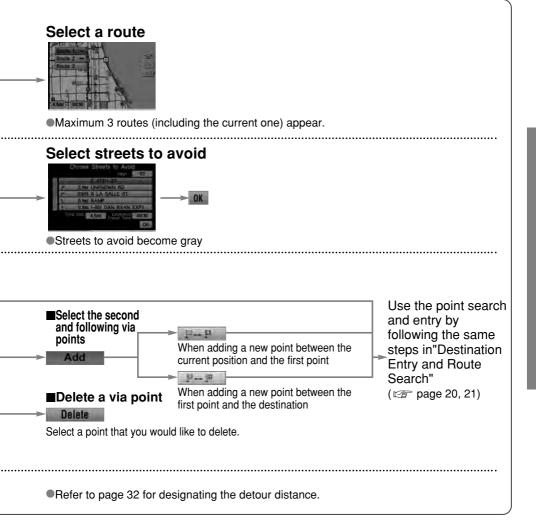
# Route Changes

 This function allows you to search for alternative routes to the same destination.





**Do not keep your eyes fixed on the monitor screen or operate the system while driving** Do not change the settings and destination locations while driving. Minimize the time spent viewing the monitor screen and listening to the voice guidance while driving. Operating the system will distract the driver from looking ahead of the vehicle and may cause an accident. Always stop the vehicle in a safe location and use the parking brake before operating the system.

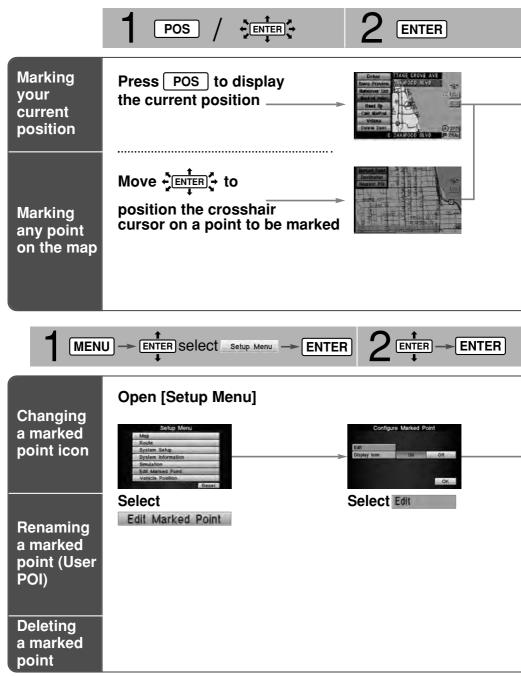


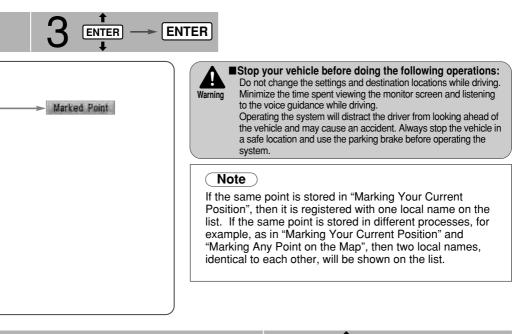
### (Notes)

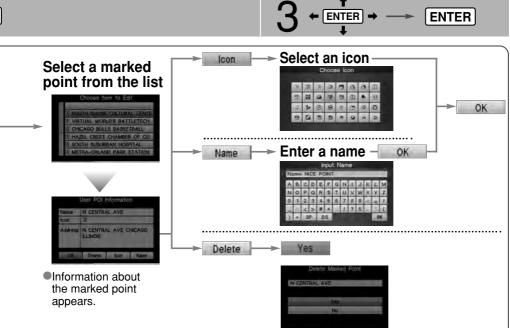
- •The detour may be longer than the distance you specified.
- You can set up to five Via points. If you try to add a sixth point, then the [Delete] menu opens. It will prompt you to delete a currently selected point.
- If you add a Via point near your current position when adding points, then Avoid Highway may not be selected with the route search method in some cases.

