YA301

USER MANUAL

Professional OBDII Diagnostic Tool

REV A,10.2019

Safety Information

For your own safety and the safety of others, and to prevent damage to the equipment and vehicles, read this manual thoroughly before operating your OBDII Diagnostic Tool. 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 massages and test procedures provided by vehicle manufacturer. Read, understand and follow all safety massages and instructions in this manual.

Safety Message Conventions Used

We provide safety messages to help prevent personal injury and equipment damage. Below are signal words we used to indicate the hazard level in a condition.

! ***DANGER***

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or to bystanders.

! ***WARNING***

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or to bystanders.

! ***CAUTION***

Indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury to the operator or to bystanders.

Important Safety Instructions

And always use your OBDII Diagnostic Tool as described in the user manual, and follow all safety messages.

! ***WARNING***

* 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.
* Fuel, oil vapors, hot steam, hot toxic exhaust gases, acid, refrigerant and other debris produced by a malfunction engine can cause serious injury or death.Do not use the OBDII Diagnostic Tool in areas where explosive vapor may collect, such as in below-ground pits, confined areas, or areas that are less than 18 inches (45 cm) above the floor.
* Do not smoke, strike a match, or cause a spark near the vehicle while testing and keep all sparks, heated items and open flames away from the battery and fuel/ fuel vapors as they are highly flammable.
* Keep a dry chemical fire extinguisher suitable for gasoline, chemical and electrical fires in work area.
* Always be aware of rotating parts that move at high speed when an engine is running and keep a safe distance from these parts as well as other potentially moving objects to avoid serious injury.
* Do not touch engine components that get very hot when an engine is running to avoid severe burns.
* Block drive wheels before testing with engine running. Put the transmission in park (for automatic transmission) or neutral (for manual transmission). And never leave a running engine unattended.
* Do not wear jewelry or loose fitting clothing when working on engine.

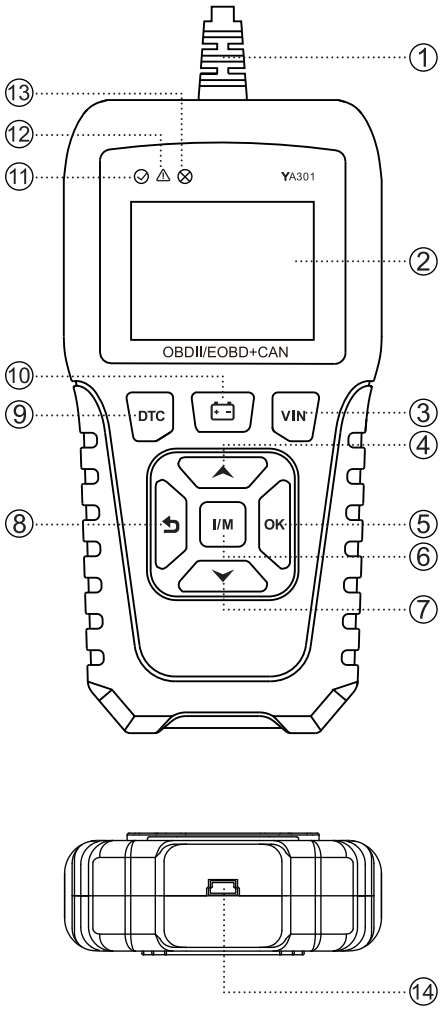
Contents

1. General Scan Tool Information

1. 1 User Interface

The scan tool is designed for easy use. All menus and lists operate the same way.

OK	Enter key selects item
	Back key returns to previous screen
	Up scroll key
	Down scroll key
I/M	One-key I/M Readiness
	One-key Battery Test
DTC	One-key DTC
VIN	One-key VIN
	Green LED Display
	Yellow LED Display
	Red LED Display



1. OBDII Connector - Connects the scan tool to the vehicle's Data Link Connector (DLC).
2. LCD Display - Visual display of information to the user. Backlit , 320 x 240 Pixel display with TFT color screen.
3. VIN - Display vehicle indentification number.
4. Up Scroll Key - Moves up through menu and submenu items in menu mode. When more than one screen of data is retrieved, moves up through the current screen to the previous screens for additional data.

5. Enter Key - Confirms a selection (or action) from a menu.

6. One-key I/M Readiness - Quick checks state emissions readiness and drive cycle verification.

7. Down Scroll Key - Moves down through menu and submenu items in menu mode. When more than one screen of data is retrieved, moves down through the current screen to next screens for additional data.

