Last Modified: 01-14-2019	6.8:8.0.48	Doc ID: RM10000000QVHP	
Model Year Start: 2016	Model: Prius	Prod Date Range: [11/2015 -]	
Fitle: AXLE AND DIFFERENTIAL: FRONT AXLE HUB BOLT: COMPONENTS; 2016 - 2019 MY Prius [11/2015 -]			

COMPONENTS

ILLUSTRATION



*1	FRONT AXLE HUB BOLT	*2	FRONT DISC
*3	FRONT DISC BRAKE CALIPER ASSEMBLY	-	-
	Tightening torque for "Major areas involving basic vehicle performance such as moving/turning/stopping" : N*m (kgf*cm, ft.*lbf)	•	Non-reusable part
	·	•	

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Model Year Start: 2016 Model: Prius		Prod Date Range: [11/2015 - 12/2018]	
Title: AXLE AND DIFFERENTIAL: FRONT AXLE HUB BOLT: REPLACEMENT; 2016 - 2018 MY Prius [11/2015 - 12/2018]			

REPLACEMENT

CAUTION / NOTICE / HINT

The necessary procedures (adjustment, calibration, initialization, or registration) that must be performed after parts are removed and installed, or replaced during front axle hub bolt removal/installation are shown below.

Necessary Procedures After Parts Removed/Installed/Replaced

REPLACED PART OR PERFORMED PROCEDURE	NECESSARY PROCEDURE	EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURE NOT PERFORMED	LINK
Auxiliary battery terminal is disconnected/reconnected	Memorize steering angle neutral point	Lane departure alert system (w/ Steering Control)	
		Intelligent clearance sonar system	
		Simple advanced parking guidance system	
		Pre-collision system	
	Initialize back door lock	Power door lock control system	INFO

NOTICE:

- When removing or installing the front disc brake caliper assembly, pushing back the disc brake piston may cause a large clearance between the brake pads and brake disc. When the brake pedal is depressed with a large clearance between the brake pads and the brake disc, DTC C1214 related to abnormal brake fluid pressure may be stored. Make sure to clear any DTCs after performing this step.
- While the auxiliary battery is connected, even if the power switch is off, the brake control system activates when the brake pedal is depressed or any door courtesy switch turns on. Therefore, when servicing the brake system components, do not operate the brake pedal or open/close the doors while the auxiliary battery is connected.

HINT:

- Use the same procedure for the RH side and LH side.
- The following procedure is for the LH side.

PROCEDURE

1. PRECAUTION

NOTICE:

After turning the power switch off, waiting time may be required before disconnecting the cable from the negative (-) auxiliary battery terminal. Therefore, make sure to read the disconnecting the cable from the negative (-) auxiliary battery terminal notices before proceeding with work.

Click here

2. DISABLE BRAKE CONTROL

Click here

3. REMOVE FRONT WHEEL

Click here

4. SEPARATE FRONT DISC BRAKE CALIPER ASSEMBLY

(a) Remove the 2 bolts and separate the front disc brake caliper assembly from the steering knuckle.

NOTICE:

Use wire or an equivalent tool to keep the front disc brake caliper assembly from hanging by the front flexible hose.

5. REMOVE FRONT DISC

Click here

6. REMOVE FRONT AXLE HUB BOLT

(a) Temporarily install 2 service nuts to the front axle hub bolts as shown in the illustration.

Recommended Service Nut: Thread diameter: 12.0 mm (0.472 in.) Thread pitch: 1.5 mm (0.0591 in.)

NOTICE:

Install the service nuts to prevent damage to the front axle hub bolts.



*a Service Nut

(b) Using SST and a screwdriver or an equivalent tool to hold the front axle hub sub-assembly, remove the front axle hub bolt.

SST: 09611-12010

NOTICE:

Do not damage the threads of the front axle hub bolts.

7. INSTALL FRONT AXLE HUB BOLT

- (a) Temporarily install a new front axle hub bolt to the front axle hub sub-assembly.
- (b) Install a washer and service nut to the front axle hub bolt as shown in the illustration.

Recommended Service Nut: Thread diameter: 12.0 mm (0.472 in.) Thread pitch: 1.5 mm (0.0591 in.)

HINT:

Recommended washer thickness is 5 mm (0.197 in.) or more.



*а	Service Nut
*b	Washer

(c) Using a screwdriver or an equivalent tool to hold the front axle hub sub-assembly, install the front axle hub bolt by tightening the service nut.