# Marked Point

Up to 100 points can be stored.
Each stored point is memorized with its name and icon, and shown on the map.



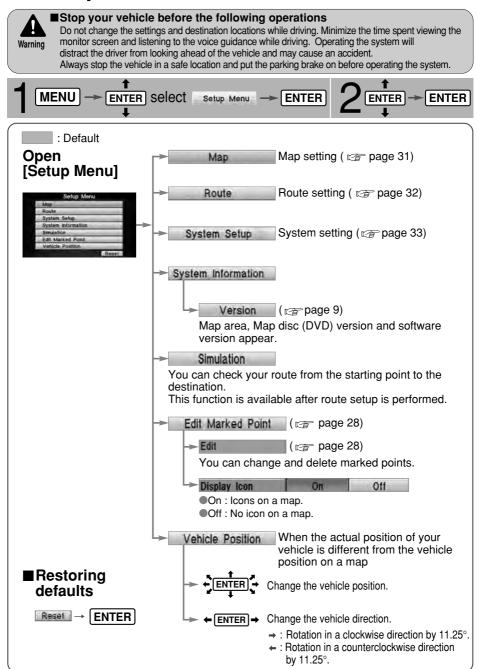




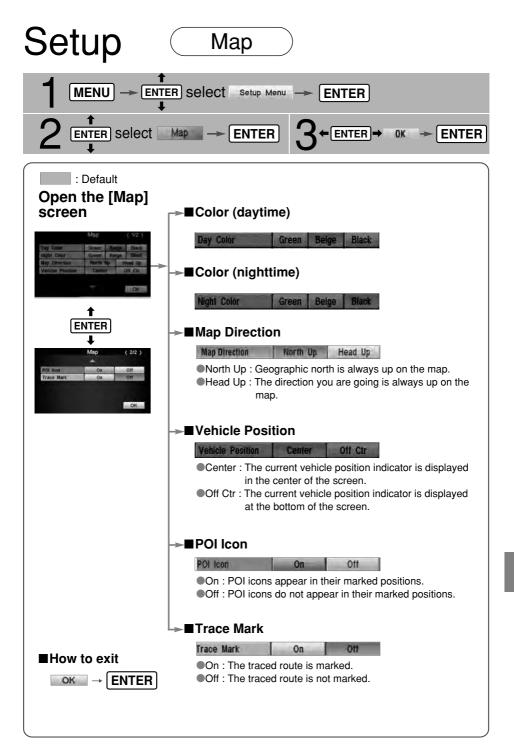
Marking

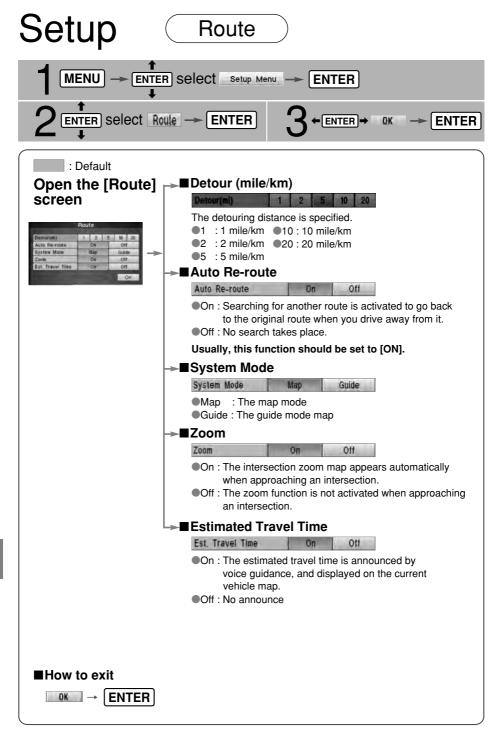
# Setup

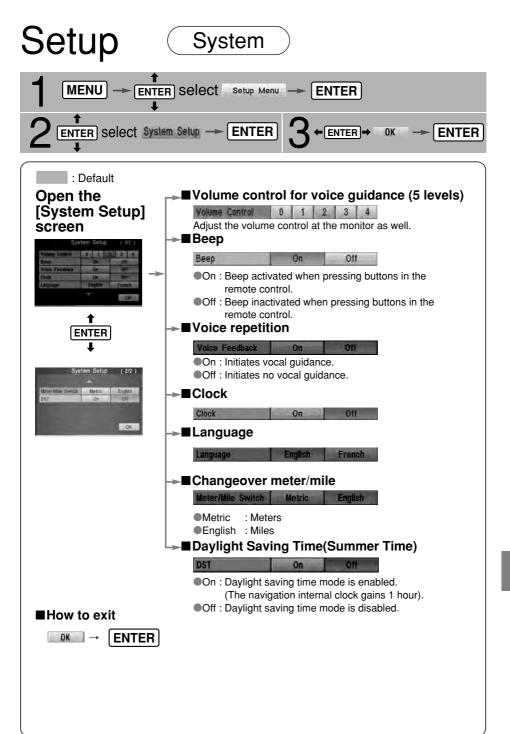
•The setting is a variable to suit your preferences.



User setting



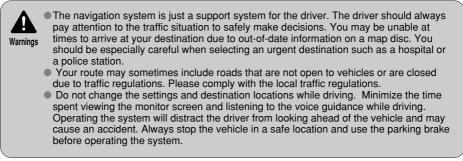




User setting

# Precautions/System Performance

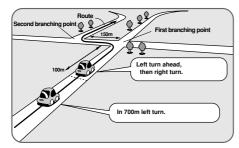
### Voice Guidance



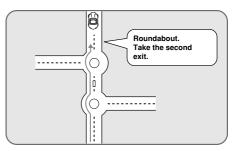
#### Voice guidance has the following functions:

#### Intersection guidance

- The system voice announces the distance to an upcoming turn and the turning direction.
   This guidance function is automatic. Therefore, you do not have to set it, and it cannot be disabled.
- •The system vocally announces the distance to an upcoming highway branching point or junction.
  - ➡ This guidance function can be set in the [Setup menu]. For details, see page 32.



When two intersections are close together, the voice guidance may be late.



When two roundabouts are close together, the voice guidance for the second may be late.

### Automatic Distance Correction

•The mobile navigation system calculates and indicates the vehicle position on the map by multiplying the speed pulse emitted by the vehicle with a correction coefficient. The speed pulse emitted varies with the type of vehicle and with differences in tire pressure and wear.

A different correction coefficient might even be required for the same type of vehicle. •Using a spare tire in place of the regular one may cause vehicle position deviations.

### GPS



GPS is a position detecting system utilizing the signals from GPS satellites deployed by the U.S. Department of Defense. The Mobile Navigation System uses input from three or more satellites and calculates the vehicle position based on the principle of triangulation.

The positioning accuracy of the system corresponds to the error display of the GPS which is from about 30 to 200 meters.

If you are using the system for the first time, or if you have not used it for some time, it takes about 5 minutes (or about 2 minutes in open areas) to calculate your vehicle's position.

### ■GPS signal reception is poor in the following places









In tunnels

Among high-rise buildings Under elevated roads

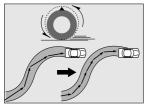
In wooded areas

- The GPS satellites are controlled by the U.S. Defense Department, which may intentionally lower positioning accuracy. In such cases, there may be vehicle position deviations.
- There may be vehicle position deviations for some time until GPS signals are received after turning on the ignition.

### Map Matching

This function compares your vehicle's tracking data with the road data on the map disc, applies dead reckoning to determine the road you are driving on, and displays your vehicle on that road on the map.