8. Back Key - Cancel a selection (or action) from a menu or returns to the menu. It is also used to exit DTC lookup screen.

9. One-key DTC - Looks up definitions of DTCs stored in scan tool, and shows the possible causes of the DTC.

10. One-key Battery Test - Display battery condition, Max value & Min value by graph in real time.

11. Green LED Display - Indicates the engine system is working normally (all monitors on the vehicles are active and perform their diagnostic testing), and no DTCs are found.

12. Yellow LED Display - Shows the tool finds a possible problem. Pending DTCs exist or/and some of the vehicle`s emission monitors have not run their diagnostic testing.

13. Red LED Display - Indicates there are some problems in one or more of the vehicle`s systems. In this case, the MIL lamp on the instrument panel is on.

14. USB - Connect USB to laptop, a removable disk will display, just copy and paste the upgrade files into removable disk, upgrade done.

1.2 Specifications

1. Display: Backlit, 320 x 240 pixel display with TFT color screen.

2. Operating Temperature: -10°C to 40°C(14°F to104°F)

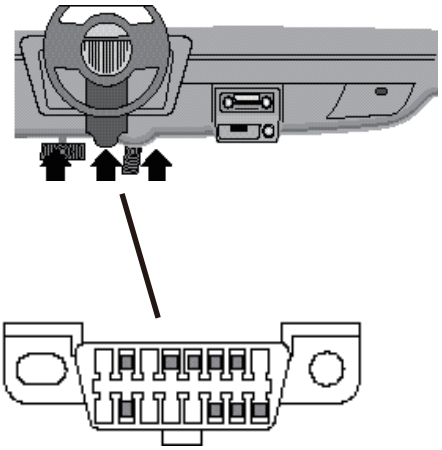
3. Storage Temperature: -20°C to 70°C(-4°F to158°F)

4. External Power: 9.0V to 16.0V power provided via vehicle battery.

5. Dimensions:
   Length: 86 mm (3.4")
   Width: 30 mm (1.18")
   Height: 171.3 mm (6.7")

6. Net Weight: 0.26kg (0.57lb)
   Gross Weight: 0.42kg (0.93lb)

2. Using Your Scan Tool



2.1 Locating Data Link Connector

- Choose a location (under driver side dash, or under steering wheel) and use that description in both places.
- If unsure about location of DLC, check vehicle manual or reputable service center about location.
- For more information, go to http://www.yawoa.com

2.2 Connect The Tool

1. Locate the OBDII Data Link Connector under the steering column. If the connector is not there, a label should be there indicating the whereabouts of the connector.
2. If necessary, remove the cover from the DLC.
3. Turn the ignition switch to the ON position. Do not start the engine.
4. Plug the OBDII connector into the Data Link Connector.
5. The tool will attempt to identify the vehicle. If successful, the vehicle identified will be displayed. if the vehicle cannot be identified, menus will be shown for you to select the vehicle manually.
6. Perform quick test.

   By using the ⌃ or ⌄ keys to select to **Diagnosis Menu** by pressing OK key to ENTER.

3. Tool Menu

The **Main Menu** and **Diagnostic Menu** are broken down into the following menus:

Δ OBDII

+Read Codes
- -Stored Codes
- -Pending Codes
- - *Permanent Codes

+Erase Codes

+Live Data
- -All Datastream
- -Graph Display
- -Record
- -Playback

+Freeze Frame

+Vehicle Info.

+I/M Readiness

+Mode 6

+O_2 Sensor Test

+Component Test

Δ I/M

Δ Battery

Δ DTC Lookup

Δ Settings

+Languages

-English -Français -Русский -Deutsch -Italiano

-日本語 -Español -Portugués -中文(繁) -中文

+Unit

-Metric -English

+Data Logging

+Self-test

-Display Test -Keyboard Test -LED Test

+Beep

Δ Info.

Δ Function is only on main menu.

\+ Function is only on secondary menu.

\- Function is only on third level menu.

3.1 OBDII

3.1.1 Read Codes

Reads DTCs from vehicle's computer with KOEO or KOER.

(1) Stored Codes

Diagnostic trouble codes stored in a control module are used to help identify the cause of a trouble or troubles with a vehicle. These codes have occurred a specific number of times and indicate a problem that requires repair.

