

**TOYOTA LAND CRUISER
OWNER'S MANUAL**

MODEL FJ40



TOYOTA MOTOR SALES CO., LTD.

Preface

Toyota Land Cruiser is a product of fine engineering and skilled manufacturing. Preservation of the high standard of efficiency originally built into the **Toyota Land Cruiser** will depend largely on the care exercised in its operation and maintenance. This manual is provided to give the operator essential information regarding day-to-day operation, lubrication, and adjustments. Careful adherence to these instructions will result in assured economy.

Your Toyota dealer is equipped to render the best of service. He should also be depended upon for work other than the adjustment and care described in this manual. For any trouble, always consult your Toyota dealer.

New Car Operation

The longevity and future performance of your Toyota Land Cruiser will be determined by the treatment accorded while in new car state.

- (1) Have general check-up and retightening made after the first 1,000 and 3,000 km (700 and 2,000 miles).
After running your Toyota Land Cruiser for 1,000 km (700 miles), take it to your Toyota dealer's service station and have a general inspection made and all parts retightened. Repeat this after the first 3,000 km (2,000 miles).
- (2) For long life expectancy and minimum troubles, the following actions must be avoided, particularly on a new vehicle.
 1. Racing the engine unnecessarily.
 2. Operating the vehicle while the engine is still cold (cooling water temperature below 70°C or 134°F).
 3. Sudden starting and quick braking (when not required)
 4. Overloading and overspeeding.
 5. High speed running on rough roads.
- (3) On new vehicles, make the following oil changes as early as possible.

1. Engine Oil

Make the initial oil change at 3,000 km or 2,000 miles. After that, recommended period for making complete oil change is every 3,000 km or 2,000 miles.

2. Gear Oil

For gear oil inside the transmission case, transfer case, and differential case, make the initial change at 18,000 km (12,000 miles). After that, inspect and add oil as required every 9,000 km (6,000 miles), and make complete replacement every 18,000 km (12,000 miles). For gear oil inside the steering gear box, inspect and add as

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required every 9,000 km (6,000 miles).

To change the engine oil and gear oil, drain out the old oil completely while the engine is still warm after running and then fill in the new oil.

3. Chassis Grease

The recommended period for greasing the chassis is every 1,500 km (1,000 miles), but this should be shortened depending on the road conditions and operating requirements, particularly if much running is to be done on muddy roads.

(Refer to Lubrication Chart at back of manual).

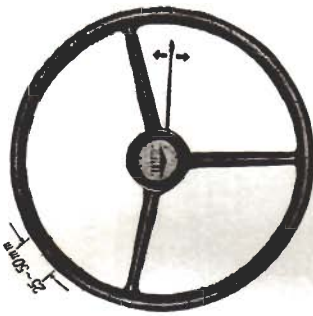
Control



- | | |
|-------------------------------------|--------------------------------|
| 1. Steering wheel | 11. Front drive shift button |
| 2. Turn signal switch | 12. Front drive indicator lamp |
| 3. Horn button | 13. Windshield wiper switch |
| 4. Ignition and starter switch | 14. Choke button |
| 5. Right turn signal indicator lamp | 15. Lighting switch |
| 6. Combination meter | 16. Dimmer switch |
| 7. Left turn signal indicator lamp | 17. Clutch pedal |
| 8. Throttle button | 18. Brake pedal |
| 9. Transfer shift lever | 19. Hand brake |
| 10. Cowl ventilator handle | 20. Accelerator pedal |
| | 21. Gear shift lever |

1. Steering Wheel

This is a very important part which controls the steering of the vehicle. If any abnormal condition is detected, even though small, immediate measures must be taken to correct the fault. The steering wheel when turned either to left or right should show standard play of from 25 to 50 mm (1~2 in) on its perimeter.



2. Turn Signal Switch

Raising the switch signals a left turn while lowering it signals a right turn, actuating the front and rear turn signal lamps on the side to which the turn is being made. The switch is of the self-cancelling type so that it returns automatically to off position after completing the turn. When this switch is turned on, the turn signal indicator lamp should be observed to see that the signal lamps are blinking properly.

3. Horn Button

Pressing this button sounds the horns at any time.

4. Ignition and Starter Switch

OFF Meter and Ignition ON Starter Motor ON



Ignition and Starter Switch

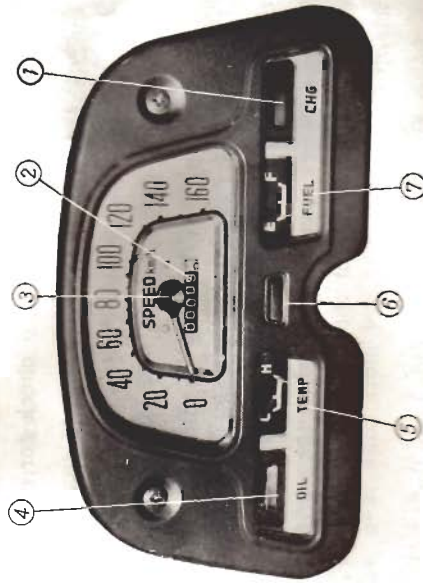
This key type switch serves for both ignition and starter switching. Turning the key in clockwise direction to the first position closes the ignition circuit. Turning it further against the spring resistance actuates the starter motor to start the engine. After

the engine starts, releasing the key allows it to return automatically to the ignition position.

5. Right Turn Signal Indicator Lamp

This lamp flashes whenever the right turn signal lamps are in operation.

6. Combination Meter



(1) **Charge Warning Lamp**—This lamp indicates whether the battery is being charged properly or not. Thus, it will light when the ignition switch is turned on but will go out after the engine starts and normal charging takes place. In the event when this lamp remains lit after the engine speed rises, or if it should light while driving, it is a definite indication that there is a trouble in the charging system.

(2) **Odometer**—This records the total kilometers (or miles) driven to the present time.

(3) **Speedometer**—This indicates the vehicle running speed.

(4) **Oil Pressure Warning Lamp**—This lamp indicates whether lubricating oil is being delivered to the engine rotating parts

under proper pressure, and is made to light whenever the oil pressure is below 0.3 to 0.5 kg/cm². When the ignition switch is turned on, this lamp will light. Failure to light in this case means that either the lamp bulb or wiring is defective.

If the lamp fails to go out after the engine starts and rises to normal speed, or if it should light while driving, it is an indication that oil pressure is too low, caused by either faulty lubricating system or lack of engine oil. In such a case, stop the engine immediately and check for cause.

(5) **Water Heat Gauge**—This gauge indicates the temperature of engine cooling water, the C—H range being approximately equal to 50°—110°C (122°—230°F). If the pointer travels beyond the H graduation, overheating is indicated to necessitate attention. Toyota Land Cruiser engine is designed for optimum operation at temperature 70° to 85°C (167°—185°F).

Water heat gauge operates only when the engine key is turned to ignition position. When the key is turned OFF, the gauge pointer returns to H position.

(6) **High Beam Indicator Lamp** This lamp lights when the headlamps are switched on to the 50-watt high beam and goes out when they are changed over to the 40-watt beam by depressing the dimmer switch.

(7) **Fuel Gauge**—The amount of gasoline in the tank is indicated by this gauge. F indicates a full tank of 70 liters (15½ Imp. gals, 18¾ U.S. gals) and E an empty tank. The fuel gauge will not actuate unless the engine key is switched to ignition position.

7. Left Turn Signal Indicator Lamp

This lamp flashes whenever the left turn signal lamps are in operation.

