

DRIVELINE/AXLES

Drive Shaft (Inspection) - Sienna

DRIVE SHAFT SYSTEM

PRECAUTION

PRECAUTION

1. **NOTICE OF REMOVING AND INSTALLING FRONT DRIVE SHAFT ASSEMBLY RH (for AWD)**
 - a. When removing and installing the front drive shaft assembly RH in an AWD vehicle, be sure to first drain all the transaxle oil and transfer oil. If removal and installation are carried out without draining these oils, the transfer oil will flow into the transaxle side. Extensive cleaning will be required if the two oils mix.

PROBLEM SYMPTOMS TABLE

PROBLEM SYMPTOMS TABLE

HINT:

Use the table below to help determine the cause of the problem symptoms. If multiple suspected areas are listed, the potential causes of symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.

DRIVE SHAFT SYSTEM

Symptom	Suspected Area	See
Front wheel shimmy (for 2GR-FE)	Front drive shaft (worn)	Refer to <u>REMOVAL</u>
Front wheel shimmy (for 1AR-FE)	Front drive shaft (worn)	Refer to <u>REMOVAL</u>
Rear wheel shimmy (for AWD)	Rear drive shaft (worn)	Refer to <u>REMOVAL</u>

DRIVELINE/AXLES

Drive Shaft (Preparation) - Sienna

DRIVE SHAFT / PROPELLER SHAFT

SST

SST

	09240-00020	Wire Gauge Set	
	09325-20010	Transmission Oil Plug	
	09330-00021	Companion Flange Holding Tool	
	09370-50010	Drive Line Angle Gauge	
	09520-01010	Drive Shaft Remover Attachment	
	09520-24010	Differential Side Gear Shaft Puller	
	(09520-32040)	Shocker Set	
	09521-24010	Drive Shaft Boot Clamping Tool	
	09527-10011	Rear Axle Shaft Bearing Remover	
	09527-30010	Rear Axle Shaft Bearing Remover	
	09726-40010	Lower Control Shaft Bearing Replacer	
	09930-00010	Drive Shaft Nut Chisel	
	09950-00020	Bearing Remover	
	09950-30012	Puller A Set	
	(09951-03010)	Upper Plate	
	(09953-03010)	Center Bolt	
	(09954-03010)	Arm	
	(09955-03030)	Lower Plate 130	
	(09956-03020)	Adapter 18	
	09960-20010	Ball Joint Puller Set	
	(09961-02060)	Spacer B	

RECOMMENDED TOOLS

RECOMMENDED TOOLS

	09010-3C100	Set, Hexagon Wrench	
	(09013-6C110)	Socket Hexagon 6mm	
	09904-00010	Expander Set	
	(09904-00040)	No. 3 Claw	

	09905-00012	Snap Ring No. 1 Expander	
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EQUIPMENT

EQUIPMENT

Torque wrench	-
Dial indicator magnetic base	-
Dial indicator	-
V-block	-
Vinyl tape	-

LUBRICANT

LUBRICANT

FRONT DRIVE SHAFT

Item	Capacity
Outboard joint grease	170 to 190 g (6.0 to 6.7 oz.)
Inboard joint grease	155 to 175 g (5.5 to 6.2 oz.)

REAR DRIVE SHAFT

Item	Capacity
Outboard joint grease	50 to 70 g (1.8 to 2.5 oz.)
Inboard joint grease	90 to 110 g (3.2 to 3.8 oz.)

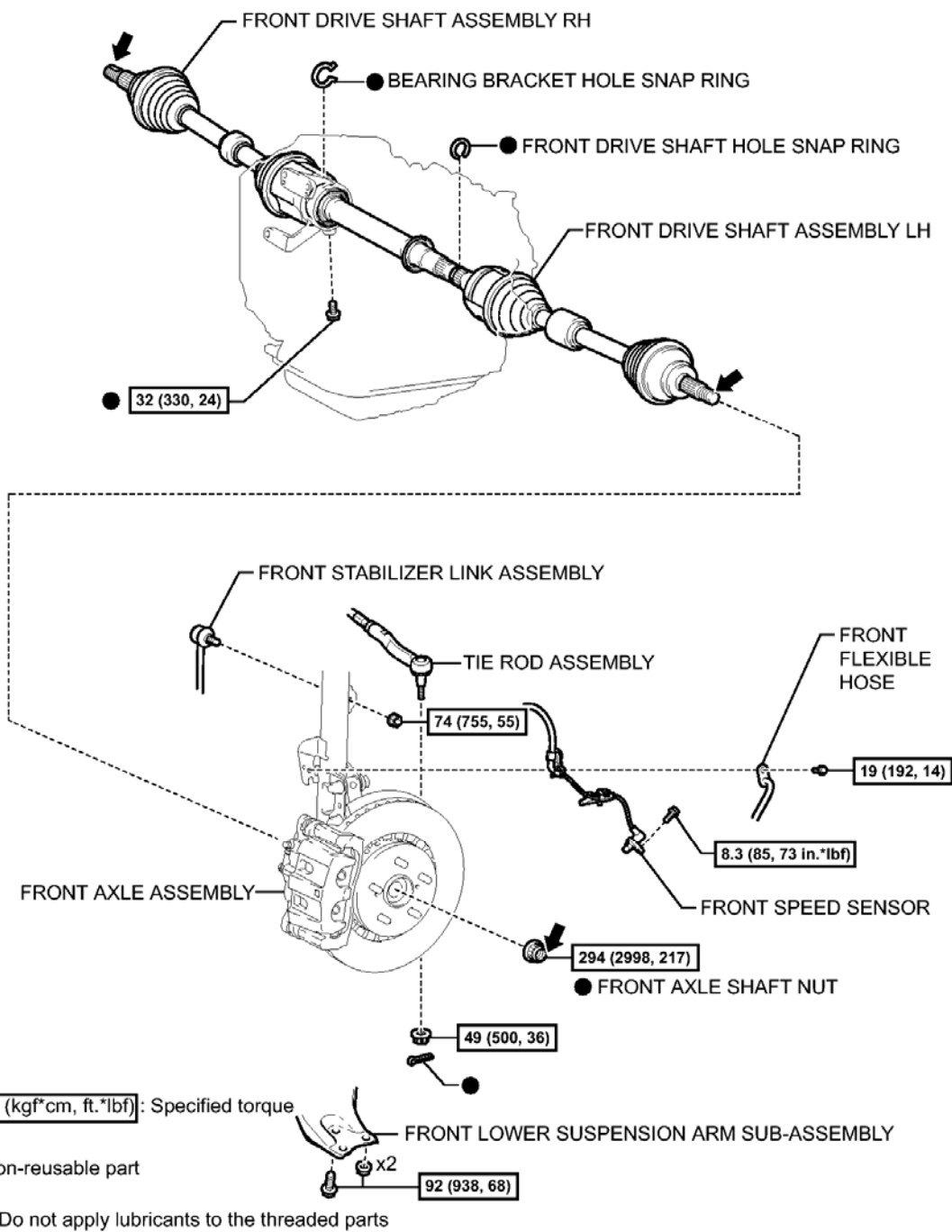
DRIVELINE/AXLES

Drive Shaft (Service Information) - Sienna

FRONT DRIVE SHAFT ASSEMBLY (FOR 1AR-FE)

COMPONENTS

ILLUSTRATION



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Fig. 1: Front Drive Shaft Assembly Replacement Components With Torque Specifications
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

for LH Side:

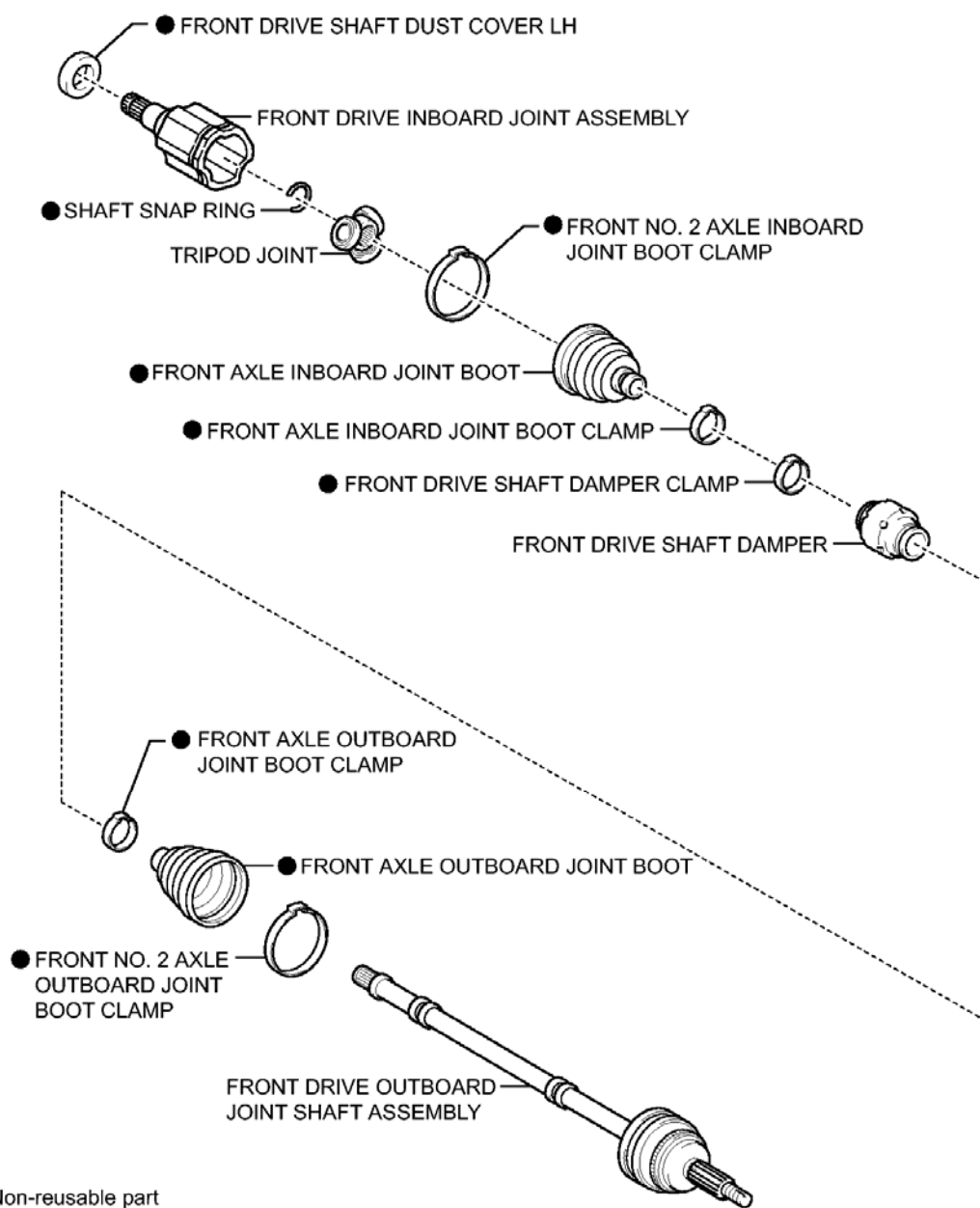
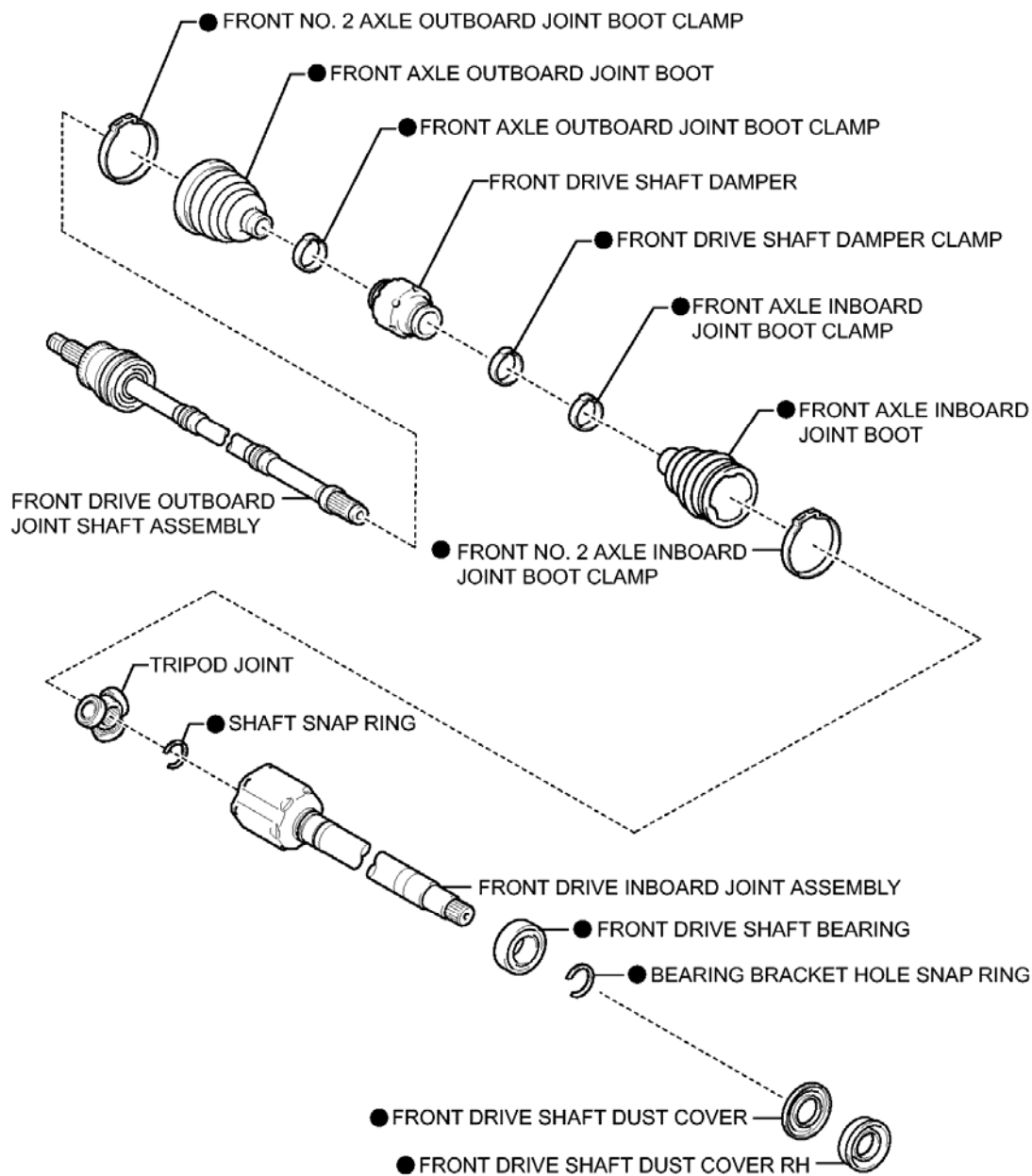


Fig. 2: Exploded View Of Front Drive Shaft Assembly Replacement Components (LH) (1 of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

for RH Side:



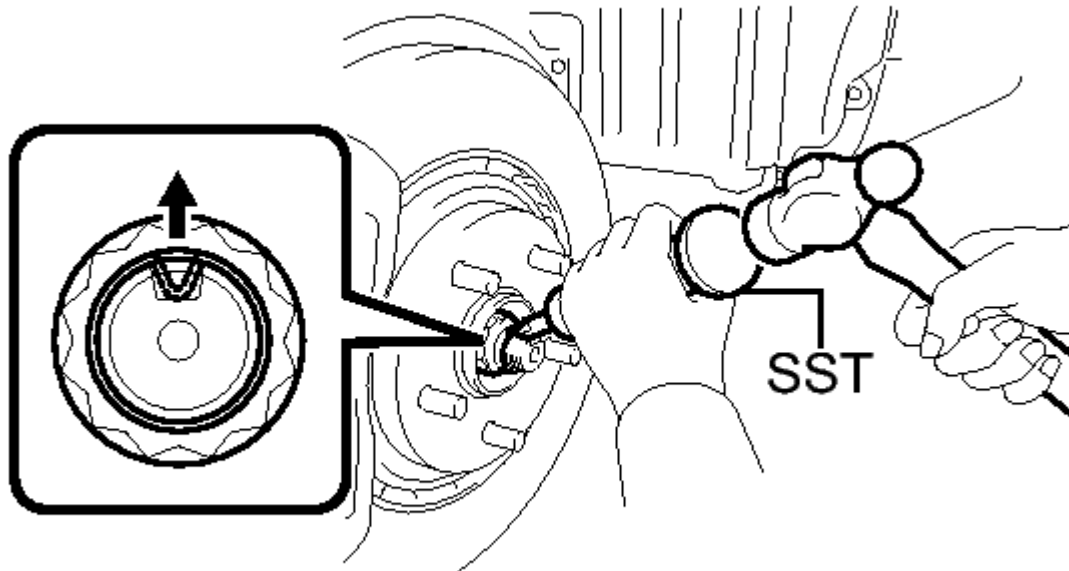
● Non-reusable part

Fig. 3: Exploded View Of Front Drive Shaft Assembly Replacement Components (RH) (2 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

REMOVAL

1. **DRAIN AUTOMATIC TRANSAXLE FLUID** . Refer to **REPLACEMENT - Step 1**
2. **REMOVE FRONT WHEELS**
3. **REMOVE FRONT AXLE SHAFT NUT**
 - a. Using SST and a hammer, release the staked part of the front axle shaft nut.



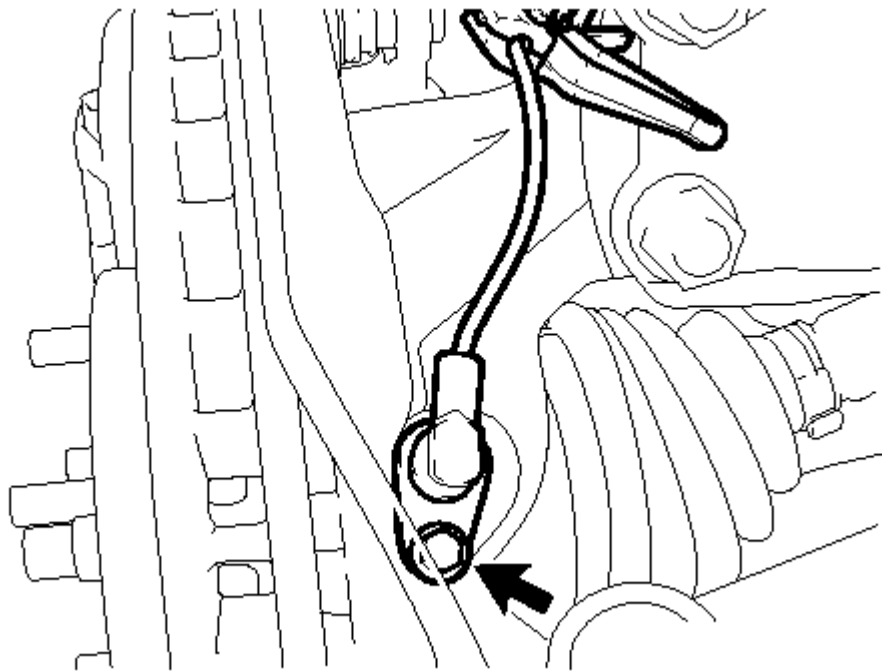
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Fig. 4: Identifying Staked Part Of Front Axle Shaft Nut LH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09930-00010

NOTE: Loosen the staked part of the nut completely, otherwise the threads of the drive shaft may be damaged.

- b. While applying the brakes, remove the front axle shaft nut.
4. **SEPARATE FRONT STABILIZER LINK ASSEMBLY** . Refer to **REMOVAL - Step 12**
5. **SEPARATE FRONT SPEED SENSOR**
 - a. Remove the bolt and separate the front speed sensor from the steering knuckle.

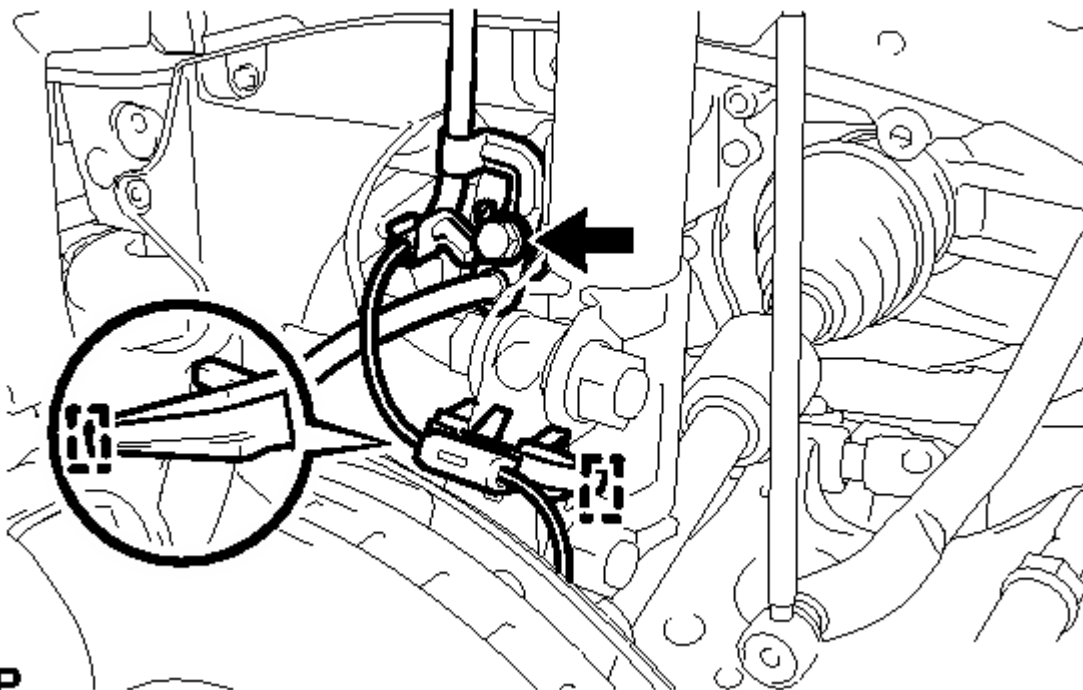


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Fig. 5: Identifying Front Speed Sensor Bolt

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Remove the bolt and 2 clamps, and separate the front speed sensor and front flexible hose.



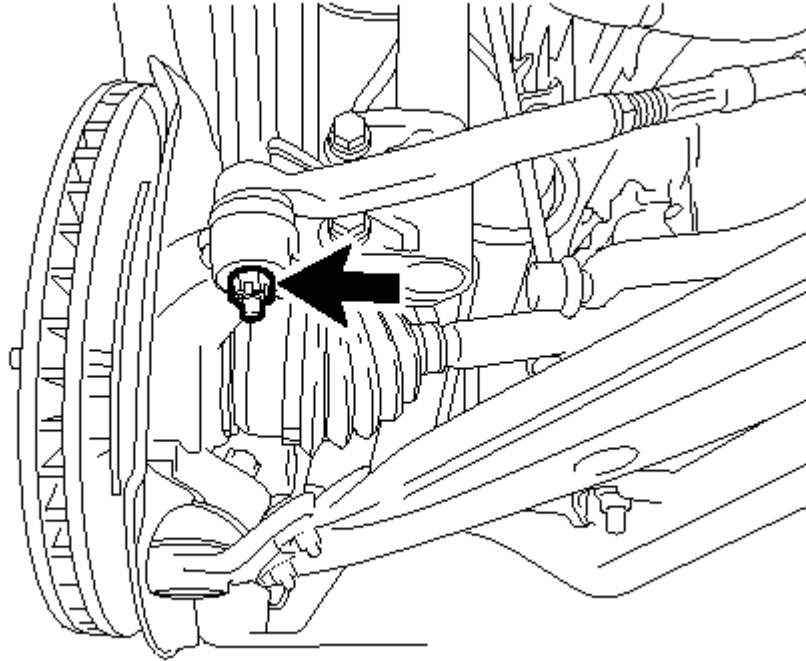
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Fig. 6: Identifying Front Speed Sensor, Flexible Hose & Fasteners

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. SEPARATE TIE ROD ASSEMBLY

- a. Remove the cotter pin and nut.



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Fig. 7: Identifying Cotter Pin And Nut

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Install SST to the tie rod end.

