NNW

335°

V550
V600

DIGITAL VEHICLE COMPASS

pni

Making Ordinary Products Extraordinary

CONTENTS

CONTENTS

CONGRATULATIONS!

You have purchased one of the most sophisticated compasses available for use in a vehicle. This unit incorporates patented magnetic sensor technology that was developed for the United States Military to give you the most accurate electronic compass headings.

Compass Features:

- **Works in Any Vehicle:** accurate in cars, trucks, SUVs, or RVs.
- **Removable Compass Unit:** easily slides off from its holding bracket to be used outside the vehicle as an alarm clock or to prevent theft.
- **Adjustable Holding Bracket:** easily mounts to any windshield with heavy-duty suction cups (included).
- **Handheld Mode (Model V600 only):** The V600 model can also be used as a handheld compass in a horizontal position without the need to recalibrate everytime the compass is removed from the vehicle.
- **Easy to Read Display:** compass heading is displayed with 16 cardinal points (N, NNE, etc.) and 1° numeric digits.
- **Electronic Calibration:** just press a button and perform two circles. Calibration doesn't have to be repeated until the
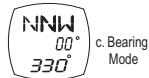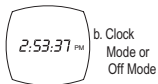
batteries are removed or the compass is mounted elsewhere.

- **Bright Backlight:** illuminates the LCD for easy viewing day or night.
- **Digital Clock:** displays in 12-hour or 24-hour time format.
- **Alarm Clock:** compass can be used as an alarm clock.
- **Trip Timer:** includes a timer that counts up in hours, minutes and seconds.
- **Bearing Point:** stores and displays one bearing point into memory.
- **"Smart" Auto Shut-Off:** shuts off auto-matically (to clock mode) to save battery power when no magnetic field change is detected for approximately 10 minutes.
- **Magnetic Distortion Message:** alerts you when magnetic interference from outside sources is affecting the accuracy of the compass.
- **Low Power Requirements:** operates on 2 AAA batteries (included) for over 200 hours, depending on backlight usage.
- **Wide Temperature Range:** 0°F to 140°F operating temperature; -40°F to 160°F storage temperature.

DISPLAY AND BUTTONS

Cardinal Point Heading

[1] LCD Display

Showing:
a. Compass Heading Mode

pni

NNW

Numeric Heading

330°

[5] Alarm

Bell

DISTORTION

[3] LIGHT Button

[4] Distortion Message

[2] ADVANCE Button

2:53:37 PM — b. Clock Mode or Off Mode

NNW *00°* *330°* — c. Bearing Mode

NNW *00:00:00* *330°* — d. Timer Mode

AL 12:00 AM — e. Alarm Mode
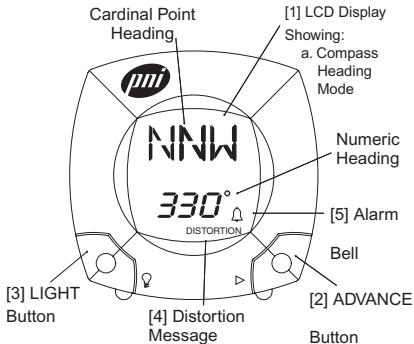
DISPLAY AND BUTTONS

[1] LCD Display:
The compass has various LCD display modes:

a. **Compass Heading Mode** – displays heading information in cardinal points (N, NNE, NE, etc.) and numeric digits (325°, 326°, etc.).
b. **Clock Mode** – used to set and display the clock in a 12-hour or 24-hour format. Clock mode is also equivalent to shut-off mode.
c. **Bearing Mode** – used to store and display bearing point information.
d. **Timer Mode** – used to set and start trip timer feature.

e. **Alarm Mode** – used to set and view alarm clock settings.

[2] ADVANCE Button:
Used to turn the unit on, to step through the various compass modes, to toggle between various options in programming mode, and to begin and end calibration.

[3] LIGHT Button:
Used to turn the backlight on or off, to enter backlight programming, and to select an option or value in programming mode.

[4] "DISTORTION" Message:
The compass detects when outside magnetic

interference is compromising compass accuracy by displaying the word "DISTORTION" on the LCD. Distortion occurs when there has been a significant change in the surrounding magnetic fields, such as when you are driving underneath an overpass or over a bridge.

[5] Alarm Bell Icon:
Indicates if the alarm feature is enabled (icon showing) or disabled (icon not showing).

