

Toyota Motor Sales, U.S.A., Inc. 19001 South Western Avenue Torrance, CA 90501 (310) 468-4000

To: All Toyota Dealer Principals, Service Managers, Parts Managers

Subject: Safety Recall B0G – *Remedy Notice* 2001 to 2003 Model Year Prius Vehicles Replacement of Electric Power Steering (EPS) Pinion Shaft Nuts

As previously announced on June 1, 2011, Toyota filed a Defect Information Report (DIR) with the National Highway Traffic Safety Administration (NHTSA) informing the agency of our intent to conduct a voluntary Safety Recall on Certain 2001 - 2003 Model Year Prius vehicles.

This communication is to inform you that the Safety Recall <u>remedy</u> is available and Toyota will begin notifying owners of vehicles covered by this Safety Recall.

Background

In the Electronic Power Steering (EPS) system of the 2001 through 2003 Prius, there is a possibility that the nuts that secure the pinion shaft in the steering gear box assembly may become loose if the steering wheel is repeatedly and strongly turned to the full-lock position. If the vehicle is continuously operated in this condition, the pinion shaft may become unstable which may cause power generated by the electric motor to not be fully transmitted. This could result in significant increased steering effort when making a left turn increasing the risk of a crash.

Remedy

Any authorized Toyota dealer will replace the nuts that secure the pinion shaft with different ones at **NO CHARGE.**

The following vital information is provided to inform you and your dealers of this campaign and your degree of involvement.

1. Owner Notification Mailing Date

The owner notification will commence in early July, 2011. The owner letter will be mailed over approximately one month consistent with parts availability and repair capacity.

Please note that only owners of the covered vehicles will be notified. If a dealer is contacted by an owner who has not yet received the notification, please *verify coverage by confirming through Dealer Daily/TIS.* Dealers should perform the procedure as outlined in the Technical Instructions located on TIS.

Toyota tries very hard to obtain current customer name and address information when mailing owner letters. In the event your dealership receives a notice for a vehicle that was sold prior to the Safety Recall announcement, it is the dealerships responsibility to forward the owner letter to the customer who purchased the vehicle.

2. Dealer Summary Reports

Summary Reports, containing the number of covered vehicles in your dealership's primary marketing area, have been enclosed in the dealer package. (Please verify eligibility by confirming through Dealer Daily or TIS prior to performing repairs.)

3. Number and Identification of Covered Vehicles

There are approximately 52,000 Prius (2001 through 2003 model year) vehicles covered by this Safety Recall.

Model	WMI	MY	VDS	Serial Range
		2001	BK12U	0001034 - 0038684
		2001	BK18U	0001005 - 0038005
Prius	ITO	2002	BK12U	0038693 - 0070195
	JIZ		BK18U	0038685 - 0070196
		2003	BK12U	0070201 - 0088781
			BK18U	0069295 - 0088779

If your dealership is contacted by an owner who has not yet received the notification, please **verify coverage by confirming through Dealer Daily/TIS.** Dealers should perform the procedure as outlined in the Technical Instructions located on TIS.

A UIO matrix by state is provided to inform your dealership of the number of affected vehicles in your state.

STATE	UIO	STATE	UIO	STATE	UIO	STATE	UIO	STATE	UIO
AK	98	HI	264	MI	814	NV	377	UT	400
AL	260	IA	313	MN	973	NY	2,080	VA	2,161
AR	176	ID	222	MO	643	OH	1,169	VT	267
AZ	1,058	IL	1,532	MS	96	OK	251	WA	2,960
CA	15,652	IN	624	MT	113	OR	1,765	WI	1,054
CO	1,555	KS	315	NC	1,142	PA	1,208	WV	78
СТ	625	KY	361	ND	30	RI	188	WY	48
DC	226	LA	139	NE	166	SC	269		
DE	89	MA	1,762	NH	296	SD	75		
FL	1,837	MD	1,455	NJ	842	TN	482		
GA	778	ME	339	NM	457	TX	2,212		

4. <u>Remedy Procedures</u>

For additional information on inspection and repair please refer to TIS.

Conduct all applicable, non-completed Safety Recall, and Service Campaigns on the vehicle during the time of appointment.

5. Special Service Tool Package

In a separate shipment scheduled to arrive June 30th 2011, your dealership was sent a package containing special service tools for this campaign. When received, the package will have a fluorescent (green, orange, yellow, or pink) label like the sample shown below for easy identification.



Part Name	Sample	Quantity] [Part Name	Sample	Quantity
Cross Member hanger		2		Rack boot stopper		2
Adjusting nut holding wrench		1		Torque wrench attachment	R B B	1
Pinion shaft socket		1		Steering gear stand		1
Bearing protector	0	1		Rack guide lock nut wrench		1
Hexagon wrench 24mm		1		Pinion shaft cap		1

If you do not receive the parts by July 2nd, please check with your parts department to see if they have received the package. If you are not able to locate the package please contact your Region/PD representative for follow-up.

6. Parts Ordering

Orders can be placed through your dealership's facing PDC. The kits have been placed on Dealer Ordering Solutions and will be systematically released daily based on dealer ordering criteria.