8. Choke Button

To facilitate starting during cold weather, pull out this button

to permit richer air-fuel mixture to be drawn into the engine and at the same time opening the throttle valve by proper amount. After the engine warms up, do not fail to push the choke button back to its original position.

Note: On the Van Type Land Cruiser, a Room Lamp Switch is provided at the right side of the choke button. Turning this switch clockwise actuates the room lamp.

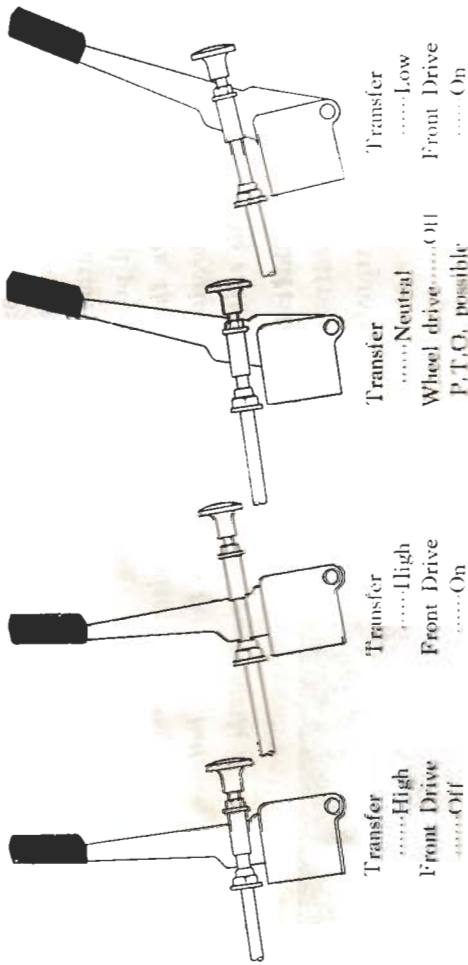
9. Transfer Shift Lever

Transfer shift lever is used to shift the gears in transfer case located at rear of transmission case. When this lever is pushed in, the gears are in high (H) position. When pulled out, they are in low (L) position. When the lever is set in between, the gears are in neutral position.

Double clutching must be performed to make the gear shift from low to high. When shifting from high to low, the front drive must be engaged and the vehicle stopped or practically stopped before making the gear shift.

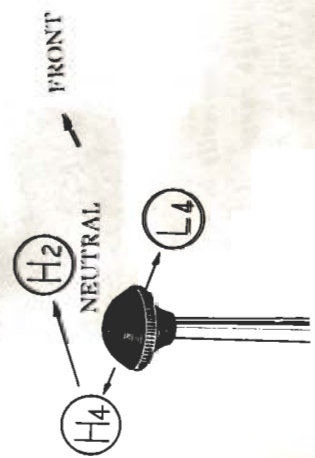
Note: Driving on level road should normally be carried out with the transfer case shifted into high range. Use the low range only for bad road driving, hill climbing, and adverse conditions. Do not drive on level road with transfer case shifted to low range and front drive engaged. This is because the effective radius of the front and rear wheels will differ due to the variation in their loads and tire inflations, resulting in the wheels slipping and imposing strain on the gears, bearings, and tires.





Transfer Shift Lever (Option)

A direct shift type shift lever is available as an optional equipment for transfer HIGH and LOW speeds switchover. The shift pattern is as follows:



clutch pedal.

H₂-High Range, 2-wheel Drive: This position is obtained by shifting the lever from H₄ toward the front of vehicle while depressing the clutch pedal.

L₄-Low Range, 4-wheel Drive: Depress the clutch pedal, then move the shift lever from neutral position to the extreme right.

Note: 1. When shifting from neutral position to either HIGH or

LOW range, vehicle must be at stand still.

2. When shifting from HIGH to LOW or vice versa, the vehicle must be come to a complete stop before shifting.

3. Shifting from H₂ to H₄ or vice versa can be accomplished while the vehicle is running by depressing the clutch pedal and operating the lever.

10. Front Drive Shift Button

11. Front Drive Indicator Lamp

Front drive ON-OFF changeover is performed by vacuum operated remote control. Pulling out the button shifts over the front drive to ON and pushing in shifts it to OFF position. The indicator lamp lights when the front drive is engaged.

Note: When the transfer case low range is to be used, make sure to shift the front drive to ON beforehand.



12. Cowl Ventilator Handle

(For Light Van)

Fresh air can be admitted into the vehicle through the cowl ventilator. Pushing the handle all the way opens the cowl ventilator while pulling back closes it. An intermediate opening position is also provided.



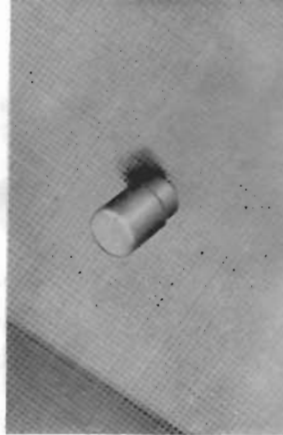
Cowl Ventilator Handle

(For canvas top models)
Cowl ventilator handle for the canvas top model is located at upper part of instrument panel. Turn the knob clockwise to open and counterclockwise to close.



Cowl side Ventilator

(For canvas top models)
On the canvas top model, ventilators are provided at both sides of the cowl. Spring action permits these ventilators to be opened or closed by pushing.



13. Windshield Wiper Switch

Turning the switch clockwise actuates the wipers. These wipers are of the auto-stop type so that the wiper blades come to rest at their original position when switched off.

15. Lighting Switch

The following lamps are actuated depending on the position to which it switched.

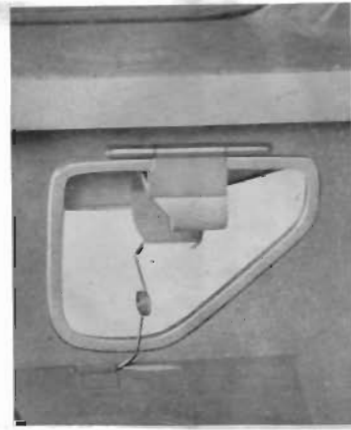
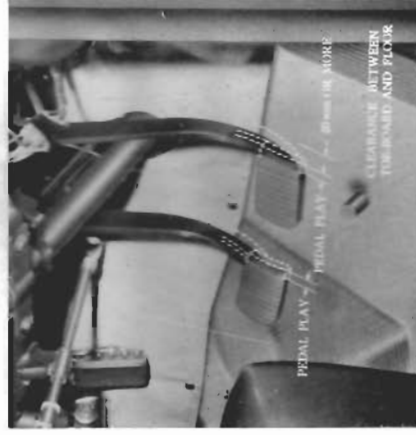
- 0.....Off
- 1.....Headlamps, tail lamps, license lamp, and meter pilot lamp.
- 2.....Front small lamps, tail lamps, license lamp, and meter pilot lamp.
- 3.....Tail lamp and license lamp.

16. Dimmer Switch

This foot-operated switch serves to make the switchover between headlamp high beams (50 watts) and low beams (40 watts). Depressing this switch successively makes alternate changes between the high and low beams. When at high beam, the high beam indicator lamp at the combination meter remains lit.

17. Clutch Pedal

Clutch has hydraulic actuation system to afford smoother operation. When shifting gears, make sure to depress the pedal fully. Clutch pedal should have play (free pedal travel until clutch engages) of about 25 mm (1 in.).



14. Throttle Button

Pulling out this button raises the engine speed independent of the accelerator pedal. It can be utilized when warming up the engine.