(2) Pending Codes

Pending codes are referred to as 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 a fault occurs a specific number of times, the code matures into a DTC and the MIL illuminates or blinks.

*** (3) Permanent Codes**

Permanent Codes are DTCs that are "confirmed" and are retained in the non-volatile memory of the computer until the appropriate monitor for each DTC has determined that the malfunction is no longer present and is not commanding the MIL on. Permanent DTC shall be stored in non-volatile memory and may not be erased by any diagnostic services or by disconnecting power to ECU.

* There are two ways to read codes using YA301:
1) Press the DTC hot key to read codes from home screen.
2) Traditional way: select Read Codes from the OBDII menu.

*** Only available in CAN Bus protocol vehicles.**

3.1.2 Erase Codes

Delete DTCs from vehicle's memory.

3.1.3 Live Data

Live Data menu lets you view, record and playback real time PIDs data from the electronic control module.

**** In live data menu, you can insert the selected item to front by holding pressing the*** 

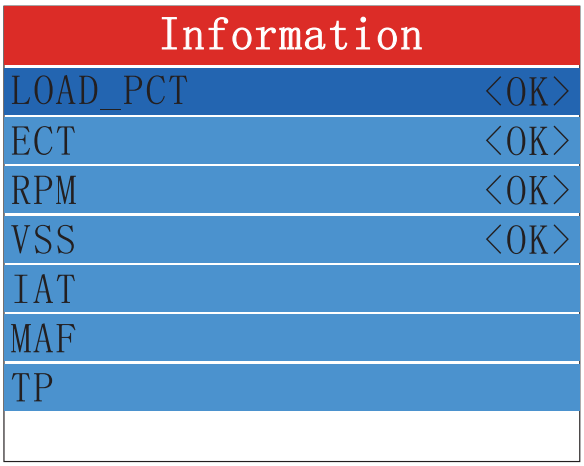
key for 3 seconds.

(1) All Datastream

Views vehicle Parameter Identification Data (PIDs) in real time. PIDs are displayed in either a text format or graph format when available.

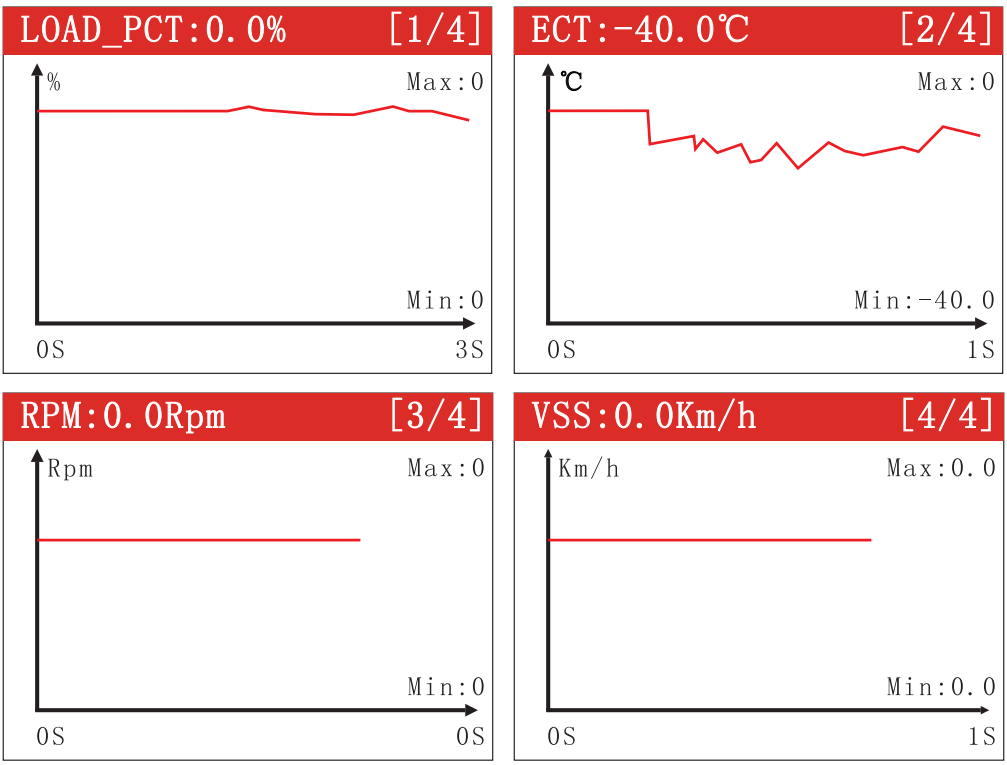
(2) Graph Display

Show the live data via graph mode, select PIDs by OK key, enter the graph by key switch the PIDs by and key.



you can use or key to select single or multiple data stream to view of data with a graph, and press OK key, the screen will display the information as below:

you can view all data stream items or select a certain item of live data with a graph display.