Part Number		Part Description	Quantity	
04001-31147		EPS Gear Kit*		1
Part N	umber	Part Description	Quant	ity
90170-	14033	Pinion Shaft Adjusting Nut	1	
90170-	14034	Pinion Shaft Lock Nut	1	
95381-	03020	Cotter pin	2	
90119-	12309	Bolt (50 mm)	2	
90119-	12329	Bolt (27 mm)	2	
45292-	47020	Main shaft lower dust seal	1	
90119-	14050	Bolt (64 mm)	2	
90119-	14092	Bolt (55 mm)	2	
17451-	21060	Exhaust Pipe Gasket	1	

IMPORTANT PARTS ORDERING REMINDER

Effective March 1, 2009, Safety Recall, Service Campaign (SSC/LSC) and Customer Support Program (CSP) parts do not earn Parts Return Credit Accrual and are not returnable under the Monthly Return Program. It is recommended that you order these parts based on appointments or immediate customer needs using a "Sell One-Buy One" ordering pattern. Please refer to PANT Bulletin 09-12 for additional details.

Each dealer will receive specific dealer ordering criteria in an email from their facing PDC Manager based on Repair Order Volume x PDC Affected UIO. Therefore, it is vital that each dealership work with both Parts and Service to immediately file Safety Recall claims and coordinate appropriate kit orders. A sample of the Parts Allocation Report has been attached below for your reference.



7. Warranty Processor Instructions



2001 - 2003 Model Year Prius Vehicles

Safety Recall	Model	Op. Code	Description	Flat Rate Hour
		1525E1	Inspect Production Lot Number – Not Affected	0.3 hr/vehicle
B0G	Prius	1525E2	Inspect the Production Lot Number and Replace Pinion Shaft Fastening Nuts	4.1 hr/vehicle

• The flat rate times include 0.1 hours for administrative cost per unit for the dealership.

Available Sublets:

- Toyota Genuine Brake Cleaner and Toyota Genuine Adhesive 1344 or equivalent can be claimed as sublet type "OF" under op code 1525E2 at a rate of \$5.00 per vehicle.
- The cost of the EPS campaign Kit can be claimed under the part cost column for Op. Code 1525E2

(Warranty processor Instructions Continued. . .)

Campaign Designation Decoder



8. <u>Repair Quality Confirmation</u>

The repair quality of covered vehicles is extremely important to Toyota. To help ensure that all vehicles have the repair performed correctly, please designate at least one associate (someone other than the individual who performed the repair) to verify the repair quality of every vehicle prior to customer delivery.

9. Customer Contacts

Please consider this Safety Recall a great opportunity to focus on assuring customers that their safety remains Toyota's highest priority. Customers who receive the owner letter may contact your dealership with questions regarding the letter and/or Safety Recall remedy. Please welcome them to your dealership and answer any questions they may have. A Q&A is provided to assure a consistent message is communicated.

Customers with additional questions or concerns are asked to please contact the Toyota Customer Experience Center (1-888-270-9371).

10. Media Contacts

If you are a dealership associate and have any questions, please contact your District Service/Parts Manager.

In the event you are contacted by the News media, it is imperative that all media contacts (local and national) receive a consistent message. Please direct all media contacts to Brian Lyons (310) 468-2552, in Toyota Corporate Communications. (Please do not provide these numbers to customers or call if you are a dealer associate. Please provide these contacts to only media representatives.)

Please review this entire package with your Service and Parts staff to familiarize them with the proper step-by-step procedures required to implement this Safety Recall.

Thank you for your cooperation. TOYOTA MOTOR SALES, U.S.A., INC.

ΤΟΥΟΤΑ

Safety Recall B0G 2001 through 2003 Model Year Prius Vehicles Replacement of Electric Power Steering (EPS) Pinion Shaft Nuts Q&A

Background

As previously announced on June 1, 2011, Toyota filed a Defect Information Report (DIR) with the National Highway Traffic Safety Administration (NHTSA) informing the agency of our intent to conduct a voluntary Safety Recall on Certain 2001 - 2003 Model Year Prius vehicles.

Q1: What is the condition?

A1: In the Electronic Power Steering (EPS) system of the 2001 through 2003 Prius, there is a possibility that the nuts that secure the pinion shaft in the steering gear box assembly may become loose if the steering wheel is repeatedly and strongly turned to the full-lock position. If the vehicle is continuously operated in this condition, the pinion shaft may become unstable which may cause power generated by the electric motor to not be fully transmitted. This could result in significant increased steering effort when making a left turn increasing the risk of a crash.

Q2: What is the EPS system?

A2: The Electric Power Steering (EPS) system provides power assistance to reduce steering effort. It generates torque using a power steering motor and a reduction mechanism which are assembled in the steering gear box assembly.

Q3: Are there any warnings that this condition exists?

A3: If the nuts start to loosen, over time, the customer will gradually notice that it takes more effort to turn the steering wheel in a left turn.

Q4: Which and how many vehicles are covered by this Safety Recall Campaign?

A4: There are approximately 52,000 Toyota Prius (2001 through 2003 model year) vehicles covered by this Safety Recall.

Q4a: What is the production period of the covered vehicles?