18. Brake Pedal

Foot brake is of hydraulic type permitting uniform braking on all wheels. The brake should be maintained in such a condition that adequate resistance will be shown when the pedal is depressed fully and that it will remain at this position without giving in. Brake pedal play (free pedal travel until brakes take effect) should be around 25 mm (1 in) and there should be a clearance of more than 20 mm ($\frac{3}{4}$ in) from the toeboard when the pedal is depressed all the way down. When any abnormal condition is detected in the brakes, it must be inspected and corrected without delay.

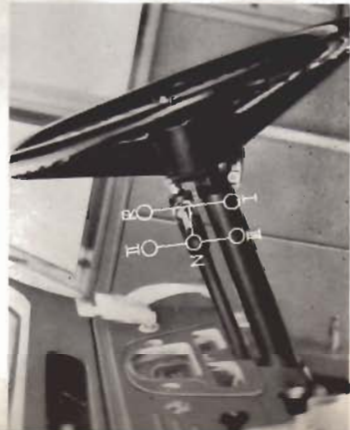


19. Hand Brake

Pulling this lever expands the brake shoes against the brake drum provided on the propeller shaft to brake the two rear wheels. However, care should be taken when one rear wheel is lifted as this will permit the other wheel to turn free. To release the hand brake, turn the lever handle to left and push in.

20. Accelerator Pedal

Controls the carburetor throttle valve to permit regulating engine output.



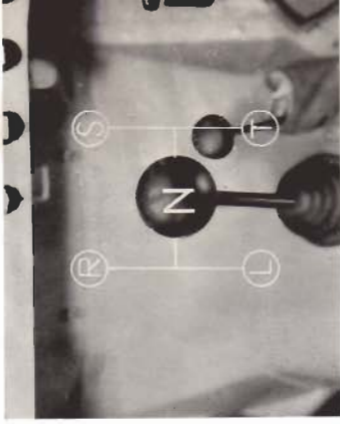
21. Gear Shift lever

Gear shift lever is on the steering column, with the shifting made in H pattern. The transmission has three speeds forward and one reverse, with synchromesh second and third speeds to enable easier shifting.

Gear shift lever (Optional)

Shift lever available as an optional equipment is a direct shift type. Its shift pattern is as follows.

- N—Neutral
- L - Low speed
- S -Second speed
- T - Top speed
- R Reverse



22. Glove Compartment

This is located in front of the assistant driver's seat. To open, pull back on the knob.



23. Inspection Lamp Plug Socket

This socket, covered with easily removable rubber cap, is located on the dash panel in front of the assistant driver's seat. It is used to plug in the inspection lamp stowed in the glove compartment, and is always ready for lighting. The inspection lamp uses a 24-watt bulb.



24. Inside Rear View Mirror

The mirror is provided with ball joint to permit adjustment in any direction. Before starting out, observe this mirror and make sure that it is properly adjusted.





25. Seat Adjuster (For Light Vans)

Lifting up the handle as shown in the figure permits the seat to move fore and aft.

Seat Adjustment (Canvas Top Models)

Loosen the seat leg mounting bolts and move the seat fore or aft to position desired.



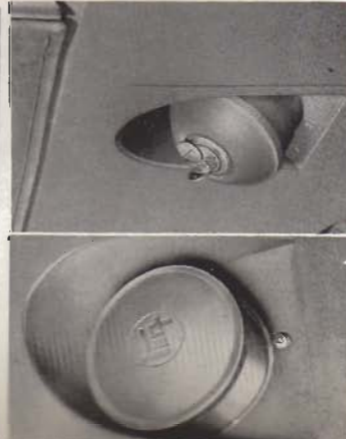
26. Hood

To open, release the two hooks at the front of hood. The hood can be opened wide and rested against the windshield but for general purposes, it is opened partially and supported by a stay installed on the back of hood.



27. Trailer Socket

The socket is located at the rear left side of the vehicle. When towing a trailer, it is to be used to plug in the connection to the trailer tail lamps and stop lamps.



28. Gasoline Tank

Gasoline tank cap is opened by pushing in and twisting to the left.

(See left figure).
Tank cap provided with a key lock can be installed if desired.

(See right figure)



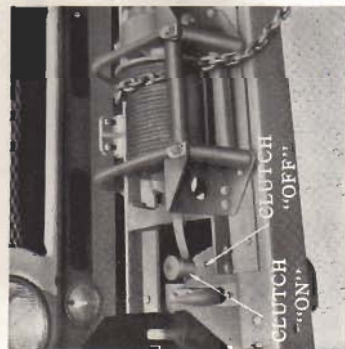
29. Pintle Hook

On canvas top models, a pintle hook is provided on the rear end of frame for towing purposes.

To open the hook, lift up the locking piece as shown in the figure. When this locking piece is down, there is absolutely no danger of the hook being ever opened during use.

30. Winch (Optional)

On the Toyota Land Cruiser, it is possible to mount a one-ton capacity winch on the front bumper. The winch wire used is a 8mm (0.3 in) diameter steel cable of 50 meters (about 164ft) long with chain and hook provided at the end and the other end is secured to the winch drum.



Operation of Winch

A. When unreeeling winch wire without power

When the winch wire is to be unwound from the drum manually without use of power, pull up the knob on winch clutch lever (see left figure) and shift the lever to OFF position. The drum will then turn freely to permit unreeeling of the wire.

B. When unreeling winch wire using power

1. Set the winch clutch lever to ON position. (See left figure.)
2. Shift the transfer shift lever to neutral position and lock it in place with cotter pin. (See center figure.)
3. Remove the lock plate on power take off control lever and tilt the lever to position (2). (See right figure.)
4. Run the engine, shift transmission into top gear, and engage the clutch slowly.

C. When reeling in winch wire under power

1. Set the winch clutch lever to ON position (See left figure.)
2. Shift the transfer shift lever to neutral position and lock it in place with cotter pin. (See center figure.)
3. Remove the lock plate on power take off control lever and tilt the lever to position (1). (See right figure.)
4. Run the engine, shift transmission into top gear, and engage the clutch slowly.

Notes:

1. *The power to the winch can be engaged or disengaged by the clutch.*
2. *Shifting the transmission to neutral will cut off the power to winch.*
3. *The transmission will drive the winch in the gear ratio and direction of rotation of the position to which it is shifted.*
4. *In reeling in the wire, have the wire under suitable tension and wind in sequence from one end, one layer after another.*
5. *When the winch is not in use, set the winch clutch lever to ON position and tie down the end of wire at suitable location. Tilt the power take off lever to neutral position and secure it in place with lock plate.*

Operational Instructions

1. Inspection Before Starting

Make the following check-ups before getting on the vehicle.

Engine Oil

Check the engine oil with oil level gauge (dip stick) before starting the engine. The oil level should be between the F and L marks. If below the L line, replenish with same quality engine oil up to the F line.



Coolant

Unscrew the radiator cap and check the coolant level. If necessary, replenish with clean water.



Tire Inflation

Recommended inflations are as follows.

Ordinary roads 1.9kg/cm² (27 lbs/in²)

Rough roads and cross country

1.5 kg/cm² (22 lbs/in²)

Sandy and muddy terrain

1.0 kg/cm² (15 lbs/in²)

Under-inflation of tires will shorten tire life and increase fuel consumption.

Overinflation will result in poor riding effect and hastening tire wear.



Gasoline Tank

A full tank holds 70 liters (18 $\frac{1}{2}$ U.S. gals, 15 $\frac{1}{2}$ Imp. gals.) Make sure to check the amount contained in the tank before starting out.

