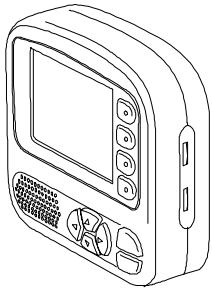
NavMate®

Navigation System

Installation

Manual

Ver 1.0



HORIZON
NAVIGATION

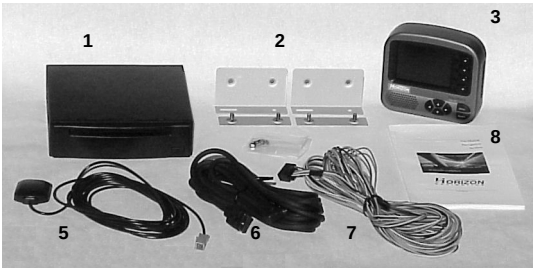
1.0 COMPONENTS

TABLE 1. Components

	COMPONENT	LOCATION/FUNCTION
1	Controller	Mounts under a seat or in the trunk.
2	Controller Brackets	Mounts the controller to the vehicle.
3	Display unit	Mounts to the instrument panel.
4	Display Bracket*	Mounts the display unit to the instrument panel.
5	GPS Antenna	Mounts on top of the instrument panel, package shelf or outside. Please refer to “2) GPS antenna mounting” on page 6.
6	Video Cable	Connects the controller and display unit.
7	Wire Harness	Connects the controller to the necessary vehicle signals.
8	User Manual	
9	Map CD**	Contains the navigation software and map database.

*Not included with kit. Vehicle-specific InDash brackets and an adapter for the NavMate display unit may be ordered from Panavise. Refer to www.panavise.com for details.

**Not included with kit. The CD-ROM for the appropriate geographic region must be ordered separately. For more information, please call 1-86NAVMATE1(1-866-286-2831).



PLEASE VERIFY RECEIPT OF ALL COMPONENTS PRIOR TO ATTEMPTING TO INSTALL THE SYSTEM INTO A VEHICLE.

2.0 SAFTY INFORMATION AND PRECAUTIONS

Before installing and using the system, please read the following precautions. Failure to do so may result in damage to the system.

2.1 Controller

1) Do not interrupt power to the system while the software is updating. This may result in corruption of the controller memory.
2) Never drop the controller. This may destroy the gyroscope or other components.
3) The controller MUST be mounted horizontally with the vehicle parked safely on reasonably level ground. Use a bubble level to ensure the controller does not exceed 5 degrees from horizontal level.
4) Mount the controller securely to ensure proper gyroscope function.
5) Mount the controller away from other electronics which may interfere with the GPS receiver.
6) Mount the controller away from strong magnetic fields.

2.2 Display unit

1) Never drop the display unit.
2) Do not apply pressure to the display screen.
3) Clean the display unit with a soft cotton cloth (or lens tissue) dampened with 70% isopropyl alcohol (rubbing alcohol). Any other cleaning fluids may damage the LCD screen.

2.3 CD-ROM

1) Never drop the CD-ROM.
2) Use standard CD-ROM cleaning procedures.

2.4 GPS antenna

1) Mount the GPS antenna in a position that provides good visibility of the sky.
2) Mount the GPS antenna away from other electronics which may interfere with antenna reception.
3) Do not cut, pinch or sharply bend the GPS antenna cable or coil the excess cable as it will degrade the signal.

2.5 Wire Harness

1) Never connect to any safety system circuits (air bag, seat belt etc.).
2) Disconnect the battery cable prior to making any connections. Wait 10 minutes before connecting the battery again.

3.0 INSTALLATION

3.1 Determine system layout

1) Determine the location to connect to the vehicle speed signal. Please call 1-86NAVMATE1(1-866-286-2831) for VSS help.
2) Determine the location to connect to the remaining vehicle signals required by NavMate. Please refer to Table 2 on pag e5 for signal requirements and NavMate wire colors.
3) Determine general component layout, e.g., where the controller will be mounted.

3.2 Connect wires and route cables

1) Connect wire harness to vehicle using splice(piggyback)method. Using a multimeter, verify the battery, ignition, ground, and backup connections.

   The NavMate system wire harness has five wires which must be connected to the vehicle. See Table 2 on pag e5 for requirements.

   Ground (Black): Connect to a vehicle ground. Maintain the shortest ground loop possible by connecting directly to a body ground point if available.

   Ignition (Pink): Connect to a circuit which is powered only when the key is in the on/run position. An example is the turn signal circuit.

   Battery (Red): Connect to a circuit which is powered constantly. An example is the hazard signal circuit.

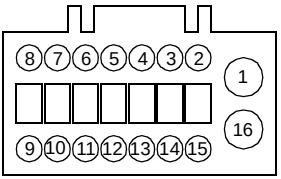
   Reverse (Light Green): Connect to a circuit which is powered only when the vehicle is in reverse. An example is the backup light.

