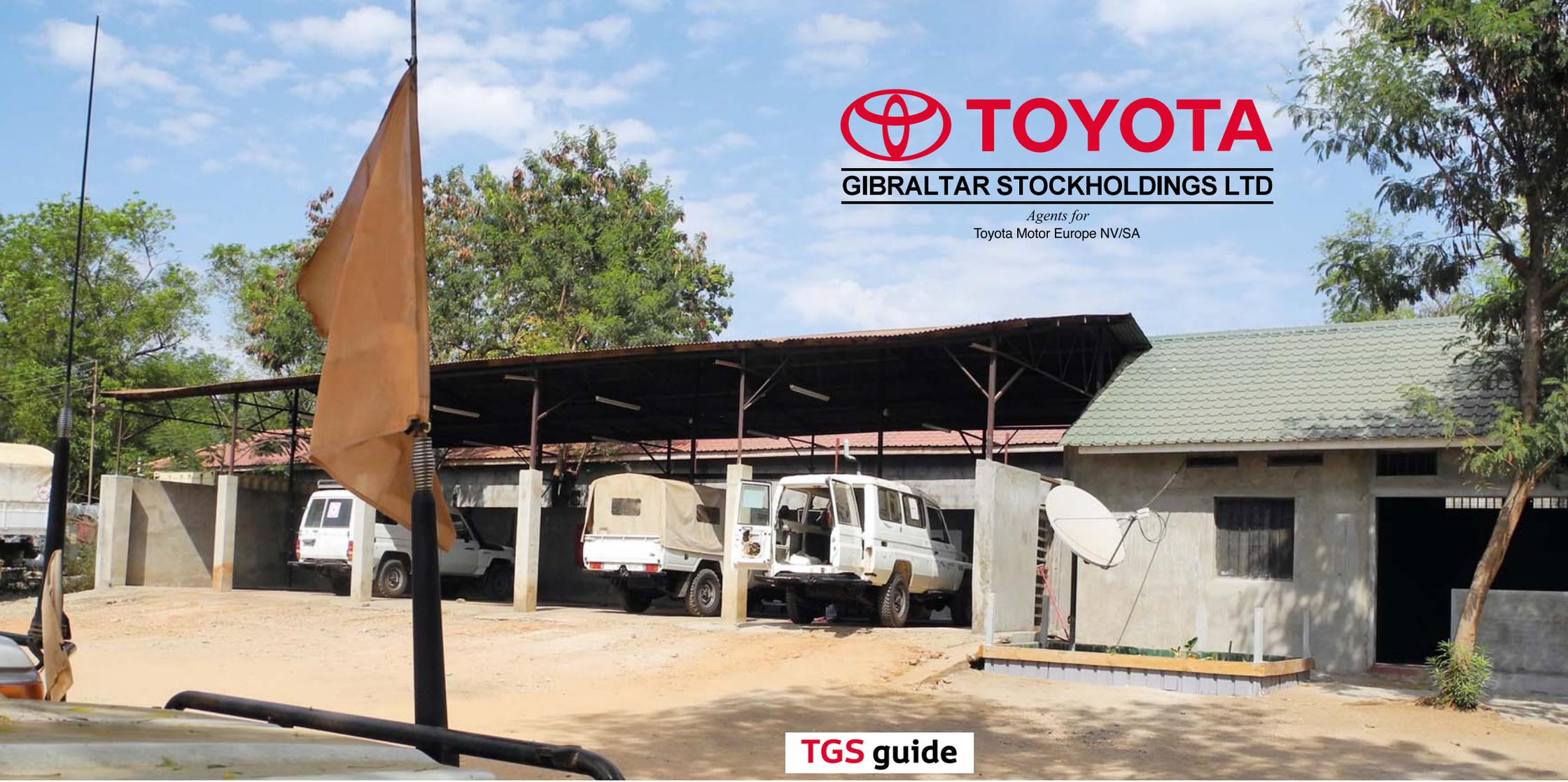




**GIBRALTAR STOCKHOLDINGS LTD**

*Agents for*  
Toyota Motor Europe NV/SA



**TGS** guide

Find us on   [www.toyota-gib.com](http://www.toyota-gib.com)

# BASIC VEHICLE MAINTENANCE



## OVERVIEW

“The modern motor vehicle is no different to the human body. You must utilise the correct fuel and lubricants on the vehicle to ensure that the engine and other components will function to their maximum capacity, therefore reducing the risk of damage or malfunction.