General Chassis Check

Check to see that there are no oil leaks, loose bolts or other loose fasteners, or abnormal condition in the springs.

2. STARTING

Set the gear shift lever to neutral position. Insert strater switch key and turn it to ignition position. This will cause the oil warning lamp and charge warning lamp to light and the water heat gauge and fuel gauge pointers to actuate.

Next, turn the key further against the resistance of switch spring to actuate the starter motor. When the engine starts, release the hand from the key immediately. Starting in cold weather will be made easier if the clutch is depressed fully and the choke button pulled out when the starter switch is turned on.

(Since the transmission oil becomes very heavy in cold weather, starting the engine with the clutch disengaged will reduce the load on the battery and starter motor.)

Starting in severe cold weather

For starting in severe cold weather, proceed as follows:

1. Pull out choke button fully

2. Depress clutch pedal fully

3. Turn key to ignition position

4. Turn key to starter position while keeping accelerator pedal depressed.

When the engine starts, return the choke button gradually to the position where the engine operates smoothly. (Avoid the practice of racing the engine as soon as it starts.) After the engine temperature rises and the engine idles smoothly, return the choke button to fully pushed in position.

In the case the engine is already warm, depress the accelerator pedal lightly and start the engine without pulling out the choke button. Care should be taken not to depress the accelerator pedal repeatedly during starting. This will cause large amount of gasoline to be drawn into the engine to make starting more difficult.

Operating the starter motor for more than five seconds continuously will impose heavy strain on the battery. In case difficult starting is experienced, stop using the starter motor for a short period and allow the battery to recover before reusing.

3. PRECAUTIONS BEFORE DRIVING OUT

After the engine starts, check the controls before starting out. Depress the foot brake to see that it offers the proper resistance. Make sure that the parking brake is released.

4. ECONOMICAL OPERATION

For economical operation and enjoyable driving, the following points should be observed.

(1) After starting out, maintain close watch on the oil warning lamp and charge warning lamp, and keep alert for presence of any abnormal vibration, noise, or odor.

(2) Accelerate the vehicle gradually, avoiding quick accelerations

as much as possible. Repeated quick accelerations and sudden braking will result in excessive fuel consumption as well as shortening the vehicle life.

Fuel consumption increases rapidly with higher speed driving. For long distance driving, the best method of obtaining good gasoline mileage is to accelerate to the desired speed and then maintain enough pressure on the accelerator pedal to enable holding that speed.

5. WINTER DRIVING

In winter, starting becomes difficult. The main reasons are: poor carburetion of fuel, the resistance of the various moving parts becoming higher because of the oil becoming more viscous, and the battery performance dropping due to lower temperature. The starting is performed by pulling the choke as previously related. Care should be taken on the prolonged use of the choke as this will not only waste fuel, but will dilute the motor oil to hasten the wear in the cylinders.

a. A cold engine means that its thermal efficiency will be that much lower. If the engine fails to warm up after a certain amount of driving, the thermostat should be checked.

In extremely cold weather, placing a suitable cover in front of the engine will prevent overcooling.

b. If the specific gravity of battery electrolyte is low, there is a danger that the electrolyte may freeze. This necessitates strict observance of periodical battery inspection.

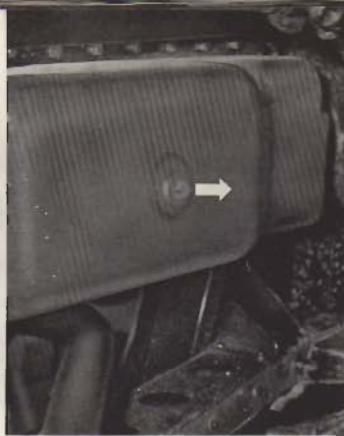
c. Anti-freeze should be used during winter as there is danger of the cooling water freezing and damaging the cylinder block or head in cold weather. If anti-freeze is not used, the cooling water should be drained out completely before garaging the vehicle.

Lubrication

Selection of proper lubricating oil and its periodical replenishment are of extreme importance in maintaining the performance and prolonging the life of your Toyota Land Cruiser.

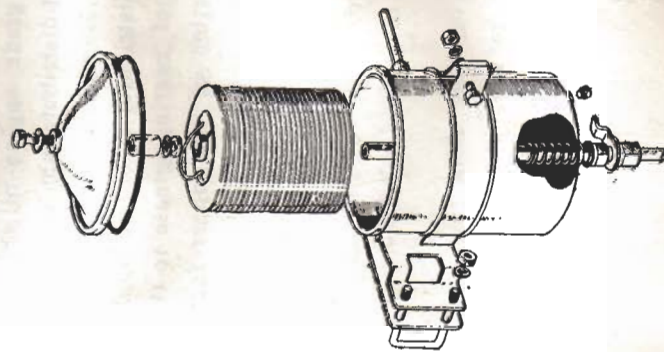
Engine Oil Change (Every 3,000 km, 2,000 miles)

While the engine is still warm after driving, drain out the old oil completely by opening the oil pan drain cock. Then remove the oil filler cap and fill in about 4.7 liters (5 U.S. qts, 4 Imp. qts.) of new engine oil. Run the engine quietly for about two to three minutes and check oil level with oil level gauge (dip stick).



Servicing Oil Cleaner

The oil cleaner can be disassembled by unscrewing the bolt at the cleaner top. After draining out the oil from the cleaner, wash the interior of cleaner case and the element with gasoline or solvent. Replace the element every 9,000 km (6,000 miles). When the oil cleaner is reassembled, run the engine at idle for a few minutes. Then check the oil level with level gauge. Add clean oil to the specified level if necessary. Amount required



is about 1.8 liter (3½ U.S. pints, 3.0 Imp. pints).

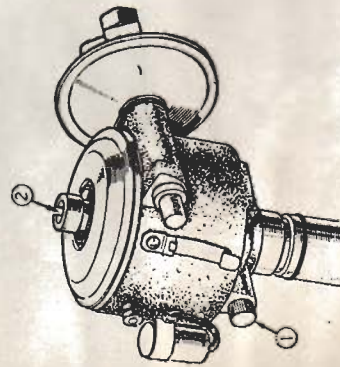
Engine Oil

It is very important that the engine oil selected for Toyota Land Cruiser be of good quality and of proper viscosity corresponding to the season. The viscosity recommended is as follows.

SAE No.	Season	Temperature
SAE 20	Winter	Below 0°C (32° F)
SAE 30	Spring, Summer, Fall	0°C-32°C (32°-90° F)
SAE 40	Tropical summer	Above 32°C (90° F)

In general, use of high viscosity oil during winter will result in starting difficulties and failure of adequate oil to reach the lubricating points, resulting in promoting wear. Conversely, use of low viscosity oil during summer will increase oil consumption as well as fast wear on cylinders and bearings.

Distributor Lubrication



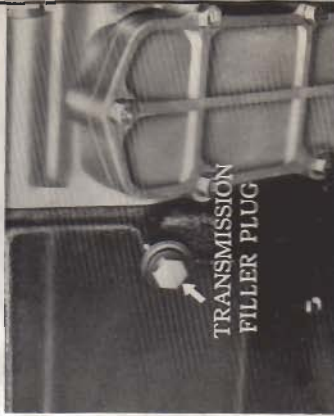
1. Fill good grade engine oil through the oil cup at distributor shaft. (Every 1,500 km or 1,000 miles).
2. Take off distributor rotor and apply a thin coat of bearing grease to the depressed portion of cam upper face. (Every 3,000 km or 2,000 miles).