(3) Record

Record the PIDs frame, selecte PIDs by  key, enter the record page by  key. Select the storage slot location to start record.

(4) Playback

Choose the record slot to playback the live data, switch frame by  and  key.

3.1.4 Freeze Frame

Display a snapshot of operating conditions at the time of a fault.

3.1.5 Vehicle Info

Scan tool display the vehicle's VIN number, Calibration ID (s) and CVN that identify the software version in the vehicles control module (s).

The tool also displays In-Use Performance Tracking of important readiness monitors.

3.1.6 I/M Readiness

Display a snapshot of the state of the vehicle's OBDII Monitors.

NOTE:

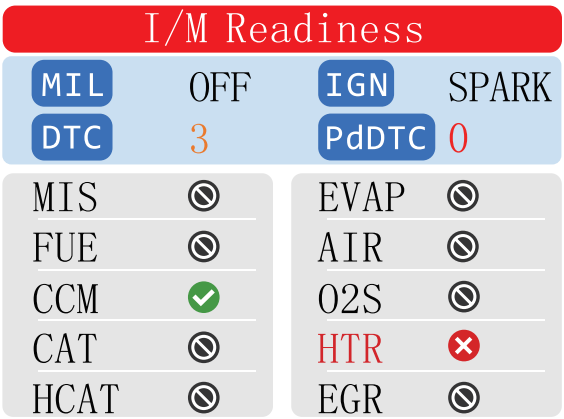
* To review I/M Readiness status, make sure that the ignition key is switched to ON with the engine off.
* Not all monitors are supported by all vehicles.

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.

Abbreviations Explanation of IM Readiness

No.	Abbreviation	Name	No.	Abbreviation	Name
1	MIL	Malfunction Indicator Lamp (MIL) Status	8	IGN	Ignition Key
2	DTC	Data Link Connector	9	PdDTC	Pending DTC
3	MIS	Misfire Monitoring	10	EVAP	Evaporative System Monitor
4	FUE	Fuel System Monitor	11	AIR	Air Conditioning Refrigerant Monitor
5	CCM	Comprehensive Components Monitor	12	O_2S	Oxygen Sensor Monitor
6	CAT	Catalyst Monitor	13	HTR	Heated catalyst monitor
7	HCAT	Heated Catalyst Monitor	14	EGR	Exhaust Gas Recirculation System Monitor



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.

Colored LED and built-in beeper provide both visual and audible reminders for emission check and DTCs. Below is the interpretation of the LED and built-in beeper.

When the LED is:

* **Green** — Indicates that engine systems are “OK” and working properply (the number of Monitor equipped with the vehicle which have run and performed their self-diagnostic testing is in the allowed range MIL is OFF). Not stored and pending DTCs exist. The vehicle is ready for an Emissons Test.

* **Yellow** — The tool finds a possible problem. It indicates the following two conditions:
  (1) Pending DTCs exist. Please check the I/M Readiness test result screen and use the Read Codes function to view detailed codes information.
  (2) Some of the vehicle`s emission monitors have not working properly. If the I/M Readiness screen shows no DTC (including pending DTC), but the yellow LED is still illuminated, it indicate a “Monitor Has Not Run” status.

* **Red** — Indicates some problems exist with one or more of the vehicle`s system, and the vehicle is not ready for an Emission Test. As well there are DTCs found. The MIL lamp on the vehicle`s instrument panel will light steady. The problem that is causing the illumination of Red LED should be fixed befored an Emissions Test or driving the vehicle further.

The built-in beeper works with the colored LED simultaneous, as an assistance to reflect the I/M readiness test results:

*Green — two long beeps.
*Yellow — short, long, short beeps.
*Red — three short beeps.

NOTE:

The built-in beeper which makes different tones corresponding to different LED indicators is invaluable when the test is performed while driving or in bright areas where LED illumination may not be visible.