A4a: The covered Prius vehicles were produced from late January, 2000 to late May, 2003.

Q4b: Are there any other Toyota or Lexus vehicles covered?

A4b: No, this specific condition is limited to certain 2001 through 2003 model year Prius vehicles.

Q5: What is Toyota going to do?

A5: Any authorized Toyota dealer will replace the nuts which secure the pinion shaft with different ones at **NO CHARGE** to the vehicle owner. Owner notification letters sent by first class mail will begin mailing in early July, **2011**.

Q6: How long will the repair take?

A6: The repair will take approximately 4 hours. However, depending upon the dealer's work schedule, it may be necessary to make the vehicle available for a longer period of time.

Q7: What if an owner has previously paid for repair to address the condition described above?

A7: Reimbursement consideration instructions will be provided in the remedy owner letter.

<u>Q8:</u> What should owners do if they experience the condition or have immediate concerns about the current safety of their vehicle?

A8: Owners with questions or concerns are asked to please contact the Toyota Customer Experience Center at 1-888-270-9371 Monday through Friday, 5:00 am to 6:00 pm, or Saturday 7:00 am through 4:00 pm Pacific Time. URGENT This is an important Safety Recall. The remedy will be performed at NO CHARGE to you. [Box only for VINs ending in odd numbers]

2001 - 2003 Model Year Prius Vehicles Replacement of Electric Power Steering (EPS) Pinion Shaft Nuts SAFETY RECALL NOTICE

[VIN]

Dear Toyota Customer:

This notice is being sent to you in accordance with the requirements of the National Traffic and Motor Vehicle Safety Act. Toyota has decided that a defect, which relates to motor vehicle safety, exists in certain 2001-2003 model year Prius vehicles.

What is the problem?

In the Electronic Power Steering (EPS) system of the 2001 through 2003 Prius, there is a possibility that the nuts that secure the pinion shaft in the steering gear box assembly may become loose if the steering wheel is repeatedly and strongly turned to the full-lock position. If the vehicle is continuously operated in this condition, the pinion shaft may become unstable which may cause power generated by the electric motor to not be fully transmitted. This could result in significant increased steering effort when making a left turn increasing the risk of a crash.

What will Toyota do?

Any authorized Toyota dealer will replace the nuts that secure the pinion shaft with different ones at **NO CHARGE** to you.

What should you do?

This is an important Safety Recall

Please contact your authorized Toyota dealer to make an appointment to have the EPS pinion shaft nuts replaced as soon as possible.

The replacement of the EPS pinion shaft nuts will take approximately 4 hours. However, depending upon the dealer's work schedule, it may be necessary to make your vehicle available for a longer period of time.

You do not need an owner letter to have this recall completed; however, to assist the dealer in confirming vehicle eligibility, we request that you present this notice at the time of your service appointment.

If you would like to update your vehicle ownership or contact information, please go to <u>www.toyota.com/ownersupdate</u>. You will need your full 17-digit Vehicle Identification Number (VIN) to input the new information.

What if you have other questions?

Your local Toyota dealer will be more than happy to answer any of your questions and set up an appointment to perform this important Safety Recall. If you require further assistance, you may contact the Toyota Customer Experience Center at 1-888-270-9371 Monday through Friday, 5:00 am to 6:00 pm, Saturday 7:00 am through 4:00 pm Pacific Time.

If you believe that the dealer or Toyota has failed or is unable to remedy the defect within a reasonable time, you may submit a complaint to the Administrator, National Highway Traffic Safety Administration, 1200 New Jersey Avenue S.E., Washington, DC 20590 or call the toll free Vehicle Safety Hot Line at 1-888-327-4236 (TTY: 1-800-424-9153), or go to http://www.safercar.gov.

What if you have previously paid for repairs to your vehicle for this specific condition?

If you have previously paid for repair to your vehicle for this specific condition prior to receiving this letter, please mail a copy of your repair order, proof-of-payment and proof-of-ownership to the following address for reimbursement consideration:

Toyota Motor Sales, U.S.A., Inc Toyota Customer Experience, WC 10

19001 South Western Avenue Torrance, CA 90509

If you are a vehicle lessor, Federal law requires that any vehicle lessor receiving this recall notice must forward a copy of this notice to the lessee within ten days.

We have sent this notice in the interest of your continued satisfaction with our products, and we sincerely regret any inconvenience this condition may have caused you.

Thank you for driving a Toyota.

Sincerely, TOYOTA MOTOR SALES, U.S.A., INC.

TECHNICAL INSTRUCTIONS

FOR

SAFETY RECALL B0G

EPS PINION SHAFT NUTS REPLACEMENT

2001 – 2003 MODEL YEAR PRIUS

I. OPERATION FLOW CHART



II. IDENTIFICATION OF COVERED VEHICLES

A. COVERED VIN RANGE

Madal	\\\\\\	Year 2001 2002 2003		VIN Range
woder	VVIVII		VDS	Range
		2001	BK12U	0001034 - 0038684
Prius JT2		2001	BK18U	0001005 - 0038005
	ITO	2002	BK12U	0038693 - 0070195
	JIZ		BK18U	0038685 - 0070196
		2003	BK12U	0070201 - 0088781
			BK18U	0069295 - 0088779

NOTE:

• Check the TIS Vehicle Inquiry System to confirm the VIN is involved in this Safety Recall, and that the campaign has not already been completed prior to dealer shipment or by another dealer.