Therefore vehicle maintenance is an integral part of the operation for the well-being of any mechanical object and requires manufacturers service procedures to be adhered to, in order to ensure reliability.”

**Cor Hendriks, TGS Technical Training Manager**



The theory behind preventive maintenance is quite simple

## PREVENTIVE MAINTENANCE

**"The proactive replacement of parts combined with regular adjustment and lubrication of moving structures will reduce premature component wear and failure"**



## ENGINE OIL

Great advances have been made over the last 20 years with the quality of engine oils and many now contain additives to improve the life and operating viscosity of the oil.

Modern semi and full synthetic oils now allow one type of oil to be used in extremes of temperature ranges to ensure easy starting when cold and high lubrication protection when warm.

It is therefore most important that manufacturer recommended oil service interval times be adhered to, in order to avoid problems.

Different oil types should not be mixed in the engine.



## OIL FILTER

The oil filter collects all the small items of residue that are produced with the normal working operation of the internal combustion engine. The filter will hold pieces in suspense to be discarded when the filter is changed.

Required to be changed in accordance with manufacturers recommended service intervals.

Always use manufacturers original filters.

## IMPORTANT SERVICING ITEMS

All manufacturers' service schedules insist that items are replaced long before their efficiency expires and keeping to the service schedule will ensure breakdowns are kept to a minimum.

## COOLANT

Toyota vehicles are filled with a 50-50 mix of water and long life coolant and the level has to be topped up to ensure engines run at the correct temperature.

The coolant not only acts as anti-freeze for the winter but also as a corrosion inhibitor, so even in hot climates it is important that the correct balance is kept in the cooling system.

### WARNING

- Do not remove radiator cap when engine is hot •
- Thermostats should **NOT** be removed in hot climates •
- Do not allow to drain onto the ground as it can be poisonous to animals •



## FUEL FILTERS

Many vehicles can have two fuel filters mounted under the bonnet, one as a pre filter and the second as a main filter. Both have throwaway elements and the main filter also incorporates a drain point and water indicator unit.

If you have reason to doubt the quality of the fuel or experience engine running problems check these items and change as required by service recommendations.

Always have new filters available as they cannot be cleaned.





## AIR FILTER

Toyota air filters are of the cyclonic type to ensure that large particles that enter the area fall to the bottom of the filter bowl and can be easily removed from the system.

Filters should be examined and replaced regularly in dusty conditions. The air filters can be washed out with water and left to dry (based on the 70 Series).



**ENSURE ALL RECEPTACLES  
HAVE THEIR CAPS REFITTED**

## TYRES

Check for correct inflation pressure, damage to tread and sidewalls including the spare wheel. Check location of tool kit including jack operation and availability of tyre inflation device. Lowering tyre pressures will assist traction off-road.



## OTHER FLUIDS

This area covers battery, screen wash, clutch and brake fluids, which should be checked at regular intervals.

Ensure correct type of fluids available and all receptacles have their caps properly fitted.



## ELECTRICAL ITEMS

Before any journey check operation of all lights including warning lights, wipers and communications equipment.

Check security of battery and the terminals.

Ensure that you carry spare bulbs and fuses.



TIRE-LOADING INFORMATION			
Reifenfulldruck kalte Reifen			kPa
Cold tire inflation pressure			psi
Pression des pneus froids			
Presión de neumáticos fríos			
245/70R17 110S	200	200	200
	29	29	29
245/65R17 112S	200	200	220
	29	29	32
	200	200	200
	29	29	29

60880 06

# UNDER BONNET



AIR  
FILTER

OIL  
FILLER  
CAP

RADIATOR  
CAP

DIPSTICK

POWER  
STEERING  
FLUID

CLUTCH  
AND  
BRAKE  
FLUID

EXPANSION  
TANK

FUEL  
FILTER

BATTERY

SCREEN  
WASH

## 4.2 litre diesel engine

6 cylinder in-line / 12 valve / OHC

TGS vehicles fitted with the 1HZ diesel engine:

Land Cruiser 76 Series Hardtop 5 door

Land Cruiser 78 Series Hardtop 13 and 6 seater

Land Cruiser 79 Series Pick-Up Single and Double Cabin

# 1HZ

The following should be checked:

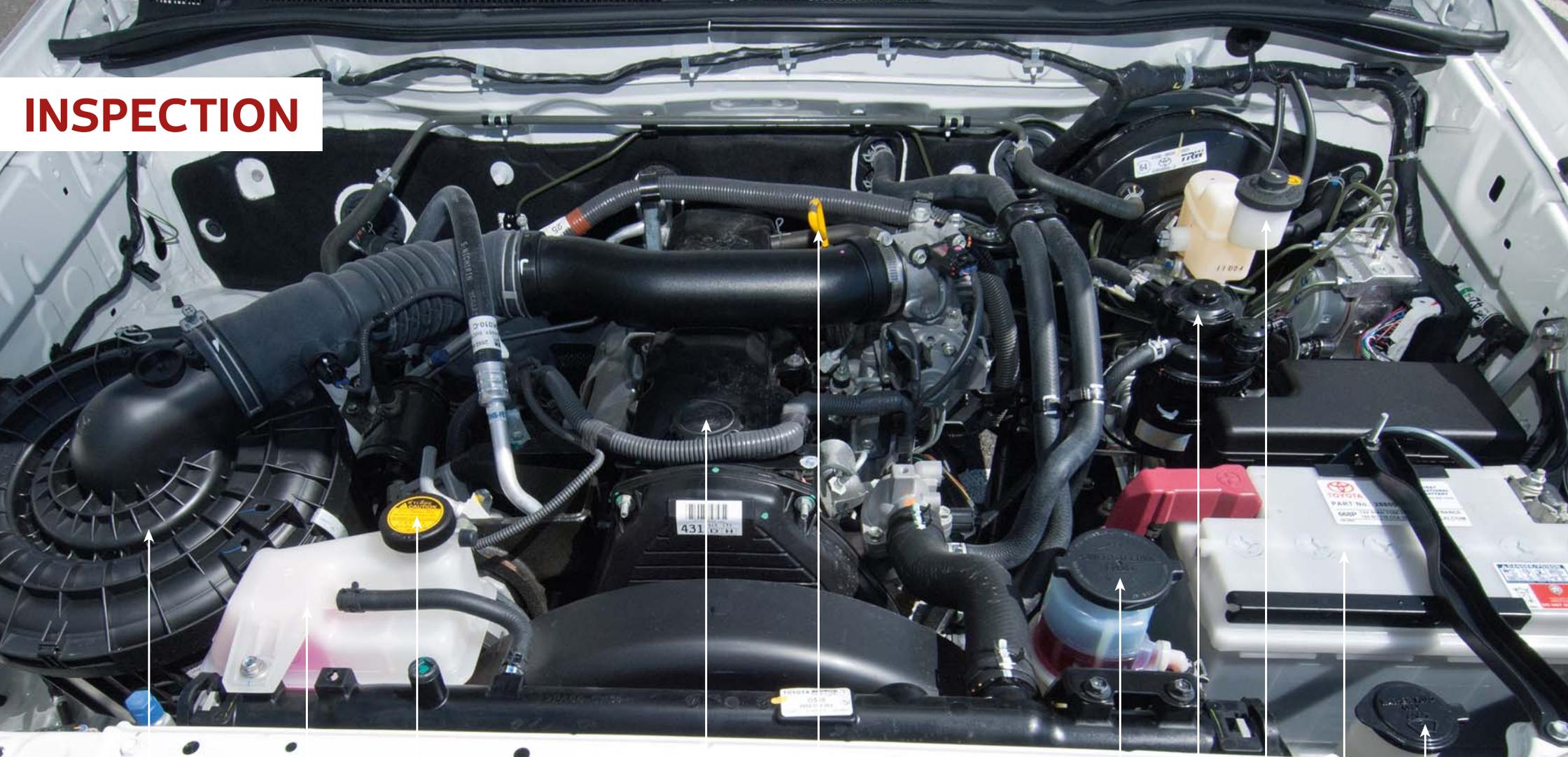
**Engine oil level** - If too low, top up with correct oil type from sealed container •

**Expansion tank level** - Check in between the two levels and top up with coolant if required. Check return pipe is present •

**Brake and clutch fluid** - Top up as required with fluid from a clean tin. Brake fluid is hygroscopic and contaminated liquid will have a lower boiling point causing brake fade •

**Belts** - Check belts for condition and security. Do not over tighten •

# INSPECTION



AIR FILTER

EXPANSION TANK

RADIATOR CAP

OIL FILLER CAP

DIPSTICK

POWER STEERING FLUID

FUEL FILTER

CLUTCH AND BRAKE FLUID

BATTERY

SCREEN WASH

- Battery** - Check for security, fluid level and terminal condition •
- Leaks** - Inspect under the engine compartment for leaks and evidence of oil or water •
- Exhaust** - Run up engine and listen for leaks from manifold area •
- Other fluid levels** - Top up power steering fluid, washer bottle etc •
- Fuel filters** - Check for leaks and water in main filter and if fitted, the second filter. Drain as required •
- Wiring** - Visual check of all wiring looms and electrical cables •

## 3.0 litre diesel engine

4 cylinder / 8 valve / OHC / EFI

TGS vehicles fitted with the 5L-E diesel engine:

Hilux Double Cabin

Fortuner

Land Cruiser Prado 150 Series

Hiace Commuter Bus

# 5L-E



## TRAINING

Ensure that all persons responsible for using vehicles are capable of simple repairs and correct driving procedures for the type of vehicles.

