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1. Safety Information

For your safety, and to prevent damage to the equipment and vehicles, read this manual thoroughly before operating your NT200E code reader. The safety messages presented below and throughout this user manual are reminders to the operator to exercise extreme care when using this device. Always refer to and follow safety messages and test procedures provided by the manufacturer of the vehicle or equipment being tested. Read, understand and follow all safety messages and instructions in this manual.

1.1 Important Safety Instructions

Always use this code reader as described in the user manual, and follow all safety messages.

- Do not route the test cable in a manner that would interfere with driving controls.
- Do not exceed voltage limits between inputs specified in this user manual.

- Always wear ANSI approved goggles to protect your eyes from propelled objects as well as hot or caustic liquids.
- Keep a dry chemical fire extinguisher suitable for gasoline, chemical and electrical fires in work area.
- Make sure to turn off ignition before connecting or disconnecting the code reader.

2. Introduction

The NT200E has been developed by leading industry experts. It is specially designed to read/clear codes, read live data, retrieve freeze data and request vehicle information on OBDII/EOBD compliant cars, SUVs, light-duty trucks and mini-vans sold worldwide since 1996.

2.1 About the Code Reader

2.1.1 Code Reader Controls




- A. **OBD II Cable** - provides communication for vehicle DLC.
- B. **LCD Display** - shows menus, test results and operation tips.
- C. **UP Key** - moves selection up.
- D. **ESC Key** - returns to previous screen or level.
- E. **ENTER Key** - confirms an action or enter system setup menu from home screen
- F. **DOWN Key** - moves selection down
- G. **USB Port** - provides a USB connection for the PC or laptop.

2.1.2 Specifications

- 1. Display: Backlit, 128 x 64 pixel display with contrast adjustment.
- 2. Working Temperature: 0 to 60°C (32 to 140°F)
- 3. Storage Temperature: -20 to 70°C (-4 to 158°F)
- 4. Power: 8-18 Volts powered by vehicle battery
- 5. Dimensions (L*W*H): 120*75*20mm (4.7*2.96*0.78in)
- 6. Weight: 300g

2.1.3 Display Indicators

Below is a list indicators used to help navigate through menus.

- 1 \$ Indicates the control unit number.
- 2  Indicates more than one screen of information is available.


2.1.4 System Setup

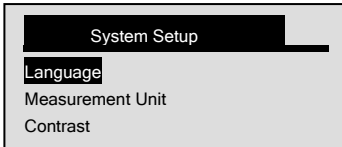
System Setup allows you to:

- Select menu languages.
- Change measurement unit.
- Adjust display contrast.

✓ **System Setup** settings remain until changes to the existing setups are made.

To do system setup:

-  1. Press the **UP/DOWN** key to enter **System Setup** from home screen.



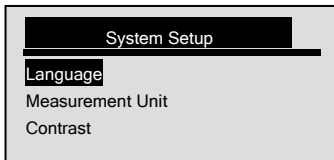
- ✓ Follow on-screen instructions to program the code reader to meet your specific needs.

2.1.5 Changing Language

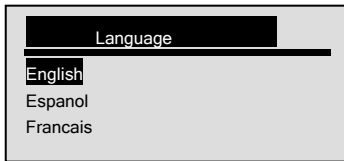
- ✓ The code reader is set to display English menus by default.

To change menu language:

- ▶ 1. Use the **UP/DOWN** key to pick **Language** from **System Setup** screen.
2. Press the **ENTER** key to confirm.



3. Use the **UP/DOWN** key to select desired language



4. Press the **ENTER** key to save language setting and return.

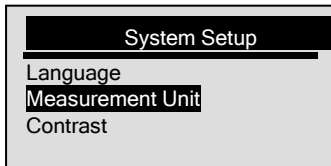
2.1.6 Changing Measurement Unit

√ Metric is the default measurement unit.

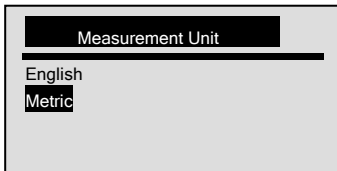
To change measurement unit:



1. Use the **UP/DOWN** key to select **Measurement Unit** from **System Setup** screen.
2. Press the **ENTER** key to confirm.



3. Use the **UP/DOWN** key to select desired measurement unit.



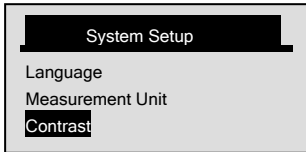
4. Press the **ENTER** key to save measurement setting and return.