• TMS warranty will not reimburse dealers for repairs conducted on vehicles that are not covered or were completed by another dealer.

III. PREPARATION

A. PARTS

Pa	rt Number	P	art Description	Ū	Quantity		
040	001-31147		EPS Gear Kit*		1		
*The kit above includes the following parts:							
	Part Num	ber	Part Descript	ion	Quantity		
	90170-140)33	Pinion Shaft Adjus	ting Nut	1		
	90170-140)34	Pinion Shaft Loo	ck Nut	1		
	95381-030)20	Cotter pin		2		
	90119-123	809	Bolt (50 mm	า)	2		
	90119-123	329	Bolt (27 mm	า)	2		
	45292-470)20	Main shaft lower d	ust seal	1		
	90119-140)50	Bolt (66 mm	า)	2		
	90119-140	92	Bolt (55 mm	ו)	2		
	17451-210	60	Exhaust Pipe G	asket	1		

B. TOOLS, SUPPLIES & EQUIPMENT

- Standard hand tools
- Transmission jack (or similar) Marking pen
- Torque wrench
- Toothbrush • Brake cleaner
- Toyota Genuine Adhesive 1344 or equivalent (Loctite 242, Threebond 1344)

• Techstream • Alignment machine

SST - These are essential special service tools that the dealership should have.

Pa	rt Number		Part Name		Quantity		
00	002-02955	Be	am torque wrench		1		
09960-20010 Ba			all joint puller set*		1		
*The set above includes the following tools.							
	Part Number		Part Name		Quantity		
	09961-02010		Ball joint puller assy		1		
	09961-020	060	Spacer B (M1	2)	1		

Campaign Tools – These tools will be provided to the dealership.

Part Name	Sample	Quantity	Part Name	Sample	Quantity
Crossmember hanger		2	Rack boot stopper		2
Adjusting nut holding wrench	J.	1	Torque wrench attachment	P. B.	1
Pinion shaft socket		1	Steering gear stand		1
Bearing protector	O	1	Rack guide lock nut wrench		1
Hexagon wrench 24mm		1	Pinion shaft cap		2

IV. BACKGROUND



In the EPS system of the 2001 through 2003 Prius, due to the inadequate fixation of nuts that secure the pinion shaft in the steering gear box assembly, if the steering wheel is repeatedly and strongly turned to the full-lock position, there is a possibility that the nuts may become loose. If the vehicle is continuously operated in this condition, the pinion shaft may become unstable which may cause power generated by the electric motor to not be fully transmitted. This could result in significant increased steering effort when making a left turn increasing the risk of a crash.

V. WORK PROCEDURE TABLE OF CONTENTS

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VI. SAFETY PRECAUTIONS



1. LOOSENING OF NUTS AND BOLTS

a) Due to vehicle age, some nuts and bolts may be extremely tight or stuck, be sure to use safe procedures at all times when removing stuck nuts and bolts.

2. HANDLING THE STEERING GEAR

 a) The steering gear assembly is a precision part, be careful not to drop or subject the gear to impacts.

3. USING CHEMICALS ON THE STEERING GEAR

- a) **DO NOT** use oil or grease on rubber or plastic parts on the steering gear assembly.
- b) When using brake cleaner, be careful to not displace excessive amounts of steering gear grease.

4. HANDLING OF REPLACEMENT PARTS

a) To prevent the reuse of any non-reusable parts, mark the parts and destroy them as appropriate.

VII. POWER STEERING GEAR INSPECTION





Campaign complete.

VIII. POWER STEERING GEAR REMOVAL A. COMPONENTS





B. MEASURE THE STATIONARY STEERING TORQUE

1. ADJUST THE TIRE PRESSURE TO THE SPECIFIED VALUE

Cold tire inflation pressure: Front - 35PSI (240kPa, 2.4kg/cm²) Rear - 33PSI (230 kPa, 2.3kg/cm²)



2. **INSTALL THE TORQUE WRENCH ATTACHMENT TO** THE STEERING WHEEL AS SHOWN

NOTE: Be sure to protect the steering wheel with a shop cloth when installing the torque wrench attachment.

THE FOLLOWING INSPECTION STEP IS VITAL. CONFIRM THIS STEP IS FOLLOWED CLOSELY.



- alignment slip plates or on an epoxy
- С. **DISCONNECT THE STEERING INTERMEDIATE SHAFT ASSEMBLY NO. 2**

CHECK FOR DIAGNOSTIC TROUBLE CODES 1.

a) If any DTCs are output, record the data and perform the repairs as necessary.



2. REMOVE THE INSTRUMENT PANEL FINISH PANEL LOWER

- Move the shift lever to the B position to ease in panel a) removal.
- Open the fastener on the shift lever cover. b)
- Remove the 2 screws and disengage the hood lever. C)
- Remove the 1 bolt and 1 screw and disengage the 3 d) clips and 2 claws.
- Disconnect the connectors and hoses and remove e) the panel.