Lubrication of Transmission Case, Transfer Case, and Power Take Off (Optional)

Gear oil in the transmission case, transfer case, and power take off should be replenished every 9,000 km (6,000 miles) and replaced every 18,000 km (12,000 miles). To replace the oil, drain out the old oil completely while it is still warm after driving and fill with new gear oil up to the filler neck.



Transmission and Transfer Case Gear Oil Drain Plugs



Transmission Case Gear Oil Filler Plug



Transfer Case Gear Oil Filler Plug

Oil Capacity

Transmission case..... Gear oil 1.54 liter (3¼ U.S. pints, 2¾ Imp. pints)
 Transfer case..... Gear oil 1.56 liter (3½ U.S. pints, 2¾ Imp. pints)
 Power take off case... Gear oil 0.35 liter (¾ U.S. pint, ½ Imp. pint)
 Above -12°C, 10°F..... SAE 90
 Below -12°C, 10°F..... SAE 80

When vehicle is provided with a power take off, drain the oil from the power take off drain plug as show in the figure and fill new oil in through the transfer case filler hole up to hole neck.

Note: Make sure to use specified gear lubricant. Use of improper lubricant may result in costly repair of transmission and transfer gears.

Lubrication of Differential Cases

In both the front and rear differential cases, drain out the old oil completely while it is still warm and fill with new hypoid gear oil up to the filler opening.

Oil Capacity

Differential case.....

Hypoid Gear Oil 2.5 liters
(2.6 U.S. qts., 2.2 Imp. qts.)

Above 38°C, 100°F consistently

SAE 140

Above -12°C, 10°F

SAE 90

Below -12°C, 10°F

SAE 80

Lubrication of Steering Gear Box

Check and replenish steering gear box oil every 9,000 km (6,000 miles) and replace it every 18,000 km (12,000 miles). Have the oil changed at a service station.



Power Take Off Case
Gear Oil Drain Plug



Differential Case
Lubrication



Steering Gear Box
Lubrication

Chassis Lubrication

Grease the chassis parts every 1,500 km (1,000 miles) in accordance with the Lubrication Chart shown at the back of this manual.

Make sure to wipe clean all grease fittings before greasing so as to prevent any chance of foreign matter entering into the lubricant. When the vehicle is subjected to considerable amount of driving on rough roads, or under muddy or wet conditions, the greasing interval should be shortened accordingly.

Steering Knuckle Lubrication

Lubricate the steering knuckle parts every 1,500 km, (1,000 miles) using lithium base multipurpose grease. Remove the grease plug shown in the figure and fill in from 200 cc to 500 cc grease. (31~78 cu. in.)



FILLER PLUG
(MP grease)

Oil Capacity

Steering Gear Box.....

Gear Oil 0.35 liter
(3/4 U.S. pint, 1/2 Imp, pint)

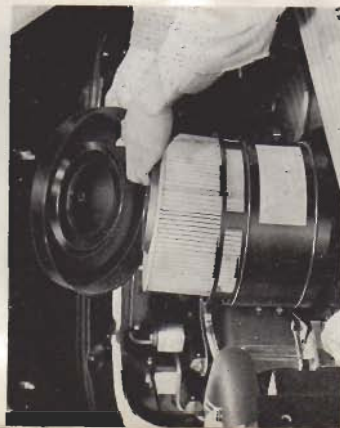
Periodic Maintenance

Good running condition of your Toyota Land Cruiser can be only maintained by giving it proper inspection and servicing at regular intervals. For best results, have this service work performed at your Toyota dealer's service station.

Air Cleaner Service

(Every 3,000 km, 2,000 miles)
Take out the paper filter element and clean by blowing compressed air from the inside. If air compressor is not available, tap the element lightly to remove the dust adhering to its surface.

A dirty air cleaner will hasten cylinder wear and oil contamination, as well as reducing engine power and efficiency. When vehicle is used on dusty roads, air cleaner should be serviced more frequently. The recommended period for replacing the filter element is every 18,000 km (12,000 miles).



Servicing Air Cleaner Element



Checking Battery Electrolyte Specific Gravity

Battery Inspection and Service

(Every 3,000 km, 2,000 miles)
The battery performs the important functions of starting, igniting, and lighting so that it must be maintained in proper condition at all times. Even if the vehicle is not used, the battery must be inspected periodically due to its self-discharging action. In summer, the battery electrolyte level drops much faster to necessitate inspection once a week.

Checking and Replenishing Electrolyte

When vent cap is removed, the electrolyte should be up to the bottom of the vent well. If all cells show low levels and there is no indication of the electrolyte being spilled, then replenish with distilled water only.

Checking Specific Gravity

The charged condition of the battery is determined by the specific gravity of its electrolyte. Using a battery hydrometer, measure the specific gravity of the electrolyte in each cell. If the reading shown is 1.26 at 20°C (68°F), the battery is fully charged. If below 1.21 (20°C), the battery should be recharged.

After inspection, the battery terminals should be cleaned and tightened securely to prevent contact resistance. Applying a coat of grease on the terminals will be very helpful.

Retightening Axle Nut

Using the hub nut wrench provided in the tool set, retighten all axle nuts securely.



Cleaning Fuel Strainer

Remove the glass bowl and wash the bowl interior and filter element with gasoline. Replace the bowl gasket if this part shows leaks after reassembling. The filter element should be replaced every 18,000 km (12,000 miles).





Brake and Clutch Adjustment

(Every 9,000 km or 6,000 miles)

Check the play on both the clutch and the brake pedals. Any abnormal increase in play or improper action necessitates readjustment. In such cases, have the work performed at your Toyota dealer's service station.

The fluid in the master cylinder reservoirs of both the brake and clutch must be always maintained more than three-quarters full.

Engine Tune-up (Every 9,000 km or 6,000 miles)

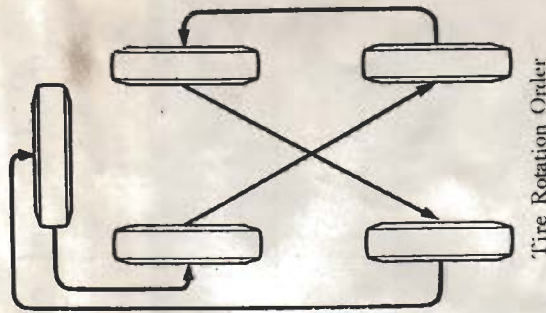
By performing a regular tune-up job on the engine every 9,000 km, it is possible to maintain the engine performance constantly in new car condition. The inspection and adjustment work included in this tune-up are as follows and should be performed at your Toyota dealer's service station.

1. Inspection of ignition system
includes batteries, distributor, spark plugs, etc.
2. Adjustment of valves tappet clearance
3. Compression pressure test
4. Inspection and adjustment of fuel system
includes carburetor, fuel pump, strainer, etc.
5. Inspection of fan belt tension
6. Retightening engine part.

Tire Rotation Every

(9,000 km or 6,000 miles)

The tires should be rotated in the manner shown in the figure so as to permit uniform wear. On Models FJ40 and FJ45 where the tire sizes differ at front and rear, rotate the tires as shown in the figure.



Adjustment of Front Alignment

For safety of driving and prevention of abnormal tire wear, the front alignment should be checked and adjusted every 9,000 km (6,000 miles). As this work requires the use of special measuring equipment, have it performed at your Toyota dealer's service station.