Note:
    The V600 model also displays a "CAr" or "HAnd" *message for the first 10 seconds of Compass Heading Mode. This indicates* *which calibration settings the compass is using: car mode or hand mode (i.e vertical or horizontal position). These messages do not appear with model V550.*

Important Note:
When in "off mode", your compass displays the clock, not a blank screen. This is normal and consumes minimal battery power. To turn the power back on, press any button.

STEP 1 – INSTALLING (REPLACING) THE BATTERIES ≣

The compass uses two "AAA" size batteries.

Installing the Batteries:
1. Remove the compass from its bracket.
2. Slide open the battery cover on the back of the compass housing.
3. Install the two batteries, noting the polarity as shown inside the battery compartment. Replace the battery cover. The compass will go through a self-test pattern until the clock starts.

Notes:
- *If nothing happens, or if the display becomes "stuck" with characters, remove the batteries, wait approximately 1 minute, and then reinsert the batteries.*
- *Every time the batteries are removed or replaced, you must calibrate the compass and reset all features (clock, alarm, bearing point, etc.).*
- *The compass has an auto-shut off feature. When no magnetic field change is detected for 10 minutes, the compass automatically switches to clock mode (off mode). To turn the power back on, press the* ADVANCE *button.*

STEP 2 – MOUNTING THE COMPASS

Mounting Guidelines:
- The compass should be mounted on the windshield.
- Choose a place on the windshield that will not obstruct the view of the driver and is within reach so the buttons can be easily pushed.
- For maximum accuracy, the compass should be mounted at least 5 inches away from strong stereo speakers.
- The compass can be tilted up or down a maximum of 20° from road level and still maintain accuracy. If tilted more than 20°, the heading information may not be accurate (see illustration next page).

Mounting the Compass:
1. Install the suction cups (included) onto the base of the holding bracket by fitting them into their holes.
2. Adjust the angle of the holding bracket so that the face of the compass is pointing towards the rear of the vehicle. Loosen the screw on the holding bracket stem by a quarter turn. Make your up and down adjustments, then tighten the screw.
3. Press the holding bracket base firmly against the windshield, until the suction

cups securely take hold (clean surface of windshield and suction cups, if necessary).

4. Readjust the angle of the holding bracket, if necessary.

Feature: The compass easily slides out of its holding bracket without having to remove the bracket mechanism. This is useful if you want to use the compass outside of the vehicle as an alarm clock or to avoid theft. Removing the compass without disrupting the bracket mechanism eliminates the need for recalibration, since the unit will be repositioned in its holding bracket the same way as when originally calibrated.

The V600 model allows the compass to be used outside the vehicle as a handheld compass in a horizontal position.

You are now ready to calibrate your compass.

Windshield Installation
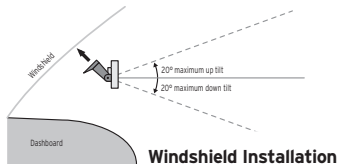
STEP 3 - CALIBRATING THE COMPASS

Calibration allows the compass to separate the earth's field from the magnetic fields generated by your vehicle, and therefore provides accurate heading information.

When to Calibrate:
- When the compass is used for the first time in a vehicle (or in handheld mode for Model V600 only).
- When the compass is used in a different location other than where previously calibrated.
- When the magnetic "DISTORTION" message is continuously displayed.

- When the batteries are removed or replaced.

Calibration Guidelines:
Before you begin calibration, the compass must be mounted on the windshield in the location where it will be used in the vehicle. The backlight must also be for "OFF".

Calibrating compass Model V550:
1. Press the ADVANCE button until the compass heading is displayed (**Note**: If the "CAL" message flashes immediately after you press the ADVANCE button,

proceed to step 3).

2. Press and hold for 2 seconds both the ADVANCE and LIGHT buttons until the "CAL" message flashes.

3. Press the ADVANCE button. The "WAIT" message will display for a second, then the "TURN TWICE" message will flash.

4. Turn your vehicle in two circles on a level surface. The size of the circles does not matter and they do not need to be perfect circles. However, they must be completed in the same direction and must take at least 15 seconds per circle to complete.

5. Press the ADVANCE button. Calibration is now complete and the compass heading should be displayed.

Calibrating compass Model V600:
Model V600 stores two calibration settings, one for use when the unit is mounted vertically inside the vehicle in its bracket (Car Mode), the other for use outside the vehicle in a horizontal position (Hand Mode). This feature allows you to use the compass in two different magnetic field environments (inside or outside) without having to calibrate every time you switch from one environment to the other.