VIII. POWER STEERING GEAR REMOVAL





4. REMOVE THE STEERING COLUMN HOLE COVER

Fold back the floor carpet and remove the 3 clips, a) then remove the hole cover.

- 5. UNFASTEN THE STEERING INTERMEDIATE SHAFT **ASSEMBLY NO. 2**
 - a) Loosen the top bolt by 2 to 3 turns.
 - b) Remove the bottom bolt.

Use a flathead screwdriver wrapped in tape to lift the C) intermediate shaft so that the pinion shaft is visible. NOTE: DO NOT pull the shaft completely off of the pinion before making match marks.



If the shaft is stuck, insert a flathead screwdriver wrapped in tape into the slit and pry.



NEVER strike the shaft. Doing so may cause malfuctions in the steering assist control system.



6. POSITION THE STEERING WHEEL STRAIGHT AHEAD



7. SECURE THE STEERING WHEEL IN THE STRAIGHT AHEAD POSITION

- a) Pass the seatbelt through the steering wheel and fasten the seatbelt.
- b) Move the seat rearward to tense the seatbelt.
 NOTE: If the steering wheel is not secured, the spiral cable may be damaged.

8. APPLY MATCH MARKS TO THE INTERMEDIATE SHAFT AND STEERING GEAR PINION SHAFT

- a) After applying the match marks, disconnect the intermediate shaft from the pinion shaft.
- 9. INSTALL THE PINION SHAFT PROTECTIVE CAP

D. **REMOVE THE POWER STEERING GEAR ASSEMBLY**



- Install the SST so that A and B are parallel. C)
- d) Disconnect the tie rod end.

NOTE: Connect the SST to the coil spring to prevent it from falling.



a)

b)

in kit) and castle nut.

end of the tie-rod end bolt.

SST 09960-20010 (09961-02060)

Remove the cotter pin (NEW cotter pins provided

Install SST spacer B (M12) so that it is even with the

To maintain a safe work environment, it may be necessary for 2 persons to perform the removal procedure.



4. DISCONNECT THE REAR END OF THE ENGINE MOVING CONTROL ROD

a) Remove the bolt and disconnect the control rod.

5. LOWER THE FRONT SUSPENSION CROSSMEMBER

- a) Use a transmission jack to support the crossmember.
- b) Remove the 4 crossmember bolts (*NEW* parts provided in kit).

NOTE: Wear protective goggles when removing the bolts, water that may have accumulated in the body will spill out when removing the bolts.

- c) Slowly lower the crossmember until there is a 4 in. (10 cm) gap between the rear of the crossmember and the body.
- d) Install the crossmember hangers.



Failure to install the crossmember hangers could damage the lower ball joints and steering gear wire harness, and will cause a safety concern. Be sure to fully install the crossmember hangers.



- e) Disconnect the 2 steering gear wire harness connectors.
- f) Remove the bolt and disengage the wire harness bracket.





h) Continue to support the crossmember with the jack. NOTE: *DO NOT* remove the jack.

6. REPLACE THE EXHAUST PIPE GASKET

- a) Remove the old gasket.
- b) Install the new gasket, if necessary, use a wooden block and hammer to fully install the gasket.

NOTE: *DO NOT* put excessive force on the exhaust pipe when replacing the gasket.

7. PROTECT THE STEERING GEAR CONNECTORS

a) Cover the connectors with a plastic bag to prevent them from being caught, damaged or fouled with cleaner during removal and disassembly.

- 8. DISCONNECT THE STABILIZER BAR
 - a) Remove the 4 bolts.
 - b) Remove the 2 brackets and disconnect the stabilizer bar from the crossmember.

NOTE: There is *NO NEED* to remove the brackets or bushings from the stabilizer bar if stuck.



- 9. REMOVE THE POWER STEERING GEAR ASSEMBLY
 - a) Remove the 4 bolts(*NEW* parts provided in kit). NOTE:
 - These bolts will be replaced.
 - There is *NO NEED* to remove the bracket or bushing from the steering gear if stuck.
 - b) Move the steering gear assembly towards the front of the vehicle and turn the assembly so the pinion shaft faces the rear of the vehicle.

NOTE: Be careful that the pinion shaft does not contact the HV wire harness.

- c) Move the gear to the right side of the vehicle.
- d) Remove the gear through the rear of the vehicle beginning with the left tie rod end.

E. REPLACE THE MAIN SHAFT LOWER DUST SEAL



1. REMOVE THE ACCELERATOR PEDAL ASSEMBLY

a) Disconnect the connector and remove the 2 bolts and accelerator pedal.

NOTE: Use hand tools only.

NOTE: Be careful not to be injured by the edges of the instrument panel bracket.

2. REMOVE THE PARKING BRAKE WIRE BRACKET

a) Remove the 2 nuts and the parking brake wire bracket.

- 3. REPLACE THE MAIN SHAFT LOWER DUST SEAL
 - a) Fold back the floor sheet and remove the 3 nuts and the dust seal.

NOTE: To avoid tearing the floor sheet *DO NOT* pull too hard.