Front Alignment (under standard loading)

Caster	1°
Camber	1°
Toe-in	3~5 mm
King pin angle	9°30'

Flushing Out Radiator

To remove the scales and rust contained in the radiator and engine water jacket, open the radiator and engine drain cocks and flush out the system by running water through the radiator filler hole for about ten minutes. If the scale and rust accumulation is very bad, radiator cleaner should be used for effective cleaning.

Retightening Chassis and Body Parts

Tighten the door hinges, door locks and steering mountings every 9,000km or 6,000 miles.

Replacement of Lamp Bulb, Fuse and Tire

When replacement is to be made at night and there is no outside illumination available, utilize the inspection lamp. This lamp is stowed inside the glove compartment and is ready for immediate use by plugging into the inspection lamp socket located at dashboard in front of assistant driver's seat.

Headlamp

The headlamp uses 50/40-watt sealed beam unit.



Remove radiator grille mounting screws, using Phillips type screwdriver, and take off the radiator grille.



With a slot screwdriver, remove retaining ring. Take care not to disturb beam angle adjust screws A and B shown in figure below.



Pull out socket and replace the lamp unit, making sure that it is returned correctly to original position.



NOTE: Screws A and B shown are for beam angle adjustments. Screw A adjusts vertical direction and screw B horizontal. Do not attempt making adjustments without an aim.

Front Turn Signal Lamp

A front turn signal lamp is mounted on the top of each front fender. Size of lamp bulb used is 25 watts, except on Model FJ45 which uses double filament bulb 25/10 watt size.



Using Phillips screwdriver, remove screw at top of lamp.



Remove the rear lens by turning it counterclockwise. Remove the bulb by pushing in and turning it counterclockwise.

Front Small Lamp

Size of bulb used is 8 watts.



Using a slot screw driver, remove the three screws and take off the lens.



Remove the bulb by pushing in and turning it counterclockwise.

Rear Combination Lamp

This lamp combines the functions of stop lamp, rear turn signal lamp, and tail lamp. It uses a double filament 25/8 watt bulb.



With a slot screwdriver, remove the three screws and take off the lens.



To remove the bulb, push it in and turn it counterclockwise.

License Lamp

The license lamp uses a 10-watt bulb.



Using Phillips screwdriver, remove the two screws and take off the cap from the rubber.



To remove the bulb, push it in and turn counterclockwise.

Fuse

The fuse box is installed on the dash panel. When replacing a burnt out fuse, make sure to check for short circuit or other troubles in the electrical circuit.



Wheel

To replace a flat tire, proceed as follows:

1. First block all front and rear wheels to insure against the rolling of vehicle, and take out jack and wrench from inside the tool box under the assistant driver's seat.
2. Have the spare tire ready on hand and loosen the hub nuts with hub nut wrench.
3. After loosening the nuts, place the jack under the axle housing and raise the vehicle.
4. Replace the wheel and screw on the hub nuts tight, after which, lower the jack.
5. Tighten the nuts uniformly and securely with hub nut wrench again.



Caution: (1) Care must be taken to secure the jack on the ground to prevent any dangers of the jack being tilted or fallen down.

(2) When the vehicle is jacked up, do not get under it or ride on it.

(3) When the rear wheels are jacked up, the hand brake will not be effective.

Early Detection of Troubles and Their Remedies

It is of utmost importance that troubles be detected early and immediate remedial measures taken.

- | | | |
|-----------------------------|---|---|
| 1. Engine Troubles | { | (1) Abnormal noise
(2) Loss in power
(3) Overheating
(4) Abnormal vibration
(5) Increased consumption of fuel or oil |
| 2. Chassis Troubles | { | (1) Noises {
(a) Transmission
(b) Differential
(c) Propeller shaft
(d) Body
(2) Loss in vehicle speed as compared with engine speed.
(3) Erratic steering
(4) Erratic braking effect |
| 3. Presence of Unusual Odor | { | (1) Gasoline odor
(2) Burning odor |

Remedies of Troubles

1.1 Abnormal Noise in Engine—Have inspection and repairs made at your nearest Toyota service station without delay.

1.2 Loss in Engine Power—check for low tire inflation, slipping clutch, dirty air cleaner, and dragging brakes.

Next check for misfiring in all cylinders. To do this, run the engine at low speed (around 400 to 500 rpm) and ground the spark plug at No.1 cylinder with a screwdriver. If no difference is noted, the cylinder is misfiring. Repeat this process on all cylinders. On the misfiring cylinder, clean the spark plug and adjust the gap to the specification of 0.9 mm (0.036 in.).

If the misfiring continues after cleaning the spark plug or even after replacing it with new part, the trouble is probably due to broken valve spring or poorly seated valve, blown out cylinder head gasket, or malfunction of the ignition system.

If the cylinders are firing properly and the power output is still low, the probable causes are delayed timing, engine overheating, insufficient compression due to worn pistons or piston rings, improper tappet clearance, and carburetor troubles, which necessitate having the fault corrected at your Toyota service station.

It should be noted that when the exhaust gas is colorless or presents a light blue color, the engine combustion is taking place properly. But when the exhaust is white, it indicates that oil is pumped up into the cylinders. When black, it indicates that the air-fuel mixture is too rich due to faulty carburetor.

1.3 Engine Over heating—The main causes for engine overheating are overloaded operation, delayed ignition timing, loose fan belt, and dirty water jacket. If the engine overheats and the radiator water starts to boil, stop the engine, open the drain cock carefully and allow about one-half of the cooling water to drain out. After reducing the radiator internal pressure in this manner, remove the radiator cap and fill in water slowly.

If the radiator cap is removed without following the above procedure, you may get your hand scalded. Also, do not drain out all of the cooling water and refill immediately with cold water as this may crack the cylinder block or cylinder head.

1.4 Abnormal Engine Vibration—Check for misfiring in cylinders as outlined above, loose mounting bolts, weakened rubbers, and faulty adjustment in carburetor.

1.5 Increased Consumption of Fuel or Oil—If the consumption of fuel or oil increases without any changes being made in the loading or driving conditions, the color of exhaust gas previously described should be noted. Increased fuel consumption is caused

mainly by faulty carburetor, slipping clutch, insufficient tire inflation, or dragging brakes. Increase in oil consumption is caused mainly by oil leaks, worn cylinders, or worn piston rings.

2.1 Chassis Troubles—For troubles outlined in articles 1 through 4, inspections and repairs should be performed with the least possible delay at your Toyota service partion. Particularly troubles concerned with steering such as excessive steering wheel play, wandering while driving, and tendency for steering wheel to lock, are signs of serious troubles, making it extremely hazardous to continue driving. Also erratic braking must be attended to immediately.

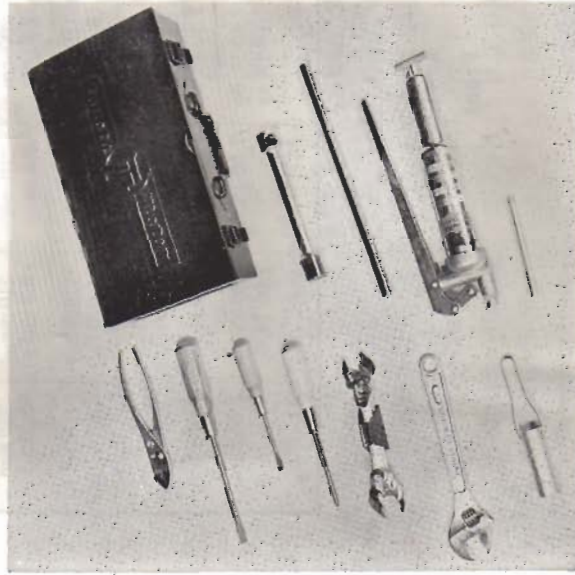
3.1 Gasoline Odor—Presence of gasoline odor indicates leaking gasoline, to necessitate making a careful inspection of the fuel system piping.