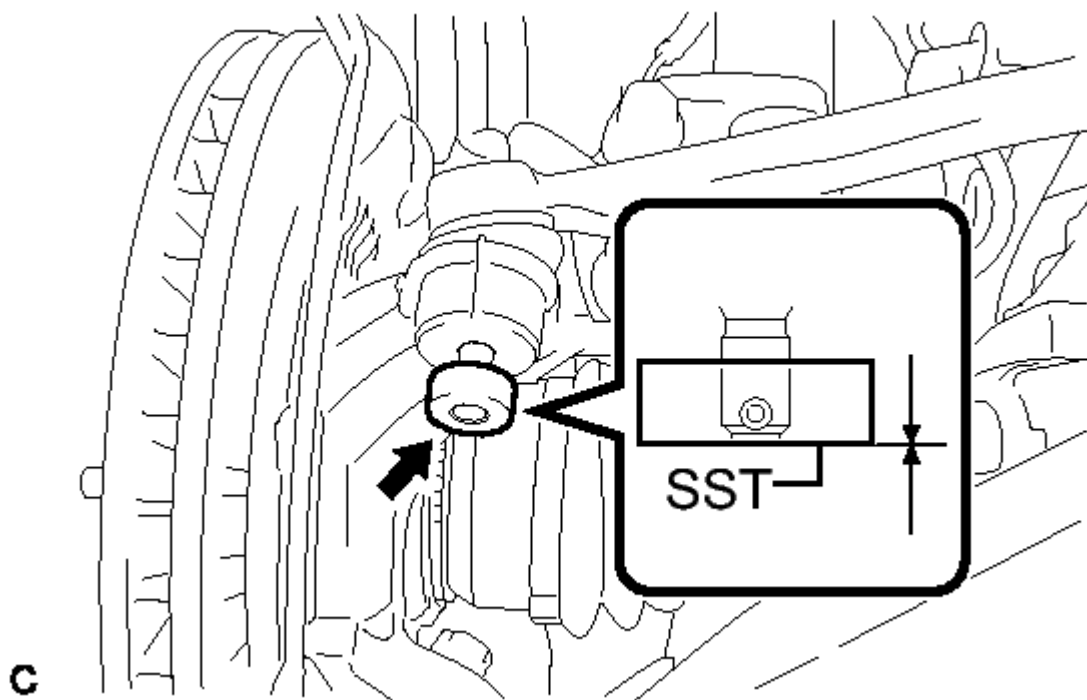


Fig. 8: Identifying SST & Tie Rod End

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09960-20010
09961-02060

NOTE: Make sure that the upper ends of the tie rod end and SST are aligned.

- c. Using SST, separate the tie rod end from the steering knuckle.

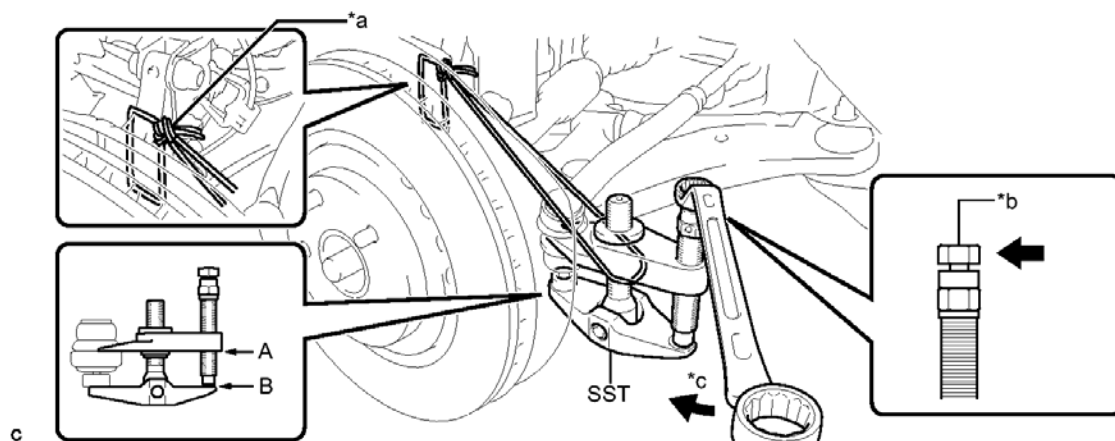


Fig. 9: Removing/Installing Tie Rod End At Steering Knuckle Using SST

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION



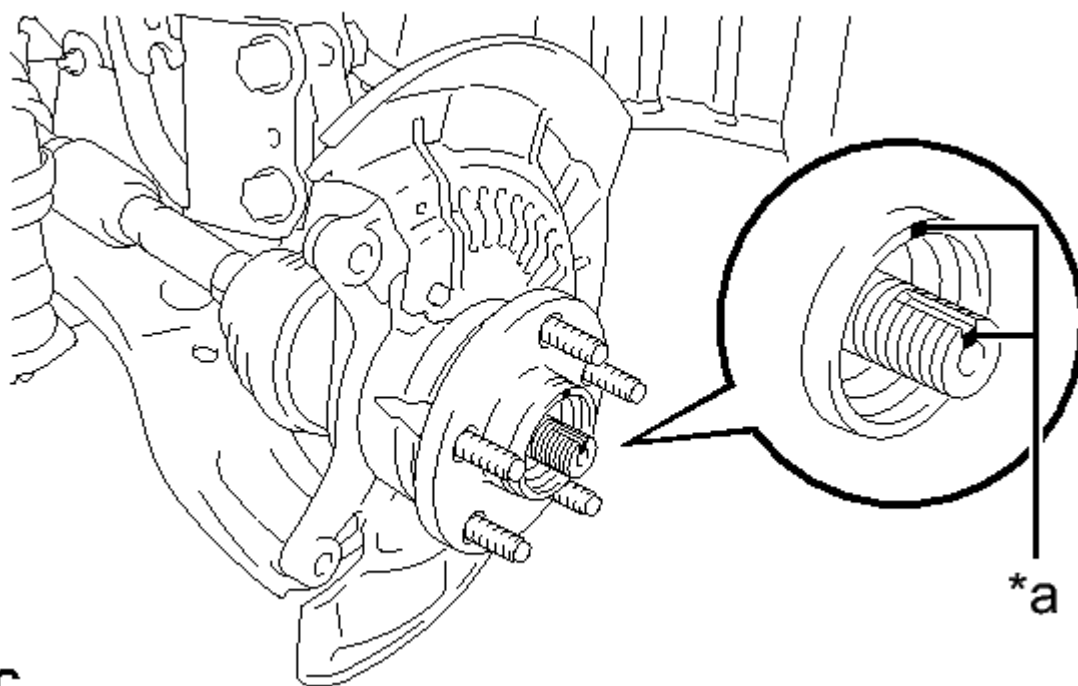
*a	Tie the string without allowing for any slack.	*b	Place the wrench here.
*c	Turn	-	-

- SST: 09960-20010

NOTE:

- Apply grease to the threads and end of the SST bolt.
- When securing SST to the steering knuckle, be sure to tighten SST using a string to prevent it from falling.
- Install SST so that A and B are parallel.
- Be sure to place a wrench on the part indicated in the illustration.
- Do not damage the front disc brake dust cover.
- Do not damage the ball joint dust cover.
- Do not damage the steering knuckle.

7. **SEPARATE FRONT LOWER SUSPENSION ARM SUB-ASSEMBLY** . Refer to **REMOVAL - Step 9**
8. **SEPARATE FRONT AXLE ASSEMBLY**
 - a. Put matchmarks on the front drive shaft assembly and front axle hub sub-assembly.



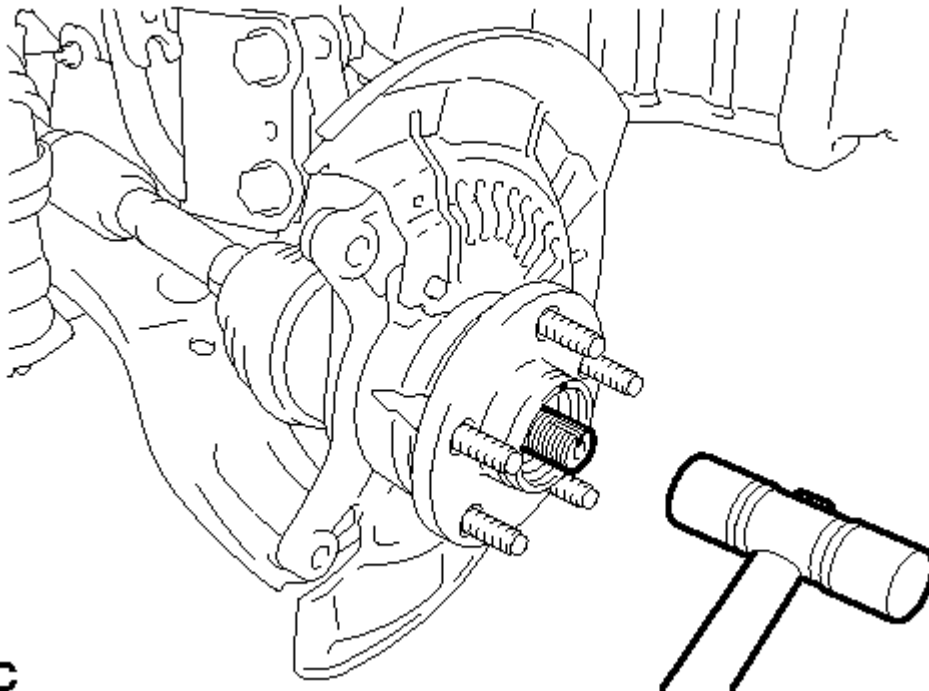
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Fig. 10: Identifying Front Drive Shaft Assembly & Front Axle Hub Sub-Assembly Matchmarks

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

***a Matchmark**

- b. Using a plastic hammer, tap the end of the drive shaft and disengage the fitting between the drive shaft and front axle.



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Fig. 11: Separating Front Drive Shaft Assembly From Front Axle Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

If it is difficult to disengage the fitting, tap the end of the drive shaft with a brass bar and hammer.

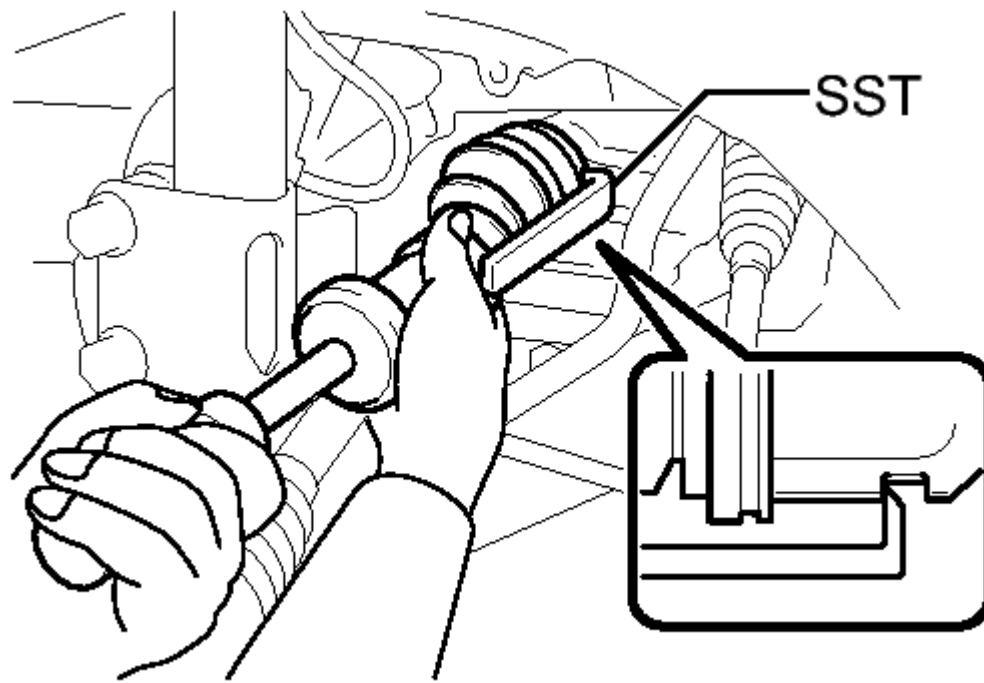
- c. Pull the front axle out of the vehicle to remove the drive shaft from the front axle.

NOTE:

- Do not pull the front axle further out of the vehicle than is necessary.
- Do not damage the outboard joint boot.
- Do not damage the speed sensor rotor.
- Suspend the drive shaft with a piece of string or the equivalent.

9. REMOVE FRONT DRIVE SHAFT ASSEMBLY LH

- a. Using SST, remove the front drive shaft assembly LH.



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Fig. 12: Removing Front Drive Shaft Assembly LH
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

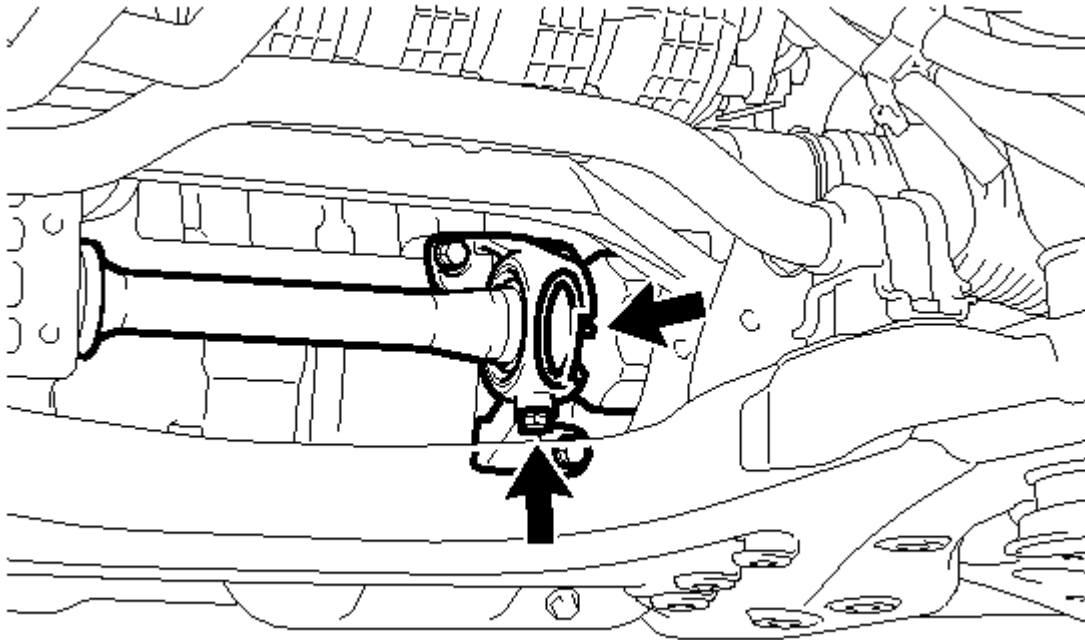
- SST: 09520-01010
- SST: 09520-24010
- 09520-32040

NOTE:

- Be careful not to damage the drive shaft dust cover, inboard joint boot or oil seal.
- Be careful not to drop the drive shaft assembly.

10. REMOVE FRONT DRIVE SHAFT ASSEMBLY RH

- a. Remove the bearing bracket hole snap ring from the drive shaft bearing bracket.



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Fig. 13: Identifying Front Drive Shaft Assembly RH & Fastener At Drive Shaft Bearing Bracket

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Remove the bolt and front drive shaft assembly RH from the drive shaft bearing bracket.

NOTE:

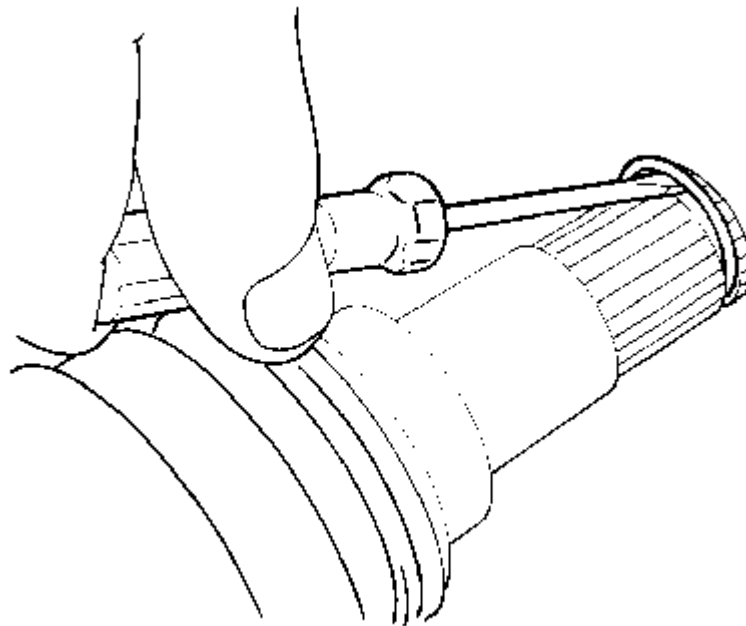
- Be careful not to damage the inboard joint boot or oil seal.
- Be careful not to drop the drive shaft assembly.

DISASSEMBLY

DISASSEMBLY

1. REMOVE FRONT DRIVE SHAFT HOLE SNAP RING (for LH Side)

- a. Using a screwdriver, remove the front drive shaft hole snap ring.



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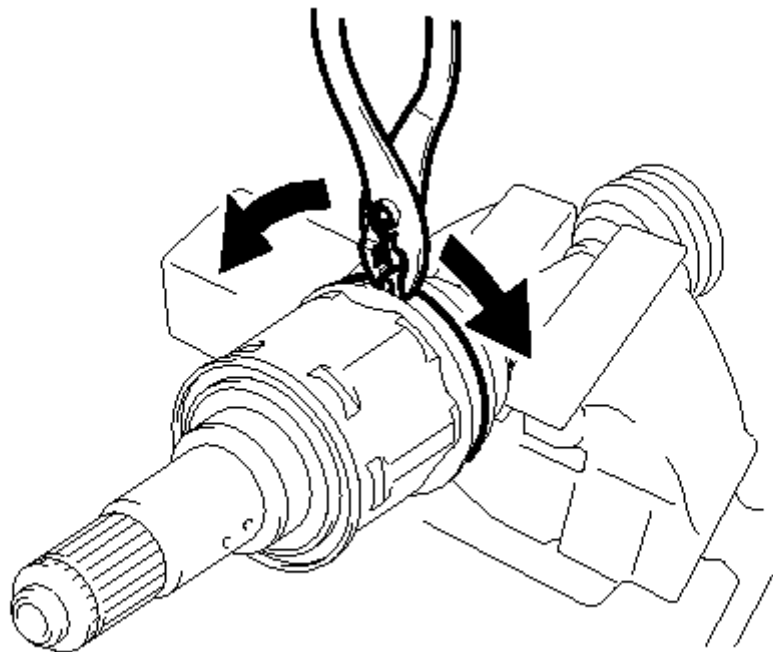
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Fig. 14: Removing Snap Ring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. REMOVE FRONT NO. 2 AXLE INBOARD JOINT BOOT CLAMP

- a. Using pliers, remove the front No. 2 axle inboard joint boot clamp as shown in the illustration.



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Fig. 15: Removing Inboard Joint Boot No. 2 Clamp

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. REMOVE FRONT AXLE INBOARD JOINT BOOT CLAMP

- a. Remove the front axle inboard joint boot clamp.

HINT:

Perform the same procedure as for the front No. 2 axle inboard joint boot clamp.

4. SEPARATE FRONT AXLE INBOARD JOINT BOOT

- a. Separate the front axle inboard joint boot from the front drive inboard joint assembly.

5. REMOVE FRONT DRIVE INBOARD JOINT ASSEMBLY

- a. Remove the grease from the front drive inboard joint assembly.
- b. Put matchmarks on the front drive inboard joint assembly and front drive outboard joint shaft assembly.

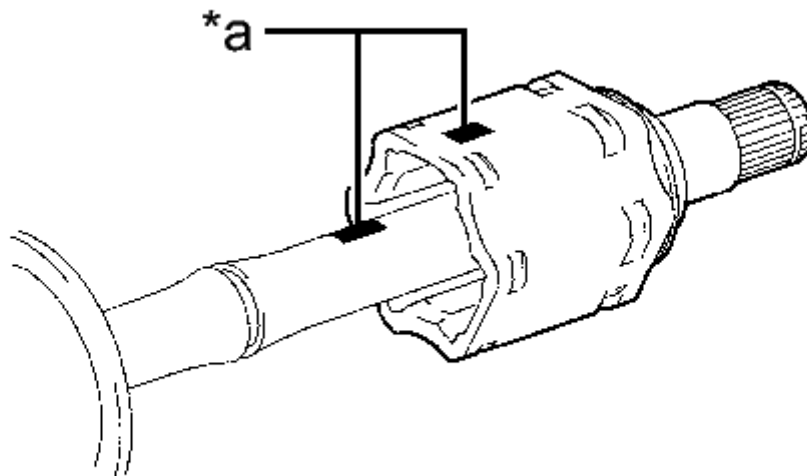


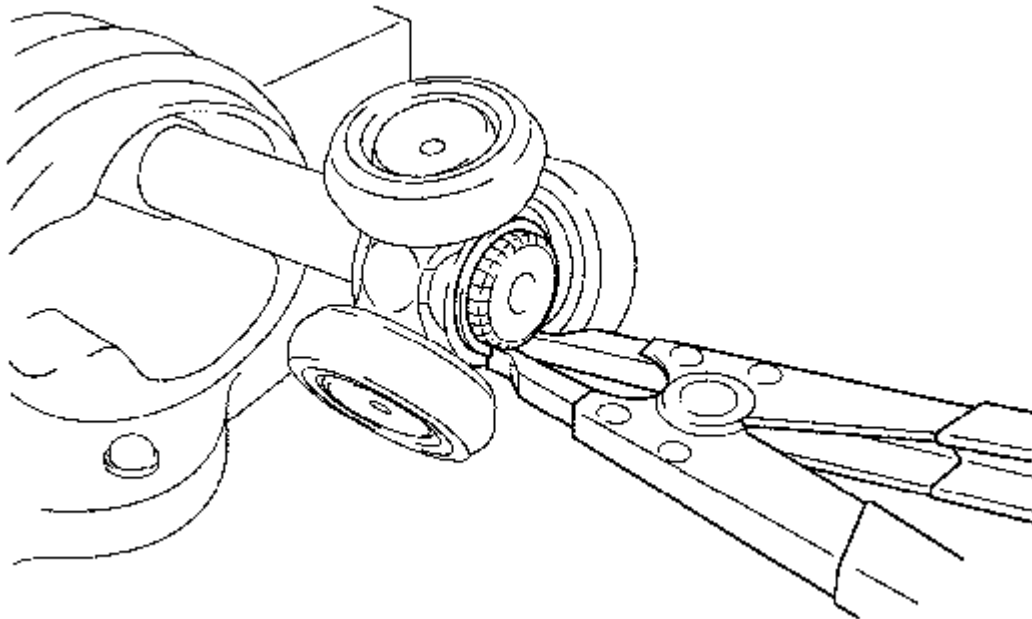
Fig. 16: Identifying Front Drive Inboard & Outboard Joint Shaft Assembly Matchmarks
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a Matchmark

NOTE: Do not use a punch for the marks.

- c. Remove the front drive inboard joint assembly from the front drive outboard joint shaft assembly.
- d. Using a snap ring expander, remove the shaft snap ring.



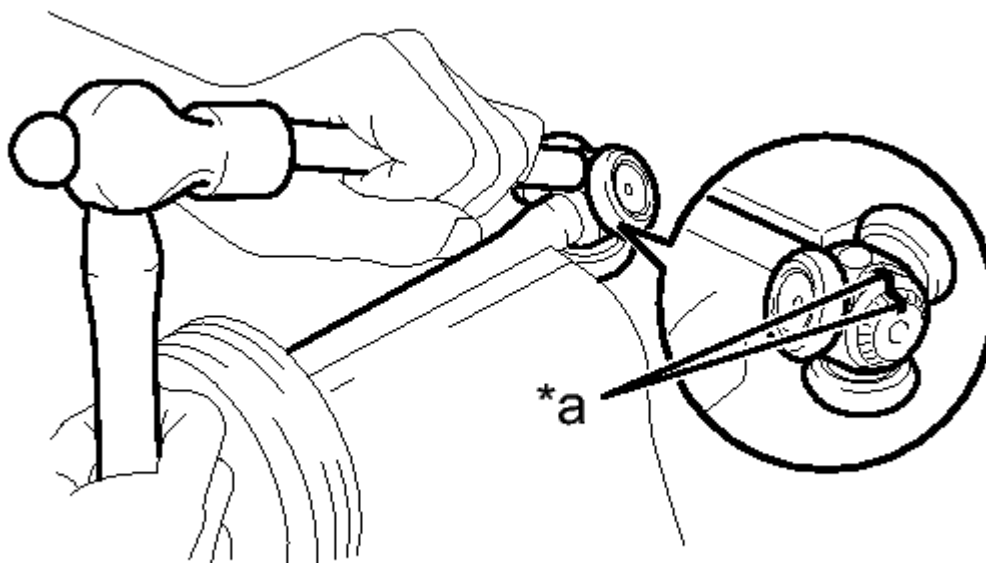
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Fig. 17: Identifying Snap Ring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- e. Put matchmarks on the outboard joint shaft and tripod joint.



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Fig. 18: Removing Tripod Joint At Front Drive Outboard Joint Shaft Assembly Using A Brass Bar & Hammer

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

***a Matchmark**

NOTE: Do not use a punch for the marks.

- f. Using a brass bar and a hammer, remove the tripod joint from the front drive outboard joint shaft assembly.