NOTICE:

- Install the service nuts to prevent damage to the front axle hub bolts.
- Do not damage the threads of the front axle hub bolts.
- (d) Remove the 3 service nuts and washer from the 3 front axle hub bolts.

8. INSTALL FRONT DISC

Click here

9. INSTALL FRONT DISC BRAKE CALIPER ASSEMBLY

(a) Install the front disc brake caliper assembly to the steering knuckle with the 2 bolts.

Torque:

107 N·m { 1091 kgf·cm, 79 ft·lbf }

NOTICE:

- Do not twist the front flexible hose when installing the front disc brake caliper assembly.
- Make sure that there is no foreign matter on the threads of the bolt.

10. INSTALL FRONT WHEEL

Click here

11. CONNECT CABLE TO NEGATIVE AUXILIARY BATTERY TERMINAL

- (a) Connect the reservoir level switch connector.
- (b) Connect the cable to the negative (-) auxiliary battery terminal.

Click here

- (c) Turn the power switch on (READY).
- (d) Depress the brake pedal and release it.
- (e) Clear the DTCs.

Click here

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Model Year Start: 2016	Model: Prius	Prod Date Range: [11/2015 - 12/2018]	
Title: AXLE AND DIFFERENTIAL: FRONT AXLE HUB: COMPONENTS; 2016 - 2018 MY Prius [11/2015 - 12/2018]			

COMPONENTS

ILLUSTRATION



*1	FRONT AXLE ASSEMBLY	*2	FRONT AXLE SHAFT NUT
*3	FRONT DISC	*4	FRONT DISC BRAKE CALIPER ASSEMBLY

*5	FRONT DRIVE SHAFT ASSEMBLY	*6	FRONT LOWER NO. 1 SUSPENSION ARM SUB-ASSEMBLY
*7	FRONT SPEED SENSOR	*8	TIE ROD END SUB-ASSEMBLY
*9	FRONT SHOCK ABSORBER ASSEMBLY	*10	COTTER PIN
*11	FRONT FLEXIBLE HOSE	-	-
	Tightening torque for "Major areas involving basic vehicle performance such as moving/turning/stopping" : N*m (kgf*cm, ft.*lbf)		N*m (kgf*cm, ft.*lbf): Specified torque
•	Non-reusable part	•	Toyota Body Grease W
ı⊗≯	Do not apply lubricants to the threaded parts	-	_

ILLUSTRATION



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Model: Prius	Prod Date Range: [11/2015 - 12/2018]
	6.8:8.0.48 Model: Prius

Title: AXLE AND DIFFERENTIAL: FRONT AXLE HUB: INSTALLATION; 2016 - 2018 MY Prius [11/2015 - 12/2018]

INSTALLATION

CAUTION / NOTICE / HINT

NOTICE:

- When removing or installing the front disc brake caliper assembly, pushing back the disc brake piston may cause a large clearance between the brake pads and brake disc. When the brake pedal is depressed with a large clearance between the brake pads and the brake disc, DTC C1214 related to abnormal brake fluid pressure may be stored. Make sure to clear any DTCs after performing this step.
- While the auxiliary battery is connected, even if the power switch is off, the brake control system activates when the brake pedal is depressed or any door courtesy switch turns on. Therefore, when servicing the brake system components, do not operate the brake pedal or open/close the doors while the auxiliary battery is connected.

HINT:

- Use the same procedure for the RH side and LH side.
- The following procedure is for the LH side.

PROCEDURE

1. INSTALL FRONT AXLE HUB SUB-ASSEMBLY

(a) Secure the steering knuckle between aluminum plates in a vise.

NOTICE:

Do not overtighten the vise.

(b) Install the front axle hub sub-assembly and front disc brake dust cover to the steering knuckle with the 3 bolts.

Torque:

130 N·m { 1326 kgf·cm, 96 ft·lbf }

NOTICE:

- Be careful not to damage the speed sensor rotor or contact surfaces.
- Do not allow foreign matter to contact the speed sensor rotor or contact surfaces.

2. INSTALL FRONT AXLE ASSEMBLY

(a) Apply 0.1 to 0.3 g (0.00353 to 0.0105 oz) of Toyota Body Grease W to each of the 4 areas shown in the illustration.





(b) Install the front axle assembly to the front shock absorber assembly with the 2 bolts and 2 nuts.