Intelligent map matching addresses the following problems to achieve high accuracy in vehicle positioning.



#### Position Correction for Elevated Roads

Position accuracy is improved by detecting if the vehicle is running on or under an elevated road.

Position Correction for Parking Garages Position accuracy is improved by detecting if the vehicle is driving in an elevated or underground parking garage.

#### **High-precision Gyrosensor**

A gyro detects turns with an accuracy of 0.05° per second. Combined with a speed sensor, it enables the system to display the current vehicle position even where GPS signals may be blocked.

•Using a spare tire in place of the regular one may cause vehicle position deviations.

Any difference between the direction which your vehicle actually travels and that shown on the map is automatically eliminated by azimuth correction.

# Precautions/System Performance

### **Positioning Accuracy**

In the following situations, your vehicle position may not be displayed correctly on the map. But, as you keep driving, your vehicle position will be automatically corrected utilizing map matching and GPS data.



Running on an elevated road



Making a turn after driving on a long straight road



Running on a steep mountain road



Running on a spiral road



Entering an intersection where a road branches off at a small angle



layout of roads

Running on gridiron Running on a slippery road with tire chains



Snaking on a wide road



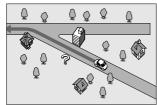
When your vehicle is on a turntable with the ignition turned off



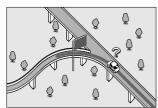
After getting off a ferryboat or vehicle train

### **Route Guide**

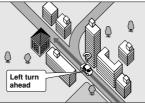
Although you may encounter the following problems in route guide, there is nothing wrong with the system.



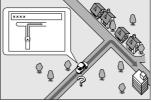
For certain intersection shapes, the upcoming turn or the name of the intersection may not be announced.



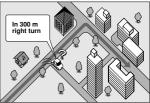
Some points where the road divides on highways or toll roads may not be displayed or announced.



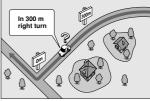
For certain intersection shapes, you may be prompted to turn right or left When you should actually stay on the same road.



The Intersection Zoom Map may not always agree with the actual shape of the intersection.



Voice guidance for the planned route may continue even after you have deviated from that route such as having turned too early.



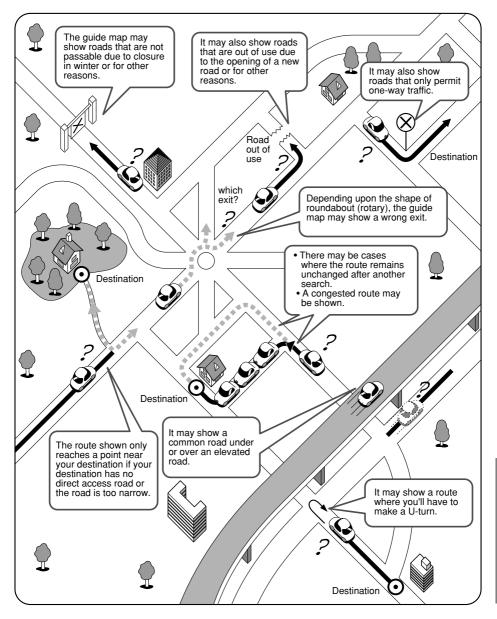
The announced distance to an upcoming turn may differ slightly from reality.



The navigation system is just a support system for the driver. The driver should always pay attention to the traffic situation to safely make decisions. You may be unable to arrive at your destination due to out-of-date information on a map disc. You should be especially careful when selecting an urgent destination such as a hospital or a police station.