   Speed signal (Green/White OR Yellow): The vehicle must have a vehicle speed signal (VSS) output in the form of a square wave or a sine wave. Use the green/white or the yellow wire, depending on VSS type. (See Tabl e2 on pag e5.) Connect to a circuit which carries the signal that drives the odometer.

   Special attention must be given to the vehicle speed sensor (VSS) connection. For vehicles with a digital signal (square wave, TTL) connecting to the green/white striped wire will provide a proper signal. In some vehicles (e.g., certain Ford/Lincoln/Mercury), the vehicle speed signal comes from a variable reluctance sensor which has a sine wave output. Connecting to the yellow wire will provide a proper signal. Some vehicles do not have a speed signal that is available to NavMate (e.g., most vehicles built before 1982, and vehicles with speed signal carried on a bus). Please call 1-86NAVMATE1(1-866-286-2831) for these vehicles.

2) Route the video cable between the controller mounting location and the display mounting location.

   NOTE: Right angle connector mates to the controller.



CONTROLLER CONNECTOR
(WIRE HARNESS VIEW)

TABLE 2. Signal/Power

No.	Signal/Power	Wire Color	Requirements	Typical location
1	Ground (battery minus)	Black	battery minus	Chassis
2	Reverse gear signal	Light Green	+13.8V DC nominal (when vehicle in reverse) Low level voltage VL max: 1.0 VL (min.) High level voltage VH min.: 7.0 VH (min.)	Backup light
3	Ignition signal	Pink	+13.8V DC nominal (when ignition on) Low level voltage VL max: 1.0 VL (min.) High level voltage VH min.: 7.0 VH (min.)	Fuse block
4	Vehicle speed signal (sine wave)	Yellow	Input pulse frequency: ˜0Hz to 2.5 KHz Input voltage range: -13 to +26 Vmax Low level voltage VL max: 0.9 VL (max) High level voltage VH min.: 4.0 VH (min.)	PCM
5	Vehicle speed signal (square wave)	Green/White	Input pulse frequency: 1 Hz to 200 Hz Input voltage range: -13 to +26 Vmax	PCM
6	Not used	-	-	-
7	Not used	-	-	-
8	Not used	-	-	-
9	Not used	-	-	-
10	Not used	-	-	-
11	Not used	-	-	-
12	Not used	-	-	-
13	Not used	-	-	-
14	Not used	-	-	-
15	Not used	-	-	-
16	System power source (battery plus)	Red	+13.8 V DC nominal, 3 Amp (min.)	Fuse block

3.3 Verify system starts and update software

1) Make sure ignition is OFF.
2) Connect wire harness to controller and video cable to controller and display unit.
3) Turn on ignition.
4) Insert the CD-ROM into the controller. NavMate will update its software. DO NOT TURN OFF THE IGNITION WHILE NAVMATE IS UPDATING.
5) Verify that NavMate powers-up correctly.

NOTE: The Display should be connected before power is turned on.

3.4 Mount components and tuck cables

1) Controller mounting

Mount the controller to the vehicle using the brackets provided. The controller must be firmly attached to the vehicle for the system to function properly. Do not overtighten. Do not mount the controller upside down. The controller must be mounted level to within 5 degrees with the vehicle parked safely on reasonably level ground. Use a bubble level to verify. Follow the rules under the "SAFTY INFORMATION AND PRECAUTIONS" on page 3.

Using a utility knife, slit the carpeting as necessary. Use double-sided tape to secure the brackets underneath the carpet. The two L-shaped mounting brackets may be reversed for mounting to the floor.

NOTE: Upon removal of the controller, reverse procedure and seal carpet slit with double-sided tape.

2) GPS antenna mounting

The GPS antenna must be mounted in a place that provides good visibility to the sky. If a clear view cannot be obtained inside the vehicle due to a vertical windshield (e.g., some delivery trucks), the antenna may be mounted outside the vehicle (The antenna has a magnet inside). Using double-sided tape, mount the GPS antenna to the instrument panel or package shelf. Plug the antenna cable into the controller.

3) Display Unit Mounting

Mount the display unit using the vehicle-specific bracket or flex mount. Do not overtighten. See www.panavise.com for details.

4) Tuck all cables into the vehicle sill. Make sure the cables are not pinched or sharply bent.

3.5 Setup, Initialize, and Calibrate

The GPS should initialize in 7-15 minutes. You do not need to be present during this time. Take this opportunity to fill out the warranty registration for the system, and place the User Manual and CD-ROM case in the vehicle glove compartment.

When GPS is ready GPS icon on the map screen will change from Red to Green.

1) Drive the vehicle approximately 10-15 miles to allow the system to find its current location and calibrate for the speed signal pulse rate and the gyroscope. Verify the VSS connection. (Make sure that the vehicle icon is moving.)

2) After a few miles of driving, verify that the vehicle icon position is close to the actual vehicle position. Make several turns and verify that the system recognizes them.

3) The system is now ready for use. Please remember that the system is "rough calibrated" and that over the next 30 miles of driving the system will fine tune its calibration.