Torque:

240 N·m {2447 kgf·cm, 177 ft·lbf}

NOTICE:

- Do not apply lubricants to the steering knuckle and shock absorber contact surfaces.
- When installing the nuts, keep the bolts from rotating.

HINT:

The bolts can be installed in either direction, however, make sure that they are both installed in the same direction.

3. INSTALL FRONT DRIVE SHAFT ASSEMBLY

(a) Align the matchmarks on the front drive shaft assembly and front axle hub sub-assembly, and connect the front drive shaft assembly to the front axle assembly.

NOTICE:

- Do not push the front axle assembly towards the outside of the vehicle any further than necessary.
- Check that there is no foreign matter on the speed sensor rotor or contact surfaces.
- Do not damage the front drive shaft outboard joint boot.
- Do not damage the front disc brake dust cover.
- Do not damage the speed sensor rotor.



*a Matchmark

4. CONNECT FRONT LOWER NO. 1 SUSPENSION ARM SUB-ASSEMBLY

(a) Connect the front lower No. 1 suspension arm sub-assembly to the front lower ball joint assembly with the bolt and 2 nuts.

Torque:

89 N·m {908 kgf·cm, 66 ft·lbf}

5. CONNECT TIE ROD END SUB-ASSEMBLY

Click here

6. INSTALL FRONT DISC

Click here

7. INSTALL FRONT DISC BRAKE CALIPER ASSEMBLY

Click here

8. INSTALL FRONT AXLE SHAFT NUT

(a) Clean the threaded parts on the front drive shaft assembly and a new front axle shaft nut using non-residue solvent.

NOTICE:

- Be sure to perform this work even when using a new front drive shaft assembly.
- Keep the threaded parts free of oil and foreign matter.

(b) Using a 30 mm deep socket wrench, while applying the brakes, temporarily install the front axle shaft nut.

Torque:

216 N·m {2203 kgf·cm, 159 ft·lbf}

NOTICE:

Stake the front axle shaft nut after inspecting for looseness and runout in the following steps.

HINT:

Keep depressing the brake pedal to prevent the front drive shaft from rotating.

9. SEPARATE FRONT DISC BRAKE CALIPER ASSEMBLY

Click here

10. REMOVE FRONT DISC

Click here

11. INSPECT FRONT AXLE HUB BEARING LOOSENESS

Click here

12. INSPECT FRONT AXLE HUB RUNOUT

Click here

13. INSTALL FRONT DISC

Click here

14. INSTALL FRONT DISC BRAKE CALIPER ASSEMBLY

Click here

15. INSTALL FRONT SPEED SENSOR

(a) Set the 2 hooks of front speed sensor to the front shock absorber assembly.





NOTICE:

Do not twist the front speed sensor when installing it.

(b) Install the front speed sensor and front flexible hose to the front shock absorber assembly with the bolt.

Torque:

29 N·m {296 kgf·cm, 21 ft·lbf}

NOTICE:

Do not twist the front flexible hose when installing it.

(c) Install the front speed sensor to the steering knuckle with the bolt.

Torque:

8.5 N·m {87 kgf·cm, 75 in·lbf}

NOTICE:

- Prevent foreign matter from attaching to the front speed sensor tip.
- Firmly insert the front speed sensor body into the steering knuckle before tightening the bolt.
- After installing the front speed sensor to the steering knuckle, make sure that there is no clearance between the front speed sensor stay and steering knuckle. Also make sure that no foreign matter is stuck between the parts.
- Do not twist the front speed sensor when installing it.



NOTICE:

Do not twist the front speed sensor when installing it.

16. STAKE FRONT AXLE SHAFT NUT









17. INSTALL FRONT WHEEL

Click here

18. CONNECT CABLE TO NEGATIVE AUXILIARY BATTERY TERMINAL

- (a) Connect the reservoir level switch connector.
- (b) Connect the cable to the negative (-) auxiliary battery terminal.

Click here

- (c) Turn the power switch on (READY).
- (d) Depress the brake pedal and release it.
- (e) Clear the DTCs.

Click here

19. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT

Click here

20. CHECK FOR SPEED SENSOR SIGNAL

Click here

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Model Year Start: 2016 Model: Prius Prod Date Range: [11/2015 - 12/2018]		Prod Date Range: [11/2015 - 12/2018]		

Title: AXLE AND DIFFERENTIAL: FRONT AXLE HUB: ON-VEHICLE INSPECTION; 2016 - 2018 MY Prius [11/2015 - 12/2018]

ON-VEHICLE INSPECTION

CAUTION / NOTICE / HINT

The necessary procedures (adjustment, calibration, initialization, or registration) that must be performed after parts are removed and installed, or replaced during front axle hub sub-assembly on-vehicle inspection are shown below.

