

Long Term Vehicle Storage Guidelines

Service
Category General

Section Pre-Delivery Service

Market USA

Toyota Supports
ASE Certification 

Applicability

YEAR(S)	MODEL(S)	ADDITIONAL INFORMATION
2013	4Runner, Avalon, Avalon HV, Camry, Camry HV, Corolla, FJ Cruiser, Highlander, Highlander HV, Land Cruiser, Matrix, Prius, Prius C, Prius PHV, Prius V, RAV4, Sequoia, Sienna, Tacoma, Tundra, Venza, Yaris	

REVISION NOTICE

October 16, 2012 Rev1:

- Applicability has been updated to include 2013 model year Avalon HV, Prius C, and Prius PHV vehicles.

Any previous printed versions of this 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.

Warranty Information

OP CODE	DESCRIPTION	TIME	OFF	T1	T2
N/A	Not Applicable to Warranty	-	-	-	-

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Required Tools & Equipment

TOOLS & MATERIAL	PART NUMBER	QTY
Digital Battery System Analyzer	<u>00002-V8150-KIT</u>	1

SPECIAL SERVICE TOOLS (SST)	PART NUMBER	QTY
GR8 Battery Diagnostic Station*	<u>00002-MCGR8</u>	1

<p>NOTE Additional SSTs may be ordered by calling 1-800-933-8335.</p>

* Essential SST.

Procedure

Summary Chart for Long-Term Storage

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

ACTION	FREQUENCY
Tire Inflation Pressure Check	Monthly
Parts Rust Inspection	Monthly
A/C Compressor Lubrication	Monthly
Test/Charge Disconnected Battery to 12.6 V	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

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 bulletin 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.

Long Term Vehicle Storage Guidelines

Procedure (Continued)

Reference and Training Materials

Listed below are additional resources, which will help you with vehicle receipt, inspection and storage procedures.

- CRIB Bulletin #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
- Service Bulletin BO020-91, *"Prevention and Repair of Acid Rain Damage"*
- Service Bulletin BO005-92, *"New Vehicle Washing Schedule for Paint Protection"*
- Service Bulletin PG001-06, *"Battery Maintenance for In-Stock Vehicles & Pre-Delivery"*
- Service Bulletin PA005-04, *"Iron Particle Rust Contamination Repair"*
- Service Bulletin PG005-94, *"Dealer Removal Procedures for Rapgard™ Protective Film"*
- Service Bulletin PG007-02, *"Wheel Film for Brake Rotor Rust Prevention"*
- Maintenance for HV and Auxiliary Batteries: Refer to applicable HV model Service Bulletin

Parking and Paint Protection Procedure

- 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.

Long Term Vehicle Storage Guidelines

Procedure (Continued)

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 Service Bulletin No. PG001-06, *"Battery Maintenance for In-Stock Vehicles & 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 Service Bulletin 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 Service Bulletin No. PG001-06, *"Battery Maintenance for In-Stock Vehicles & Pre-Delivery"* 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**.

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.

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Procedure (Continued)

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)

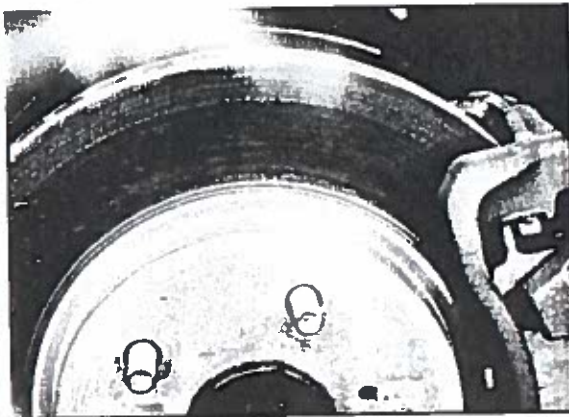
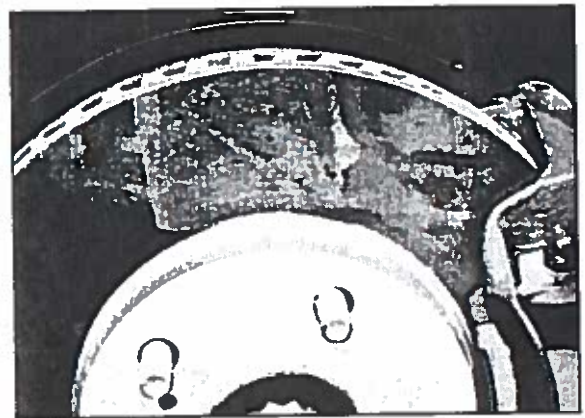


Figure 2. Severe Rust on Rotor (Hard to Remove by Braking)



NO

- If 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.