## TOOLS

Always ensure that you carry a small tool kit able to carry out emergency repairs. Some items of spares i.e. filters should also be carried. Technical data and vehicle specifications need to be available.



EXAMPLE OF  
CONTAMINATED  
FUEL

## ELECTRICAL PROBLEMS

Generally electrical problems are caused by a flat battery and/or poor battery connections.

Make sure your electrical system is up to the job especially when you have accessories like winches, radio equipment and refrigerators fitted.

Ensure that the battery terminals and clamps are clean and tight, if necessary top up the battery with distilled water and check if the fan belt is at the correct tension.

It is good practice to keep a pair of jump leads in the vehicle and know how to use them.

If your vehicle has a faulty alternator you can temperately solve the problem by swapping every 100km batteries with another vehicle.



## TIPS AND TRICKS

Regular maintenance is the key to reliable and safe motoring but sometimes the inevitable happens and the vehicle fails to function. At these times you will be grateful for preparation made before setting out on your journey and a little knowledge.

## FUEL PROBLEMS

Most problems encountered with the fuel system are caused by low quality or contaminated fuel.

This will be evident by: poor starting, excessive smoke from the exhaust and poor running of the engine. The warning light on the dashboard, indicating that the fuel is contaminated with water may also be on.

It is important to take extra care when refuelling from barrels or jerry cans and avoid water or dirt entering the fuel tank. Also drain the water from the fuel filter regularly and change the filter elements according to the service intervals.

Changing over to the second fuel tank, draining the water from the fuel sedimentor or changing both fuel filters might get you going again. As soon as possible the fuel tank(s) should be filled with clean fuel.



## TYRE PROBLEMS

Punctures are common, so know how to change a wheel and make sure you carry the equipment to do so.

It is advisable to carry an extra spare wheel, inner tubes, tyre pressure gauge and a tyre repair kit.

Do not forget a tyre pump and pressure gauge which is also essential when you have dropped your tyre pressure for off-road use.

## COMMUNICATIONS

If the vehicle is fitted with HF or VHF equipment, check to see if they work correctly and that the correct frequencies are programmed into the units. If unsure, carry out a test call to the office to confirm.



## DAILY INSPECTION

Every day before using the vehicle, open the bonnet and check for any faults. Walk around the vehicle to check tyres and other equipment etc.



IT'S IMPORTANT FOR YOU TO KNOW WHETHER A WARNING LIGHT REQUIRES IMMEDIATE ATTENTION

## EXTERNAL CHECKS

Walk around the vehicle starting at the front left wing and check the following points:

**Front locking hubs** - Check for correct hub position dependant on terrain to be expected •

**Tyres** - Check condition of all tyres for tread, damage, pressure and suitability for journey to be taken. Don't forget the spare! •

**Body condition** - As you walk around, check for body damage and loose items such as bumpers, mirrors etc •

**Lights** - Check all lights work as required •



## VEHICLE CHECKLIST

In order to avoid breakdowns and problems during the day, it is important to carry out a first parade of your vehicle and equipment prior to departing from your base.

The following items should be checked and rectified as required:

## INTERNAL CHECKS

Before moving off, check the following items on the inside of the vehicle:

- Availability and condition of tool kit •
- Security of all items stowed in the rear •
- Internal instrumentation on the dashboard for correct operation •
- Fuel levels •

**Any major faults should be reported to the vehicle manager before setting off.**

## DOCUMENTS

Ensure that you have the correct:

- Registration documents •
  - Insurance documents •
  - Permission documents •
- ...to operate the vehicle concerned •

Make sure these are in the correct language for the area you are operating in.

Ensure any passengers you are carrying have the correct documents.





## VEHICLE INSPECTION REPORT

Full physical examination of the vehicle and visible components

A vehicle inspection report is something that all assigned drivers should use to check their vehicle on a daily basis before leaving the compound.