STEP 3 – CALIBRATING THE COMPASS

Car Mode Calibration (V600):

1. Press the ADVANCE button until the compass heading is displayed. If the "HAnd" message shows instead of the "CAr" message, press and hold for 2 seconds the ADVANCE button to switch from "HAnd" to "CAr" mode.

2. Press and hold for 2 seconds both the the ADVANCE and LIGHT buttons until the "CAL" message flashes.

3. Press the ADVANCE button – The "WAIT" message will display for a second, then the "TURN TWICE" message will flash.

4. Turn your vehicle in 2 circles on a level surface. The size of the circles does not matter and they do not need to be perfect circles. However, they must be completed in the same direction and must take at least 15 seconds per circle to complete.

5. Press the ADVANCE button. Calibration is now complete and the compass heading should be displayed. The "CAr" message will also show for approximately 10 seconds, indicating that you are in car calibration mode.

STEP 3 - CALIBRATING THE COMPASS

Hand Mode Calibration (V600):
After car mode is calibrated you can then calibrate hand mode. The first time the V600 goes into handheld mode it needs to be calibrated. The compass will store this separate calibration for hand mode, and will use it in the future.

Note: *For this mode the compass should be horizontal or flat in the hand.*

1. Press the ADVANCE button until the compass heading is displayed. If the "CAr" message shows instead of the "HAnd" message, press and hold for 2 seconds the ADVANCE button to switch from "CAr" to "HAnd" mode.

2. Press and hold for 2 seconds both the ADVANCE and LIGHT buttons until the "CAL" message flashes.

3. Press the ADVANCE button – The "WAIT" message will flash for a second, then the "TURN TWICE" message will flash.

4. Rotate the compass 2 complete rotations, taking at least 15 seconds per rotation.

5. Press the ADVANCE button. Calibration is now complete, and the compass heading should be displayed. The

STEP 3 - CALIBRATING THE COMPASS

"HAnd" message will also show for approximately 10 seconds, indicating that you are in hand calibration mode.

Feature: Pressing the LIGHT button during programming cancels the calibration process without disrupting your previous calibration settings. However, if no previous calibration is stored, pressing the light button will not cancel calibration.

Clock Feature:
The compass displays time in either standard time format or military time format (12-hour clock format or 24-hour clock format). The default time format is standard time.

Setting the clock:
1. Press the ADVANCE button until the clock is displayed (you must be in clock mode in order to set the clock).
2. Press and hold the ADVANCE button for 2 seconds. The default number "12" will flash.
3. Press the ADVANCE button to toggle between the 12 and 24 hour formats, then press the LIGHT button to set the desired hour format.

   The clock appears with the hour digits flashing.

5. Press the ADVANCE button to change the flashing hour digits, then press the LIGHT button to set the desired hour.
6. Press the ADVANCE button to change the flashing first digit of the minutes, then press the LIGHT button to set the desired digit.

SETTING AND USING THE COMPASS FEATURES

7. Press the ADVANCE button to change the flashing second digit of the minutes, then press the LIGHT button to set the desired digit.

8. Press the ADVANCE button to set the flashing seconds, then press the LIGHT button to set the seconds to "OO."

9. Press the ADVANCE button to toggle between A or P (a.m. or p.m.), then press the LIGHT button to set A or P (This step is not required if you have selected the 24-hour format). The clock is now set

Bearing Point Feature:
The bearing point feature allows the compass to store one heading to be used as a reference point.

1. Press the ADVANCE button until bearing mode is selected. "OO" should be shown before any headings are entered.

2. Press and hold the ADVANCE button for 2 seconds. After the tone, the current compass direction is stored as the bearing. Repeat to enter new bearing.

SETTING AND USING THE COMPASS FEATURES

Trip Timer Feature:
The compass features a standard timer that counts up in hours, minutes, and seconds. It can be started and stopped any number of times. A tone will sound with each start and stop of the timer.

1. Press the ADVANCE button until timer mode is selected and flashing "00:00:00".
2. Press and hold the ADVANCE button for 2 seconds to start timer.
3. Press and hold the ADVANCE button for 2 seconds to pause timer.
4. To reset timer, press and hold the ADVANCE button for 4 seconds.

Alarm Clock Feature:
The compass can be used as an alarm clock. You must be in alarm mode to set the alarm.

Setting the Alarm:
1. Press the ADVANCE button until alarm mode is selected (display should show "AL 12:00am" if set for the first time).
2. Press and hold the ADVANCE button for 2 seconds. The hour digits will then flash ("12" if set for the first time).