3.1.7 Mode 6

Scan tool controls the operation of vehicle components, tests or systems.

3.1.8 O_2 Sensor Test

Display oxygen sensor monitoring test results from the vehicle's memory, the O_2 Monitor Test is NOT an ON-DEMAND TEST.

3.1.9 Component Test

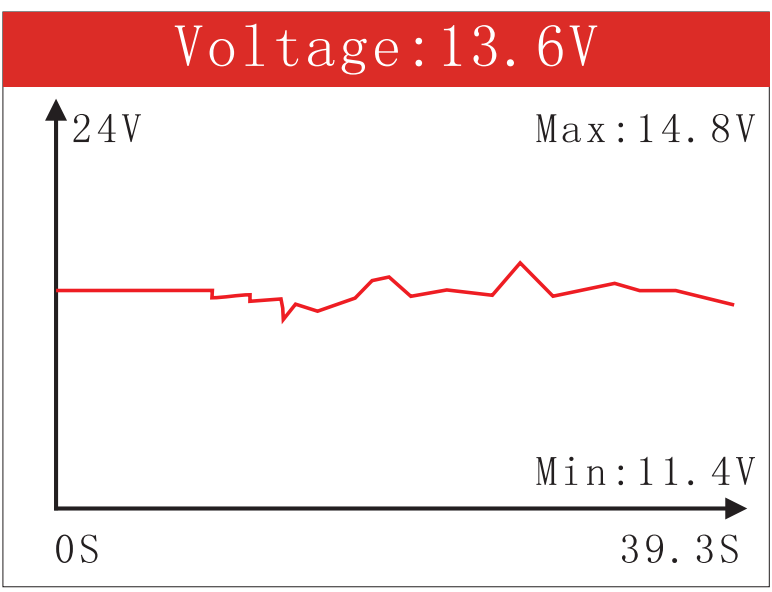
YA301 will display a list of components and their locations on the vehicle. This function will always appear on the Main Menu. This selection will appear on the Diagnostic Menu only when the tool has a list of component locations for the currently selected vehicle.

3.2 I/M

Display a snapshot of the state of the vehicle's OBDII Monitors.

3.3 Battery

Display battery condition, Max value & Min value by graph in real time.



3.4 DTC Lookup

Looks up definitions of DTCs stored in scan tool, and shows the possible causes of the DTC. (Not every DTC with possible causes reason)

3.5 Settings

Changes tool settings, displays tool information, and performs tool self-tests.

3.5.1 Languages

Allows the user to change the language used by the tool. English is default.

3.5.2 Unit

Changes measurement units display metric or english.

3.5.3 Data Logging

Turn on / off the data log function to record the device data through vehicle.

3.5.4 Self-test

(1) Display Test

Used to check the display screen.

(2) Keyboard Test

Verifies that the keys are working correctly.

(3) LED Test

The LED Test function verifies if the I/M Readiness LED indicator lamps are functioning properly.

3.5.5 Beep

Turn on / off the beeper to choose whether the key with sound.

3.6 Info.

Display the device hardware information, software information, release date and serial number, etc.

5. Abbreviation Appendix of Live Data

NO	Abbreviation	Explanation
1	2ND AIR SYS	Secondary Air System Monitor
2	2ND O_2S COMP B1 CNT	Secondary O_2 Sensor Monitor Completion Counts Bank 1
3	2ND O_2S COMP B2 CNT	Secondary O_2 Sensor Monitor Completion Counts Bank 2
4	2ND O2S COND ENCONT B1 CNT	Secondary O_2 Sensor Monitor Conditions Encountered Counts Bank 1
5	2ND O2S COND ENCONT B2 CNT	Secondary O_2 Sensor Monitor Conditions Encountered Counts Bank 2
6	A/C REF	A/C System Refrigerant Monitor
7	AAT	Ambient Air Temperature
8	AIR_STAT	Commanded Secondary Air Status
9	AIR2 COMP	AIR Monitor Completion Condition Counts (Secondary Air)
10	AIR2 COND	AIR Monitor Conditions Encountered Counts (Secondary Air)
11	ATP_B	Absolute Throttle Position B
12	ATP_C	Absolute Throttle Position C
13	ATP_D	Absolute Throttle Position D
14	ATP_E	Absolute Throttle Position E
15	ATP_F	Absolute Throttle Position F
16	BARO	Barometric Pressure
17	BOOST PRESSURE CMPL CONT	Boost Pressure Monitor Completion Condition Counts
18	BOOST PRESSURE COND ENCONT	Boost Pressure Monitor Conditions Encountered Counts
19	CALID	Calibration Identifications
20	CAT	Catalyst Monitor
21	CAT COMP1	Catalyst Monitor Completion Counts Bank 1
22	CAT COMP2	Catalyst Monitor Completion Counts Bank 2
23	CAT COND1	Catalyst Monitor Conditions Encountered Counts Bank 1
24	CAT COND2	Catalyst Monitor Conditions Encountered Counts Bank 2
25	CATEMP11	Catalyst Temperature Bank 1,Sensor 1
26	CATEMP12	Catalyst Temperature Bank 1,Sensor 2
27	CATEMP21	Catalyst Temperature Bank 2,Sensor 1
28	CATEMP22	Catalyst Temperature Bank 2,Sensor 2
29	CCM	Comprehensive Component Monitor
30	CLR DIST	Distance Traveled Since DTCs Cleared

