

Long Term Vehicle Storage Guidelines

Service Category General

Section Maintenance

Market USA

Toyota Supports
 ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
1998 – 2011	4Runner, Avalon, Camry, Camry HV, Corolla, FJ Cruiser, Highlander, Highlander HV, Land Cruiser, Matrix, Prius, Prius PHV, RAV4, Sequoia, Sienna, Tacoma, Tundra, Venza, Yaris	

TSB REVISION NOTICE

December 23, 2009 Rev1:

- Applicability has been updated to include 2010 Prius PHV model and 2011 vehicles.

Any previous printed versions of this service bulletin should be discarded.

Introduction

Long-term or off-site storage requires special care to keep vehicles factory fresh and ready for delivery. The following guidelines should be performed to minimize vehicle component/part degradation due to extended vehicle storage conditions. Long-term storage can affect a vehicle's systems and components. Any problems that are found should be corrected immediately.

Required Tools & Equipment

TOOLS & MATERIAL	PART NUMBER	QTY
Digital Battery System Analyzer	00002-V8150-KIT	1

Warranty Information

OP CODE	DESCRIPTION	TIME	OPF	T1	T2
N/A	Not Applicable to Warranty	–	–	–	–

Long Term Vehicle Storage Guidelines

Procedure

Parking and Paint Protection

- Storage areas should be paved, well lit and secure. If your off-site storage lot is not paved, spread gravel down to minimize mud and dust. Be sure vehicles are driven carefully when moving them to or from a long-term lot. This will help minimize damage to the paint finish from road grit or gravel.
- Park vehicles from right to left at least three feet apart. Leave enough space front and rear to easily walk between rows.
- HVAC vent controls should be set to "Recirc" to minimize dust and odor intrusion.
- Make sure the plastic door edge protectors are in place and fold in the side view mirror (if applicable).
- Anti-rust covers or anti-rust film should remain on vehicle during storage
 1. Anti-Rust Covers (behind wheel) should be removed at PDS.
 2. Anti-Rust Film (applied to wheel) should be removed just prior to customer delivery.
- Wash vehicles frequently.

Battery

- Turn off all electrical accessories, make sure windows and sunroof are closed and check that the transmission is in "park" (first or reverse for manual transmission vehicles). Do not apply the parking brake.
- Test batteries monthly (more often in high heat or cold areas), using the Digital Battery System Analyzer (P/N 00002-V8150-KIT). Refer to TSB [PG001-06](#), "Battery Maintenance for In Stock Vehicles and Pre-Delivery" for complete battery maintenance procedures.
- To reduce battery drain during long-term storage, remove the battery ground (-) cable of each vehicle and reinstall just before delivery to the customer. Locate the current PDS TSB on TIS for complete details.
- If a hybrid vehicle is put into storage, the state of charge (SOC) of its battery and auxiliary battery will gradually decrease. To prevent the auxiliary battery from becoming discharged during storage, proper maintenance is necessary. Refer to TSB "Maintenance for HV & Auxiliary Batteries" for procedure and additional information.

Tire Inflation Pressure

If the vehicle is parked for long periods without being moved, a flat spot may develop on each tire surface in contact with the ground, even if the tires are inflated to specification. Tire inflation pressure should be checked once a month.

Tire inflation pressure for storage only: **45 psi**.

Long Term Vehicle Storage Guidelines

Procedure (Continued)

Parts Rust

If the vehicles in your storage area are exposed to a sea breeze and/or a significant precipitation, corrosion with rust in some parts may occur.

If rust is found, remove it, and treat it by applying rust inhibitor to prevent recurrence.

Engine Starting and Vehicle Movement

If the vehicle is stored over an extended period of time, starting and running the engine periodically will ensure smooth running operation.

1. Start and operate the engine at an engine speed under 1,500 RPM for 15 minutes or longer. This also eliminates moisture in the exhaust system.

NOTE

Be sure to allow sufficient clearance at the rear of the vehicle to prevent other vehicles stored behind from getting damaged by exhaust gas.

2. Move the vehicle at least 30 feet to lubricate the transmission and differential and prevent tire flat-spot damage.
3. Raise engine speed above 3,000 RPM 10 times to eliminate moisture from the exhaust.