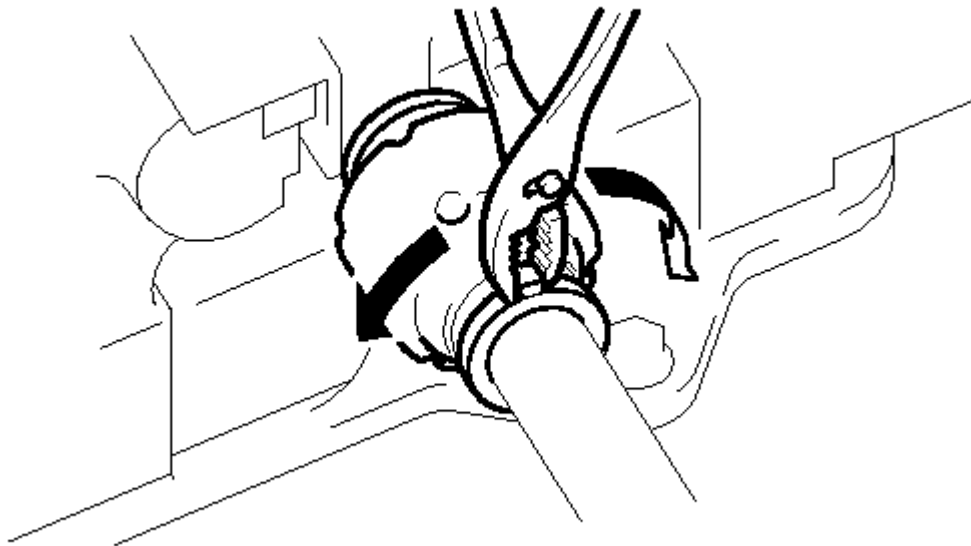
NOTE: Do not tap the roller.

6. REMOVE FRONT AXLE INBOARD JOINT BOOT

- a. Remove the front axle inboard joint boot from the front drive outboard joint shaft assembly.

7. REMOVE FRONT DRIVE SHAFT DAMPER

- a. Using pliers, remove the front drive shaft damper clamp as shown in the illustration.



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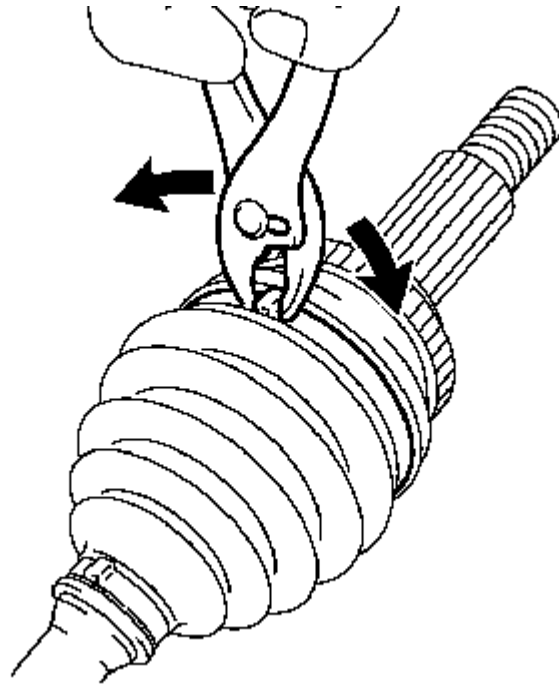
Fig. 19: Removing Front Drive Shaft Damper Clamp

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Remove the front drive shaft damper.

8. REMOVE FRONT NO. 2 AXLE OUTBOARD JOINT BOOT CLAMP

- a. Using pliers, remove the front No. 2 axle outboard joint boot clamp as shown in the illustration.



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Fig. 20: Removing No. 2 Front Axle Outboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. REMOVE FRONT AXLE OUTBOARD JOINT BOOT CLAMP

- a. Remove the front axle outboard joint boot clamp.

HINT:

Perform the same procedure as for the front No. 2 axle outboard joint boot clamp.

10. REMOVE FRONT AXLE OUTBOARD JOINT BOOT

- a. Remove the front axle outboard joint boot from the front drive outboard joint shaft assembly.
- b. Remove the grease from the front drive outboard joint.

11. REMOVE FRONT DRIVE SHAFT DUST COVER LH (for LH Side)

- a. Using SST and a press, remove the front drive shaft dust cover LH.

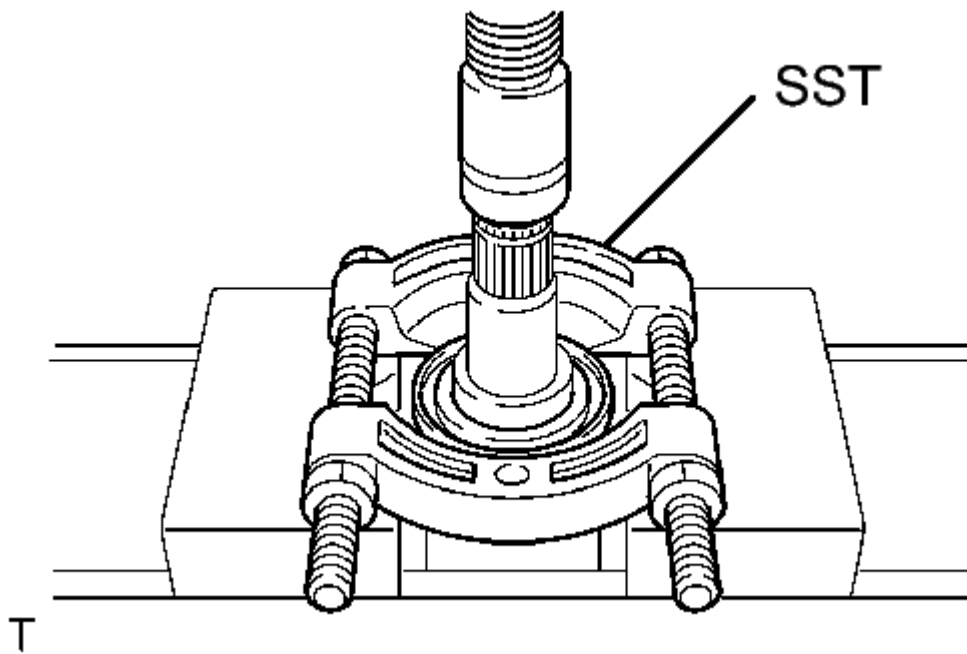


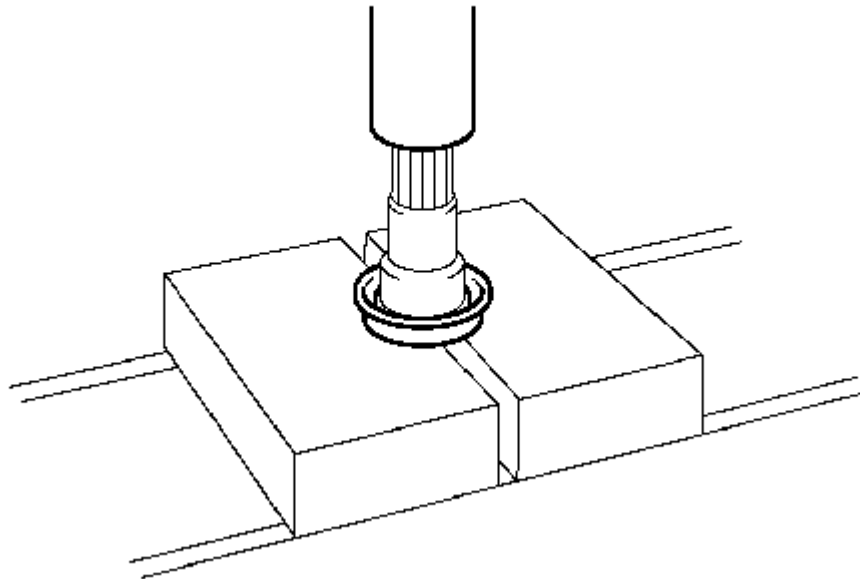
Fig. 21: Pressing Drive Shaft Dust Cover Off LH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09950-00020

NOTE: Be careful not to drop the front drive inboard joint assembly.

12. REMOVE FRONT DRIVE SHAFT DUST COVER RH (for RH Side)

- Using a press, remove the front drive shaft dust cover RH.



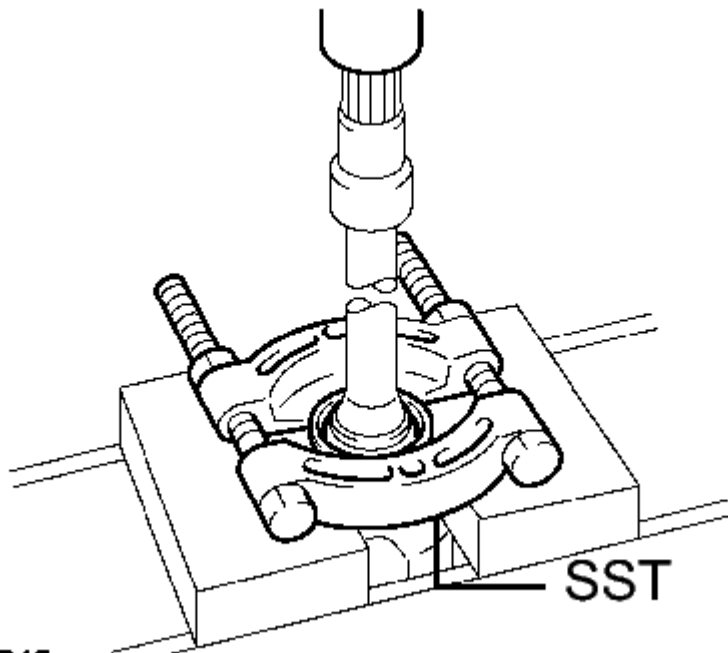
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Fig. 22: Removing Drive Shaft Dust Cover Off RH
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE: Be careful not to drop the front drive inboard joint assembly.

13. REMOVE FRONT DRIVE SHAFT DUST COVER (for RH Side)

- a. Using SST and a press, remove the front drive shaft dust cover.



T C68342

Fig. 23: Removing Drive Shaft Dust Cover

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09950-00020

NOTE: Be careful not to drop the front drive inboard joint assembly.

14. REMOVE FRONT DRIVE SHAFT BEARING (for RH Side)

- Using a snap ring expander, remove the drive shaft hole snap ring.

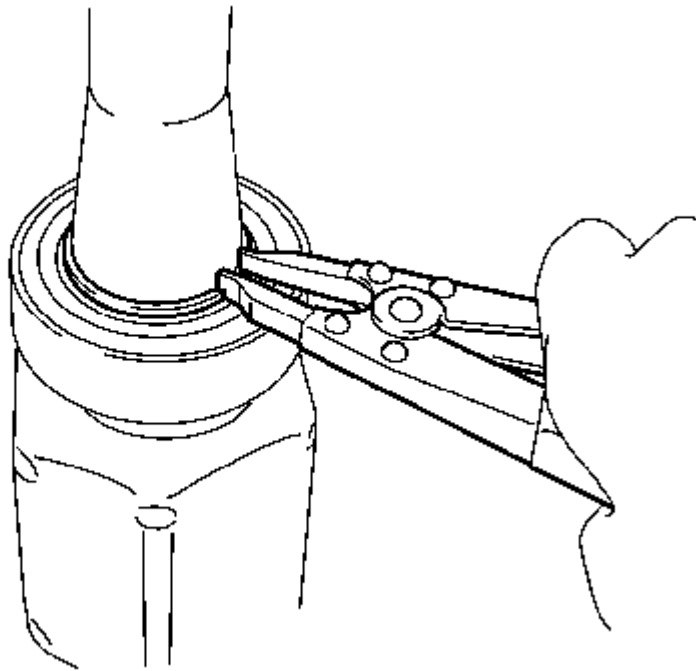


Fig. 24: Removing Drive Shaft Hole Snap Ring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Using SST and a press, remove the front drive shaft bearing.

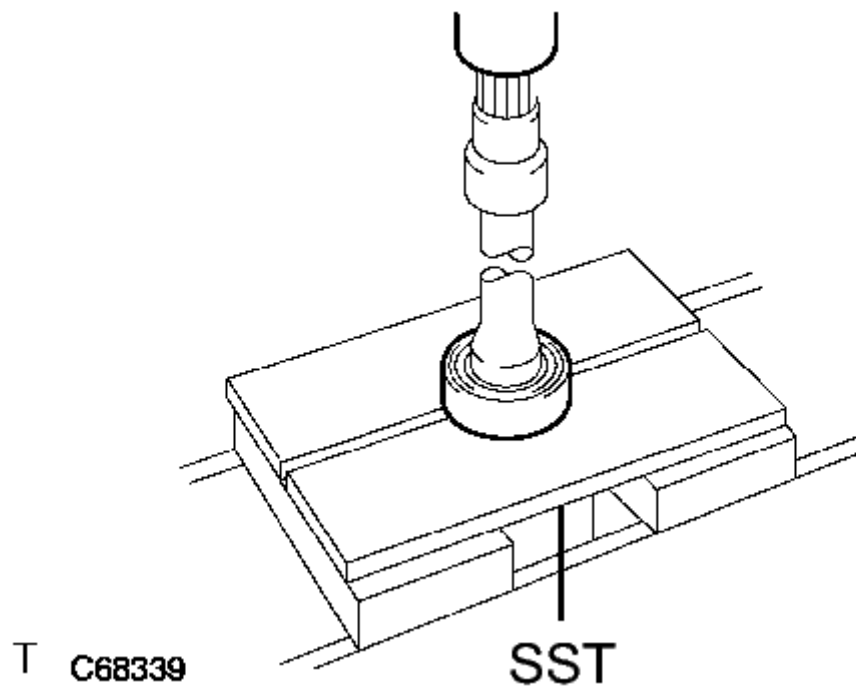


Fig. 25: Removing Bearing

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09527-10011

NOTE: Be careful not to drop the front drive inboard joint assembly.

15. REMOVE BEARING BRACKET HOLE SNAP RING (for RH Side)

- Remove the bearing bracket hole snap ring.

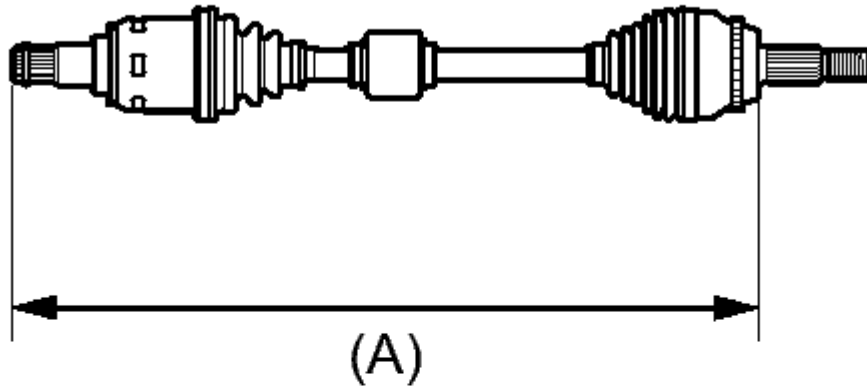
INSPECTION

INSPECTION

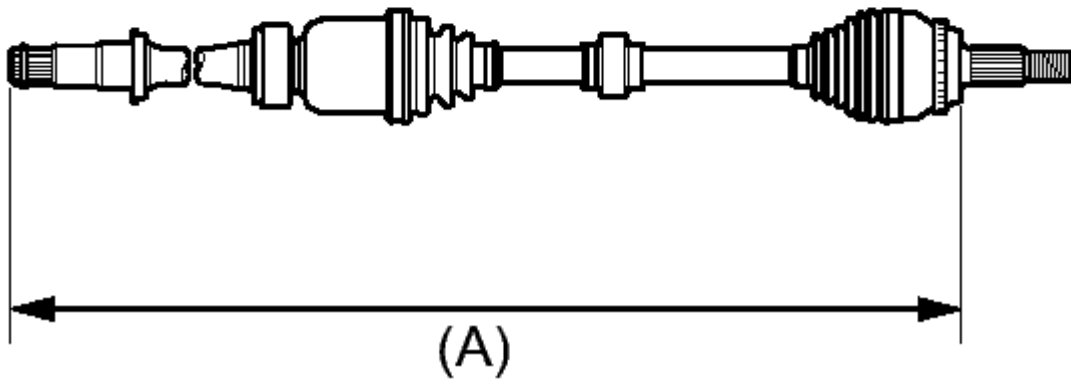
1. INSPECT FRONT DRIVE SHAFT ASSEMBLY

- Check whether the drive shaft dimensions are within the following specifications.

*a



*b



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Fig. 26: Inspecting Drive Shaft Assembly Dimensions
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	LH Side:
*b	RH Side:

HINT:

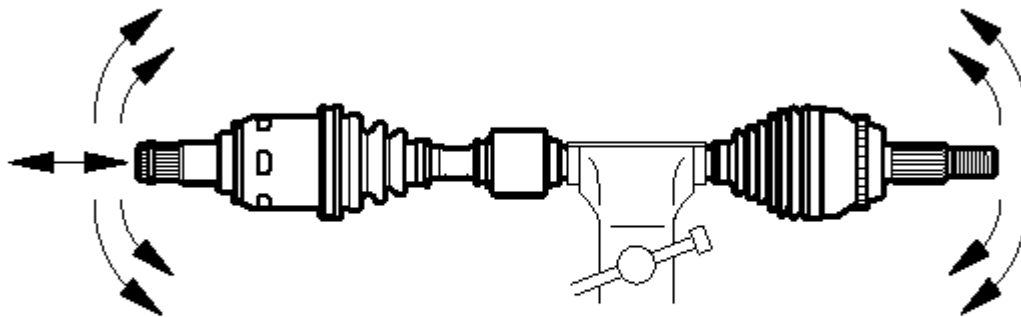
The following table shows the dimension (A) of the drive shaft.

Dimension (A)

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LH Side	RH Side
652.4	970.0
mm	mm
(2.14	(3.18
ft.)	ft.)

- b. Check that there is no excessive play in the outboard joint.



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Fig. 27: Inspecting Inboard & Outboard Joints For Excessive Play
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Check that the inboard joint slides smoothly in the thrust direction.
- d. Check that there is no excessive play in the radial direction of the inboard joint and outboard joint.
- e. Check the boots for damage.

REASSEMBLY

REASSEMBLY

1. **INSTALL BEARING BRACKET HOLE SNAP RING (for RH Side)**
 - a. Install a new bearing bracket hole snap ring to the front drive shaft assembly RH.
2. **INSTALL FRONT DRIVE SHAFT BEARING (for RH Side)**
 - a. Using SST, install a new front drive shaft bearing.

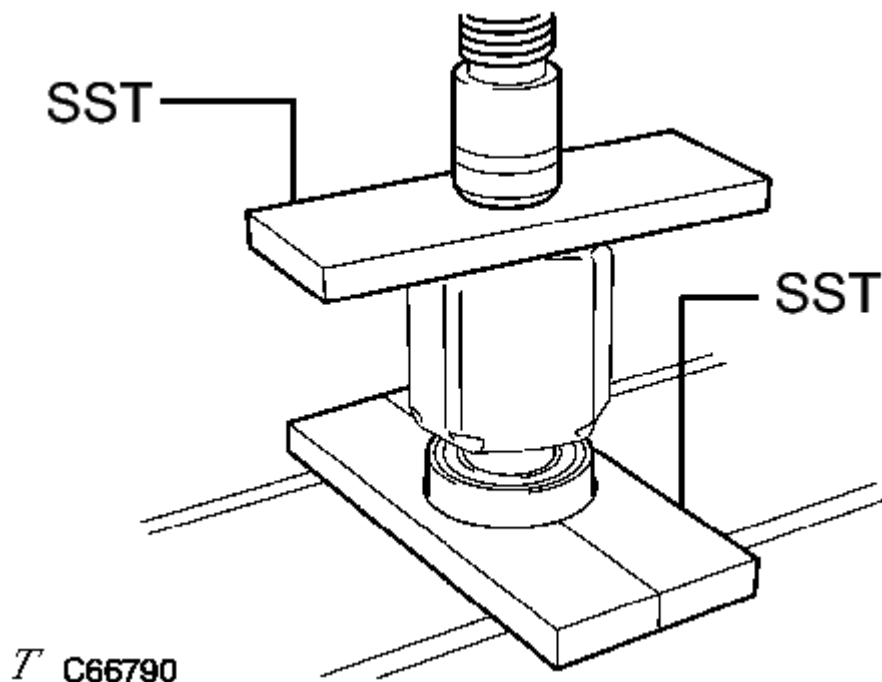
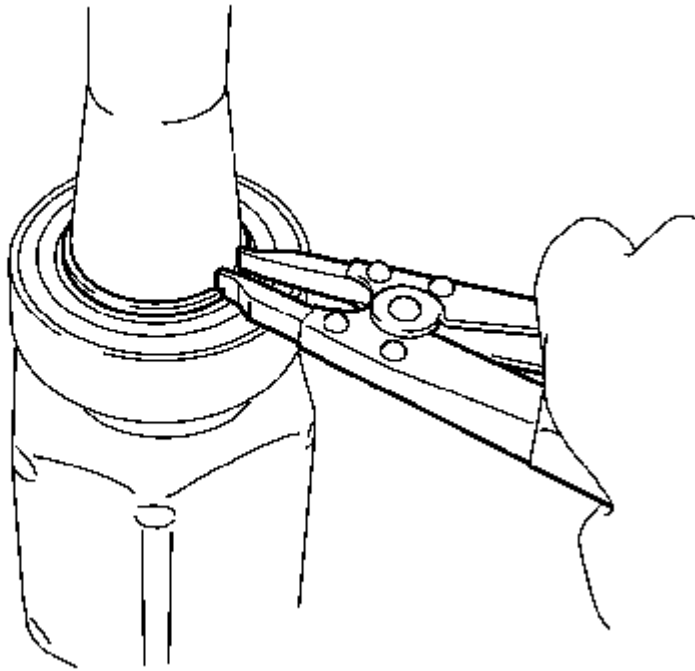


Fig. 28: Installing Front Drive Shaft Bearing Using SST
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09527-10011
- SST: 09527-30010

NOTE: The bearing should be completely installed.

- b. Using a snap ring expander, install a new drive shaft hole snap ring.

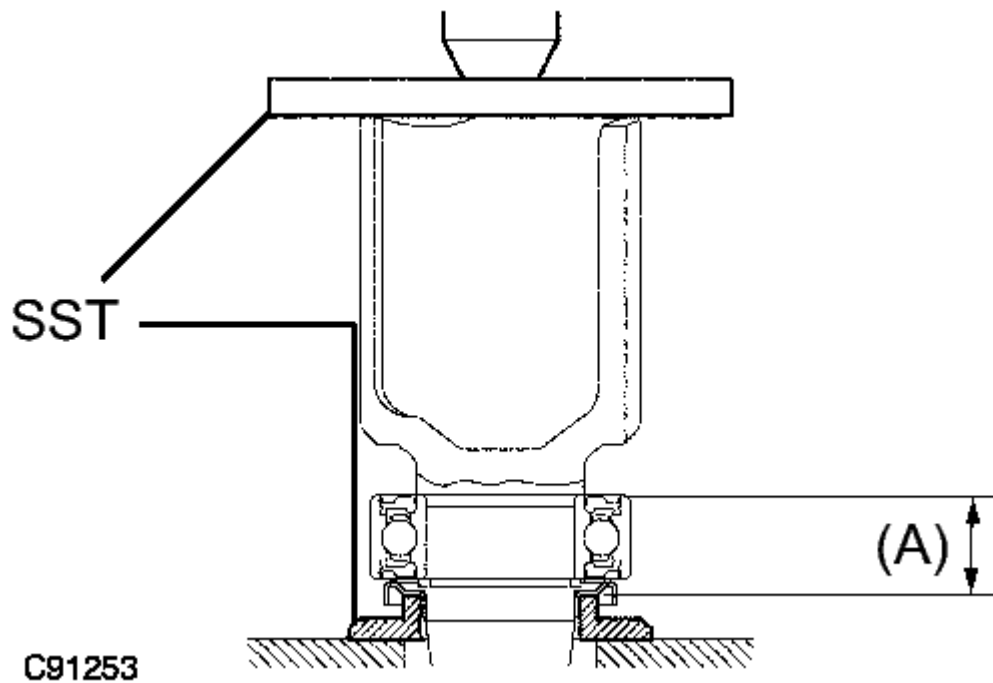


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Fig. 29: Installing Drive Shaft Hole Snap Ring
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. INSTALL FRONT DRIVE SHAFT DUST COVER (for RH Side)

- a. Using SST and a press, install a new front drive shaft dust cover.



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Fig. 30: Installing Front Drive Shaft Dust Cover, SST & Press
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09527-10011
- SST: 09726-40010

Distance (A)

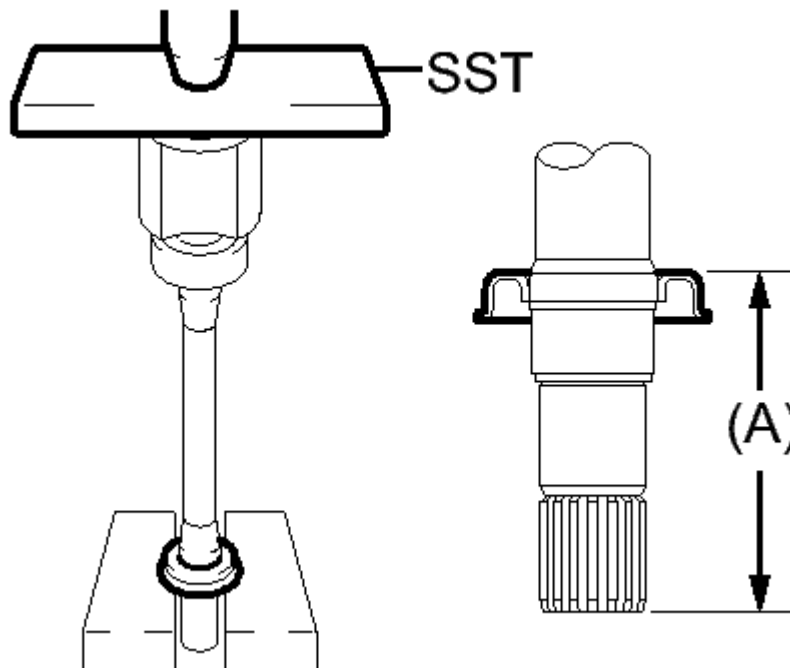
27.0 mm (1.07 in.)

