

# TOYOTA JZX90 / JZX100

## NEW OWNERS HANDBOOK

---

*Prepared with the help of the JZX World community*

<http://www.jzx100.com>

**CONTENTS**

General Maintenance Items .....3

    Oil System .....3

    Cooling System.....3

    Various Fluids and Their Capacities .....3

    Misc Items.....4

    Spark Plugs.....4

        Spark Plug Gap .....4

        Spark Plug Heatrange.....5

    Brakes .....5

    Light Bulb Sizes.....5

        Chaser JZX100 .....5

        Mark II and Cresta JZX100 .....6

        Chaser JZX90 .....6

        JZX90 Mark II .....6

        JZX100 Interior and Other Lights .....6

    Wheel Alignment .....6

        JZX90 Alignment Specs.....6

        JZX100 Alignment Specs.....7

100K Service Requirements .....8

Toyota Diagnostic Codes .....8

    Toyota Error Codes.....9

## GENERAL MAINTENANCE ITEMS

### OIL SYSTEM

- **Engine Oil:** 5.1 Litres (*oil change only*)
- **Engine Oil:** 5.4 Litres (*oil and filter change*)
- **Engine Oil Filter:** Ryco part # Z418 (*90mm tall*)
- **Engine Oil Filter:** Ryco part # Z68 (*120mm tall*)
- **OEM Engine Oil:** Toyota Genuine (*SAE 10W-30*)
- **Aftermarket Engine Oil:** Any brand you are happy using providing it is either the factory specified 10W-30 or close to that viscosity range. For example, a 0W-40 oil should be just fine, as should a 5W-30 etc.

### COOLING SYSTEM

If you are planning to use an aftermarket coolant, make sure it is compatible with **Toyota Red** as other coolant types may eat away at the alloy cylinder heads.

- **Coolant (*Automatic trans*):** 8.4 Litres - Toyota Genuine Long Life Coolant
- **Coolant (*Manual trans*):** 7.7 Litres - Toyota Genuine Long Life Coolant

### VARIOUS FLUIDS AND THEIR CAPACITIES

- **Windscreen Washer Tank:** 3.5 Litres
- **Power Steering Fluid:** 0.3 Litres – Toyota Genuine Power Steering Fluid *or* ATF Dextron III
- **Clutch Fluid:** Toyota Genuine brake fluid 2500H
- **Brake Fluid:** Toyota Genuine brake fluid 2500H
- **Fuel Tank:** 70 Litres – Unleaded Premium
- **Automatic Transmission Fluid:** 7.65 Litres – Toyota Genuine Auto Fluid Type T-III
- **Manual Transmission Oil:** 3.0 Litres – Toyota Genuine MG Gear Oil Special II (*API GL-4 or GL-5 SAE 75W-90*)
- **Differential Oil (*with & without Torsen LSD*):** 1.3 Litres Toyota Genuine Hypoid Gear Oil SX (*API GL-5, SAE 85W-90*)

## MISC ITEMS

- **Fuel Filter:** Ryco Part# Z373
- **Gasket Turbine Outlet:** 17279-88410 (*gasket that goes between dump and back out the turbo*)
- **Front Wheel Studs:** NS312 (*from Repco*)
- **Panel Air Filter:** OEM 17801-46060 – K&N 33-2504
- **O2 sensor:** 89465- 80015
- **Timing Belt (OEM):** 13568-49065
- **Oil Pump Assembly:** 15100-46030
- **Crank Position Sensor:** 90919-05023
- **Air Box Assembly:** 17700-46290
- **Air Box - Cold Air Assembly/scoop:** 17751-46080 + 17751-46081
- **Ignition Coil Assembly:** 90919-02216
- **Alternator Assembly:** 27060-46160 + 27060-46301
- **Starter Motor (0.8kw):** 28100-46130
- **Starter Motor (1.4kw):** 28100-46140
- **Heater tap (Valve Assy, Water):** 87240-22370

## SPARK PLUGS

Twin electrode plugs are recommended due to the Wasted Spark ignition system used on the 1JZ-GTE engine.