A/C Compressor Lubrication

To minimize the possibility of damage to the A/C compressor while storing a vehicle, perform the following recommended maintenance procedures at least once a month to lubricate the compressor.

1. Turn off A/C and blower switches prior to starting engine.
2. Start and warm up the engine until engine idle drops below 1,000 rpm.
3. Turn on the A/C system (including the rear A/C) using the following settings:
 - A. A/C Switch: On
 - B. Blower Speed: High
 - C. Engine Speed: Below 1,000 RPM
4. Keep A/C on with engine idling for at least one minute (in dual A/C vehicles, leave on for two minutes).
5. Turn off A/C system and stop engine.

Long Term Vehicle Storage Guidelines

Procedure (Continued)

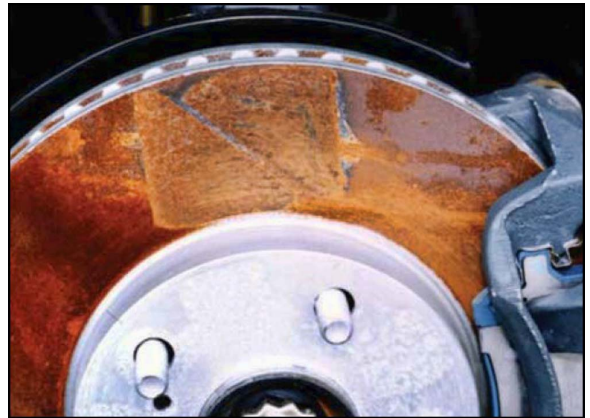
Disk Brake Rotor Surface Rust Removal

The brake rotors are made of cast iron, so they may show gradual build-up of surface rust during long term storage. At least once every two months, drive the vehicle and use the brakes normally stopping from about 30 mph at least 20 times. This regular usage will help prevent severe rust build up and the possibility of unwanted brake vibration concerns due to rust.

Figure 1. Slight rust on rotor (easy to remove by braking)



Figure 2. Severe rust on rotor (hard to remove by braking)



NOTE

- If the brake vibration still occurs after the braking cycle, determine the root cause of the brake vibration and repair.
- Brake rotor resurfacing may be required if the rust was severe and resulted in excessive rotor thickness variation.

Below are items that should be checked periodically and their frequency.

Summary Chart for Long-Term Storage

Action	Frequency
Tire inflation pressure check	Monthly
Parts rust inspection	Monthly
A/C compressor lubrication	Monthly
Test/Charge disconnected battery to 12.6V	Monthly
Disc brake rotor surface rust removal	Every 8 weeks
Engine Starting and vehicle movement	Every 6 weeks
Rappgard™ removal	After 90 days
Tyvek removal	After 12 months

Long Term Vehicle Storage Guidelines

Procedure (Continued)

Summary Chart for Long-Term Storage (Continued)

A combination of proper Vehicle Receipt, Pre-Delivery Service and Vehicle Storage is the only way to maintain factory fresh vehicles. Toyota's goal is to deliver 100% problem-free cars and trucks. With your commitment to quality and customer satisfaction, we can reach that goal. Review this TSB often and be sure new employees are aware of the policies and procedures outlined herein, as individual training in proper inspection, pre-delivery service, and storage and handling techniques are essential to ensure high delivery quality.

Here is a list of additional resources, which will help you with vehicle receipt, inspection and storage procedures.

Reference and Training Materials

- [CRIB #165](#), Acid Rain Paint Finish Damage – Prevention and Repair
- UoT e-Learning Course E257 Vehicle Delivery Quality – Paint Finish Repair
- Dealer Delivery Quality Operations Guide, P/N 001 16-DDQOG-98
- [BO020-91](#), Prevention and Repair of Acid Rain Damage
- [BO005-92](#), New Vehicle Washing Schedule for Paint Protection
- [PG001-06](#), Battery Maintenance for In Stock Vehicle and Pre-Delivery
- [PA005-04](#), Iron Particle Rust Contamination Repair
- [PG005-94](#), Rappgard™ Removal Procedures
- [PG007-02](#), Wheel Film for Brake Rotor Rust Prevention
- Maintenance for HV & Auxiliary Batteries, Refer to applicable HV models.