2.1.7 Adjusting Display Contrast

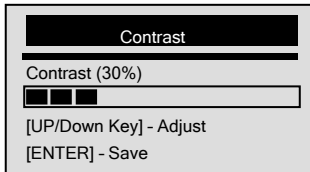
To adjust display contrast:



1. Use the **UP/DOWN** key to select **Contrast** from **System Setup** screen.
2. Press the **ENTER** key to confirm.



3. Use the **UP/DOWN** key to adjust contrast.

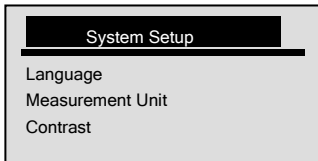


4. Press the **ENTER** key to save contrast setting and return.

2.1.8 Exiting System Setup

To quit system setup:

- ▶ 1. Use the **ESC** key to quit system setup



3. OBDII/EOBD Diagnosis

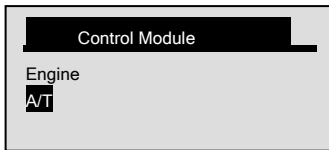
Diagnostic Menu allows you to:

- Read DTCs.
- Clear DTCs.
- View live datastream.
- View freeze data.

- Retrieve vehicle information.
- √ The code reader detects the communication protocol when it is connected to the vehicle and uses the protocol throughout the testing until another vehicle is diagnosed.
- √ If the code reader fails to communicate with the vehicle a "Communication Error!" message displays. Make sure the OBDII connector is securely attached, and the ignition key is on. Turn vehicle key to off for 10 seconds, then on. If the problem still exists, refer to "**Error Messages**" on page 18 of **Troubleshooting**.
- √ When the code reader links to a vehicle, it checks the status of I/M Monitors, and gives a summary report on the display as illustrated below.

System Status	
Code Found	3
Monitors N/A	4
Monitors OK	4
Monitors INC	3

- √ If the vehicle is equipped with more than one computer module (for example a powertrain control module [PCM] and a transmission control module [TCM]), the code reader identifies them by their identification names (ID) assigned by the manufacturer (i.e. Engine or A/T).
- √ Use the **UP/DOWN** key to select a control module where the data may be retrieved when more than one module is detected.



✓ To view information of other control units quit the current test and select another module.

3.1 Reading DTCs

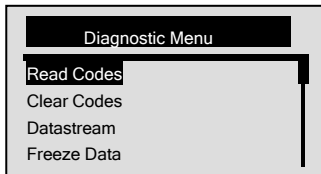
The **Read Codes** function is used to read DTCs (stored codes), which are used to help identify the cause of a trouble or troubles with a vehicle, and pending codes from the vehicle's control modules.

- √ When emission-related or drivability fault occurs the control module illuminates the malfunction indicator lamp (MIL).
- √ Pending Codes are also referred to as continuous monitor or maturing codes that indicate intermittent faults. If the fault does not occur within a certain number of drive cycles (depending on vehicle), the code clears from memory. If fault occurs a specific number of times, the code matures into a DTC and the MIL illuminates or blinks.
- √ This function can be performed with KOEO or KOER.

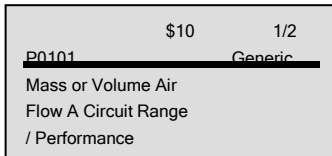
To read codes from vehicle control modules:



1. Press the **ENTER** key to start diagnosis from home screen.
2. Use the **DUP/DOWN** key to select **Read Codes** from *Diagnostic Menu* screen.



3. Press the **ENTER** key to confirm.
4. View DTCs and their definitions.



- √ If no DTCs are present a message stating “No (Pending) Codes Found” is displayed.
 - √ If any manufacturer specific or enhanced codes are detected, a “Manufacturer specific codes are found! **Press any key to select** Vehicle make!” message displays prompting you to select a vehicle make before viewing DTC(s).
 - √ If the manufacturer of the vehicle being tested is not listed, select **Other**.
5. Press the **ESC** key to return to **Diagnostic Menu** screen.

3.2 Clearing DTCs

The **Clear Codes** function is used to delete DTCs and I/M Readiness data from vehicle's control module(s). It may also erase freeze data, and set monitors to incomplete or not ready.