- 4. INSTALL THE PARKING BRAKE WIRE BRACKET
- a) Install the 2 nuts.

Torque: 48 in.lbf (5.4 Nm, 55 kgf cm)

5. INSTALL THE ACCELERATOR PEDAL ASSEMBLY

a) Install the 2 bolts.

Torque: 44 in.lbf (5 Nm, 51 kgf cm)

NOTE: Confirm the floor sheet is not trapped under the pedal.

b) Check the orientation before installing the new dust seal.

L-UP: Towards the front of the vehicle

- c) Install the new dust seal.
- d) Confirm the floor sheet and silencer are not trapped under the new dust seal.

NOTE: Water and noise entry may occur if the dust seal is not installed correctly.

- e) Install the 3 nuts.
 Torque: 43.4 in.lbf (4.9 Nm, 50 kgf cm)
 NOTE: To avoid tearing the floor sheet *DO NOT* pull too hard.
- f) Return the floor sheet to its original position.

IX. PINION SHAFT DOUBLE NUT REPLACEMENT

FOLLOW ALL OF THE STEPS BELOW. FAILURE TO FOLLOW THESE STEPS WILL RESULT IN THE STEERING GEAR BEING REPAIRED INCORRECTLY.



In order to prevent foreign substances from entering the steering gear assembly, do not work with dirty hands and do not use gloves or cloths when working on the steering gear assembly.

1. SECURE THE POWER STEERING GEAR ASSEMBLY IN THE STAND AND VICE

- a) Confirm the stand is set up correctly before installing on the gear.
- b) Wrap a shop cloth around the gear housing before securing the gear in the stand.

NOTE: Be sure to tighten the vice securely while working on the steering gear assembly.









2. CLEAN THE GEAR ASSEMBLY

a) Clean around the dust boots using paper towel, brake cleaner, and an air gun.

NOTE: In order to prevent foreign substances from entering the gear assembly when disassembled, these steps MUST be performed.

b) Clean around the rack housing cap using paper towel, brake cleaner, and an air gun.

3. MARK THE RACK GUIDE SPRING CAP

- a) Using a center punch, mark the center of the flat part of the gear housing.
- b) Make a mark on the spring cap that aligns with the mark made on the gear housing.



NOTE:

- During the work procedure the spring cap will be adjusted, these marks are essential to returning the cap to its original position.
- DO NOT place the match mark on the lock nut.
- Confirm that you are looking straight down at the steering gear when placing the match marks. If the marks are made when not viewing from directly above, the match marks will be deviated.





- b) Clean the rack guide spring cap and lock nut using a toothbrush and an air gun.
 - DO NOT move the cap during cleaning.
 To prevent scratching of the gear housing, DO NOT use a wire brush.



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DO NOT use brake cleaner. There is a risk of it entering the steering gear. DO NOT remove the cap.

6. DISCONNECT THE STEERING RACK BOOTS

- a) Add match marks to the rack boots, clamps, and gear housing.
- b) Loosen the clamp screws. *DO NOT* remove the screws.
- c) Disconnect the boots from the gear housing.

d) Install the rack boot stoppers.



7. REMOVE THE RACK HOUSING CAP

NOTE: The cap opening is pointed slightly downwards to prevent brake cleaner from entering the steering gear.

8. REMOVE THE PINION SHAFT LOCK NUT

- a) Use a paper towel to clean the grease from around the nuts.
- b) Use the adjusting nut holding tool to hold the adjusting nut while removing the lock nut.



DO NOT use brake cleaner or an air gun at this time, contamination may occur.

NOTE: If the lock nut is loose before removal, there is *NO* problem with reusing the gear.

9. REMOVE THE PINION SHAFT ADJUSTING NUT

a) Use the pinion shaft socket to hold the pinion shaft while removing the adjusting nut.

10. CLEAN INSIDE THE STEERING GEAR

a) Use a paper towel to clean the inside of the steering gear.



- b) Insert the bearing protector until it is fully seated against the bearing.
- c) Hold the bearing protector in place. Use a toothbrush and brake cleaner to clean the sealant and grease from the gear housing and pinion shaft threads.
 - DO NOT spray brake cleaner directly at the bearing protector, contamination may occur.
 DO NOT use an air gun at this time, contamination may occur.
 DO NOT use a brush with wire

bristles, it will scratch the aluminum

housing.d) Use a paper towel to clean off all dirt and brake cleaner.

e) Apply indirect air to dry the inside of the steering gear.



DO NOT apply air directly, the bearing grease may be displaced. It is vital that the pinion shaft is fully cleaned of all grease, if grease is left on the shaft the new nuts may not install correctly.





d) Tighten the lock nut while holding the adjusting nut with the holding tool.
 Torque: 48 Nm (489 kgf cm, 35 ft lbf)



STEP 8. REMOVE THE PINION SHAFT LOCK NUT.



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b) Set the pinion shaft by performing the following a total of 3 times: Rotate the shaft 1 rotation right of center then 1 rotation left of center.

- c) Rotate the pinion shaft 1 complete rotation to the **right** using the torque wrench (00002-02955).
- d) Return the steering gear to the straight ahead position.
- e) Rotate the pinion shaft 1 complete rotation to the **left** using the torque wrench (00002-02955).