NOTE:

- The front drive shaft dust cover should be completely installed.
- Be careful not to damage the front drive shaft dust cover.

4. INSTALL FRONT DRIVE SHAFT DUST COVER RH (for RH Side)

- Using SST and a press, install a new front drive shaft dust cover RH until the distance (A) from the tip of the center drive shaft to the front drive shaft dust cover RH meets the specification.



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Fig. 31: Identifying Front Drive Shaft Dust Cover (For RH Side)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09527-10011

Distance (A)

110.5 mm (4.35 in.)

NOTE:

- The front drive shaft dust cover RH should be completely installed.

- Be careful not to damage the front drive shaft dust cover RH.

5. **INSTALL FRONT DRIVE SHAFT DUST COVER LH (for LH Side)**

- a. Using SST and a press, install a new front drive shaft dust cover LH.

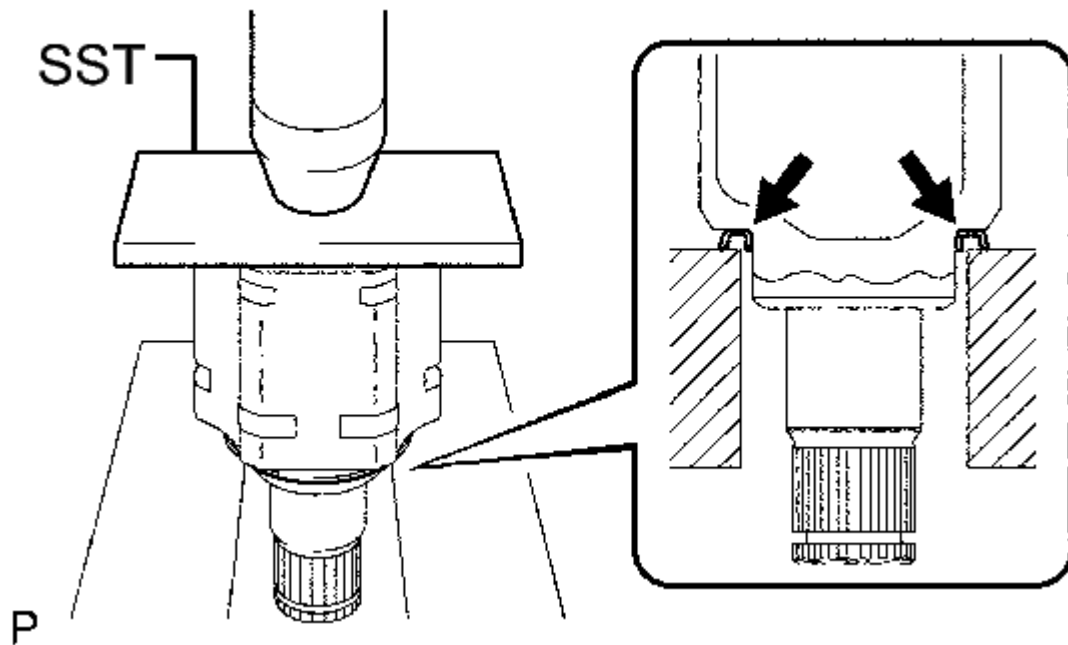


Fig. 32: Installing Drive Shaft Dust Cover LH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

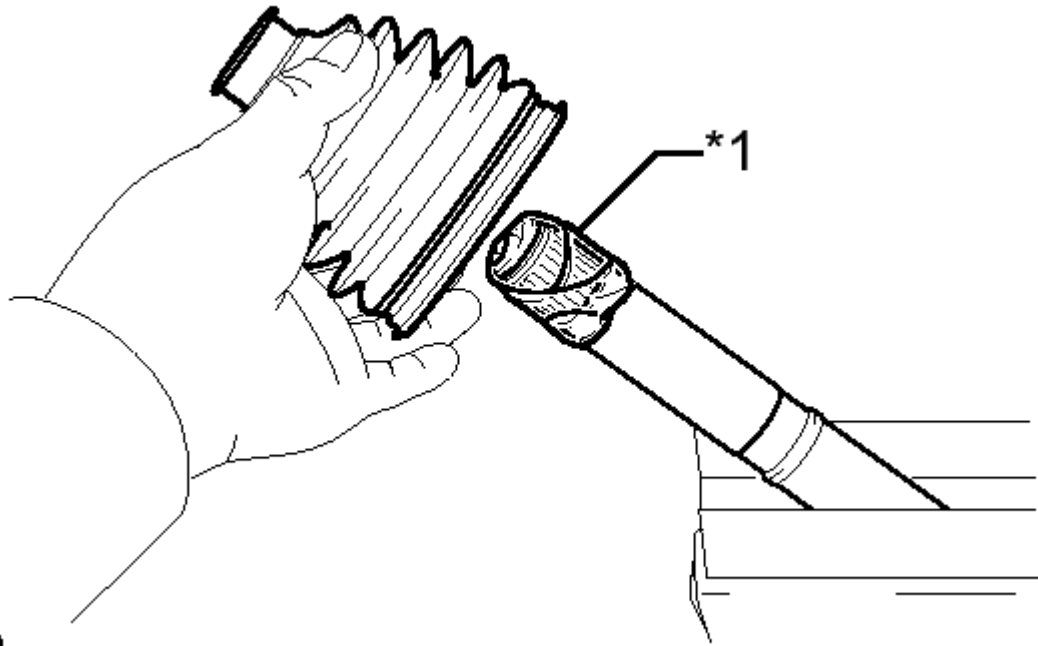
- SST: 09527-10011

NOTE:

- The front drive shaft dust cover LH should be completely installed.
- Be careful not to damage the front drive shaft dust cover LH.

6. **INSTALL FRONT AXLE OUTBOARD JOINT BOOT**

- a. Wrap the spline of the drive shaft with vinyl tape to prevent the boot from being damaged.



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Fig. 33: Identifying Outboard Joint Boot & Tape Wrapped Around Drive Shaft Spline
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION



- b. Install new parts to the front drive outboard joint shaft assembly in the following order.
 1. Front No. 2 axle outboard joint boot clamp
 2. Front axle outboard joint boot
 3. Front axle outboard joint boot clamp
- c. Pack the front drive outboard joint shaft assembly and front axle outboard joint boot with grease from the boot kit.

Grease capacity

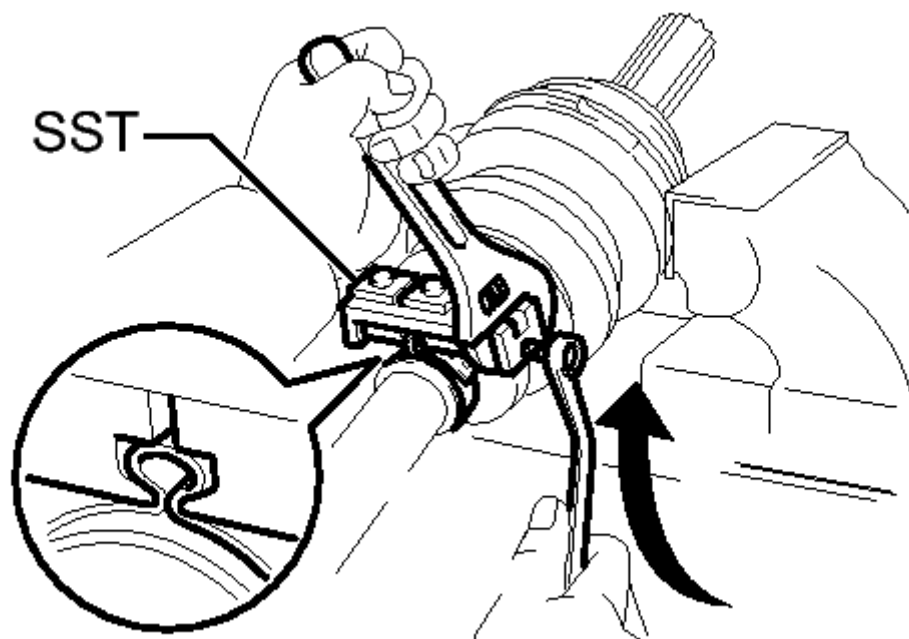
170 to 190 g (6.0 to 6.7 oz.)

7. INSTALL FRONT AXLE OUTBOARD JOINT BOOT CLAMP

- a. Hold the drive shaft lightly in a vise between aluminum plates.

NOTE: **Do not overtighten the vise.**

- b. Install the front axle outboard joint boot clamp onto the front axle outboard joint boot.
- c. Place SST onto the front axle outboard joint boot clamp.



T

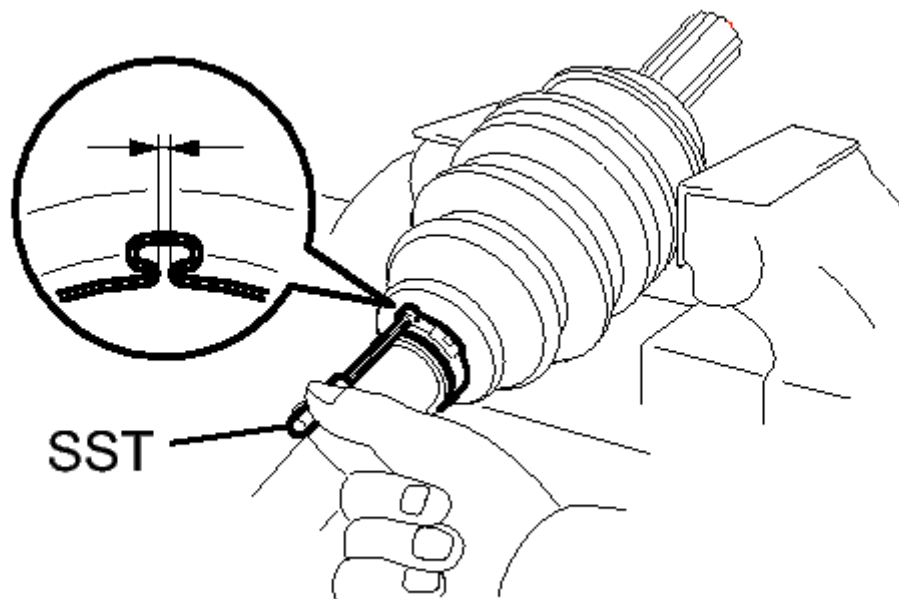
Fig. 34: Installing Front Axle Outboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09521-24010

d. Tighten SST so that the front axle outboard joint boot clamp is pinched.

NOTE: Do not overtighten SST.

e. Using SST, measure the clearance of the front axle outboard joint boot clamp.



T

Fig. 35: Measuring Clearance Of Outboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09240-00020

Clearance

0.5 to 1.5 mm (0.0197 to 0.0591 in.)

NOTE: If the measured value is greater than the specified value, retighten the clamp.

8. INSTALL FRONT NO. 2 AXLE OUTBOARD JOINT BOOT CLAMP

- Install the front No. 2 axle outboard joint boot clamp onto the front axle outboard joint boot.
- Place SST onto the front No. 2 axle outboard joint boot clamp.

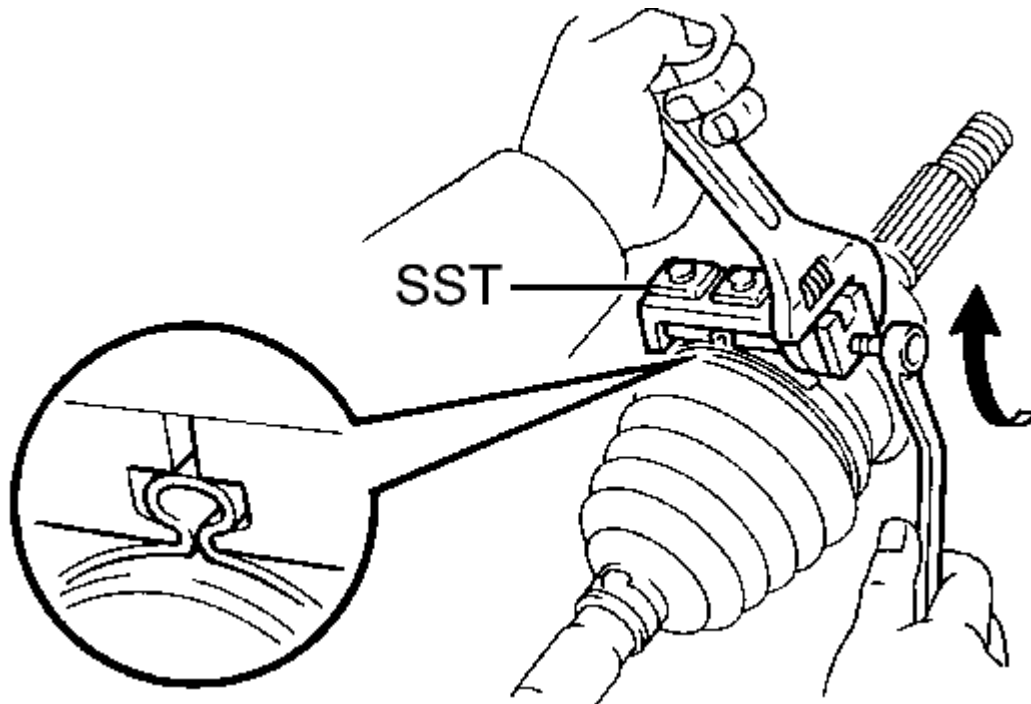


Fig. 36: Installing No. 2 Front Axle Outboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09521-24010

c. Tighten SST so that the front No. 2 axle outboard joint boot clamp is pinched.

NOTE: **Do not overtighten SST.**

d. Using SST, measure the clearance of the front No. 2 axle outboard joint boot clamp.

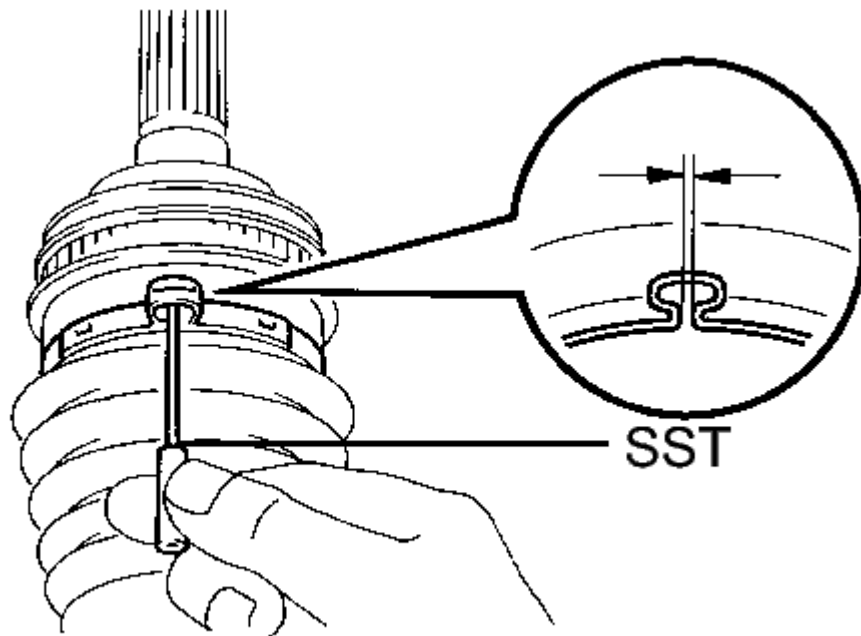


Fig. 37: Measuring Clearance Of No. 2 Outboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09240-00020

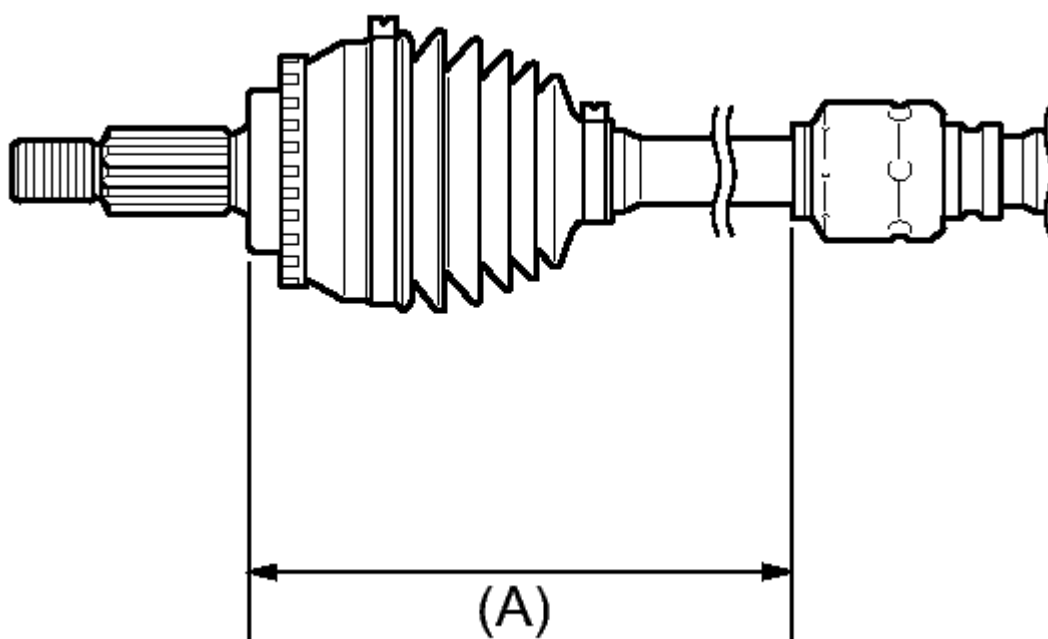
Clearance

0.5 to 1.5 mm (0.0197 to 0.0591 in.)

NOTE: If the measured value is greater than the specified value, retighten the clamp.

9. INSTALL FRONT DRIVE SHAFT DAMPER

- Install the front drive shaft damper onto dimension (A) shown in the illustration.



C

Fig. 38: Identifying Drive Shaft Damper Dimension
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE: Install the damper in the correct orientation.

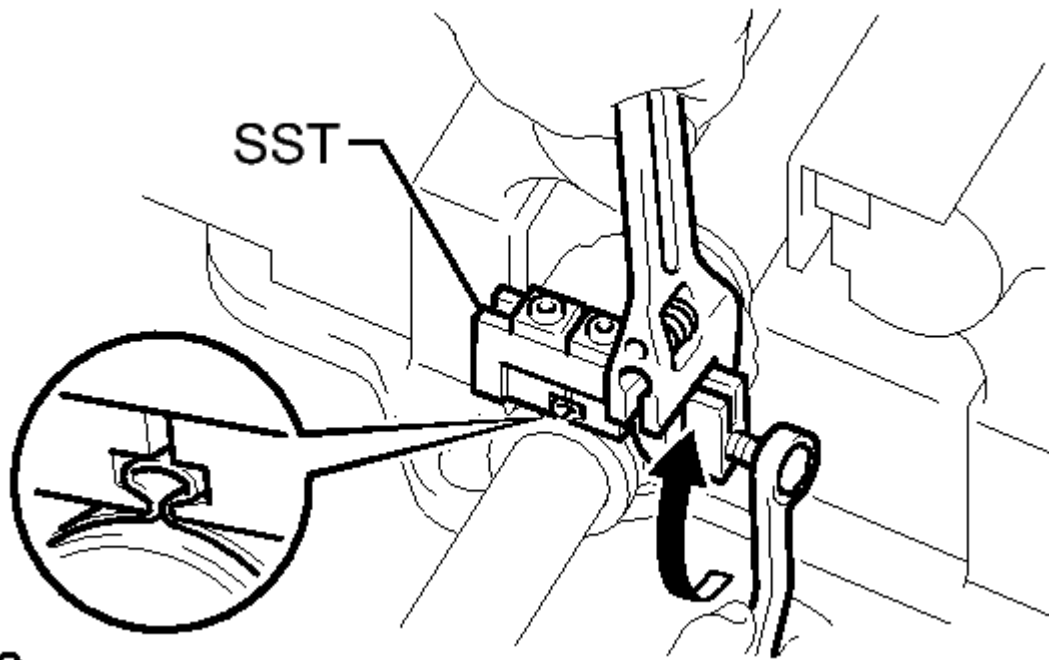
Dimension (A)

LH Side	RH Side
283 to 287 mm (11.1 to 11.3 in.)	280 to 284 mm (11.0 to 11.2 in.)

- b. Install a new front drive shaft damper clamp onto the front drive shaft damper.

NOTE: Be sure to install the clamp in the correct position.

- c. Place SST onto the front drive shaft damper clamp.



C

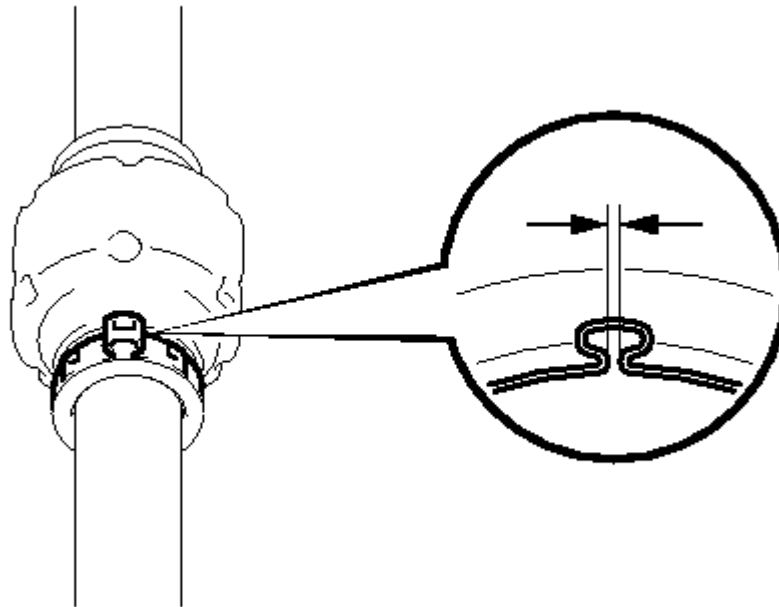
Fig. 39: Installing Front Drive Shaft Damper Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09521-24010

d. Tighten SST so that the clamp is pinched.

NOTE: **Do not overtighten SST.**

e. Using SST, measure the clearance of the front drive shaft damper clamp.



C

Fig. 40: Measuring Clearance Of Front Drive Shaft Damper Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09240-00020

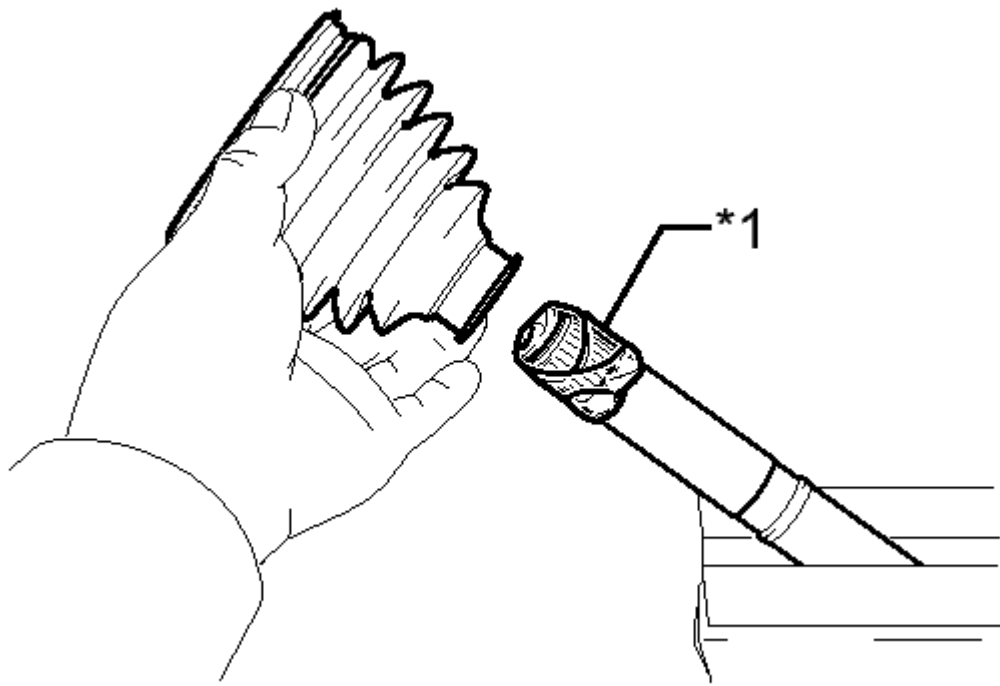
Clearance

0.5 to 1.5 mm (0.0197 to 0.0591 in.)

NOTE: If the measured value is greater than the specified value, retighten the clamp.