Necessary Procedures After Parts Removed/Installed/Replaced

REPLACED PART OR PERFORMED PROCEDURE	NECESSARY PROCEDURE	EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURE NOT PERFORMED	LINK	
		Lane departure alert system (w/ Steering Control)		
	Memorize steering angle neutral point	Intelligent clearance sonar system	HINT:	
Auxiliary battery terminal is disconnected/reconnected		Simple advanced parking guidance system	INFO	
		Pre-collision system		
	Initialize back door lock	Power door lock control system	HINT:	

NOTICE:

- When removing or installing the front disc brake caliper assembly, pushing back the disc brake piston may cause a large clearance between the brake pads and brake disc. When the brake pedal is depressed with a large clearance between the brake pads and the brake disc, DTC C1214 related to abnormal brake fluid pressure may be stored. Make sure to clear any DTCs after performing this step.
- While the auxiliary battery is connected, even if the power switch is off, the brake control system activates when the brake pedal is depressed or any door courtesy switch turns on. Therefore, when servicing the brake system components, do not operate the brake pedal or open/close the doors while the auxiliary battery is connected.

HINT:

- Use the same procedure for the RH side and LH side.
- The following procedure is for the LH side.

PROCEDURE

1. PRECAUTION

NOTICE:

After turning the power switch off, waiting time may be required before disconnecting the cable from the negative (-) auxiliary battery terminal. Therefore, make sure to read the disconnecting the cable from the negative (-) auxiliary battery terminal notices before proceeding with work.

Click here

2. DISABLE BRAKE CONTROL

HINT:

Click here

3. REMOVE FRONT WHEEL

Click here

4. SEPARATE FRONT DISC BRAKE CALIPER ASSEMBLY

HINT:

Click here

5. REMOVE FRONT DISC

HINT:

Click here

6. INSPECT FRONT AXLE HUB BEARING LOOSENESS

(a) Using a dial indicator, check for looseness near the center of the front axle hub sub-assembly.

Maximum Looseness

SPECIFIED CONDITION	
0.05 mm	
0.00196 in.	

NOTICE:

- Ensure that the dial indicator is set perpendicular to the measurement surface.
- Keep the magnet of the dial indicator away from the front axle hub sub-assembly and front speed sensor.

HINT:

If the looseness exceeds the maximum, replace the front axle hub sub-assembly.

7. INSPECT FRONT AXLE HUB RUNOUT

(a) Using a dial indicator, check for runout on the surface of the front axle hub sub-assembly outside the front axle hub bolts.

Maximum Runout

SPECIFIED CONDITION
0.05 mm
0.00196 in.

NOTICE:

- Ensure that the dial indicator is set perpendicular to the measurement surface.
- Make sure to set the tip of the dial indicator towards the outside of the front axle hub bolts.
- Keep the magnet of the dial indicator away from the front axle hub sub-assembly and front speed sensor.





If the runout exceeds the maximum, replace the front axle hub sub-assembly.

8. INSTALL FRONT DISC

HINT:

Click here

9. INSTALL FRONT DISC BRAKE CALIPER ASSEMBLY

HINT:

Click here

10. INSTALL FRONT WHEEL

HINT:

Click here

11. CONNECT CABLE TO NEGATIVE AUXILIARY BATTERY TERMINAL

(a) Connect the reservoir level switch connector.

(b) Connect the cable to the negative (-) auxiliary battery terminal.

HINT:

Click here

- (c) Turn the power switch on (READY).
- (d) Depress the brake pedal and release it.
- (e) Clear the DTCs.

HINT:

Click here

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Model Year Start: 2016	Model: Prius	Prod Date Range: [11/2015 - 12/2018]		
Title: AXLE AND DIFFERENTIAL: FRONT AXLE HUB: REMOVAL; 2016 - 2018 MY Prius [11/2015 - 12/2018]				

REMOVAL

CAUTION / NOTICE / HINT

The necessary procedures (adjustment, calibration, initialization, or registration) that must be performed after parts are removed and installed, or replaced during front axle hub sub-assembly removal/installation are shown below.