Platinum (or other precious metal) spark plugs do not necessarily perform any better nor last any longer than standard copper plugs.

- **Recommended:** NGK BKR6EK (*twin electrode copper plugs ~\$8ea*)
- **Platinum:** NGK BKR6EKP-11 (*twin electrode 'Premium Platinum, Special Design' spark plugs ~\$20ea*)
- **Alternatives:** NGK BKR6E, NGK BKR6E-11, NGK BKR7E, or NGK BKR7E-11

**Notes:** The -11 designation of the above NGK brand spark plugs denotes that the plugs are factory pre-gapped to 1.1mm. The non -11 designated plugs are exactly the same except that they are not factory pre-gapped to 1.1mm, however, I'm jet to find a set of non factory pre-gapped plugs to be anything other than 1.1mm!

## SPARK PLUG GAP

The recommended spark plug gap for a stock 1JZ-GTE engine is 1.1mm.

As you increase boost in a BPU application, you should consider progressively reducing the gap on your spark plugs, starting with the largest gap, until such a point that any ignition issues are negated (*i.e. misfire, rough idle etc*)

Also, before reducing the plug gap too much, consider changing to a colder heat range plug first while starting with the recommended stock 1.1mm plug gap. Only reduce the spark plug gap if problems persist.

## SPARK PLUG HEATRANGE

When increasing boost pressure it is generally recommended to change to a colder range spark plug. In the case of NGK spark plugs, if you were using a heat range 6 plug, you would go to a heat range 7 (colder) plug.

In addition, consider spark plug gap when increasing the performance of your engine as well.

Please note that other spark plug manufacturers may not follow the same heat range numbering system whereby going to a heat range 7 spark plug of another brand could actually increase the heat range.

**Notes:** Both Champion and Bosch spark plugs use a decreasing value range to indicate colder plugs as opposed to NGK who use an increasing heat range. i.e. When using NGK, a 2 heat range is hotter than a 12 heat range.

## BRAKES

The front brakes on the **JZX100** are **100% IDENTICAL** to that of the IS300, this means that **Calipers, Rotors, and Pads** which fit the IS300 will also fit the JZX100.

- **Front Brake Pads:** 04465-22312
- **Rear Brake Pads:** 04466-30030
- **Front Rotors (OEM):** 43512-50100
- **Front Rotors (DBA):** DBA 748L/R (Left/Right)
- **Front Rotors (DBA Slotted):** DBA 478SL/R (Left/Right)

## LIGHT BULB SIZES

### CHASER JZX100

- Tourer V cars - hid d2r for high and low
- Tourer V cars after compliance - it should be h4 for high and low (*however dont quote me on that*)
- Series 1 fogs - h3c
- Series 2 fogs - hb4
  
- Non Tourer V cars series 1 ie gx100/105, lx100 etc - hb4 low and fog, hb3 high
- Non Tourer V cars series 2 same

---

## MARK II AND CRESTA JZX100

- Tourer V cars - hid d2r low, hb3 hi, h3c fog
- Tourer V cars - dont know here, only low beam will change
- Mark II series 1 fogs - h3c
- Mark II series 2 fogs - same
  
- Non Tourer V cars series 1 ie gx100/105, lx100 etc - h4 hi and low, hb4 fog
- Non Tourer V cars series 1 – same
  
- Roulant G and Exceed cars - hid d2r low, hb3 hi, h3c fog
- Super Lucent and non Roulant G cars - h4 hi and low, hb4 fog
- Roulant series 1 fog - h3c
- Roulant series 2 fog - hb4

---

## CHASER JZX90

- Should be h4 high and low, h3c for fogs

---

## JZX90 MARK II

- Same for hi and low, with 9006 for fogs

---

## JZX100 INTERIOR AND OTHER LIGHTS

- T10 for indicators
- G14 is the room light
- T20 for rear tail lights
- T10 are dash lights

Should be same for JZX90 cars though unconfirmed

---

## WHEEL ALIGNMENT

---

### JZX90 ALIGNMENT SPECS

Anyone have JZX90 alignment specs?