10. INSTALL FRONT DRIVE INBOARD JOINT ASSEMBLY

- Wrap the spline of the outboard joint shaft with vinyl tape to prevent the boot from being damaged.
- Install new parts to the front drive outboard joint shaft assembly in the following order.



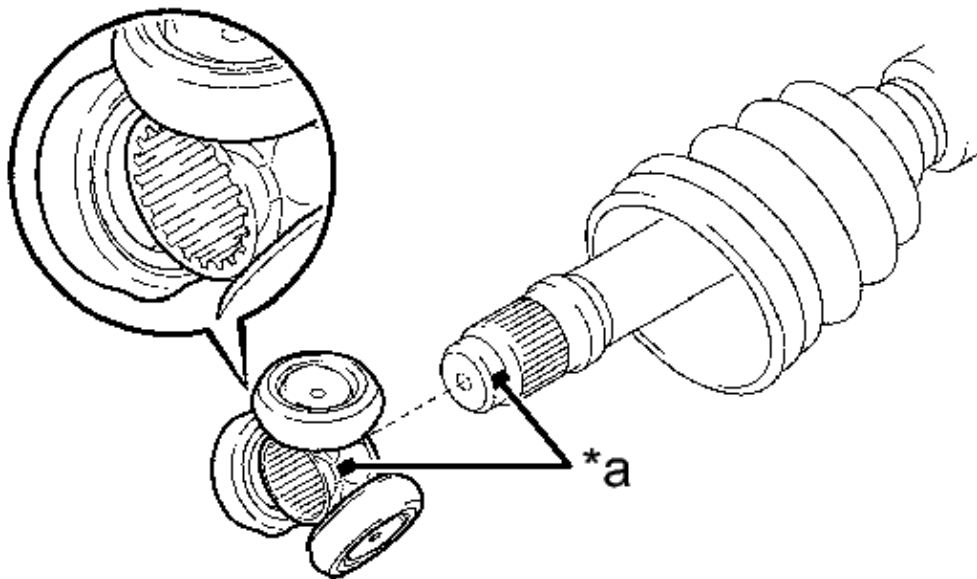
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Fig. 41: Identifying Inboard Joint Boot & Tape Wrapped Spline
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Vinyl tape
----	---------------

1. Front axle inboard joint boot clamp
 2. Front axle inboard joint boot
 3. Front No. 2 axle inboard joint boot clamp
- c. Place the beveled side of the tripod joint axial spline toward the front drive outboard joint shaft assembly.



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Fig. 42: Identifying Tripod Joint Axial Spline & Front Drive Outboard Joint Shaft Matchmarks

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

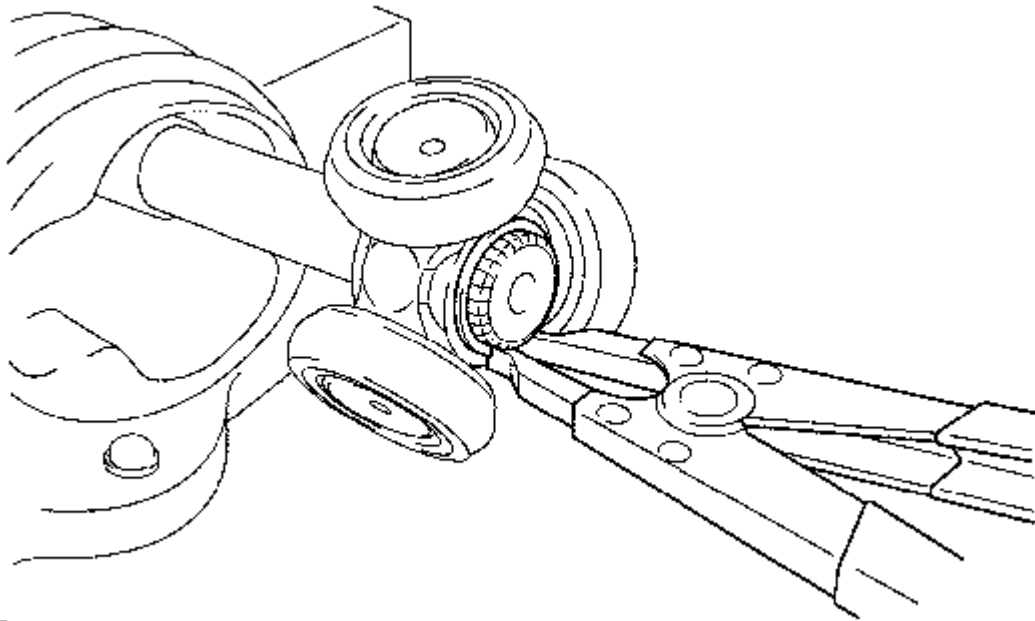
*a	Matchmark
----	-----------

- d. Align the matchmarks placed before removal.
- e. Using a brass bar and a hammer, tap in the tripod joint to the front drive outboard joint shaft assembly.

NOTE:

- Do not tap the roller.
- Be sure to install the tripod joint in the correct direction.

- f. Using a snap ring expander, install a new shaft snap ring.



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Fig. 43: Identifying Snap Ring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- g. Pack the front drive inboard joint assembly and front axle inboard boot with grease.

Grease capacity

135 to 155 g (4.76 to 5.47 oz.)

- h. Align the matchmarks and install the front drive inboard joint assembly to the front drive outboard joint shaft assembly.

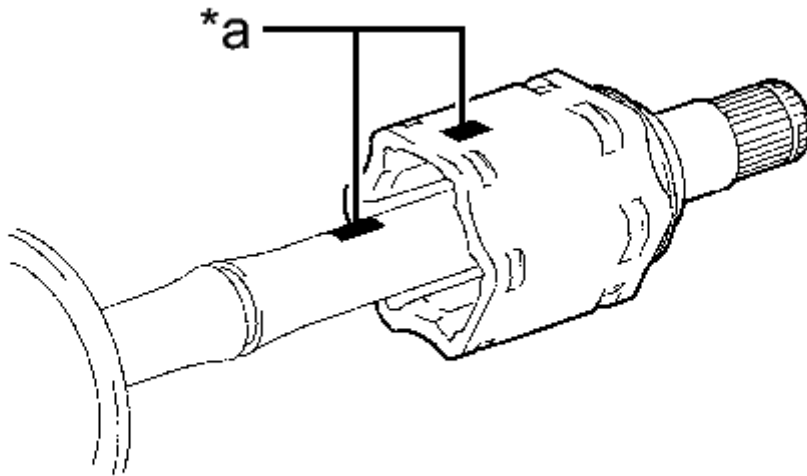


Fig. 44: Identifying Front Drive Inboard & Outboard Joint Shaft Assembly Matchmarks
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

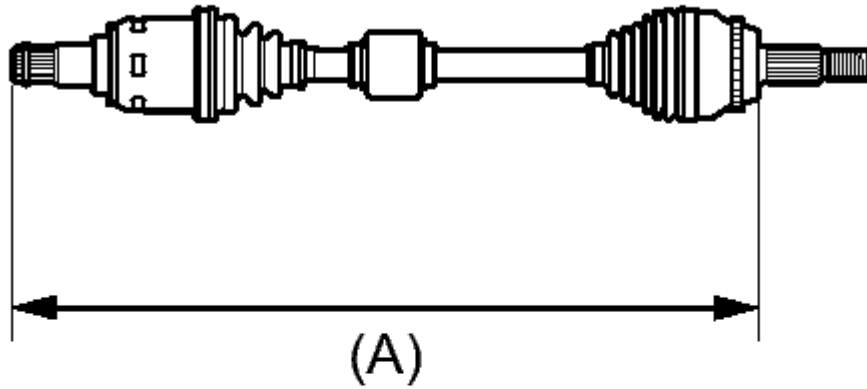
TEXT IN ILLUSTRATION

*a	Matchmark
----	-----------

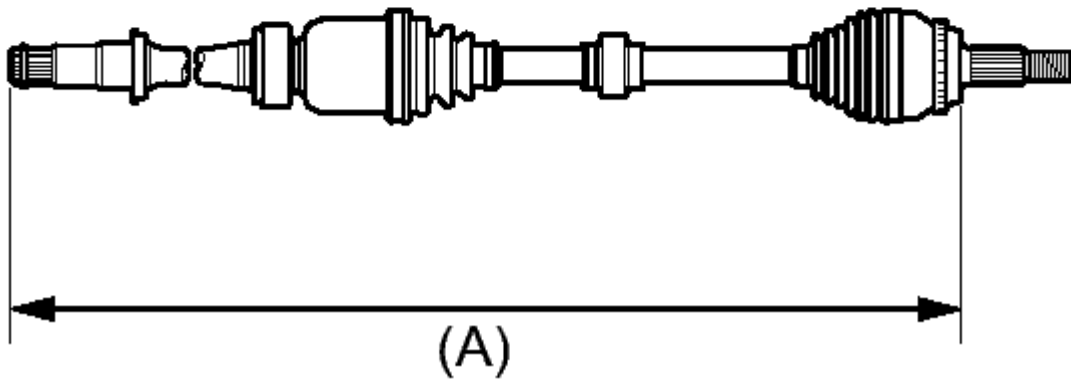
11. INSTALL FRONT AXLE INBOARD JOINT BOOT

- a. Install the front axle inboard joint boot to the front drive inboard joint assembly.
- b. Check whether the drive shaft dimensions are within the following specifications.

*a



*b



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Fig. 45: Inspecting Drive Shaft Assembly Dimensions
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	LH Side:
*b	RH Side:

HINT:

The following table shows the dimension (A) of the drive shaft.

Dimension (A)

--	--

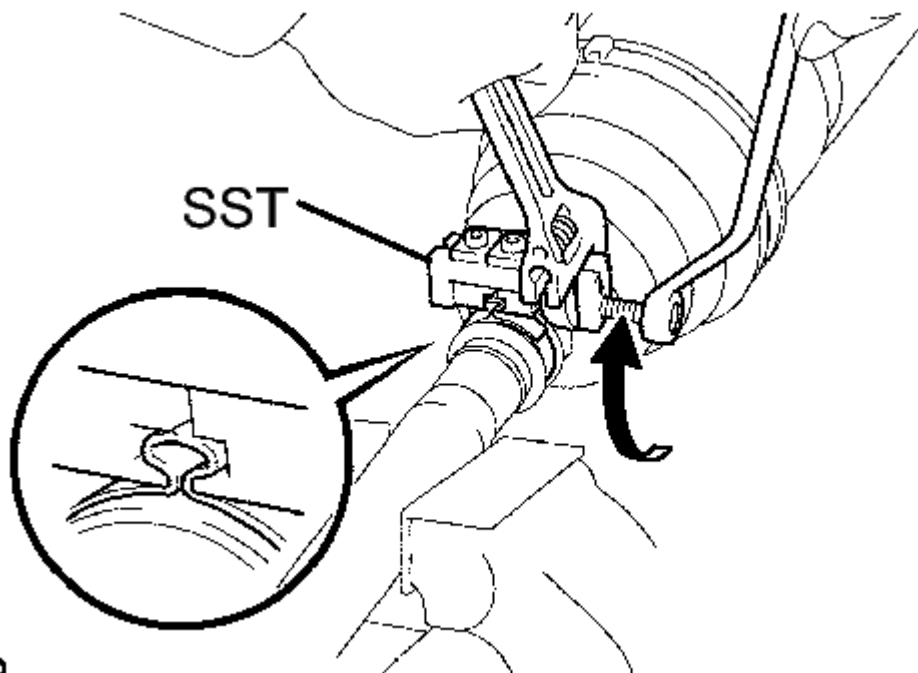
LH Side	RH Side
652.4 mm (2.14 ft.)	970.0 mm (3.18 ft.)

12. INSTALL FRONT AXLE INBOARD JOINT BOOT CLAMP

- a. Hold the drive shaft lightly in a vise between aluminum plates.

NOTE: Do not overtighten the vise.

- b. Secure the front axle inboard joint boot clamp onto the front axle inboard joint boot.
- c. Place SST onto the front axle inboard joint boot clamp.



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Fig. 46: Installing Front Axle Inboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09521-24010

- d. Tighten SST so that the front axle inboard joint boot clamp is pinched.

NOTE: Do not overtighten SST.

- e. Using SST, measure the clearance of the front axle inboard joint boot clamp.

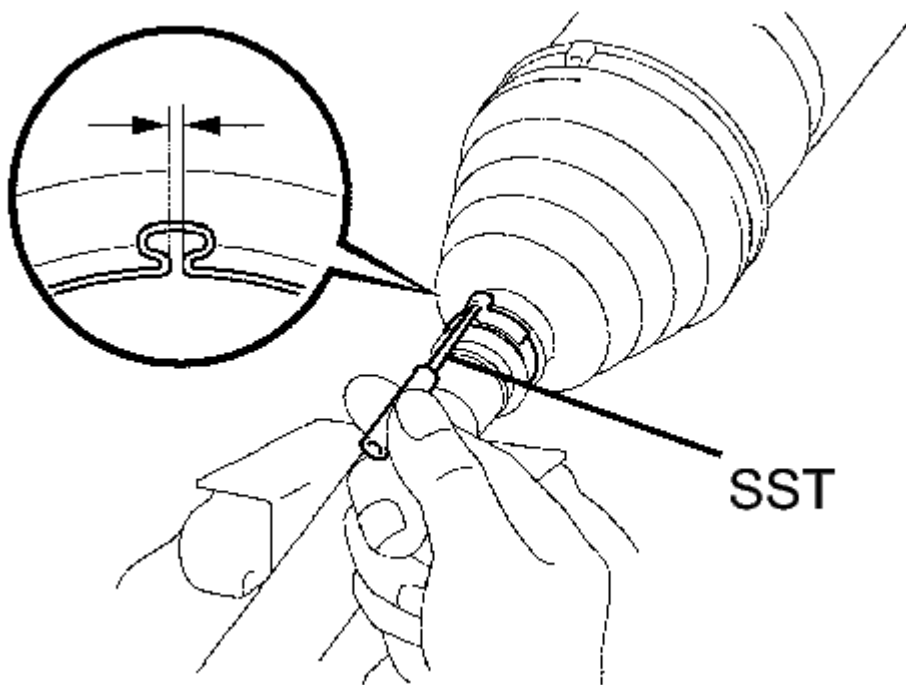


Fig. 47: Measuring Clearance Of Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09240-00020

Clearance

0.5 to 1.5 mm (0.0197 to 0.0591 in.)

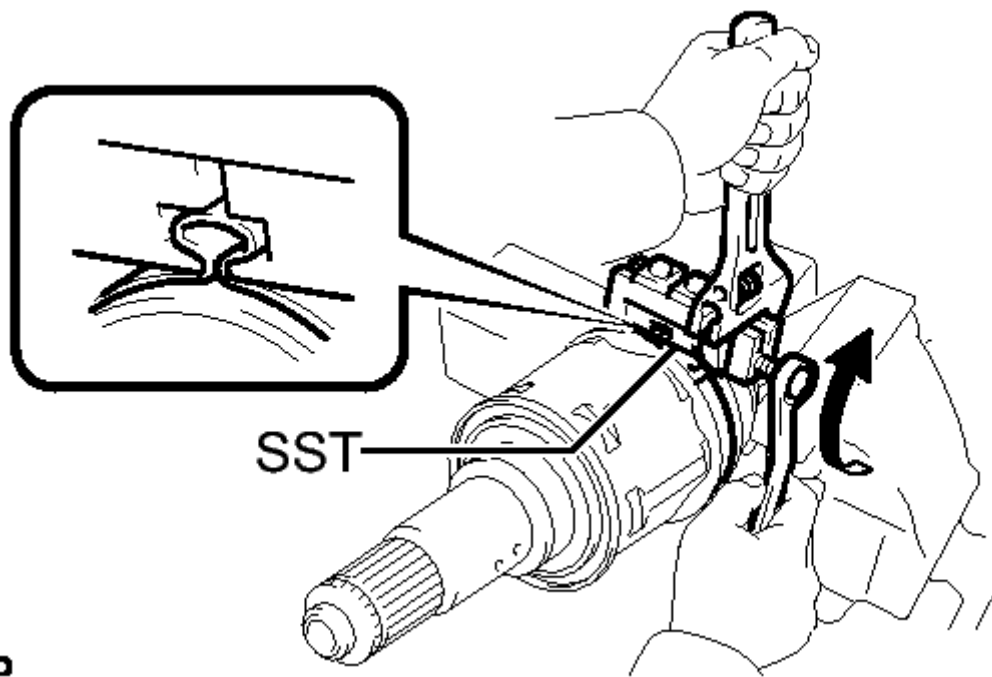
NOTE: If the measured value is greater than the specified value, retighten the clamp.

13. INSTALL FRONT NO. 2 AXLE INBOARD JOINT BOOT CLAMP

- Hold the front drive inboard joint shaft assembly in a vise between aluminum plates.

NOTE: Do not overtighten the vise.

- Secure the front No. 2 axle inboard joint boot clamp onto the front axle inboard joint boot.
- Place SST onto the front No. 2 axle inboard joint boot clamp.



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Fig. 48: Installing No. 2 Front Axle Inboard Joint Boot Clamp

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09521-24010

d. Tighten SST so that the front No. 2 axle inboard joint boot clamp is pinched.

NOTE: Do not overtighten SST.

e. Using SST, measure the clearance of the front No. 2 axle inboard joint boot clamp.

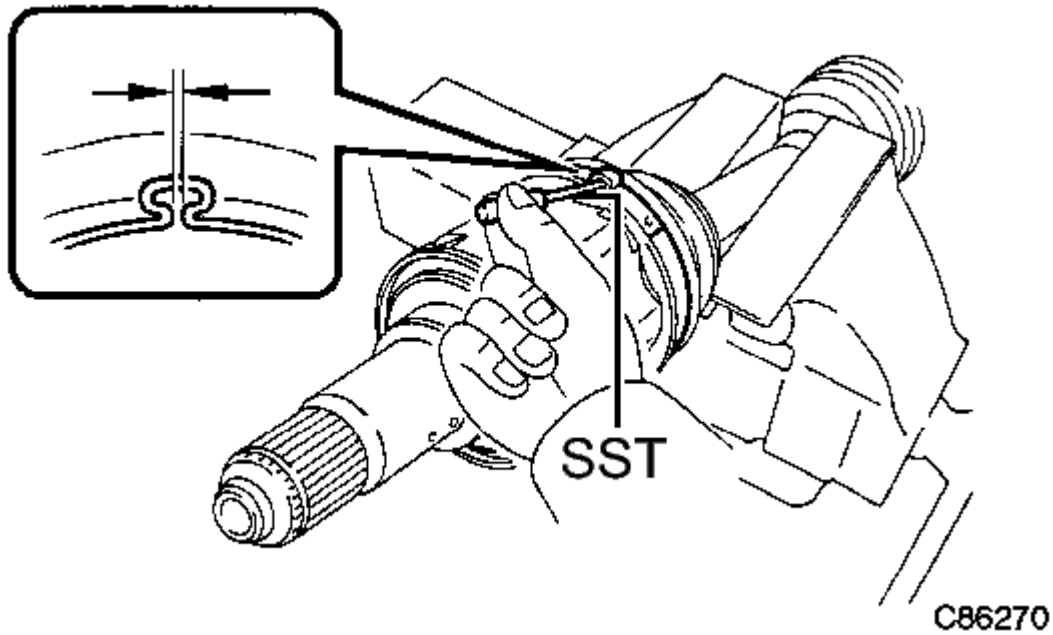


Fig. 49: Measuring Clearance Of No. 2 Front Axle Inboard Joint Boot Clamp
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09240-00020

Clearance

0.5 to 1.5 mm (0.0197 to 0.0591 in.)

NOTE: If the measured value is greater than the specified value, retighten the clamp.

14. INSTALL FRONT DRIVE SHAFT HOLE SNAP RING

- Install a new front drive shaft hole snap ring.

15. INSPECT FRONT DRIVE SHAFT ASSEMBLY See step 1

INSTALLATION

INSTALLATION

INSTALLATION

1. INSTALL FRONT DRIVE SHAFT ASSEMBLY LH

- Align the splines of the shaft and install the front drive shaft assembly LH using a brass bar and a hammer.

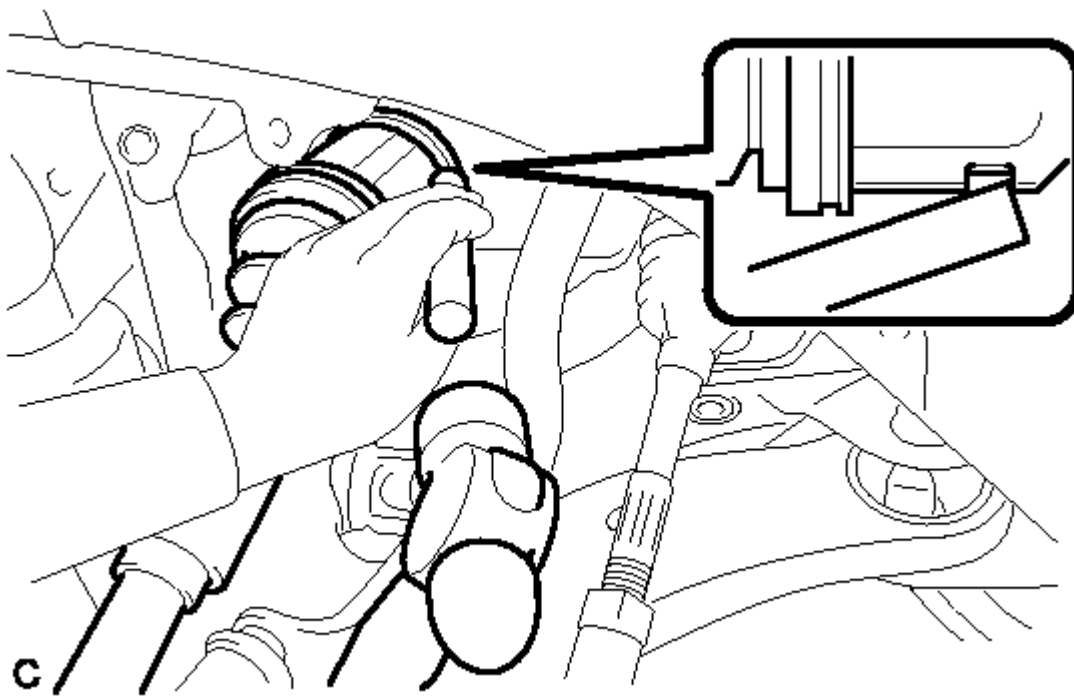


Fig. 50: Installing Drive Shaft Assembly LH With Brass Bar And Hammer
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE:

- Set the shaft snap ring with the opening facing down.
- Be careful not to damage the drive shaft dust cover, boot or oil seal.
- Move the drive shaft assembly while keeping it level.

2. INSTALL FRONT DRIVE SHAFT ASSEMBLY RH

- a. Install the front drive shaft assembly RH.
- b. Install the bearing bracket hole snap ring and a new bolt.

Torque: 32 N*m (330 kgf*cm, 24 ft.*lbf)

NOTE:

- Do not damage the boot or oil seal.
- Move the drive shaft assembly while keeping it level.

3. INSTALL FRONT AXLE ASSEMBLY

- a. Pull the front axle out of the vehicle to align the spline of the drive shaft with the front axle and insert the front axle.

NOTE:

- Do not pull the front axle further out of the vehicle than is necessary.
- Do not damage the outboard joint boot.

- Check for any foreign matter on the speed sensor rotor and insertion part.
- Do not damage the speed sensor rotor.

4. **INSTALL FRONT LOWER SUSPENSION ARM SUB-ASSEMBLY** . Refer to INSTALLATION - Step 7

5. **INSTALL TIE ROD ASSEMBLY**

- Connect the tie rod assembly to the steering knuckle with the nut.

Torque: 49 N*m (500 kgf*cm, 36 ft.*lbf)

- Install a new cotter pin.

NOTE: Further tighten the nut up to 60° if the holes for the cotter pin are not aligned.

6. **INSTALL FRONT SPEED SENSOR**

- Install the front speed sensor and front flexible hose with the bolt.

Torque: 19 N*m (192 kgf*cm, 14 ft.*lbf)

NOTE:

- Do not twist the front speed sensor when installing it.
- First install the speed sensor harness bracket, and then install the flexible hose bracket.

- Install the front speed sensor to the steering knuckle with the bolt.

Torque: 8.3 N*m (85 kgf*cm, 73 in.*lbf)

NOTE:

- 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.
- To prevent interference between the front speed sensor and magnetic rotor, do not rotate the front speed sensor body during or after the insertion of the front speed sensor body to the steering knuckle.

7. **INSTALL FRONT STABILIZER LINK ASSEMBLY** . Refer to INSTALLATION - Step 10

8. INSTALL FRONT AXLE SHAFT NUT

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

NOTE:

- Be sure to perform this work for a new drive shaft.
- Keep the threaded parts free of oil and foreign matter.

- b. Install the new front axle shaft nut.