3.2 Burning Odor—In the event of burning odor is present, the trouble is probably due to short circuit in the wire harness, or burned out generator. In such a case, stop the engine and disconnect the battery terminals. After taking such fire preventive actions, make the necessary inspections. When a short circuit occurs in the wiring system, the charge warning lamp will light up.

Service Tools and Jack

Toyota Land Cruiser is provided with the following tools as standard equipment. These are contained in a steel tool box and stowed underneath the assistant driver's seat.

1. Screw jack, 2-ton capacity 1 set
2. Pliers 1 pc.
3. Screwdriver, for cross recess type screws 1 pc.
4. Screwdriver, for slot type screw. 2 pcs.
5. Double open-end wrench, 5-pc set 1 set
6. Adjustable end wrench 1 pc.
7. Spark plug wrench 1 pc.
8. Hub nut wrench 1 set
9. Grease pump 1 pc.



H-78-15

Specifications and Adjustment Data

DIMENSIONS & WEIGHTS

	FJ40 (L)	FJ40(L) V	FJ43 (L)	FJ45(L) V	FJ45(L) P
Wheelbase	2,285 mm (90.0 in.)	2,285 mm (90.0 in.)	2,430 mm (95.7 in.)	2,650 mm (104.3 in.)	2,650 mm (104.3 in.)
Tread, front	1,404 mm (55.3 in.)	1,404 mm (55.3 in.)	1,404 mm (55.3 in.)	1,404 mm (55.3 in.)	1,404 mm (55.3 in.)
Tread, rear	1,400 mm (55.1 in.)	1,400 mm (55.1 in.)	1,400 mm (55.1 in.)	1,400 mm (55.1 in.)	1,400 mm (55.1 in.)
Overall length	3,870 mm (152.4 in.)	3,870 mm (152.4 in.)	4,290 mm (168.5 in.)	4,660 mm (183.5 in.)	4,650 mm (183.1 in.)
Overall width	1,665 mm (65.6 in.)	1,665 mm (65.6 in.)	1,665 mm (65.6 in.)	1,720 mm (67.7 in.)	1,665 mm (65.6 in.)
Overall height	1,950 mm (76.8 in.)	1,980 mm (77.9 in.)	1,970 mm (77.6 in.)	1,770 mm (69.7 in.)	1,890 mm (74.4 in.)
Ground clearance	200 mm (7.9 in.)	200 mm (7.9 in.)	210 mm (8.3 in.)	210 mm (8.3 in.)	210 mm (8.3 in.)
Net vehicle weight	1,480 kg (3,260 lb.)	1,550 kg (3,410 lb.)	1,590 kg (3,500 lb.)	1,850 kg (4,070 lb.)	1,670 kg (3,670 lb.)
Gross vehicle weight	2,050 kg (4,500 lb.)	2,050 kg (4,500 lb.)	2,300 kg (5,000 lb.)	2,700 kg (6,000 lb.)	2,700 kg (6,000 lb.)
Tire size, front	7.10-15, 4p or 7.60-15, 6p	7.10-15, 4p or 7.60-15, 6p	7.60-15, 4p or 7.60-15, 6p	7.00-15, 6p or 7.60-15, 6p	7.00-15, 6p or 7.60-15, 6p
Tire size, rear	7.10-15, 4p or 7.60-15, 6p	7.10-15, 4p or 7.60-15, 6p	7.60-15, 6p	7.00-15, 8p or 7.60-15, 6p	7.00-15, 8p or 7.60-15, 6p

ENGINE

Toyota model

Type

Location

F

6-cylinder in line, 4-cycle, O.H.V.

Front

Bore & stroke	90×101.6mm (3.54×4.00 in.)
Piston displacement	3,878cc (236.7 cu.in.)
Compression ratio	7.5
Max. gross horsepower	(SAE) 135 hp @ 3,800 rpm
Max. gross torque	(SAE) 30 m·kg (217 ft·lb) @2,000 rpm
Valve timing;	
Intake	Open
Close	B.T.D.C. 10°
Exhaust	Open
Close	A.B.D.C. 46°
Exhaust	Open
Close	B.B.D.C. 52°
Exhaust	Close
Close	A.T.D.C. 12°
Valve clearance;	
Intake	0.25mm (0.010 in.)
Exhaust	0.35mm (0.014 in.)
Fuel system;	
Air cleaner	Oil bath type or paper filter element type
Carburetor	Down-draft
Tank capacity	70 liters (18.5 US gal., 15½ Imp gal.)
Cooling system;	
Type	Water cooled, forced circulation by centrifugal pump
Radiator	Fin & tube type
Water capacity	16.6 liters (18.5 US qts, 14.6 Imp qts.)
Lubrication system;	
Type	Full pressure force feed type
Oil cleaner	Paper filter element type
Oil capacity	6.5 liters (6.9 US qts, 5.7 Imp qts.)
Electrical system;	
Ignition timing	B.T.D.C. 7° @ 500 rpm
Ignition order	1-5-3-6-2-4
Distributor advance	Centrifugal governor & vacuum advancer
Distributor point gap	0.45 mm (0.018 in.)

Cam closing angle 41°
 Spark plug, size 14 mm (0.55 in.)
 Spark plug gap 0.9 mm (0.036 in.)
 Battery 12 volts, 50 amp. hr. (20 h.r.)
 Specific gravity 1.28 @ 20°C (68° F)
 Generator 12 volts, 216 watts
 Starting motor 12 volts, 1.4 hp

CLUTCH

Type Dry single plate with centrifugal weights and torsion rubbers
 Play of clutch pedal 25mm (1 in.)

TRANSMISSION

Type 3-speed, 2nd & 3rd gears synchromesh
 Gear ratio, 1st 2.76
 2nd 1.70
 3rd 1.00
 Reverse 3.67
 Lever position Steering column or center floor
 Oil capacity 1.54 liters (3¼ US pints, 2¾ Imp. pints.)

TRANSFER

Type 2-speed, helical gear sliding type
 Gear ratio, low 2.31
 high 1.00
 Oil capacity 1.57 liters (3½ US pints, 2¾ Imp. pints.)

AXLE

Front;
 Type Full floating, hypoid gear drive
 Reduction ratio 3.70 or 4.11
 Oil capacity 2.5 liters (2.6 US qts., 2.2 Imp qts.)
 Rear;
 Type Semi-floating, hypoid gear drive
 Reduction ratio 3.70 or 4.11

Oil capacity 2.5 liters (2.6 US qts., 2.2 Imp qts.)

SUSPENSION

Front Semi-elliptic leaf springs with double acting hydraulic telescopic shock absorbers
 Rear (for FJ40, 40V) Semi-elliptic leaf springs with double acting hydraulic telescopic shock absorbers & torsion-bar type stabilizer
 (for FJ43, 45V, 45P) Semi-elliptic leaf springs with helper springs, single-acting hydraulic telescopic shock absorbers & torsion-bar type stabilizer

STEERING

Type Worm & sector roller type
 Gear ratio 21 to 1
 Steering angle;
 In 32°
 Out 27°
 Play of steering wheel 25~50mm (1~2 in.)
 Front wheel alignment;
 Toe-in 3~5mm (0.12~0.20 in.)
 Camber 1°
 Caster 1°
 King pin angle 9.5°

BRAKE

Service brake Hydraulic brake operating on all wheels
 Parking brake Mechanical operating on propeller shaft

FRAME

Type Girder type, channel section

Identification Numbers

The frame and engine serial numbers of your Toyota Land Cruiser are stamped at the following locations. These are official serial numbers and are to be used for registration purposes.