SETTING AND USING THE COMPASS FEATURES

3. Press the ADVANCE button to change hour. Display will show "am" or "pm" according to what hour is shown.
4. Press the LIGHT button to set the desired hour.
5. Repeat steps 3 and 4 to select the minutes.
6. After minutes are selected and the LIGHT button is pressed, the alarm is set and the alarm bell icon will appear on the LCD screen. The alarm bell icon means the alarm is enabled.

Enabling and Disabling the Alarm:
1. Press the ADVANCE button until alarm mode is selected.
2. Press and hold for 2 seconds both the ADVANCE and LIGHT buttons until you hear a confirming beep and the bell icon appears or disappears.

The compass uses an electro-luminescent backlight to illuminate the display, making it visible at night. Pressing the LIGHT button turns the backlight on or off. The backlight has a programmable auto shut-off feature, which turns the backlight off after it has been on for a specified period of time.

Backlight Auto Shut-off:

The compass has a programmable auto shut-off for the backlight. The default auto shut-off value is 10 seconds, but 30 seconds can also be selected. Auto shut-off can also be disabled completely by selecting 00 seconds. This means the backlight will stay on continuously until the LIGHT button is pressed again, or when the vehicle is parked and no magnetic field change is detected for approximately ten minutes.

Changing the Auto Shut-Off Value:

1. Press and hold the LIGHT button for 2 seconds and the default value 10 (or last selected value) will appear and flash.
2. Press the ADVANCE button to select the desired value of 10, 30, or 00 seconds.
3. Press and hold the LIGHT button for 2 seconds to select the value. The clock display will appear.

FREQUENTLY ASKED QUESTIONS

How does the compass work?
The compass uses a patented magnetic sensor technology that was developed by PNI Corporation for the U.S. Military. This technology is called Magneto-Inductive and is the largest advance in compass technology since the fluxgate was invented 60 years ago. The earth generates a magnetic field, and through a mathematical calculation, compass heading is determined. The Magneto-Inductive technology is able to electronically sense the difference in the earth's field from your vehicle's magnetic field. The unit's microprocessor electronically subtracts your vehicle's magnetic fields, displaying highly accurate compass readings. Magneto-Inductive sensor technology has many advantages over other technologies including better performance, consuming less power and being less expensive. These advantages have made Magneto-Inductive sensor technology the choice for many high profile compass applications including Chrysler, GM, and Ford automobiles, Polaris jet skis, Bayliner boats and Timex watches.

Where can the compass be used?
The compass can be used in any type of vehicle including cars, trucks, vans, SUVs,

and RVs. The V600 can be used outside the vehicle as a handheld compass.

How do I read the display?
The compass displays direction in 2 different formats (1) cardinal points (N, NNE, NE, E, etc.) and (2) numeric digits (325°, 330°, etc.) The 16 cardinal points of a compass (N, NNE, NE, ENE, E, ESE, SE, SSE, S, SSW, SW, WSW, W, WNW, NW, NNW) give you a general sense of direction. The numeric digits show your exact direction down to the nearest 1 degree.

What is calibration and why is it necessary?
Calibration is the process whereby the compass separates the earth's magnetic field from externally generated magnetic fields such as those generated by a vehicle's steel body or electronics. Without calibration, the compass thinks the entire magnetic field it is reading is from the earth and consequently displays inaccurate compass readings.

When do I need to calibrate the compass?
The compass needs to be calibrated when used for the first time, when used in an environment with a different magnetic field or when the batteries are removed or

replaced. Using the compass in a different environment includes moving it to a new position in the same vehicle, installing it in a different vehicle, or when there has been a change to your vehicle such as installation of a new stereo. The V600 needs to be calibrated when used as a handheld compass outside the vehicle for the first time.

What are the benefits of Car Mode and Hand Mode (Model V600 only):
Model V600 includes an additional electronic sensor which allows it to store two calibration settings, one for use when the unit is mounted vertically inside the vehicle in its bracket (Car Mode), the other for use outside the vehicle in a horizontal position (Hand Mode). This allows you to use the compass in two different magnetic field environments (inside or outside) without having to calibrate everytime you switch from one environment to the other.

Can Model V550 be used in a handheld mode outside of the vehicle?
Yes. However, unlike model V600 which can store two calibration settings, the V550 model has to be calibrated everytime it is removed from its holding bracket and used outdoors, then calibrated again when

replaced in its holding bracket. In addition, the V550 can only be calibrated and held in a vertical position.