---

## JZX100 ALIGNMENT SPECS

### FRONT

- Caster - left = 6degree 25' right = 5degree 57'
- Camber - left = -2degree 10' right = -2degree 11'
- Toe - left = 0.9 right = 0.1

### REAR

- Camber - left = -1degree 31' right = -1degree 27'
- Toe - total = 4.0 left = 2.0 right = 1.9

## 100K SERVICE REQUIREMENTS

- **Engine Oil 10w-30sj VVTi:** 08880-81704
- **Diff Oil 85W-90:** 08885-80924
- **Brake Fluid:** 08823-80080
- **Oil filter:** 90915-YZZD2
- **V-belt:** 90916-A2007
- **Spark Plugs:** PK20TR11
- **Transmission Fluid:** 08886-81120
- **Idler Sub Assembly:** 13505-46070
- **Idler Tensioner:** 13540-46030
- **Water Pump:** 16100-49855
- **Coolant:** 08889-80086
- **Seal - Type T Oil:** 90311-38056
- **Oil Seal:** 90311-40020
- **Oil Seal:** 90311-46001

## TOYOTA DIAGNOSTIC CODES

Reading the diagnostic trouble codes is very easy. You will need a paper clip to short the check connectors of the diagnostic connector. The diagnostic connector comes in two types. The early system is located on the inner-left fender well and is a round, green connector, usually located near the air cleaner. Simply jump the two terminals in this connector with the ignition switch in the "ON" position and the engine off. Later models, '87 and newer use a multiple terminal "DIAGNOSTIC" connector which is a small, rectangular-shaped grey "box", usually located near the right fender in the engine compartment. To get codes out of this type of connector, jump the "TE1" and "E1" terminals. Finding these terminals is easy as the inside cover of the diagnostic connector contains a schematic of the connector pinouts. If the under hood emission decal (VECI) is still intact on your vehicle, the proper pins for this are outlined there as well.

The trouble codes will appear as flashes of the check engine lamp. Be sure the ignition key is on, the engine off, and your foot off of the accelerator when reading the codes. Two different codes may appear: One-digit and two digit. One digit codes have an approximate 4.5 second delay between flashes with the check engine light illuminating for about a half of a second. Multiple codes have a 2.5 second delay between them. For example a code two flashes the check engine lamp two times in a little over one second: I I. If two codes are stored, such as a code two and a code four, the lamp may flash as such: ....I I....I I I I. Crude examples but you get the idea. Two digit codes are similar but will flash the lamp with the first number first and the second number last. An example of a code twelve is I ....II and a code twenty four is I I..IIII.

YouTube video of how to read codes: [http://www.youtube.com/watch?v=O\\_EDiu23AMs](http://www.youtube.com/watch?v=O_EDiu23AMs)



## TOYOTA ERROR CODES

**1 or NONE**

- SYSTEM NORMAL

**11**

- LOSS OF POWER SUPPLY TO ECU
- IGNITION SWITCH/CIRCUIT
- MAIN RELAY/CIRCUIT
- ECU

**6 or 12**

- RPM SIGNAL-NO SIGNAL TO ECU FROM DISTRIBUTOR ("Ne" OR "G") AFTER ENGINE HAS BEEN CRANKED
- DISTRIBUTOR/CIRCUIT
- STARTERSIGNAL CIRCUIT
- IGNITER/IGNITER CIRCUIT
- ECU

**13**

- SAME AS ABOVE BUT AFTER ENGINE HAS RUN AT 1,000-1,500 RPM
- DISTRIBUTOR/DISTRIBUTOR CIRCUIT
- ECU

**3 or 14**

- IGNITION SIGNAL
- NO "IGF" SIGNAL TO ECU
- IGNITER/IGNITER CIRCUIT
- IGNITER AND IGNITION COIL/CIRCUIT
- ECU

**5 or 21**

- OXYGEN SENSOR SIGNAL/OXYGEN SENSOR HEATER SIGNAL
- OPEN OR SHORT IN OXYGEN SENSOR OR OXYGEN SENSOR SIGNAL

**4 or 22**

- WATER TEMPERATURE SENSOR SIGNAL
- OPEN OR SHORT IN WATER TEMP. SENSOR SIGNAL
- WATER TEMPERATURE SENSOR CIRCUIT
- WATER TEMPERATURE SENSOR
- ECU