1. Frame Serial Number

This is stamped on the left frame at the front end.



2. Engine Serial Number

This is stamped on the right side of the cylinder block.

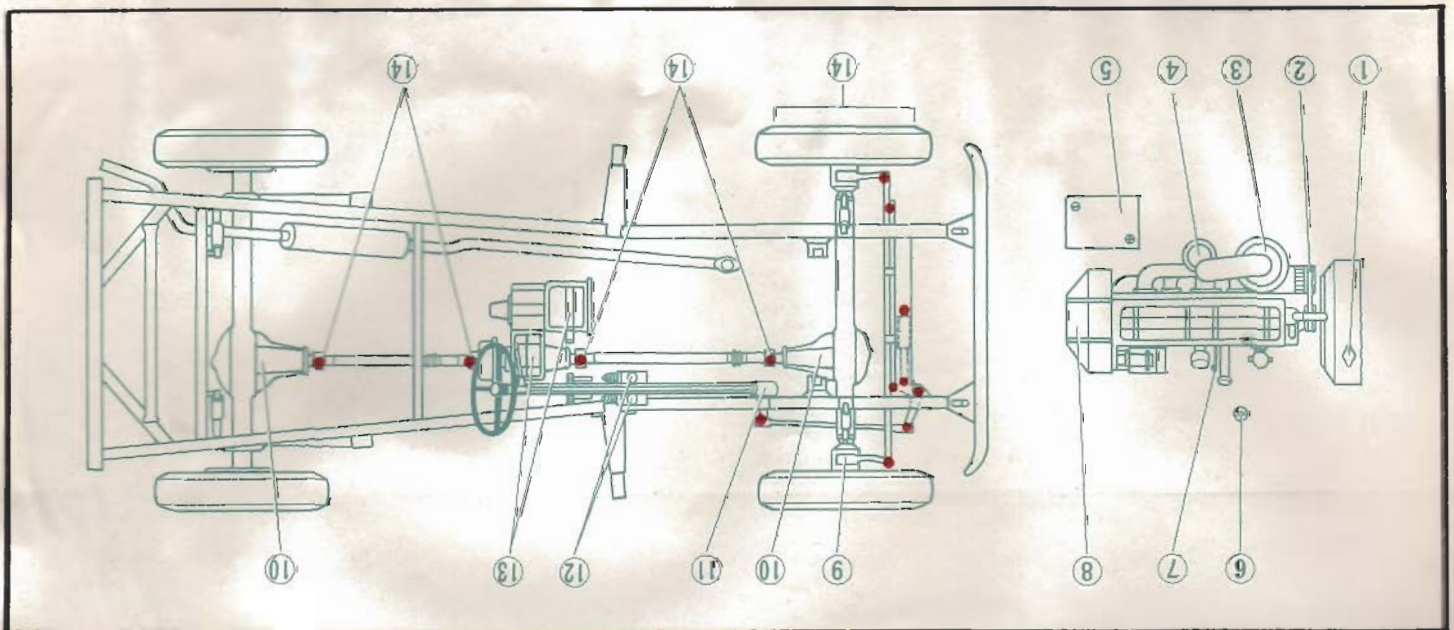


3. Identification Plate

This plate can be found on the right of dash panel when opening the hood.



TOYOTA LAND CRUISER



PERIODIC MAINTENANCE CHART

SERVICE EVERY 1,500 KILOMETERS (1,000 MILES) EXCEPT AS NOTED BY [] AND ○ RESPECTIVELY

Item	Frequency	Procedure
No. 1 COOLING SYSTEM	All models	Check for leaks
No. 2 FAN BELT	① Drain and Refill	Check for deflection (1/2 in)
No. 3 AIR CLEANER ELEMENT	② Dry type	Clean
No. 4 OIL FILTER	① Oil type	Replace
No. 5 BATTERY	③ Liquid level	Check and add
No. 6 FUEL FILTER	② Specific gravity	Check
No. 7 CRANKCASE	① Element	Check and clean
No. 8 FRONT WHEEL BEARINGS	② Distributor cap, rotor and points	Adjust
No. 9 CLUTCH	① Clean and adjust	Adjust
No. 10 DIFFERENTIAL	① Above 38°C (100°F) constant	SAE 140
	② Above -12°C (10°F)	SAE 90
	③ Below -12°C (10°F)	SAE 80
	Capacity	liters pints
	All models	2.5 4 1/2 (imp)
		5 7 (U.S.)
No. 11 STEERING GEAR BOX (Plug)	① Drain and Refill	Inspect and replenish if necessary
No. 12 BRAKE FLUID RESERVOIR	② Fill to the step of reservoir	
No. 13 TRANSMISSION	① Above -12°C (10°F)	SAE 90
	② Below -12°C (10°F)	SAE 80
	Capacity	liters pints
	Trans. case	1.56 2 3/4 (imp)
		3 7/8 (U.S.)
	Inspect and replenish if necessary	
No. 14 UNIVERSAL JOINTS and FRONT SUSPENSION and STEERING LINKAGE	① All models	70 15 1/2 (imp)
		18 7/8 (U.S.)
	Model	Front Rear
	F140(L), 40(L)V	18 psi 26 psi
	F143(L), 43(L)V	16 psi 30 psi
	F145(L), 45(L)V	25 psi 60 psi
	Rotore tires according to the plan shown on page 29, then balance wheels.	
Service as shown	① Every 18,000 km (12,000 miles)	Replace or cleaner element
	② Every 3,000 km (2,000 miles)	Replace spark plugs
	③ Every 9,000 km (6,000 miles)	Drain and refill differential
		Drain and refill transmission
		Replace fuel filter element
TUNE-UP DATA		
Compression Pressure	(psi at cranking speed with throttle fully open)	10.2 kg/cm ² (145 psi)
Spark Plug	All models	Denso NGK
	Type	W14 B-4
	Gap	0.9 mm (0.035 in)
Distributor	Make	Denso
	Point gap	0.5 mm (0.02 in)
	Dwell angle	38°-44°
Condenser	Make	Denso
	Capacity	0.20-0.24 mfd
Battery	Amp. Hrs.	55
	Specific gravity	1.280
	Recharge at	1.220
Compression Pressure	(psi at cranking speed with throttle fully open)	10.2 kg/cm ² (145 psi)
Fuel Pump	Manufacturer	KYOSAN
	Pressure	0.24-0.34 kg/cm ² (3.4-4.8 psi)
	Volume	2.100cc (128 cubic in.)/min at 1,000 rpm
Carburetor Adjustment	See Repair Manual for procedure	
Engine Idle Speed	500 rpm	
Valve Clearance	(engine hot and running)	Inlet valve 0.254 mm (0.010 in)
		Exhaust valve 0.356 mm (0.014 in)
Timing Procedure	1. Bring engine to operating temperature	
	2. Connect a 12 volts timing light to No. 1 spark plug	
	3. Set idle to 500 rpm	
	4. Set advance selector to initial timing line	
	5. Loosen distributor clamp bolt	
	6. Observe timing of flywheel opening and turn distributor to obtain alignment of pointer with steel ball	
	7. Retighten distributor clamp and reset to proper idle speed.	