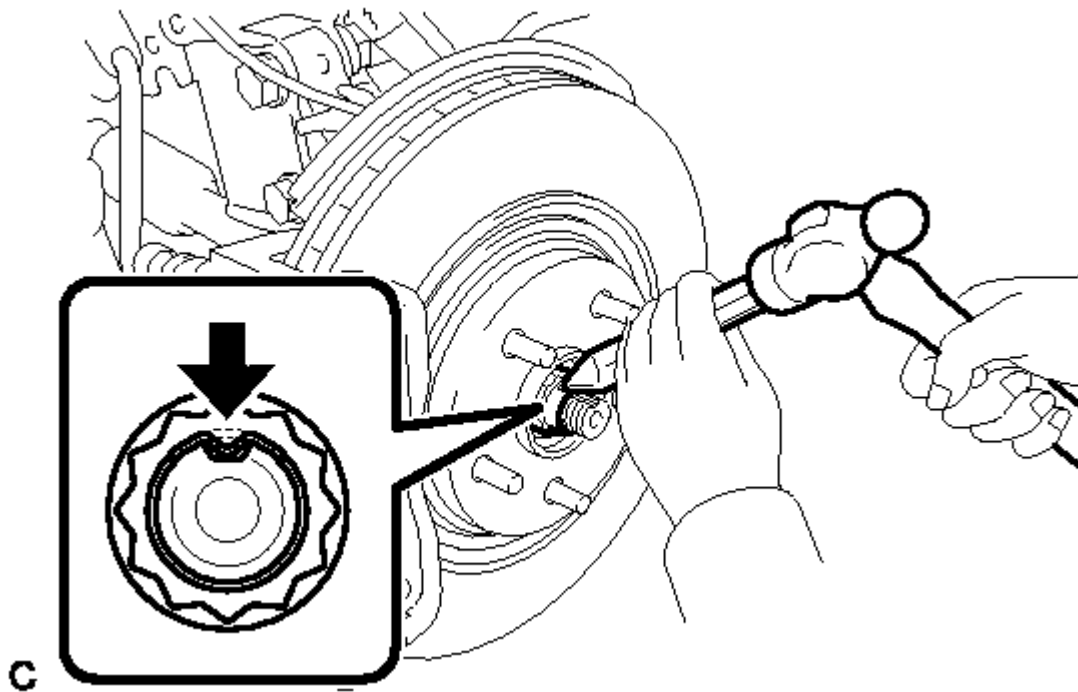


Fig. 51: Staking Front Axle Shaft Nut

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Torque: 294 N*m (2998 kgf*cm, 217 ft.*lbf)

- c. Using a chisel and hammer, stake the front axle shaft nut.

9. INSTALL FRONT WHEELS

Torque: 103 N*m (1050 kgf*cm, 76 ft.*lbf)

10. ADD AUTOMATIC TRANSAXLE FLUID

Refer to ADJUSTMENT

11. ADJUST FRONT WHEEL ALIGNMENT

Refer to ADJUSTMENT

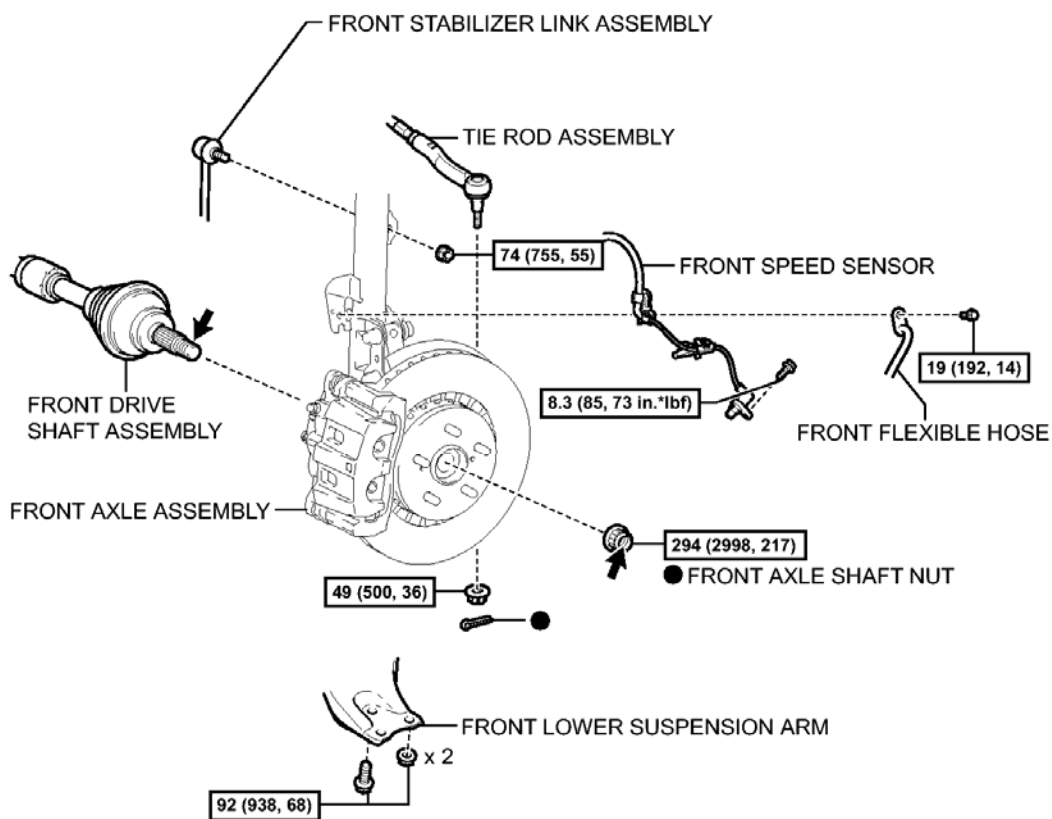
12. INSPECT SPEED SENSOR SIGNAL

Refer to TEST MODE PROCEDURE

FRONT DRIVE SHAFT ASSEMBLY (FOR 2GR-FE)

COMPONENTS

ILLUSTRATION



N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

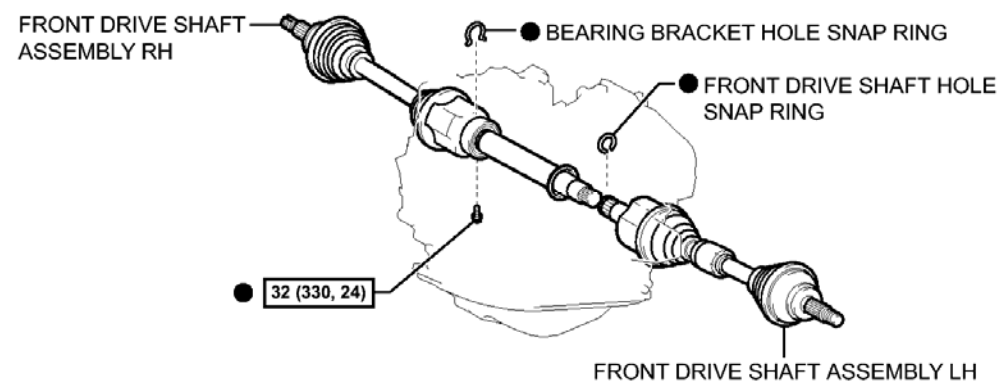
➡ Do not apply lubricants to the threaded parts

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Fig. 52: Front Drive Shaft Assembly Replacement Components With Torque Specifications (1 of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

for 2WD:



N*m (kgf*cm, ft*lbf) : Specified torque

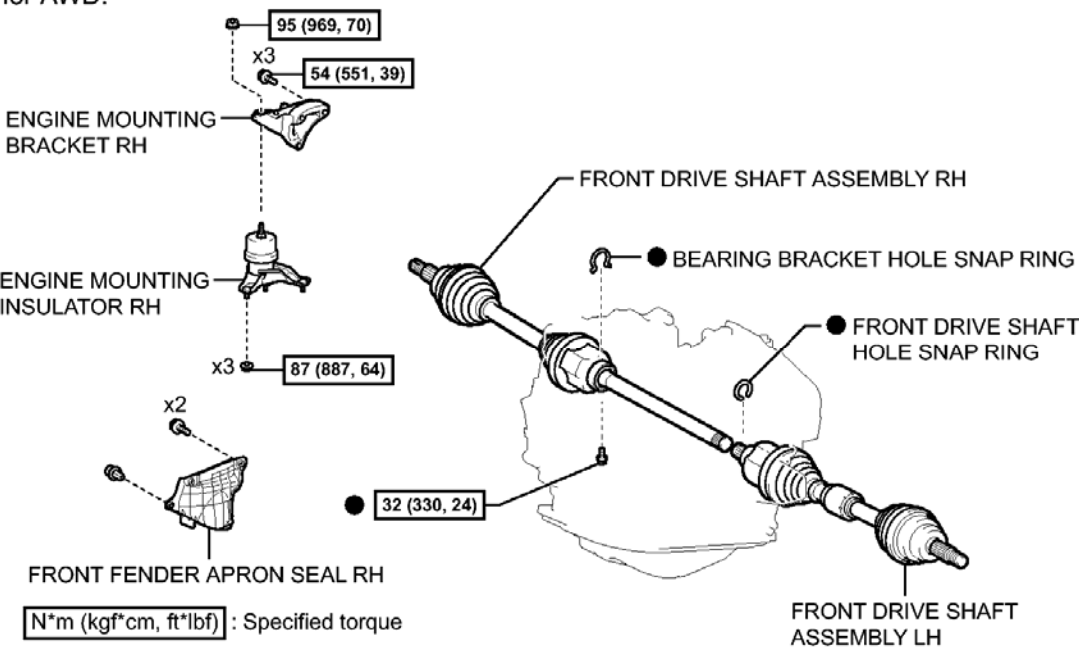
● Non-reusable part

c

Fig. 53: Front Drive Shaft Assembly Replacement Components With Torque Specifications (2 of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

for AWD:



N*m (kgf*cm, ft*lbf) : Specified torque

● Non-reusable part

c

Fig. 54: Front Drive Shaft Assembly Replacement Components With Torque Specifications (3 of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

for LH Side:

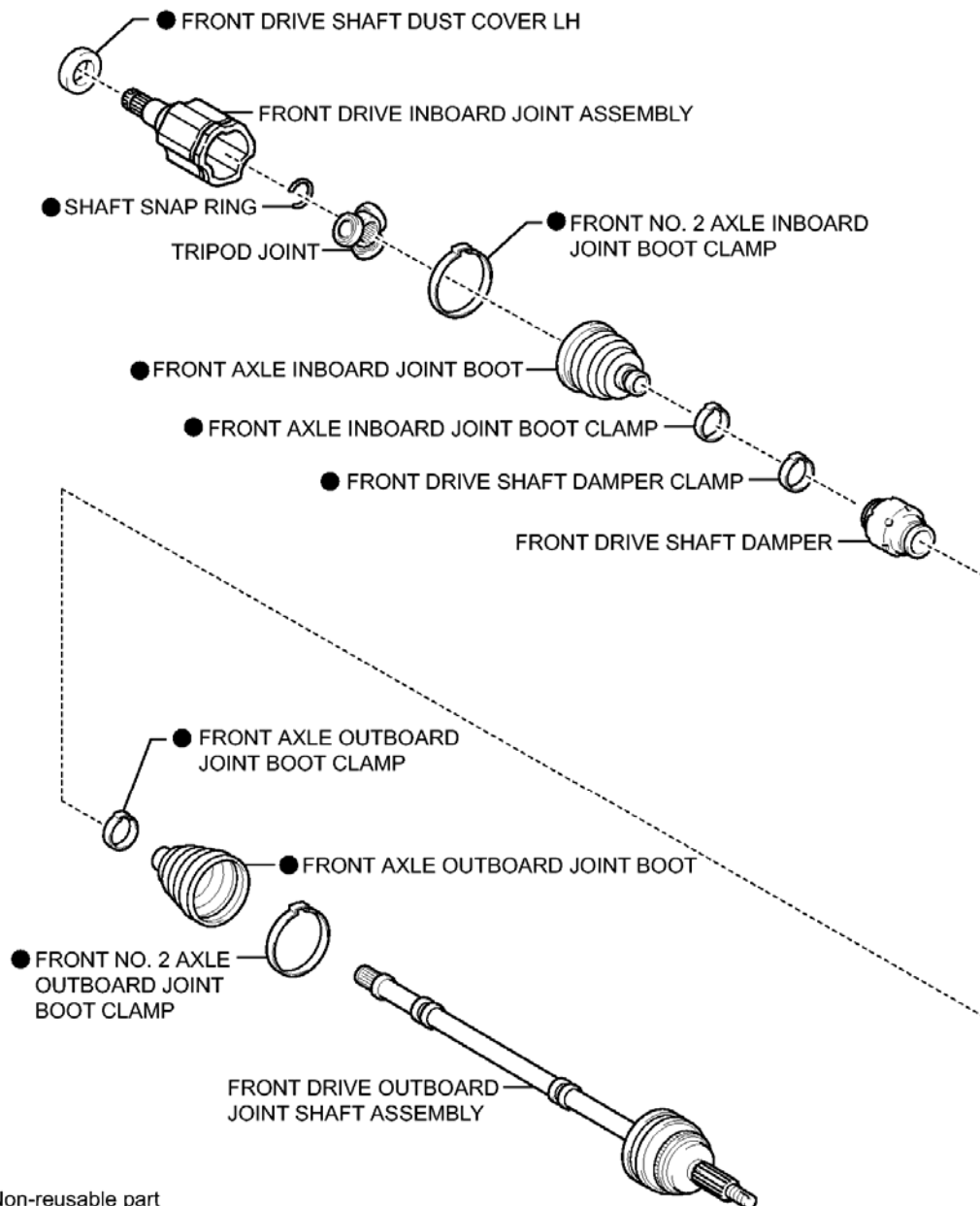


Fig. 55: Exploded View Of Front Drive Shaft Assembly Replacement Components (1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

for RH Side:

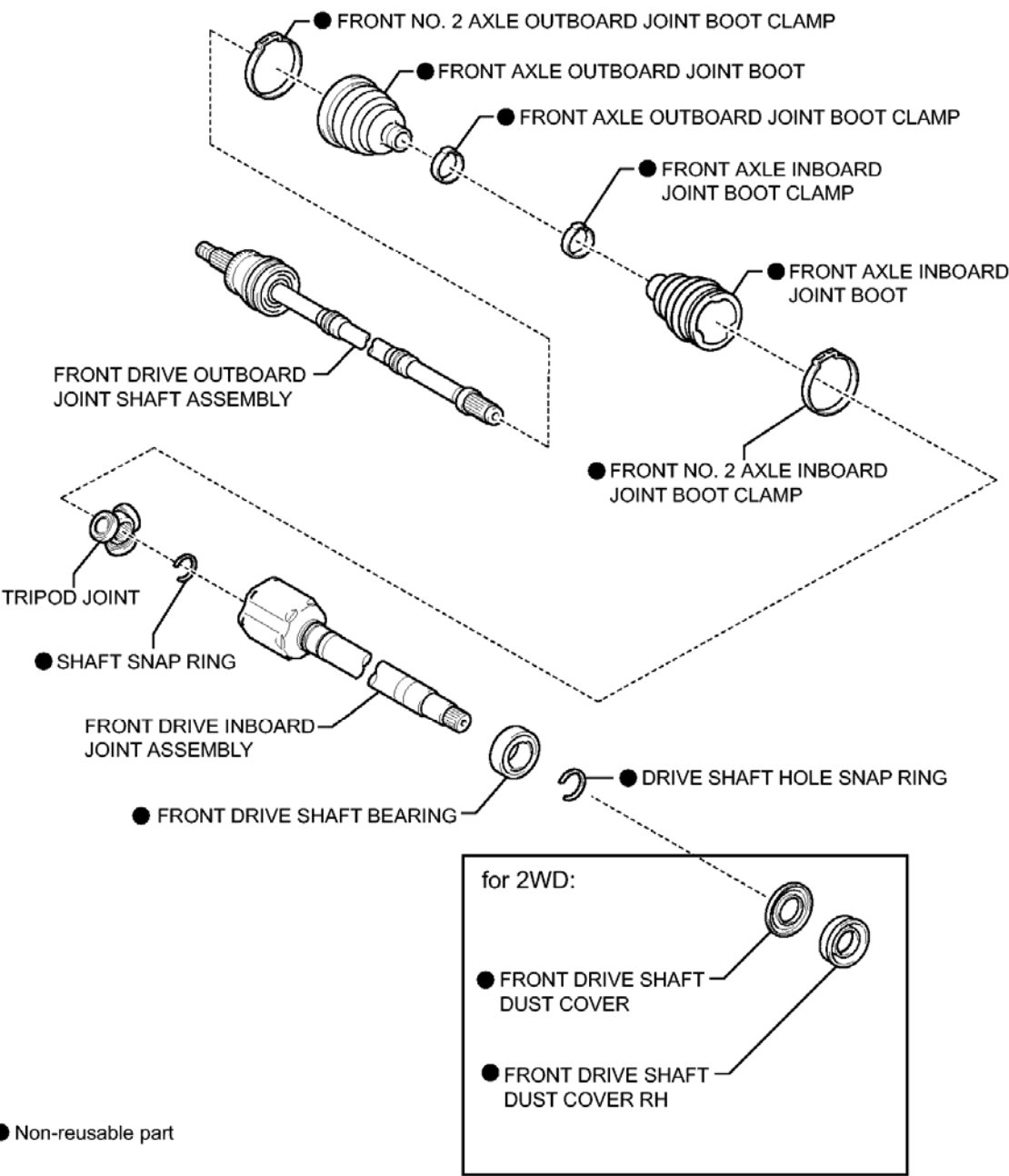


Fig. 56: Exploded View Of Front Drive Shaft Assembly Replacement Components (2 of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

REMOVAL

1. PRECAUTION (for AWD)

Refer to drive shaft system precaution. Refer to **PRECAUTION** .

2. DRAIN AUTOMATIC TRANSAXLE FLUID (for 2WD) . Refer to **REPLACEMENT - Step 1**

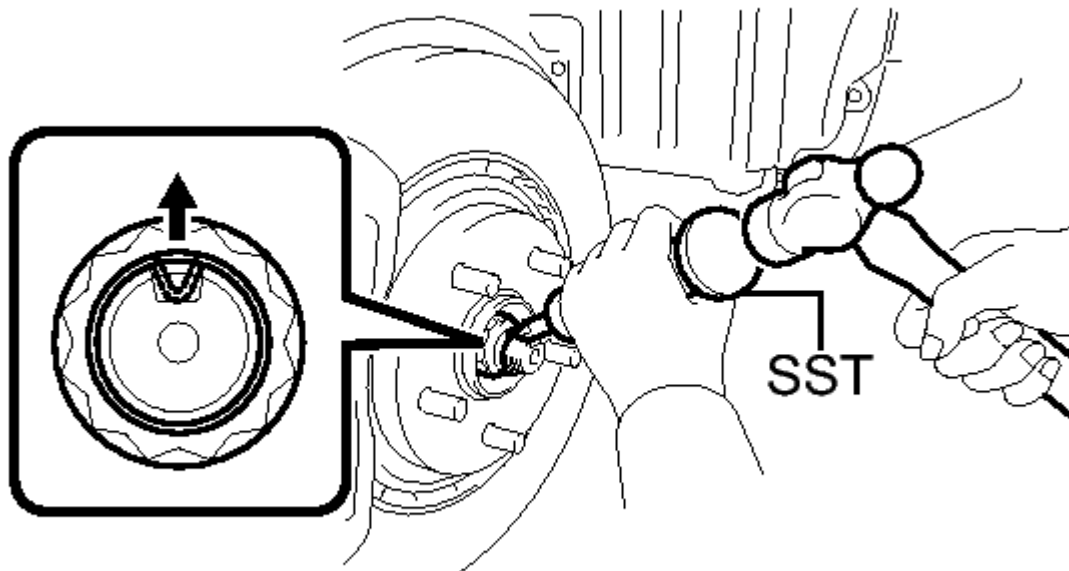
3. DRAIN AUTOMATIC TRANSAXLE FLUID (for AWD) . Refer to **REPLACEMENT - Step 1**

4. DRAIN TRANSFER OIL (for AWD) . Refer to **REPLACEMENT - Step 1**

5. REMOVE FRONT WHEELS

6. REMOVE FRONT AXLE SHAFT NUT

- a. Using SST and a hammer, release the staked part of the front axle shaft nut.



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Fig. 57: Identifying Staked Part Of Front Axle Shaft Nut LH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09930-00010

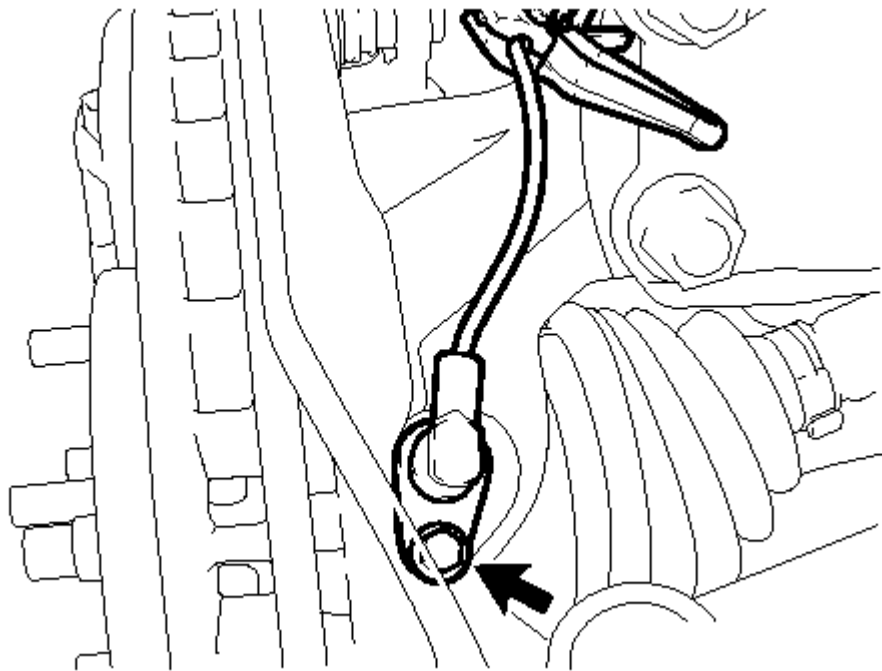
NOTE: Loosen the staked part of the nut completely, otherwise the threads of the drive shaft may be damaged.

- b. While applying the brakes, remove the front axle shaft nut.

7. SEPARATE FRONT STABILIZER LINK ASSEMBLY . Refer to **REMOVAL - Step 12**

8. SEPARATE FRONT SPEED SENSOR

- a. Remove the bolt and separate the front speed sensor from the steering knuckle.

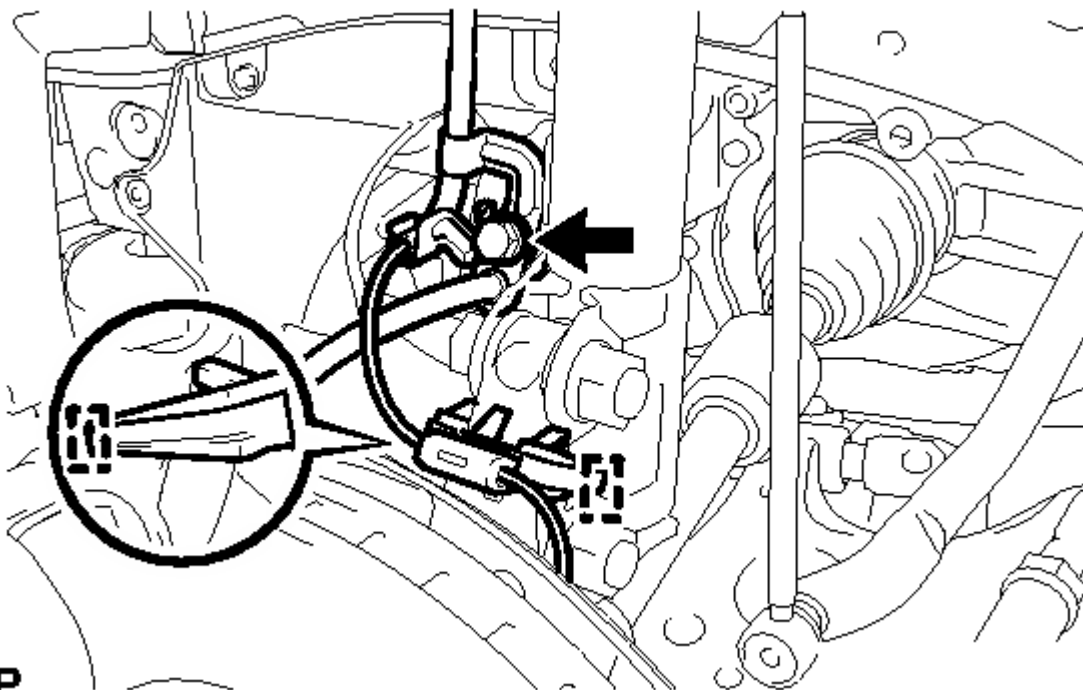


C

Fig. 58: Identifying Front Speed Sensor Bolt

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Remove the bolt and 2 clamps, and separate the front speed sensor and front flexible hose.