Specification: 0.5 to 2.5 Nm (0-22in. lbf) within 1 rotation of straight ahead position

Rotation Speed: Approx. 3 seconds per rotation

STOP

It is normal if the preload is different between right and left rotation.
Keep the rotation speed constant.

• DO NOT measure instant torque needle fluctuations.

NOTE: If the preload is not within specifications, replace the steering gear assembly.

17. CLEAN THE RACK HOUSING CAP

- a) Clean the grease from inside the cap.
- NOTE: It is *NOT* necessary to add more grease.
- b) Use a toothbrush and brake cleaner to clean the sealant on the threads of the cap.

18. INSTALL THE RACK HOUSING CAP

- a) Apply Toyota Genuine Adhesive 1344 (or equivalent) to the cap threads.
- b) Install and tighten the cap.

Torque: 69 Nm (704 kgf cm, 51 ft lbf) NOTE: Remove any excess Toyota Genuine Adhesive 1344 (or equivalent).



19. REPOSITION THE RACK GUIDE SPRING CAP

- a) Use the hexagon wrench 24mm to rotate the cap approximately 180 degrees back to the original position.
- b) Confirm the match marks align correctly.

c) Measure the amount of spring guide cap protrusion.Specification: Approx. 7mm

If the protrusion does not meet the specification, it is possible that the cap is out of position by 1 rotation. (1 rotation is approximately 1.5mm)

- 20. APPLY ADHESIVE TO THE RACK GUIDE SPRING CAP
 - a) Apply Toyota Genuine Adhesive 1344 (or equivalent) to the corner of the spring cap and gear housing.

21. INSTALL THE RACK GUIDE SPRING CAP LOCK NUT

a) Tighten the lock nut by hand.

NOTE: The lock nut can be installed in either direction.

b) While holding the spring cap with the hexagon wrench 24mm, tighten the lock nut using the lock nut wrench and a torque wrench set to the **calculated torque** as described below.





- c) Rotate the pinion shaft 1 complete rotation to the **right** using the torque wrench (00002-02955).
- d) Return the steering gear to the straight ahead position.
- e) Rotate the pinion shaft 1 complete rotation to the **left** using the torque wrench (00002-02955).

Specification: 1.0 to 3.0 Nm (9-26.5in. lbf) within 1 rotation of straight ahead position

Rotation Speed: Approx. 3 seconds per rotation

It is normal if the preload is different between right and left rotation.
Keep the rotation speed constant.
DO NOT measure instant torque needle fluctuations.

NOTE: If the preload is not within specifications, replace the steering gear assembly.

23. INSTALL THE STEERING GEAR RACK BOOTS

- a) Position the steering gear in the straight ahead position (Approximately 2 turns from full lock position).
- b) Remove the rack boot stoppers.
- c) Attach the rack boots to the gear housing.
- d) Align the boot and clamp marks and tighten the clamp screws.

NOTE:

- DO NOT remove the screws from the clamps, the clamps may become deformed allowing water entry into the boot.
- The boots *MUST* be installed on the gear by hand to prevent scratching the gear or puncturing the boot.
- If the clamps are misaligned during installation, they may interfere with the crossmember during installation.

- e) Move the steering gear from lock to lock to check the boots contract and expand smoothly.
- f) Position the steering gear in the straight ahead position (Approximately 2 turns from full lock position) and proceed to SECTION VIII. POWER STEERING GEAR INSTALLATION.

X. POWER STEERING GEAR INSTALLATION

1. INSTALL THE PINION SHAFT PROTECTIVE CAP



- 2) Confirm the shaft is fully installed.
- 3) Install the bottom bolt.Specification: 35Nm (360kgf cm, 26 ft lbf)
- 4) Install the top bolt.
 - Specification: 35Nm (360kgf cm, 26 ft lbf)



- 3. INSTALL THE INSTRUMENT PANEL FINISH LOWER PANEL
- 4. ALIGN THE VEHICLE
- 5. PERFORM THE STEERING CENTER POSITION LEARN PROCEDURE
- a) Use a Techstream to perform the center position learn procedure.

THE FOLLOWING INSPECTION STEP IS VITAL. CONFIRM THIS STEP IS FOLLOWED CLOSELY.

- 6. REMEASURE THE STATIONARY STEERING TORQUE
- a) Position the vehicle on the same surface used when taking the initial readings.
- b) Install the torque wrench attachment to the steering wheel
- c) Connect the SST torque wrench (00002-02955).
- d) Turn vehicle to READY ON.
- e) Start with the wheels straight ahead. Turn the steering wheel ¼ turn to the left of center, then ¼ turn to the right of center using the torque wrench.
- f) Record the right and left steering torque values.
 - This information can be used when explaining the change in the steering effort that may result from this work.



- If there is a noticeable difference in steering feel, the pinion shaft nuts may not have been set correctly. The steering gear should be replaced.
- **DO NOT** perform this inspection on alignment slip plates or on an epoxy covered shop floor.