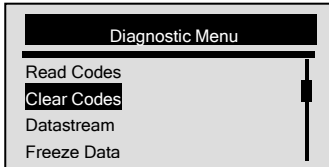
- √ Perform **Clear Codes** function only after systems have been checked completely.
- √ After servicing the vehicle, erase stored DTCs and verify no codes have been

reset. If a DTC returns, the problem has not been fixed or other faults are present.

- ✓ Depending on which monitor sets a code, the vehicle may need to be driven and the monitor run before concluding that the fault has been repaired.
- ✓ This function is performed with KOEO. Do not start the engine.

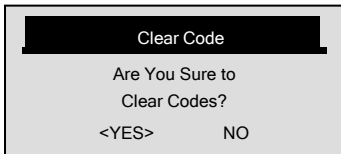
To erase codes from vehicle control modules:

-  1. Use the **UP/DOWN** key to select **Clear Codes** from *Diagnostic Menu* screen.



2. Press the **ENTER** key to confirm.

3. If codes and diagnostic results are to be cleared, press the **ENTER** key directly.



- ✓ If codes and test data are not to be deleted, select **ESC**, and a "Command Canceled!" message displays prompting to press any key to return to **Diagnostic Menu**.
4. Wait a few seconds until a "Codes Cleared!" message shows indicating codes have been cleared successfully.
- ✓ If the code reader fails to clear the codes, a "Clear Error! Turn Key on with

Engine off!" message displays.

5. Wait a few seconds or press any key to return to ***Diagnostic Menu***.

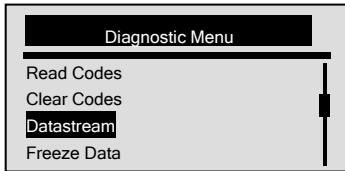
3.3 Viewing Datastream

The ***Datastream*** function allows real time viewing of the vehicle's electronic control unit's PID data, including sensor data, operation of switches, solenoids and relays.

To view live datastream:



1. Use the **UP/DOWN** key to select **Datastream** from ***Diagnostic Menu*** screen.



2. Press the **ENTER** key to confirm.
3. View PIDs on code reader. Use the **UP/DOWN** key when more than one screen of information is retrieved

Datastream	
DTC_CNT	2
LOAD_PCT %	0.0
ETC °F	171
RPM/min	0

√ Some vehicles may not support this function, and a “Not Support This Function!” message display.

4. Press the **ESC** key to return.

3.4 Viewing Freeze Data

The **Freeze Data** function is used to view freeze frame data, a snapshot of vehicle

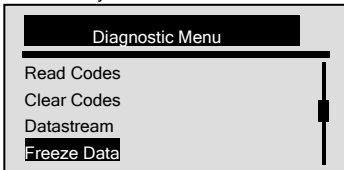
operating conditions recorded by the on-board computer at the time of an emission-related fault.

- √ If codes were cleared, freeze data may not be stored in vehicle memory depending on vehicle.

To view freeze frame data:



1. Use the **UP/DOWN** key to select **Freeze Data** from **Diagnostic Menu** screen



2. Press the **ENTER** key to confirm.

3. View freeze frame data on screen. If more than one screen of information is retrieved, use the UP/DOWN key to view additional data.

Freeze Data	
DTCFRZF	P0157
FUELSYS1	OL
FUELSYS2	OL
LOAD_PCT %	0.0

- √ If no freeze frame is detected, a “No Freeze Data Found!” message displays.
 - √ Some vehicles may not support this function, and a “Not Support This Function!” message display.
4. Press the **ESC** key to return to ***Diagnostic Menu***.

3.5 Reading I/M Readiness Status Data

The **I/M** Readiness function is used to view a snapshot of the operations for the emission system on OBDII/EOBD vehicles.

- √ I/M Readiness is a useful function used to check if all monitors are OK or N/A.
- √ The vehicle's computer performs tests on the emission system during normal driving conditions. After a specific amount of drive time (each monitor has specific driving conditions and time required), the computer's monitors decide if the vehicles emission system is working correctly. When the monitor's status is:
 - OK - vehicle was driven enough to complete the monitor.
 - INC (Incomplete) - vehicle was not driven enough to complete the monitor.
 - N/A (Not Applicable) - vehicle does not support that monitor.
- √ **I/M Readiness** function is performed with the KOER or KOEO.
- √ There are two types of I/M Readiness tests:
 - Since DTCs Cleared - shows status of the monitors since the DTCs were last

cleared.