NO	Abbreviation	Explanation
31	CVN	Calibration Verification Numbers
32	DTCFRZF	DTC That Caused Required Freeze Frame Data Storage
33	ECT	Engine Coolant Temperature
34	EGR COMP	EGR Monitor Completion Condition Counts
35	EGR COND	EGR Monitor Conditions Encountered Counts
36	EGR ERR	Exhaust Gas Recirculation Error
37	EGR PCT	Commanded Exhaust Gas Recirculation
38	EGR SYS	Exhaust Gas Recirculation System
39	EGR/VVT CMPL CONT	EGR and/or VVT Monitor Completion Condition Counts
40	EGR/VVT ENCONT	EGR and/or VVT Monitor Conditions Encountered Counts
41	EOT	Engine Run Time Since DTCs Cleared
42	EQ RAT11	Equivalence Ratio (lambda)(B1-S1)
43	EQ RAT12	Equivalence Ratio (lambda)(B1-S2)
44	EQ RAT13	Equivalence Ratio (lambda)(B1-S3)
45	EQ RAT14	Equivalence Ratio (lambda)(B1-S4)
46	EQ RAT21	Equivalence Ratio (lambda)(B2-S1)
47	EQ RAT22	Equivalence Ratio (lambda)(B2-S2)
48	EQ RAT23	Equivalence Ratio (lambda)(B2-S3)
49	EQ RAT24	Equivalence Ratio (lambda)(B2-S4)
50	EQ RAT31	Equivalence Ratio (lambda)(B3-S1)
51	EQ RAT32	Equivalence Ratio (lambda)(B3-S2)
52	EQ RAT41	Equivalence Ratio (lambda)(B4-S1)
53	EQ RAT42	Equivalence Ratio (lambda)(B4-S2)
54	EQ RAT	Fuel/Air Commanded Equivalence Ratio
55	EVAP	Evaporative System Monitor
56	EVAP COMP	EVAP Monitor Completion Condition Counts
57	EVAP COND	EVAP Monitor Conditions Encountered Counts
58	EVAP VP	Evap System Vapor Pressure
59	EWMA MISFIRE LST 10 CYC	(Exponential Weighted Moving Average)Misfire Counts For Last Ten Driving Cycles
60	EXHAUST GAS SNSR CMPL CONT	Exhaust Gas Sensor Monitor Completion Condition Counts