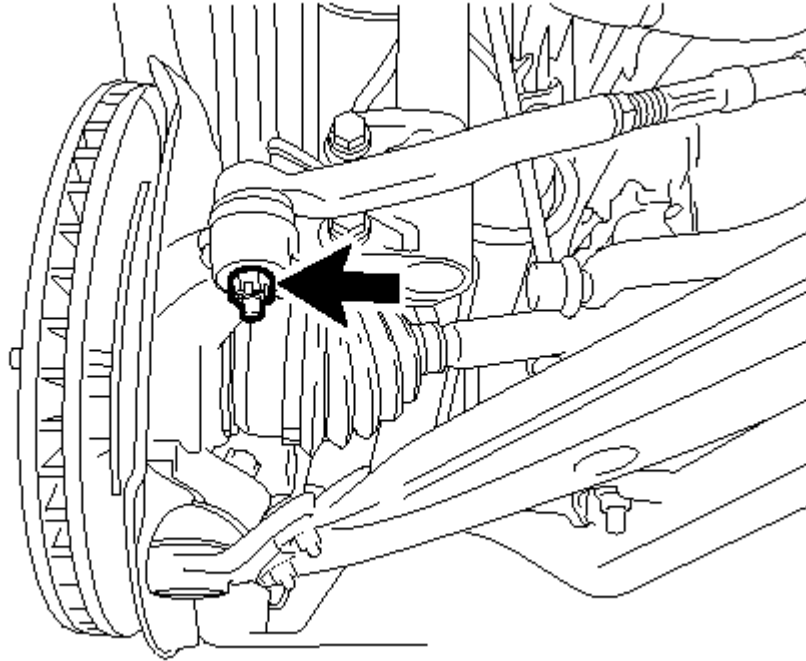
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Fig. 59: Identifying Front Speed Sensor, Flexible Hose & Fasteners

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. SEPARATE TIE ROD ASSEMBLY

- a. Remove the cotter pin and nut.



C

Fig. 60: Identifying Cotter Pin And Nut

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Install SST to the tie rod end.

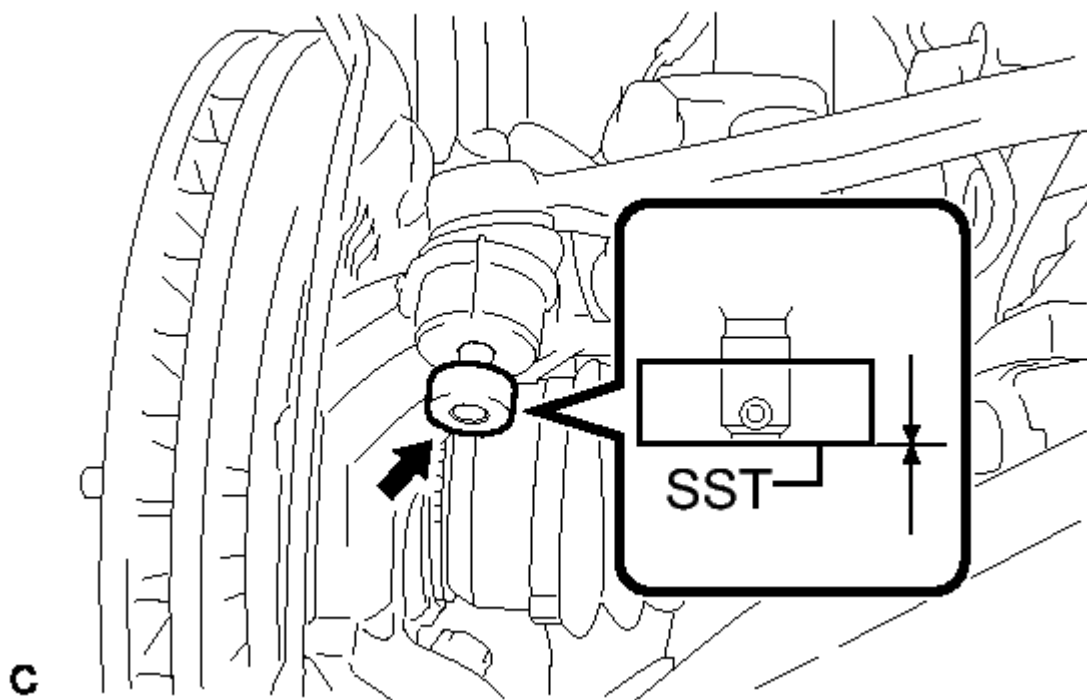


Fig. 61: Identifying SST & Tie Rod End

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09960-20010
09961-02060

NOTE: Make sure that the upper ends of the tie rod end and SST are aligned.

c. Using SST, separate the tie rod end from the steering knuckle.

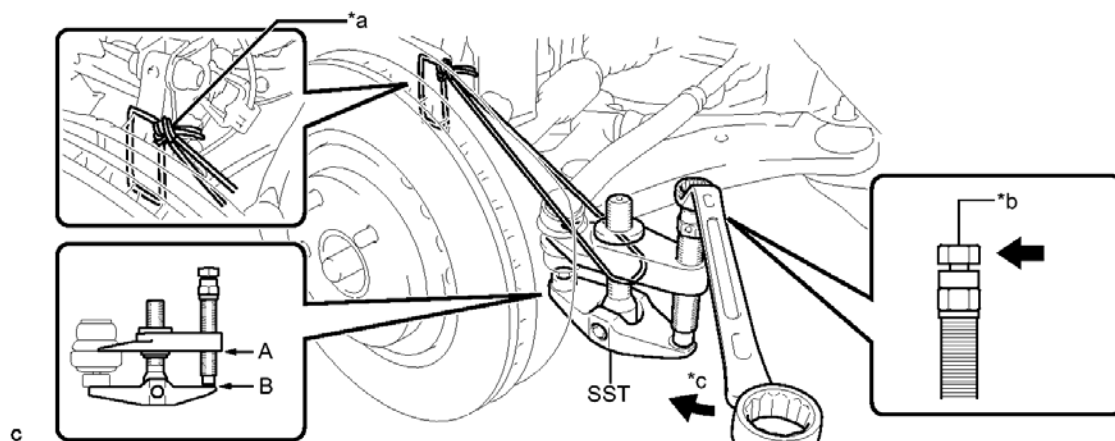


Fig. 62: Removing/Installing Tie Rod End At Steering Knuckle Using SST

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION



*a	Tie the string without allowing for any slack.	*b	Place the wrench here.
*c	Turn	-	-

- SST: 09960-20010

NOTE:

- Apply grease to the threads and end of the SST bolt.
- When securing SST to the steering knuckle, be sure to tighten SST using a string to prevent it from falling.
- Install SST so that A and B are parallel.
- Be sure to place a wrench on the part indicated in the illustration.
- Do not damage the front disc brake dust cover.
- Do not damage the ball joint dust cover.
- Do not damage the steering knuckle.

10. **SEPARATE FRONT LOWER SUSPENSION ARM** . Refer to **REMOVAL - Step 9**

11. **SEPARATE FRONT AXLE ASSEMBLY**

- Put matchmarks on the front drive shaft assembly and front axle hub sub-assembly.

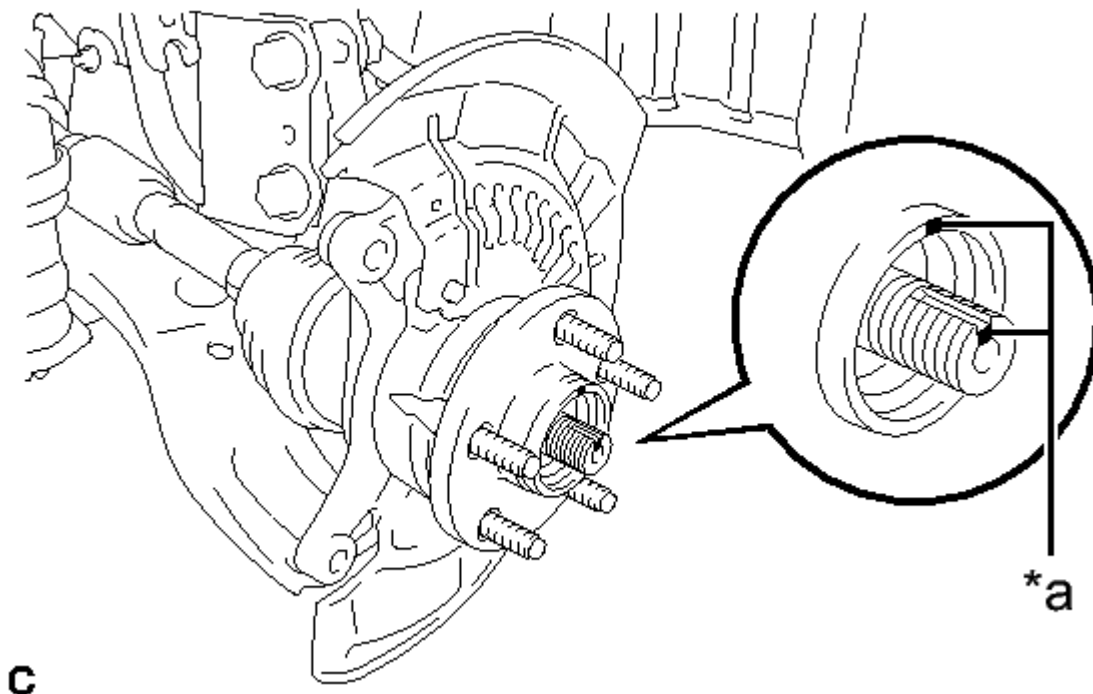
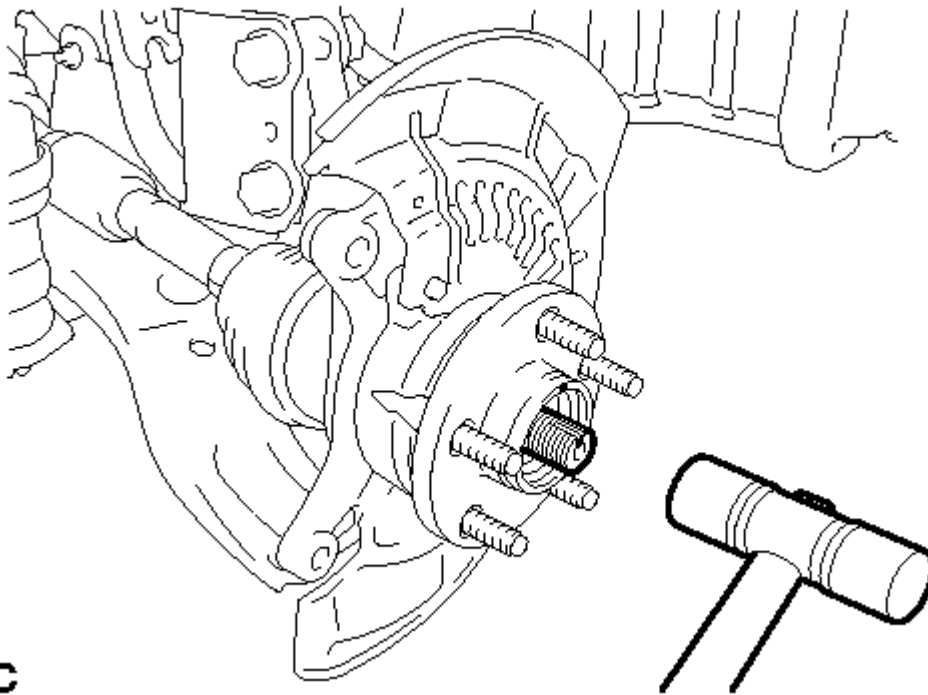


Fig. 63: Identifying Front Drive Shaft Assembly & Front Axle Hub Sub-Assembly Matchmarks

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

*a Matchmarks

- b. Using a plastic hammer, tap the end of the drive shaft and disengage the fitting between the drive shaft and front axle.



C

Fig. 64: Separating Front Drive Shaft Assembly From Front Axle Assembly

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

If it is difficult to disengage the fitting, tap the end of the drive shaft with a brass bar and hammer.

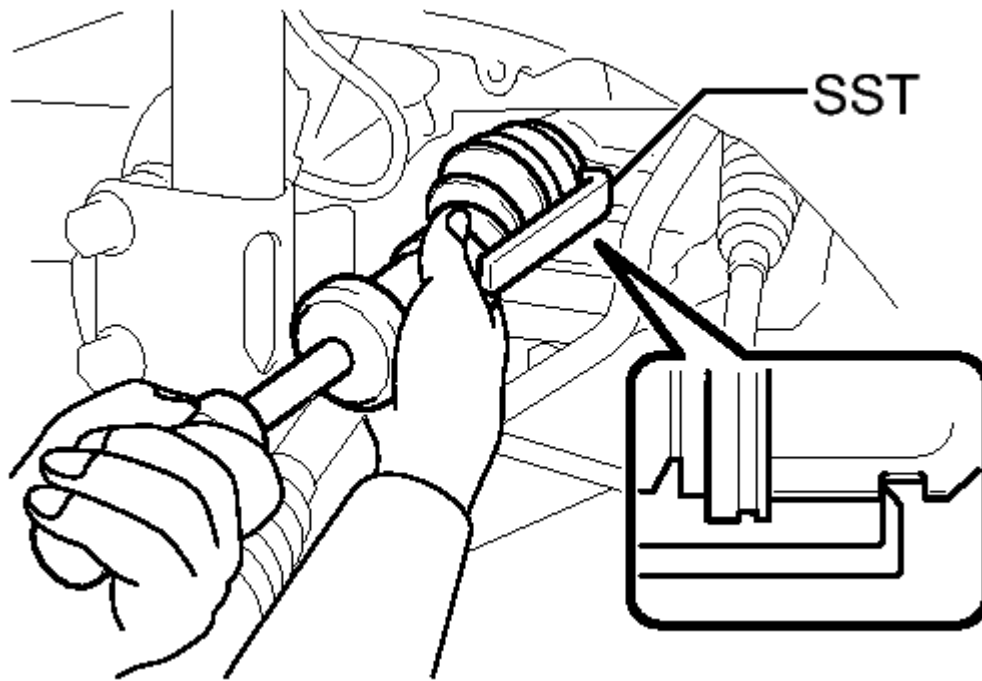
- c. Pull the front axle out of the vehicle to remove the drive shaft from the front axle.

NOTE:

- Do not pull the front axle further out of the vehicle than is necessary.
- Do not damage the outboard joint boot.
- Do not damage the speed sensor rotor.
- Suspend the drive shaft with a piece of string or the equivalent.

12. REMOVE FRONT DRIVE SHAFT ASSEMBLY LH

- a. Using SST, remove the front drive shaft assembly LH.



C
Fig. 65: Removing Front Drive Shaft Assembly LH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09520-01010
- SST: 09520-24010
- 09520-32040

NOTE:

- Be careful not to damage the drive shaft dust cover, inboard joint boot or oil seal.
- Be careful not to drop the drive shaft assembly.

13. **REMOVE FRONT FENDER APRON SEAL RH (for AWD)**
14. **REMOVE ENGINE MOUNTING BRACKET RH (for AWD)**
 - a. Support the engine assembly with a transmission jack.
 - b. Remove the nut.

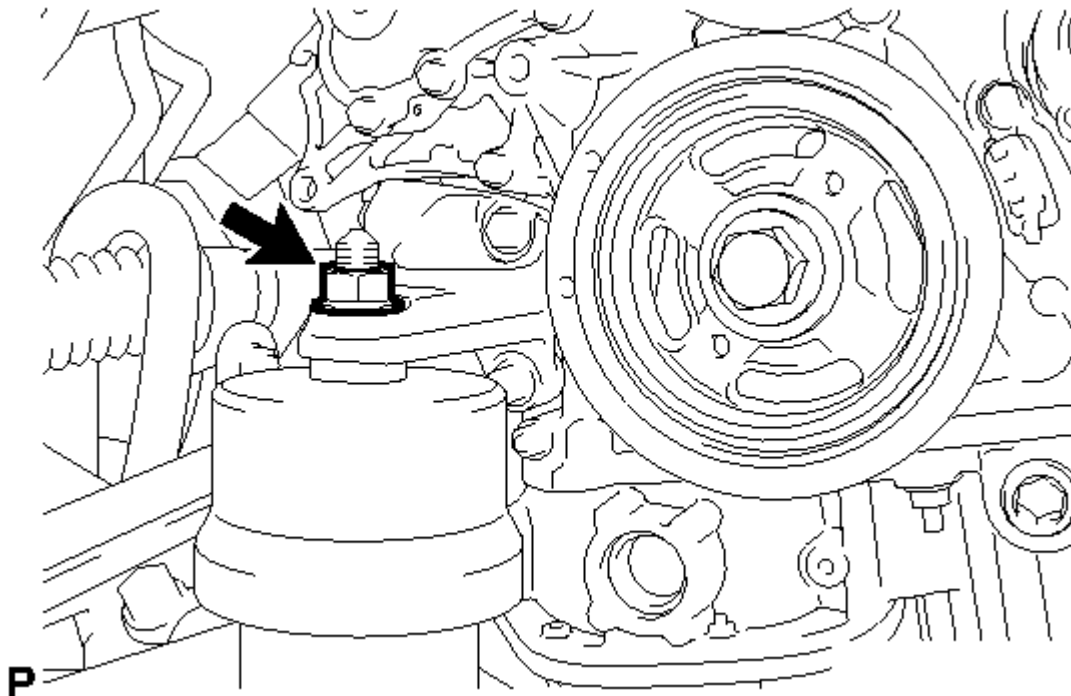


Fig. 66: Identifying Engine Mounting Bracket RH Nut
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Remove the 3 bolts and remove the engine mounting bracket RH from the engine assembly.

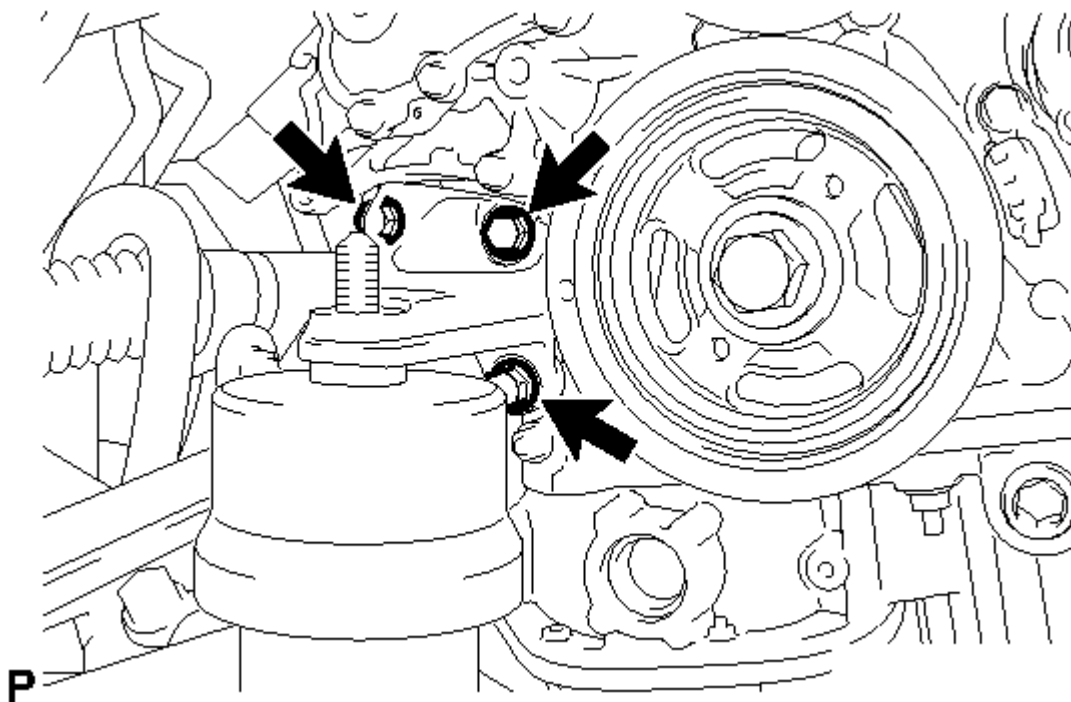


Fig. 67: Identifying Engine Mounting Bracket RH Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

15. REMOVE ENGINE MOUNTING INSULATOR RH (for AWD)

- a. Remove the 2 hole plugs.
- b. Remove the 3 nuts and remove the engine mounting insulator RH.

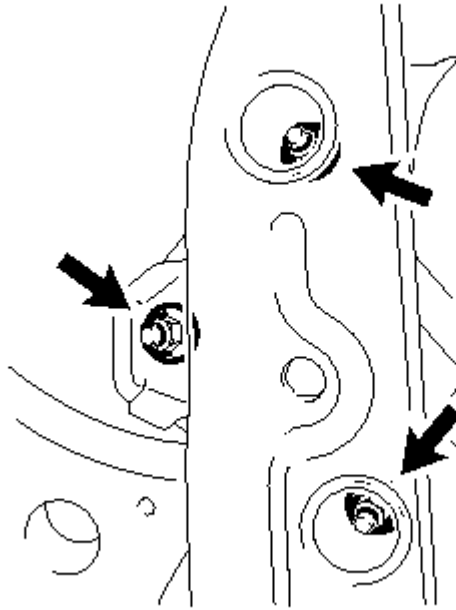


Fig. 68: Identifying Nuts And Engine Mounting Insulator RH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

16. REMOVE FRONT DRIVE SHAFT ASSEMBLY RH

- a. Remove the bearing bracket hole snap ring from the drive shaft bearing bracket.

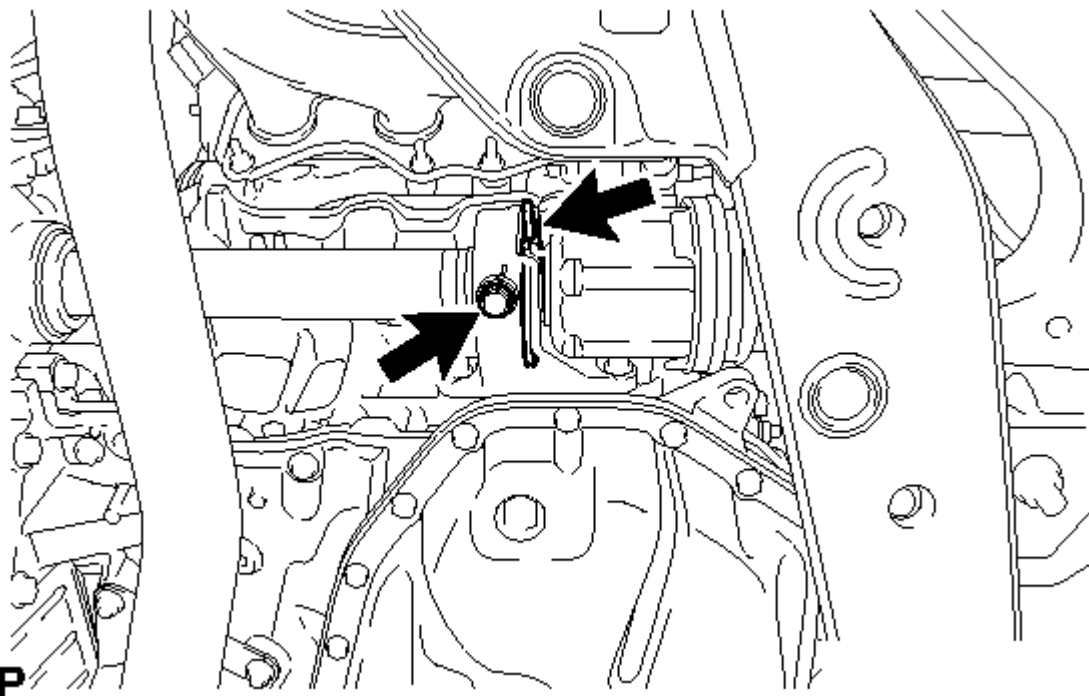


Fig. 69: Identifying Bearing Bracket Hole Snap Ring & Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Remove the bolt and front drive shaft assembly RH from the drive shaft bearing bracket.

NOTE:

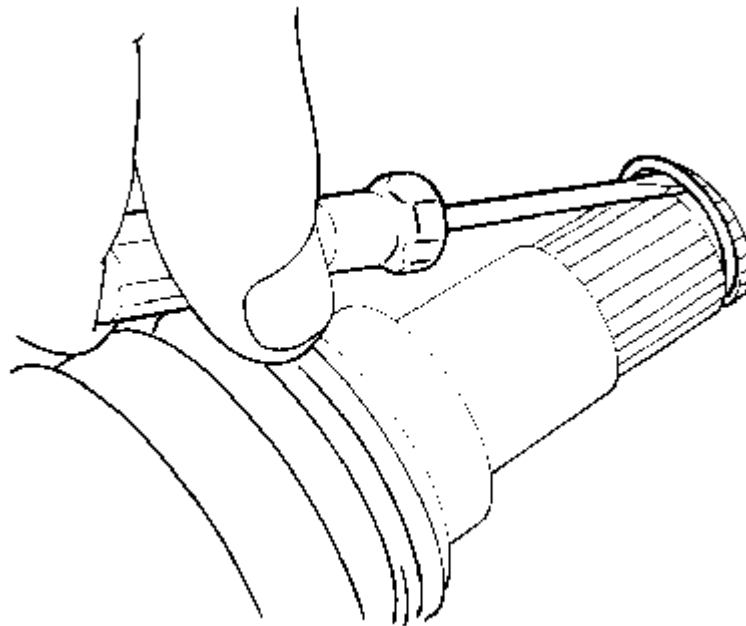
- Be careful not to damage the inboard joint boot or oil seal.
- Be careful not to drop the drive shaft assembly.