- This Drive Cycle - shows status of monitors since the start of the current drive cycle.

√ Below is a list of abbreviations and names of OBD II monitors supported by the code reader.

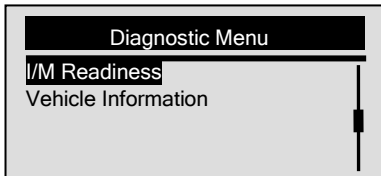
No.	Abbreviation	Name
1	Misfire Monitor	Misfire Monitor
2	Fuel System Mon	Fuel System Monitor
3	Comp. Component	Comprehensive Components Monitor
4	Catalyst Mon	Catalyst Monitor
5	Htd Catalyst	Heated Catalyst Monitor
6	Evap System Mon	Evaporative System Monitor
7	Sec Air System	Secondary Air System Monitor
8	A/C Refrig Mon	Air Conditioning Refrigerant Monitor

9	Oxygen Sens Mon	Oxygen Sensor Monitor
10	Oxygen Sens Htr	Oxygen Sensor Heater Monitor
11	EGR System Mon	Exhaust Gas Recirculation System Monitor

NOTE Not all monitors are supported by all vehicles.

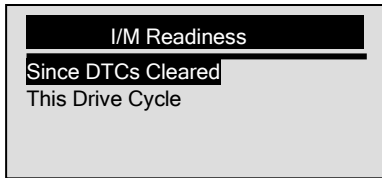
To retrieve I/M Readiness Status data:

1. Use the **UP/DOWN** key to select **I/M Readiness** from **Diagnostic Menu** screen.



2. Press the **ENTER** key to confirm.

√ If vehicle supports both types of monitors, please see the following screen:



- √ Use the **UP/DOWN** key to select a monitor type and press the **ENTER** key to confirm.
3. Depending on readiness test, one of these 2 screens will be present.

Since DTCs Cleared	
MIL Status	OFF
Misfire Monitor	N/A
Fuel System Mon	N/A
Comp. Component	OK

Or

This Drive Cycle	
MIL Status	OFF
Misfire Monitor	N/A
Fuel System Mon	N/A
Comp. Component	OK

- √ If more than one screen of information is retrieved, use the **UP/DOWN** key to view additional data.
 - √ Some vehicle may not support this function, and a “Not Support This Function!” message displays.
4. Press the **ESC** key to return to ***Diagnostic Menu***.

3.6 Reading Vehicle Information

The ***Vehicle Information*** function is used to request the vehicle's VIN number, calibration ID(s) which identifies software version in vehicle control module(s), calibration verification numbers (CVN(s)) and in-use performance tracking on model year 2000 and newer OBD II compliant vehicles.

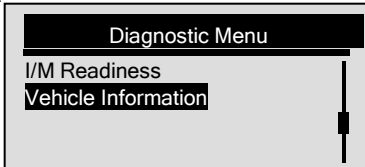
- √ CVNs are calculated values required by OBD II regulations. They are reported to check if emission-related calibrations have been changed. Multiple CVNs may be reported for a control module. It may take several minutes to do the CVN

calculation.

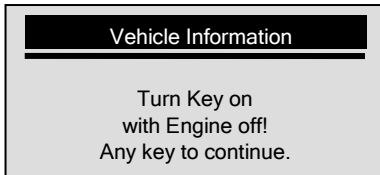
√ In-use performance tracking tracks performance of key readiness monitors.

To request vehicle information:

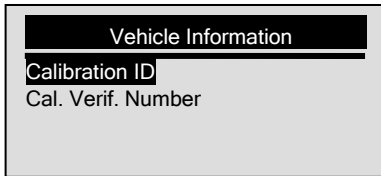
- ▶ 1. Use the **DOWN** key to select **Vehicle Information** from *Diagnostic Menu* screen.



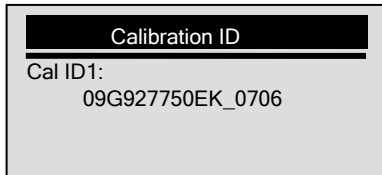
2. Press the **ENTER** key to confirm.
3. Wait a few seconds or press **ENTER** key to continue.



- √ Some vehicles may not support this function, and a “Not Support This Function!” message displays.
4. Use the **UP/DOWN** key to select an available item from ***Vehicle Information*** screen.