NO	Abbreviation	Explanation
61	EXHAUST GAS SNSR ENCONT	Exhaust Gas Sensor Monitor Conditions Encountered Counts
62	FLI	Fuel Level Input
63	FRP	Fuel Rail Pressure
64	FRP	Fuel Rail Pressure(gauge)
65	FRP RMV	Fuel Rail Pressure Relative to Manifold Vacuum
66	FUEL	Fuel System Monitor
67	FUELSYS1	Fuel System 1
68	FUELSYS2	Fuel System 2
69	HIGH SNSR VTG TM CAL (CONST)	High Sensor Voltage For Switch Time Calculation (Constant)
70	HTR CAT	Heated Catalyst Monitor
71	IAT	Intake Air Temperature
72	IGN CYC CNTR	Ignition Cycle Counter
73	IMAP	Intake Manifold Absolute Pressure
74	IN-USE PERF TC IGN ENG	In-use Performance Tracking-compression Ignition Engines
75	IPT	In-use Performance Tracking-spark Ignition Engines
76	LEAN TO RICH SNSR TM (CAL)	Lean To Rich Sensor Switch Time (Calculated)
77	LEAN TO RICH SNSR/V	Lean to Rich Sensor Threshold Voltage (Constant)
78	LOAD_ABS	Absolute Load Value
79	LOAD_PCT	Calculated Load Percentage
80	LONGFT1	Long Term Fuel Trim - Bank 1
81	LONGFT2	Long Term Fuel Trim - Bank 2
82	LONGFT3	Long Term Fuel Trim - Bank 3
83	LONGFT4	Long Term Fuel Trim - Bank 4
84	LOW SNSR VTG TM CAL (CONST)	Low Sensor Voltage For Switch Time Calculation (Constant)
85	MAF	Air Flow Rate From Mass Air Flow Sensor
86	MAX SNSR VTG TEST CYCLE(CAL)	Maximum Sensor Voltage For Test Cycle (Calculated)
87	MIL	Malfunction Indicator Lamp
88	MIL DIST	Distance Traveled While MIL is Activated
89	MIL TIME	Engine Run Time While MIL is Activated
90	MIN SNSR VTG TEST CYCLE (CAL)	Minimum Sensor Voltage For Test Cycle (calculated)

NO	Abbreviation	Explanation
91	MIS	Misfire Monitor
92	MISFIRE CNT LAST/CUR CYC	Misfire Counts For Last/Current Driving Cycles
93	NMHC CMPL COND CONT	NMHC Catalyst Monitor Completion Condition Counts
94	NMHC COND ENCONT	NMHC Catalyst Monitor Conditions Encountered Counts
95	NOX ADSORBER CMPL COND CONT	NOx Adsorber Monitor Completion Condition Counts
96	NOX ADSORBER COND ENCONT	NOx Adsorber Monitor Conditions Encountered Counts
97	NOX CAT CMPL COND CONT	NOx Catalyst Monitor Completion Condition Counts
98	NOX CAT COND ENCONT	NOx Catalyst Monitor Conditions Encountered Counts
99	O_2B1S1	Oxygen Sensor Output Voltage B1S1
100	O_2B1S3	Oxygen Sensor Output Voltage B1S3
101	O_2B1S4	Oxygen Sensor Output Voltage B1S4
102	O_2B2S1	Oxygen Sensor Output Voltage B2S1
103	O_2B2S2	Oxygen Sensor Output Voltage B2S2
104	O_2B2S3	Oxygen Sensor Output Voltage B2S3
105	O_2B2S4	Oxygen Sensor Output Voltage B2S4
106	O_2B3S1	Oxygen Sensor Output Voltage B3S1
107	O_2B3S2	Oxygen Sensor Output Voltage B3S2
108	O_2B4S1	Oxygen Sensor Output Voltage B4S1
109	O_2B4S2	Oxygen Sensor Output Voltage B4S2
110	O_2B1S1	Oxygen Sensor Current (B1-S1)
111	O_2B1S2	Oxygen Sensor Current (B1-S2)
112	O_2B1S3	Oxygen Sensor Current (B1-S3)
113	O_2B1S4	Oxygen Sensor Current (B1-S4)
114	O_2B2S1	Oxygen Sensor Current (B2-S1)
115	O_2B2S1	Oxygen Sensor Current (B2-S1)
116	O_2B2S2	Oxygen Sensor Current (B2-S2)
117	O_2B2S3	Oxygen Sensor Current (B2-S3)
118	O_2B2S4	Oxygen Sensor Current (B2-S4)
119	O_2B3S1	Oxygen Sensor Current (B3-S1)
120	O_2B3S2	Oxygen Sensor Current (B3-S2)