Necessary Procedures After Parts Removed/Installed/Replaced

REPLACED PART OR PERFORMED PROCEDURE	NECESSARY PROCEDURE	EFFECT/INOPERATIVE FUNCTION WHEN NECESSARY PROCEDURE NOT PERFORMED	LINK
Front wheel alignment adjustment	 Clear zero point calibration data. Perform yaw rate and acceleration sensor zero point calibration. 	 DTCs are stored ABS warning light illuminates Brake warning light / yellow (minor malfunction) illuminates Slip indicator light illuminates VSC disabled or malfunctions 	INFO
Auxiliary battery terminal is disconnected/reconnected		Lane departure alert system (w/ Steering Control)	
	Memorize steering angle neutral point	Intelligent clearance sonar system	INFO
		Simple advanced parking guidance system	
		Pre-collision system	
	Initialize back door lock	Power door lock control system	INFO

NOTICE:

- When removing or installing the front disc brake caliper assembly, pushing back the disc brake piston may cause a large clearance between the brake pads and brake disc. When the brake pedal is depressed with a large clearance between the brake pads and the brake disc, DTC C1214 related to abnormal brake fluid pressure may be stored. Make sure to clear any DTCs after performing this step.
- While the auxiliary battery is connected, even if the power switch is off, the brake control system activates when the brake pedal is depressed or any door courtesy switch turns on. Therefore, when servicing the brake system components, do not operate the brake pedal or open/close the doors while the auxiliary battery is connected.

HINT:

- Use the same procedure for the RH side and LH side.
- The following procedure is for the LH side.

PROCEDURE

1. PRECAUTION

NOTICE:

After turning the power switch off, waiting time may be required before disconnecting the cable from the negative (-) auxiliary battery terminal. Therefore, make sure to read the disconnecting the cable from the negative (-) auxiliary battery terminal notices before proceeding with work.

Click here

2. DISABLE BRAKE CONTROL

Click here

3. REMOVE FRONT WHEEL

Click here

4. REMOVE FRONT AXLE SHAFT NUT

Click here

5. SEPARATE FRONT SPEED SENSOR

(a) Remove the bolt and separate the front speed sensor and front flexible hose from the front shock absorber assembly.

NOTICE:

Be sure to separate the front speed sensor and front flexible hose from the front shock absorber assembly completely.



(b) Remove the bolt, disengage the clamp and separate the front speed sensor from the front shock absorber assembly and steering knuckle.

NOTICE:

- Prevent foreign matter from contacting the sensor tip.
- Be careful not to damage the front speed sensor.
- Clean the speed sensor installation hole and the contact surfaces every time the speed sensor is removed.



6. SEPARATE TIE ROD END SUB-ASSEMBLY

Click here

7. SEPARATE FRONT DISC BRAKE CALIPER ASSEMBLY

Click here

8. REMOVE FRONT DISC

Click here

9. SEPARATE FRONT LOWER NO. 1 SUSPENSION ARM SUB-ASSEMBLY

 (a) Remove the bolt and 2 nuts and separate the front lower No. 1 suspension arm sub-assembly from the front lower ball joint assembly.

10. SEPARATE FRONT DRIVE SHAFT ASSEMBLY

- (a) Put matchmarks on the front drive shaft assembly and the front axle hub sub-assembly.
 - H *a Matchmark
- (b) Using a plastic hammer, separate the front drive shaft assembly from the front axle assembly.

NOTICE:

- Do not damage the front drive shaft outboard joint boot.
- Do not push the front axle assembly towards the outside of the vehicle any further than necessary.

HINT:

If it is difficult to separate the front drive shaft assembly from the front axle assembly, tap the end of the front drive shaft assembly using a brass bar and a hammer.







(a) Remove the 2 bolts, 2 nuts and front axle assembly from the front shock absorber assembly.

NOTICE:

When removing the nuts, keep the bolts from rotating.



12. REMOVE FRONT AXLE HUB SUB-ASSEMBLY

(a) Secure the front axle assembly between aluminum plates in a vise.

NOTICE:

Do not overtighten the vise.



(b) Remove the 3 bolts, front axle hub sub-assembly and front disc brake dust cover from the steering knuckle.

NOTICE:

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- Do not drop the front axle hub sub-assembly.
- Be careful not to damage the speed sensor rotor or contact surfaces.
- Do not allow foreign matter to contact the speed sensor rotor or contact surfaces.