**8 or 24**

- INTAKE AIR TEMPERATURE SENSOR SIGNAL
- OPEN OR SHORT IN INTAKE AIR TEMP. SIGNAL
- INTAKE AIR TEMPERATURE CIRCUIT
- INTAKE AIR TEMPERATURE SENSOR
- ECU

**25**

- AIR/FUEL RATIO LEAN INDICATOR
- LEAN SIGNAL SENT TO ECU FROM O2 SENSOR
- INJECTOR FAULT(S)
- FUEL PRESSURE
- OXYGEN SENSOR
- AIRFLOW METER OR MAP SENSOR
- IGNITION
- ECU

**26**

- AIR/FUEL RATIO RICH INDICATOR
- SAME AS ABOVE
- COLD START INJECTOR

**27**

- SUB-OXYGEN SENSOR CIRCUIT OR SUB-OXYGEN SENSOR HEATER CIRCUIT
- SUB OXYGEN SENSOR/HEATER/CIRCUIT
- ECU

**28**

- No.2 OXYGEN SENSOR/OXYGEN SENSOR HEATER
- SAME AS CODE 21

**2 or 31**

- MANIFOLD AND/OR AIRFLOW METER SENSOR SIGNAL CIRCUIT
- AIRFLOW METER/CIRCUIT
- MANIFOLD PRESSURE SENSOR/CIRCUIT
- ECU

**32**

- AIRFLOW METER SIGNAL (VANE-TYPE)
- AIRFLOW METER./CIRCUIT
- ECU

**14 or 34**

- TURBOCHARGER PRESSURE
- ABNORMAL TURBOCHARGER PRESSURE
- TURBO CHARGER
- AIRFLOW METER/MANIFOLD/TURBOCHARGER PRESSURE SENSOR
- INTERCOOLER SYSTEM
- ECU

**35**

- TURBOCHARGER PRESSURE SENSOR SIGNAL
- TURBOCHARGER PRESSURE SENSOR
- ECU

**7 or 41**

- THROTTLE POSITION SENSOR SIGNAL
- OPEN OR SHORT IN TPS SIGNAL
- TPS SENSOR
- TPS SIGNAL/CIRCUIT
- ECU

**9 or 42**

- VEHICLE SPEED SENSOR SIGNAL CIRCUIT
- NO SPD. SIGNAL FOR SEVERLA SECONDS
- WHILE VEHICLE IS OPERATED UNDER HEAVY LOAD (TPS/MAP/AIR FLOW INPUTS)
- SPEED SENSOR/CIRCUIT
- ECU

**10 or 43**

- STARTER SIGNAL
- NO "STA" SIGNAL TO ECU UNTIL ENGINE SPEED EXCEEDS 800RPM
- IGNITION SWITCH/CIRCUIT
- ECU

**11 or 51**

- SWITCH SIGNALS
- IDL (tps) CONTACTS OFF, NEUTRAL START SWITCH OFF, A/C SWITCH "ON" SIGNAL TO ECU
- WITH DIAGNOSTIC CHECK CONNECTOR SHORTED
- A/C SWITCH/CIRCUIT
- A/C AMPLIFIER
- TPS/CIRCUIT
- NEUTRAL START SWITCH/CIRCUIT
- ECU

**12 or 52**

- KNOCK SENSOR SIGNAL--OPEN OR SHORT IN KNOCK SENSOR SIGNAL
- KNOCK SENSOR/CIRCUIT
- ECU

**13 or 53**

- KNOCK CONTROL SIGNAL IN ECU
- ECU

**71**

- EGR VALVE MALFUNCTION--EXHAUST GAS TEMPERATURE BELOW SPEC. FOR EGR CONTROL
- EGR SYSTEM
- EGR GAS TEMPERATURE SENSOR/CIRCUIT

**72**

- AIR CONDITIONER COMPRESSOR RELAY/RELAY SIGNAL
- A/C COMPRESSOR RELAY/CIRCUIT
- ECU