7. TEST DRIVE THE VEHICLE TO CONFIRM THE REPAIR

◄ VERIFY REPAIR QUALITY ►

- Confirm the lot number before replacing the pinion shaft double nuts
- Confirm ALL removal steps in the TI are followed, DO NOT completely remove the crossmember
- Confirm ALL pinion shaft double nut replacement steps are followed precisely
- Confirm the pinion shaft preload is set exactly as described in the TI
- If you have any questions regarding this recall, please contact your regional representative

XI. APPENDIX

A. CAMPAIGN DESIGNATION DECODER



B. RECALL PARTS DISPOSAL

As required by Federal Regulations, please make sure all recalled parts (original parts) removed from the vehicle are disposed of in a manner in which they will not be reused, **unless requested for parts recovery return.**



to the left during

differentiate these

gear was removed.

nuts.



This document is intended as a technician aid. Carefully follow the complete BOG instructions found on TIS when performing this repair

Lonnie Peterson / Toyota Customer Services Product Quality and Service Support, Quality Compliance June 30, 2011 Approved By: Bob Waltz

To:All Toyota DealersFrom:Toyota Customer Services

Safety Recall B0G- *Remedy Available* 2001 to 2003 Model Year Prius Vehicles Replacement of Electronic Power Steering (EPS) Pinion Shaft Nuts ******URGENT*****

As previously announced on June 1, 2011, Toyota filed a Defect Information Report (DIR) with the National Highway Traffic Safety Administration (NHTSA) informing the agency of our intent to conduct a voluntary Safety Recall on Certain 2001 - 2003 Model Year Prius vehicles.

- This communication is to inform you that the Safety Recall <u>remedy</u> is available and Toyota will begin notifying owners of vehicles covered by this Safety Recall.
- A Dealer Letter containing additional information (i.e. Technical Instructions, reimbursement procedures, parts ordering information, etc.) has been posted on TIS.
- Please refer to TIS for vehicle applicability and additional information.

Customer and Media Contacts

- A Q&A has been attached for your use in the event you receive a customer contact. If a customer has
 further questions, please direct the inquiry to the Toyota Customer Experience Center at 1-800-331-4331.
- If you are a dealership associate and have any questions, please contact your District Service/Parts Manager.
- In the event you are contacted by the News media, it is imperative that all media contacts (local and national) receive a consistent message. Please direct all media contacts to Brian Lyons (310) 468-2552, in Toyota Corporate Communications. (Please do not provide these numbers to customers or call if you are a dealer associate. Please provide these contacts to only media associates.)



Safety Recall B0G 2001 to 2003 Model Year Prius Vehicles Replacement of Electric Power Steering (EPS) Pinion Shaft Nuts Q&A

Background

As previously announced on June 1, 2011, Toyota filed a Defect Information Report (DIR) with the National Highway Traffic Safety Administration (NHTSA) informing the agency of our intent to conduct a voluntary Safety Recall on Certain 2001 - 2003 Model Year Prius vehicles.

Q1: What is the condition?

A1: In the Electronic Power Steering (EPS) system of the 2001 through 2003 Prius, there is a possibility that the nuts that secure the pinion shaft in the steering gear box assembly may become loose if the steering wheel is repeatedly and strongly turned to the full-lock position. If the vehicle is continuously operated in this condition, the pinion shaft may become unstable which may cause power generated by the electric motor to not be fully transmitted. This could result in significant increased steering effort when making a left turn increasing the risk of a crash.

Q2: What is the EPS system?

A2: The Electric Power Steering (EPS) system provides power assistance to reduce steering effort. It generates torque using a power steering motor and a reduction mechanism which are assembled in the steering gear box assembly.

Q3: Are there any warnings that this condition exists?

A3: If the nuts start to loosen, over time, the customer will gradually notice that it takes more effort to turn the steering wheel in a left turn.

Q4: Which and how many vehicles are covered by this Safety Recall Campaign?

A4: There are approximately 52,000 Toyota Prius (2001 through 2003 model year) vehicles covered by this Safety Recall.

Q4a: What is the production period of the covered vehicles?

A4a: The covered Prius vehicles were produced from late January, 2000 to late May, 2003.

Q4b: Are there any other Toyota or Lexus vehicles covered?

A4b: No, this specific condition is limited to certain 2001 through 2003 model year Prius vehicles.

Q5: What is Toyota going to do?

A5: Any authorized Toyota dealer will replace the nuts which secure the pinion shaft with different ones at **NO CHARGE** to the vehicle owner. Owner notification letters sent by first class mail will begin mailing in early July, **2011**.

Q6: How long will the repair take?

A6: The repair will take approximately 4 hours. However, depending upon the dealer's work schedule, it may be necessary to make the vehicle available for a longer period of time.

Q7: What if an owner has previously paid for repair to address the condition described above?

A7: Reimbursement consideration instructions will be provided in the remedy owner letter.

<u>Q8:</u> What should owners do if they experience the condition or have immediate concerns about the current safety of their vehicle?

A8: Owners with questions or concerns are asked to please contact the Toyota Customer Experience Center at 1-888-270-9371 Monday through Friday, 5:00 am to 6:00 pm, or Saturday 7:00 am through 4:00 pm Pacific Time.