NO	Abbreviation	Explanation
121	O_2B4S1	Oxygen Sensor Current (B4-S1)
122	O_2B4S2	Oxygen Sensor Current (B4-S2)
123	O_2B1S1	Oxygen Sensor Voltage (B1-S1)
124	O_2B1S2	Oxygen Sensor Voltage (B1-S2)
125	O_2B1S3	Oxygen Sensor Voltage (B1-S3)
126	O_2B1S4	Oxygen Sensor Voltage (B1-S4)
127	O_2B2S1	Oxygen Sensor Voltage (B2-S1)
128	O_2B2S2	Oxygen Sensor Voltage (B2-S2)
129	O_2B2S3	Oxygen Sensor Voltage (B2-S3)
130	O_2B2S4	Oxygen Sensor Voltage (B2-S4)
131	O_2B3S1	Oxygen Sensor Voltage (B3-S1)
132	O_2B3S2	Oxygen Sensor Voltage (B3-S2)
133	O_2B4S1	Oxygen Sensor Voltage (B4-S1)
134	O_2B4S2	Oxygen Sensor Voltage (B4-S2)
135	O_2S	Oxygen Sensor Monitor
136	O_2S COMP1	O_2 Sensor Monitor Completion Counts Bank 1
137	O_2S COMP2	O_2 Sensor Monitor Completion Counts Bank 2
138	O_2S COND1	O_2 Sensor Monitor Conditions Encountered Counts Bank 1
139	O_2S COND2	O_2 Sensor Monitor Conditions Encountered Counts Bank 2
140	O_2S HTR	Oxygen Sensor Heater Monitor
141	O_2SLOC	Location of Oxygen Sensors
142	OBD COND	OBD Monitoring Conditions Encountered Counts
143	OBDSUP	OBD Requirements To Which Vehicle or Engine Is Certified
144	PM FILTER CMPL COND CONT	PM Filter Monitor Completion Condition Counts
145	PM FILTER COND ENCONT	PM Filter Monitor Conditions Encountered Counts
146	PTO	Power Take Off (PTO)
147	RICH TO LEAN SNSR/V	Rich To Lean Sensor Threshold Voltage (Constant)
148	RICH TO LEAN TM CAL	Rich To Lean Sensor Switch Time (Calculated)
149	RPM	Engine RPM
150	RUNTM	Time Since Engine Start

NO	Abbreviation	Explanation
151	SHRTFT1	Short Term Fuel Trim - Bank 1
152	SHRTFT2	Short Term Fuel Trim - Bank 2
153	SHRTFT3	Short Term Fuel Trim - Bank 3
154	SHRTFT4	Short Term Fuel Trim - Bank 4
155	SHRTFTB1S1	Short Term Fuel Trim B1S1
156	SHRTFTB1S3	Short Term Fuel Trim B1S3
157	SHRTFTB1S4	Short Term Fuel Trim B1S4
158	SHRTFTB2S1	Short Term Fuel Trim B2S1
159	SHRTFTB2S2	Short Term Fuel Trim B2S2
160	SHRTFTB2S3	Short Term Fuel Trim B2S3
161	SHRTFTB2S4	Short Term Fuel Trim B2S4
162	SHRTFTB3S1	Short Term Fuel Trim B3S1
163	SHRTFTB3S2	Short Term Fuel Trim B3S2
164	SHRTFTB4S2	Short Term Fuel Trim B4S2
165	SNSR PERIOD (CAL)	Sensor Period (calculated)
166	SPARKADV	Ignition Timing Advance For #1 Cylinder
167	TAC_PCT	Commanded Throttle Actuator Control
168	TM BTW SNSR TRANS (CAL)	Time Between Sensor Transitions (Calculated)
169	TP	Absolute Throttle Position
170	TP_R	Relative Throttle Position
171	VIN	Vehicle Identification Number
172	VPWR	Control Module Voltage
173	VSS	Vehicle Speed Sensor
174	WARM UPS	Number Of Warm-ups Since DTCs Cleared

6. Guarantee Card

Hello! Thank you for purchasing the products in order to better serve you, please read carefully, fill in and properly keep this guarantee card after purchasing the products.

<table>
<tr><td>Name</td><td colspan="2"></td><td>Email</td><td></td></tr>
<tr><td>Purchase Date</td><td colspan="2"></td><td>Cotact Number</td><td></td></tr>
<tr><td>Address</td><td colspan="2"></td><td>Product Name</td><td></td></tr>
<tr><td>Order Number</td><td colspan="4"></td></tr>
<tr><td rowspan="4">Repair Records</td><td>Date</td><td colspan="3">Cause of failure and solution</td></tr>
<tr><td></td><td colspan="3"></td></tr>
<tr><td></td><td colspan="3"></td></tr>
<tr><td></td><td colspan="3"></td></tr>
</table>

Warranty statement

If there is any quality problem of the product that needs to be repaired, please send this warranty card together with the purchased product back to our company to provide after-sales service.

Model: YA301