### **Route Search**

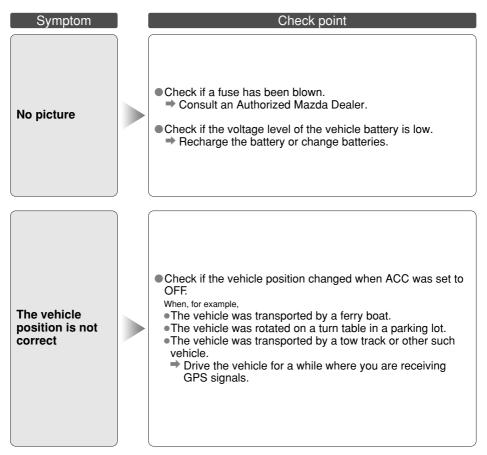
## Although you may encounter the following problems in a route search, there is nothing wrong with the system.



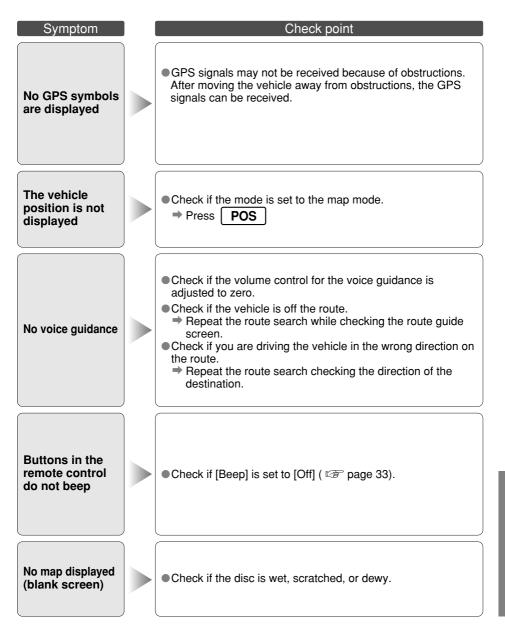
# Troubleshooting Verification First

### Note

There may be some problems due to operational errors or mistakes. Please read this manual again and verify that there really is a problem before calling an Authorized Mazda Dealer to ask for repair services.



As necessary



# Troubleshooting Error Messages

Error message	Solution
Route Calculation failed	• Change your destination and route, and repeat the route search.
Cannot Read Disc	<ul> <li>The disc is wet, dirty, scratched, or upside down, or the disc cannot be played with this unit.</li> <li>Eject the disc and check it.</li> </ul>
Accessing Data Please wait	<ul> <li>When the message appears in the opening screen:</li> <li>Check if the map disc is wet from condensation, scratched, or dirty. If the same message is displayed when this operation is repeated after checking, then consult an Authorized Mazda Dealer.</li> <li>When the message appears during operation:</li> <li>If the same message appears after repeating the operation, then consult an Authorized Mazda Dealer.</li> </ul>
Please Select another point. * When entering your destination Unable to select Destination.	Change your destination and route, and repeat the route search.

# Maintenance

### **Care of the Product**

#### ■Cleaning this product

Use a dry, soft cloth to wipe it.

#### ■Cautions for cleaning

Never use solvents such as benzene and thinners they may mar the surface of the unit.

#### ■Map disc

If you require the latest map disc, consult an Authorized Mazda Dealer. For latest map disc information, please refer to "Map Related Issues" on page 9.

### Handling and Care of Map Discs



#### ■Map Disc

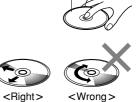
This unit supports only DVD-SDAL-formatted map disc (SEAMLESS) that NAVTECH has specifically designed for this unit. Mazda shall not be liable for any damages caused by using other formatted discs. Make sure to specify that a disc should be exclusively used for this product when you purchase it.

#### ■How to hold the disc

- Do not touch the underside of the disc.
- Do not make scratches on the disc.
- Do not bend the disc.
- When not in use, keep the disc in the case.

#### ■Disc Cleaning

• Use a dry, soft cloth to wipe from the center outward.



Label side

#### ■Do not leave discs in the following places:

- Direct sunlight
- Near car heaters
- In dirty, dusty and damp areas
- On seats and dashboards