This daily vehicle inspection report checklist can be photocopied or downloaded from the media centre on our website.

# SAMPLE VEHICLE INSPECTION REPORT

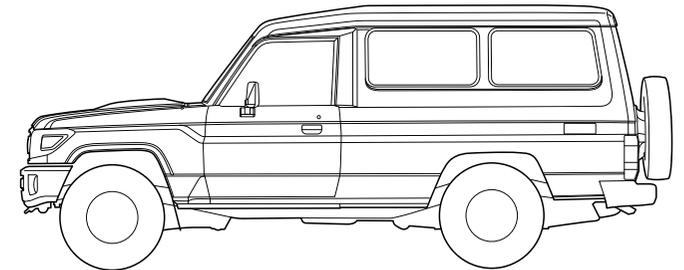
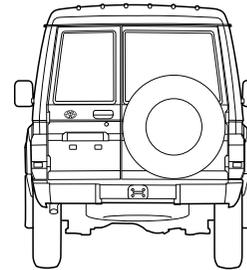
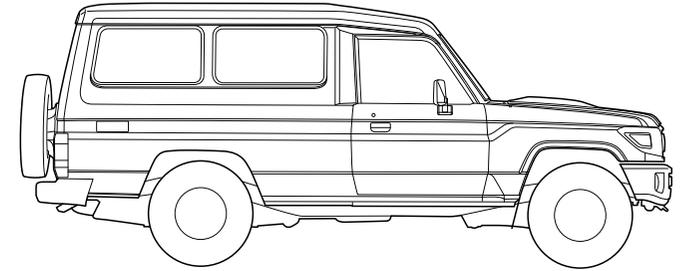
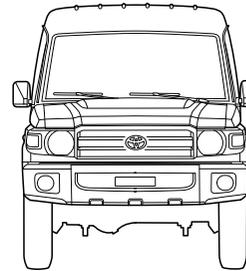
ORGANISATION VEHICLE CODE

	INSPECTION
DATE	VEHICLE

KM
CURRENT
NEXT SERVICE

FUEL				
MAIN TANK	1/4	1/2	3/4	Full
SECONDARY	1/4	1/2	3/4	Full

EQUIPMENT	VEHICLE - INTERIOR
<input type="checkbox"/> FIRST AID KIT <input type="checkbox"/> FIRE EXTINGUISHER <input type="checkbox"/> WARNING TRIANGLES <input type="checkbox"/> SPARE WHEEL RIM AND TYRE <input type="checkbox"/> WHEEL SPANNER	<input type="checkbox"/> REGISTRATION AND INSURANCE PAPERS <input type="checkbox"/> LOGBOOK <input type="checkbox"/> LIGHTS AND INDICATORS <input type="checkbox"/> SEATS AND SEAT BELT SECURITY <input type="checkbox"/> RADIO - HF <input type="checkbox"/> RADIO - VHF
ENGINE	VEHICLE - EXTERIOR
<input type="checkbox"/> OIL LEVEL <input type="checkbox"/> COOLANT LEVEL <input type="checkbox"/> BRAKE FLUID LEVEL <input type="checkbox"/> POWER STEERING FLUID <input type="checkbox"/> WINDSHIELD WASHER FLUID <input type="checkbox"/> FAN BELTS AND FAN <input type="checkbox"/> BATTERY AND TERMINALS	<input type="checkbox"/> BODY PANELS <input type="checkbox"/> INSURANCE STICKER <input type="checkbox"/> WINDSHIELD AND WINDOWS <input type="checkbox"/> WINDSHIELD WIPER BLADES <input type="checkbox"/> SIDE MIRRORS <input type="checkbox"/> TYRE CONDITION AND PRESSURE <input type="checkbox"/> WHEEL NUT TIGHTNESS



DAMAGES AND OBSERVATIONS



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**Turn the maintenance of your vehicle into a daily routine**

**Toyota Gibraltar Stockholdings Ltd**

PO Box 176, 40 Devil's Tower Road, Gibraltar

Tel: +350 200 59100 or +44 207 906 1745

Fax: +350 200 70465 or +44 208 090 3780

Email: [sales@toyota-gib.com](mailto:sales@toyota-gib.com)

**TGSUSA**

Tel: +1 703-442-8550

Cell: +1 703-489-7977

Toll free number: 1-888-869-4427

E-mail: [info@toyota-gib.us](mailto:info@toyota-gib.us)

Find us on  

**[www.toyota-gib.com](http://www.toyota-gib.com)**



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