What happens when the batteries are removed?

Removing the batteries from the unit erases all the information that was stored in memory including the time, alarm, bearing point, etc.., as well as calibration information. After removing the batteries, the unit must be recalibrated and the information reset.

What is magnetic distortion?

Many things generate external magnetic fields that can cause a compass to be inaccurate, such as metal and electronics. Your compass senses when there has been a significant change in magnetic fields and displays the "DISTORTION" message. This may occur when driving over a bridge, under an overpass, over railroad tracks or within close proximity to something with a strong magnetic field. Once the vehicle has moved away from the source of interference, the compass will be accurate again. If the "DISTORTION" message is continuously

displayed, it is usually a sign that there has been a significant change in magnetic fields and recalibration is necessary.

SERVICE AND REPLACEMENT

Customer Service
Please e-mail customer service department at customerservice@pnicorp.com or call us between the hours of 8:00 a.m. and 5:00 p.m. (PST) Monday through Friday, with questions not answered in this manual.

Replacement Service
For the fastest service, it is best to contact or return your unit to the place of purchase within 30 days of the purchase. If you wish to return the unit for replacement or repair to PNI Corporation, please do the following:

1. Obtain a return merchandise authorization (RMA) number by contacting PNI:

- By phone: (888) 422-6672 (toll-free within the U.S.A. only) or at (707) 566-2260 between 8:00 a.m. and 5:00 p.m. (PST).

- By fax: (707) 566-2261

- By e-mail: customerservice@pnicorp.com

2. Provide a proof of purchase, such as a mechanical reproduction or carbon copy of your sales receipt. If you send your original receipt, it cannot be returned. Proof-of-purchase must show printed date of purchase, model number, and place of purchase. There will be a charge for repair/

SERVICE AND REPLACEMENT

replacement if no proof of purchase is provided, or if it is past the 12-month warranty period.

Once you have acquired a RMA number, pack the unit securely to prevent damage in transit. If possible, use the original packing material and box. Be sure to send the entire product.

3. Ship prepaid and insured by way of a traceable carrier such as United Parcel Service (UPS), Roadway Parcel Service (RPS), or First Class Mail to avoid loss in transit.

4. Write the issued RMA number on the outside of your package and send your proof-of-purchase and description of the problem to the following address:

**PNI Corporation
5464 Skylane Boulevard, Suite A
Santa Rosa, CA 95403-1084**

Type or print your name and address where the replacement should be delivered. After receipt of your documents and unit, a replacement unit will be sent to you. Please allow 2 to 3 weeks from receipt of your returned product to delivery of your replacement.

WARRANTY INFORMATION

PNI Corporation warrants to the original user that this product will be free of defects in workmanship and materials for one (1) year from the date of purchase. This warranty does not cover wear and tear due to normal use, or damage to the product as the result of improper usage, neglect of care, alteration, accident, or unauthorized repair.

If the product is found by PNI to be defective and you have provided proof of purchase acceptable to PNI, PNI's entire liability and your exclusive remedy for breach of warranty shall be that PNI, at its option, will replace or repair the product and return the replacement or repaired product to you at no charge, provided that you ship the product to PNI at your expense. PNI warrants the repaired or replaced product to be free from defects in material and workmanship for a period of the greater of: (i) ninety (90) days from the date it is shipped to you; or (ii) the period of time remaining on the original one (1) year warranty.

THE FOREGOING WARRANTY IS GIVEN IN LIEU OF AND PNI DISCLAIMS ALL OTHER WARRANTIES OR REPRESENTATIONS, EXPRESSED OR IMPLIED, IN FACT OR IN LAW, WITH RESPECT TO THIS PRODUCT, INCLUDING, BUT NOT LIMITED TO, (1) THE IMPLIED

WARRANTY INFORMATION

WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, OR (2) THAT USE OF THE PRODUCT WILL BE UNINTERRUPTED AND ERROR FREE.

PNI shall have no liability for any indirect or speculative damages (including, but not limited to, consequential, incidental, and special damages) relating to the use of or inability to use this product, whether arising out of contract, negligence, tort, or under any warranty theory, or for infringement of any other party's intellectual property rights, irrespective of whether PNI had advance notice of the possibility of any such damages, including, but not limited to, loss of use, revenue, or profit. In no event shall PNI's total liability for all claims regarding the product exceed the price paid for the product. PNI neither assumes nor authorizes anyone to assume for it any other liabilities.