5. Press the **ENTER** key to view retrieved information.



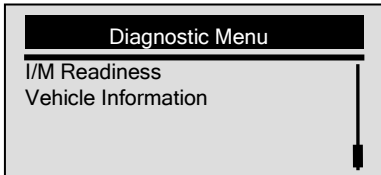
6. Press the **ESC** key return.

NOTE Not all data is supported by all vehicles.

3.7 Exiting Test

To exit the OBDII test:

- ▶ 1. Use the **ESC** key to return to *Diagnostic Menu* screen.



2. Press the **ENTER** key to confirm.
3. Press the **ESC** key to quit the test

4.Updating the Code Reader

NT Wonder is an extremely easy-to-use that is used to update NT200E code reader. Also, it enables you to search DTC, read the manuals as well set up the language and style of the application.

This section illustrates how to use NT Wonder to perform its functions:

- Updating the Code Reader
- Printing
- Searching DTC
- Read the manuals
- Update tool settings


NT200E is able to be updated to keep you stay current with the latest development of

diagnosis.

- √ The update of NT200E consists of two parts: program upgrade and DTC upgrade.
- √ To update the code reader, you need following tools:
 - NT200E Code Reader
 - Update Tool Downloaded in Our Website
 - PC or Laptop with USB Ports and Internet Explorer
 - USB Cable
- √ To be able to use update tool, PC or laptop must meet the following minimum requirements:
 - Operation System: Win98/NT, Win ME, Win2000, Win XP, VISTA and Windows 7.
 - CPU: Intel PIII or better
 - RAM: 64MB or better
 - Hard Disk Space: 30MB or bigger
 - Display: 800*600 pixel, 16 byte true color display or better
 - Internet Explorer 4.0 or newer

IMPORTANT Do not disconnect the code reader from computer, or power off the computer during the process of updating.

To update the code reader:

1. Download the update tool NT wonder and update files from our website and save the applications and files in computer disk.
2. Unzip the update tool file. Follow instructions on computer screen to install the tool and driver.
3. Double click the  desktop icon to launch the application.
4. Click Setting and select the language you want to update.
5. Connect NT200E to computer with the USB cable provided.
6. When NT200E enters the Update Mode, the application would detect it automatically

- update the device.
- Update online: With internet connection, the tool NT Wonder automatically detects the software version of the code reader and read the latest software version from the server. If any new diagnosis software found, it will automatically upgrade your NT200E. Otherwise a prompt of new version not detected displays.
 - Update offline: Update files will be automatically stored in your computer hard drive with every successful online update. When picking Update offline, the update tool NT Wonder will detect these local files automatically and display them in a list. Ticking one of them will lead to an update process, which eliminates the need to download any file.
1. Click <Update online> or <Update offline>to start updating according to the software version conditions.

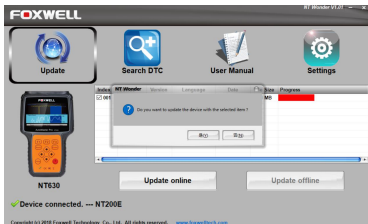


Figure 4-2 Sample Update Process Screen

2. A Update Finished Message displays when the update is completed.

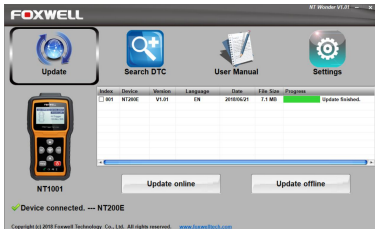


Figure 4-3 Sample Update Done Screen

5. Troubleshooting

5.1 Error Message

When a “Communication Error!” message displays, please check the following:

- Verify ignition key is in the ON position.
- Make sure the code reader is correctly attached to vehicle's Data Link Connector (DLC).
- Check DLC for cracked or recessed pins, or for any substance that could prevent a good electrical connection.
- Check NT200E's OBDII connector for bent or broken pins.
- Make sure the vehicle is OBDII/EOBD compliant.
- Cycle the vehicle key to OFF for 10s and then back to ON.
- Verify battery voltage is at least 8.0V with KOEO.
- Verify that the control module is not defective.

5.2 Code Reader Does Not Power Up

If the NT200E will not power up, communicate with vehicle's control module, or functions incorrectly in any other way, do the following:

- Check DLC for broken or bent pins and clean the pins if need be.
- Make sure NT200E is correctly connected to the vehicle's DLC.
- Verify battery voltage is at least 8.0V with KOEO.