DISASSEMBLY

DISASSEMBLY

1. REMOVE FRONT DRIVE SHAFT HOLE SNAP RING (for LH Side)

- a. Using a screwdriver, remove the front drive shaft hole snap ring.



T

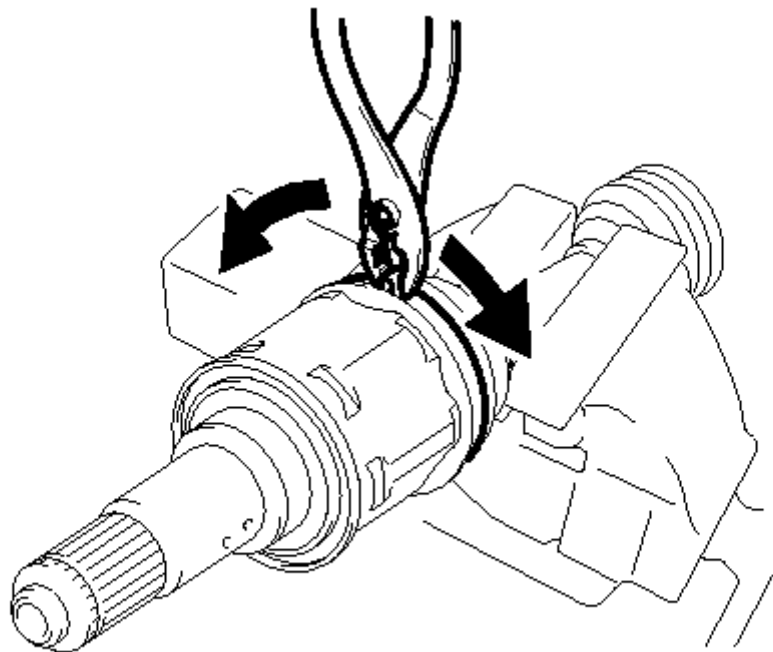
C57543

Fig. 70: Removing Snap Ring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. REMOVE FRONT NO. 2 AXLE INBOARD JOINT BOOT CLAMP

- a. Using pliers, remove the front No. 2 axle inboard joint boot clamp as shown in the illustration.



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Fig. 71: Removing Inboard Joint Boot No. 2 Clamp

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. REMOVE FRONT AXLE INBOARD JOINT BOOT CLAMP

- a. Remove the front axle inboard joint boot clamp.

HINT:

Perform the same procedure as for the front No. 2 axle inboard joint boot clamp.

4. SEPARATE FRONT AXLE INBOARD JOINT BOOT

- a. Separate the front axle inboard joint boot from the front drive inboard joint assembly.

5. REMOVE FRONT DRIVE INBOARD JOINT ASSEMBLY

- a. Remove the grease from the front drive inboard joint assembly.
- b. Put matchmarks on the front drive inboard joint assembly and front drive outboard joint shaft assembly.

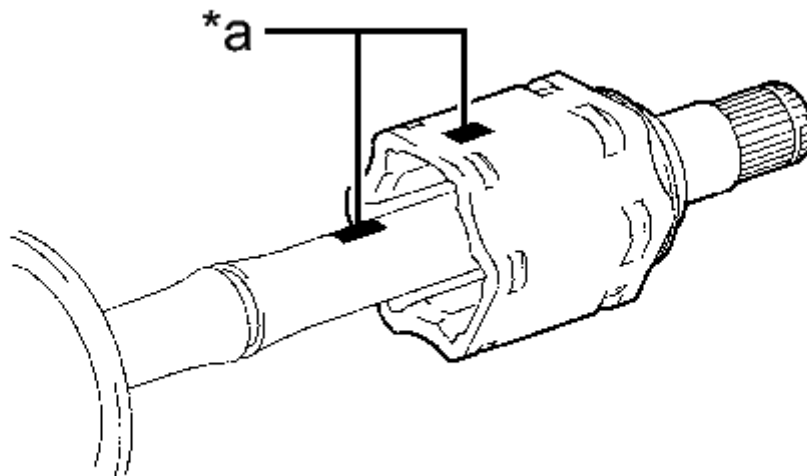


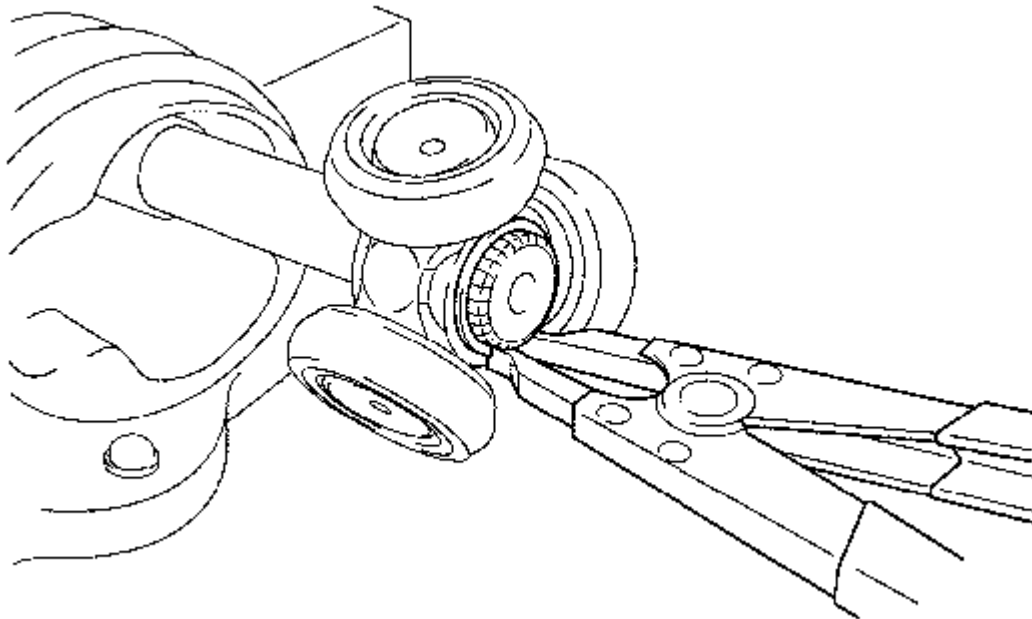
Fig. 72: Identifying Front Drive Inboard & Outboard Joint Shaft Assembly Matchmarks
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a Matchmark

NOTE: Do not use a punch for the marks.

- c. Remove the front drive inboard joint assembly from the front drive outboard joint shaft assembly.
- d. Using a snap ring expander, remove the shaft snap ring.



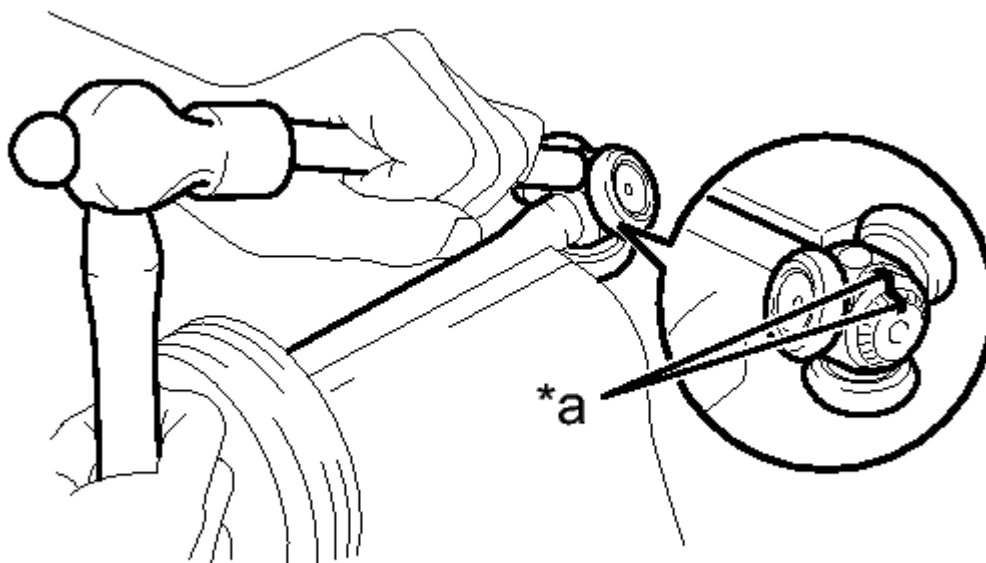
P C67414

F45046

Fig. 73: Identifying Snap Ring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- e. Put matchmarks on the outboard joint shaft and tripod joint.



C

Fig. 74: Removing Tripod Joint At Front Drive Outboard Joint Shaft Assembly Using A Brass Bar & Hammer

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

***a Matchmark**

NOTE: Do not use a punch for the marks.

- f. Using a brass bar and a hammer, remove the tripod joint from the front drive outboard joint shaft assembly.

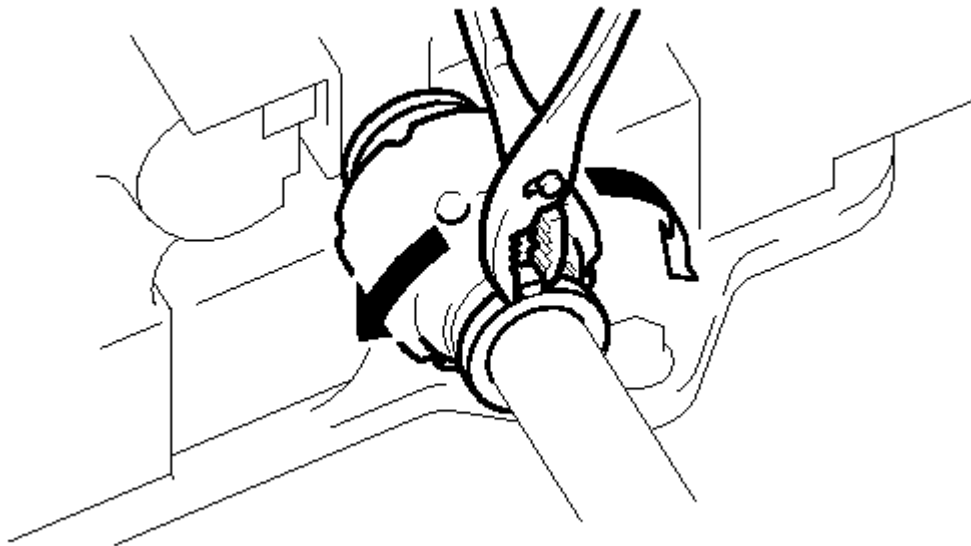
NOTE: Do not tap the roller.

6. REMOVE FRONT AXLE INBOARD JOINT BOOT

- a. Remove the front axle inboard joint boot from the front drive outboard joint shaft assembly.

7. REMOVE FRONT DRIVE SHAFT DAMPER (for LH Side)

- a. Using pliers, remove the front drive shaft damper clamp as shown in the illustration.



C

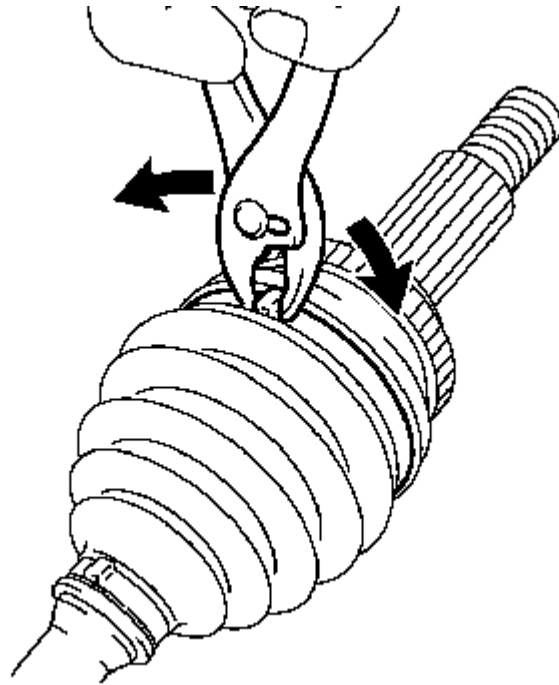
Fig. 75: Removing Front Drive Shaft Damper Clamp

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Remove the front drive shaft damper.

8. REMOVE FRONT NO. 2 AXLE OUTBOARD JOINT BOOT CLAMP

- a. Using pliers, remove the front No. 2 axle outboard joint boot clamp as shown in the illustration.



T

Fig. 76: Removing No. 2 Front Axle Outboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. REMOVE FRONT AXLE OUTBOARD JOINT BOOT CLAMP

- a. Remove the front axle outboard joint boot clamp.

HINT:

Perform the same procedure as for the front No. 2 axle outboard joint boot clamp.

10. REMOVE FRONT AXLE OUTBOARD JOINT BOOT

- a. Remove the front axle outboard joint boot from the front drive outboard joint shaft assembly.
- b. Remove the grease from the front drive outboard joint.

11. REMOVE FRONT DRIVE SHAFT DUST COVER LH (for LH Side)

- a. Using SST and a press, remove the front drive shaft dust cover LH.

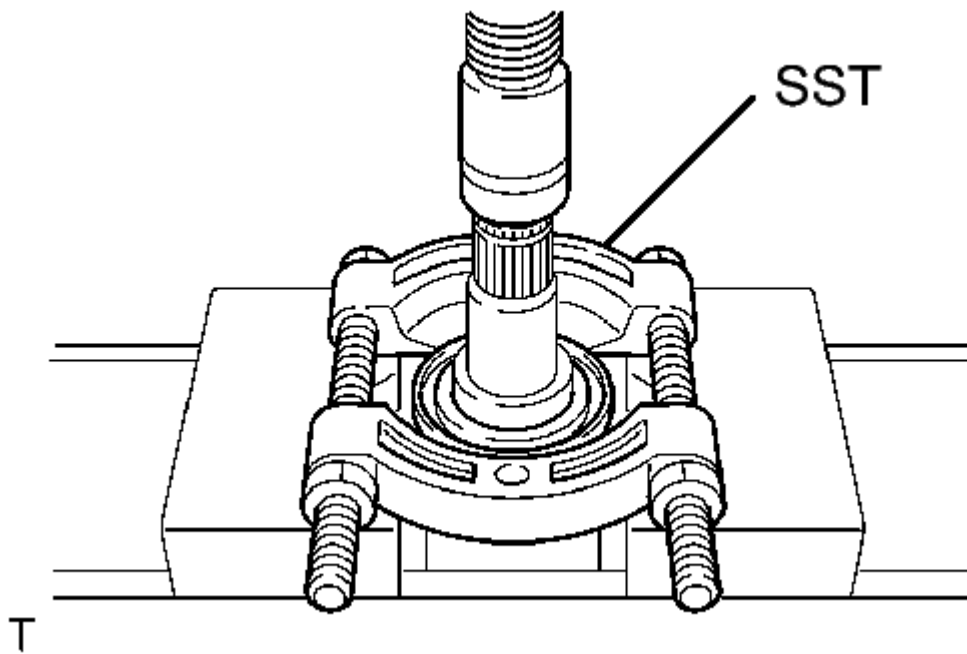
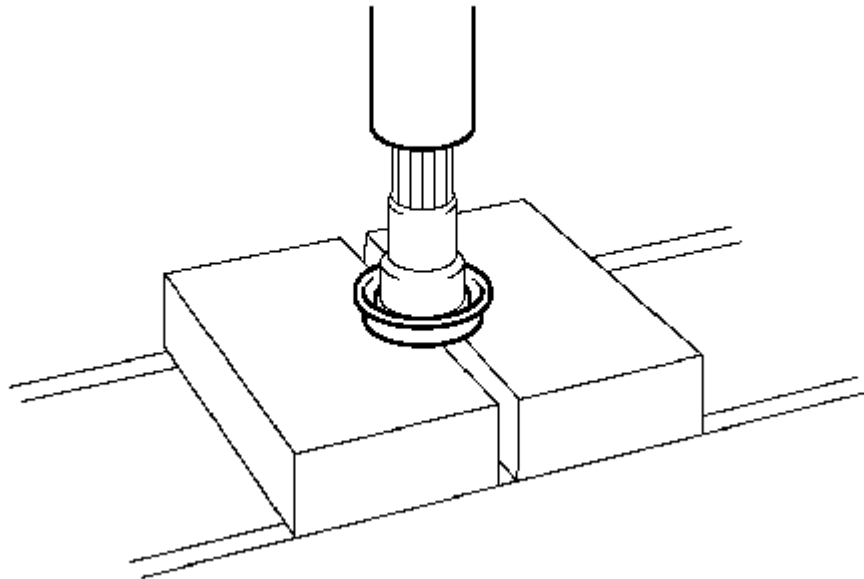


Fig. 77: Pressing Drive Shaft Dust Cover Off LH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09950-00020

NOTE: Be careful not to drop the front drive inboard joint assembly.

12. **REMOVE FRONT DRIVE SHAFT DUST COVER RH (for 2WD RH Side)**
 - a. Using a press, remove the front drive shaft dust cover RH.



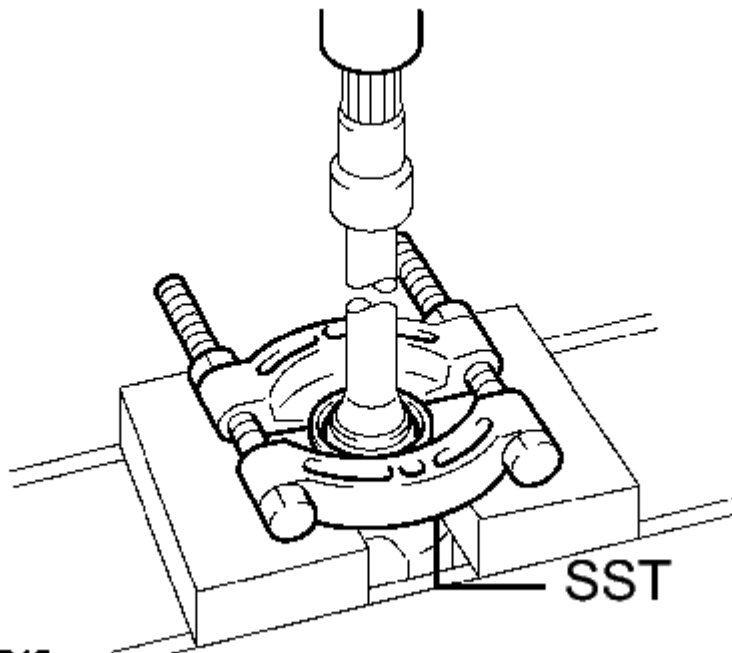
T

Fig. 78: Removing Drive Shaft Dust Cover Off RH
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE: Be careful not to drop the front drive inboard joint assembly.

13. REMOVE FRONT DRIVE SHAFT DUST COVER (for 2WD RH Side)

- a. Using SST and a press, remove the front drive shaft dust cover.



T C68342

Fig. 79: Removing Drive Shaft Dust Cover

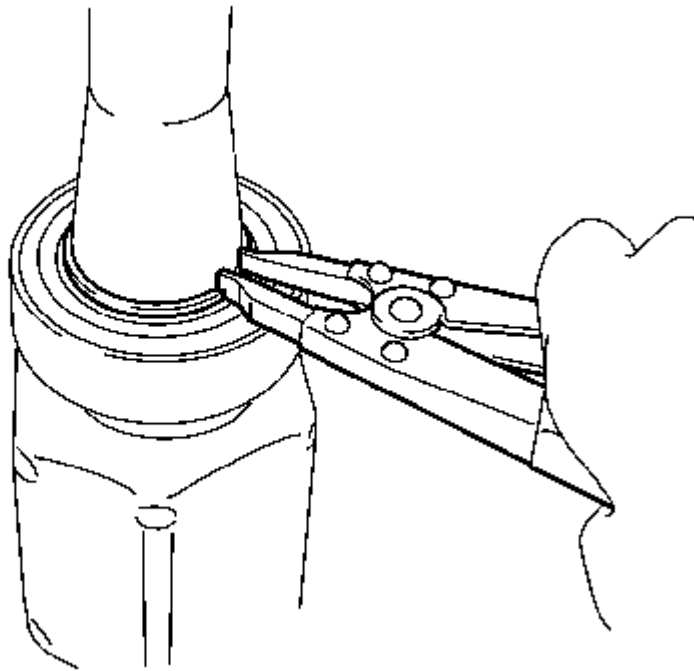
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09950-00020

NOTE: Be careful not to drop the front drive inboard joint assembly.

14. REMOVE FRONT DRIVE SHAFT BEARING (for RH Side)

- Using a snap ring expander, remove the drive shaft hole snap ring.



T C66605

Fig. 80: Removing Drive Shaft Hole Snap Ring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Using SST and a press, remove the front drive shaft bearing.

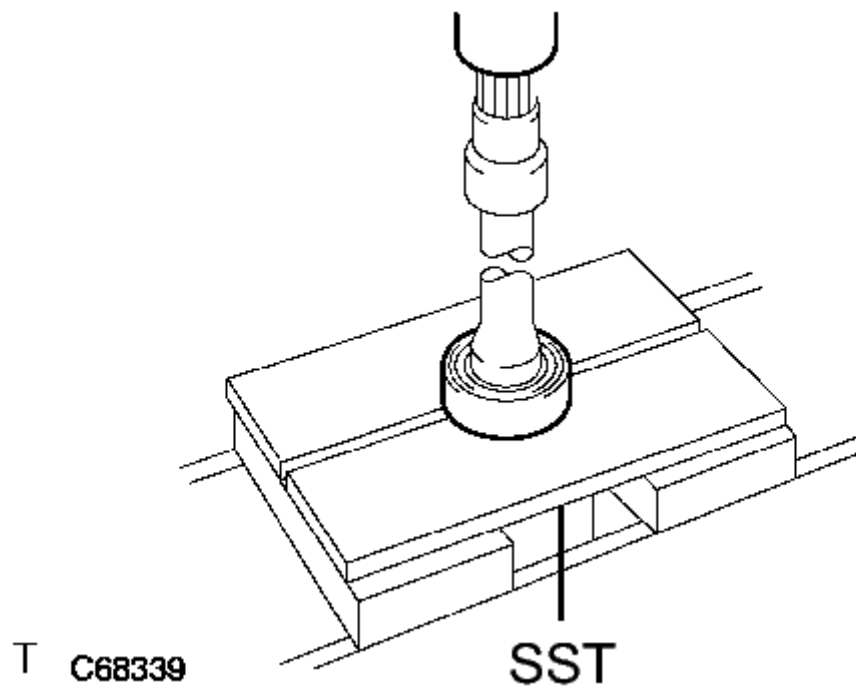


Fig. 81: Removing Bearing

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09527-10011

NOTE: Be careful not to drop the front drive inboard joint assembly.

15. REMOVE BEARING BRACKET HOLE SNAP RING (for RH Side)

- Remove the bearing bracket hole snap ring.

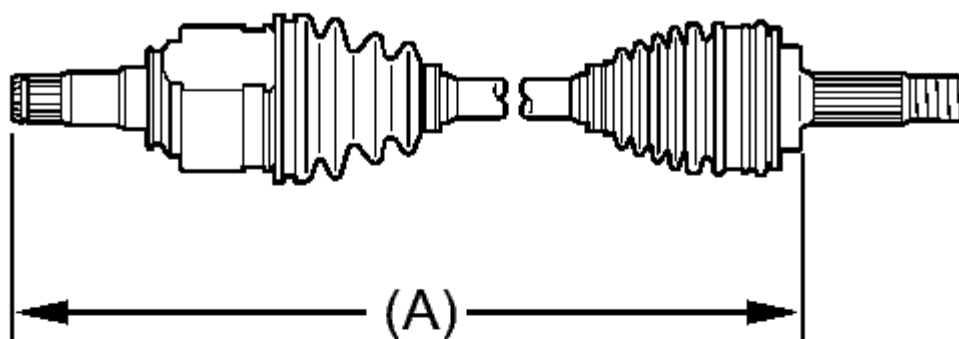
INSPECTION

INSPECTION

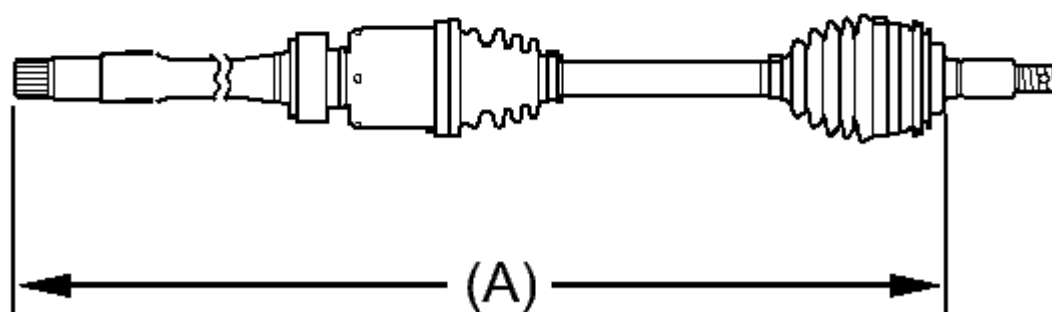
1. INSPECT FRONT DRIVE SHAFT ASSEMBLY

- Check whether the drive shaft dimensions are within the following specifications.

*a



*b



T

Fig. 82: Inspecting Drive Shaft Assembly Dimensions
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

LH

*a	Side:
*b	RH Side:

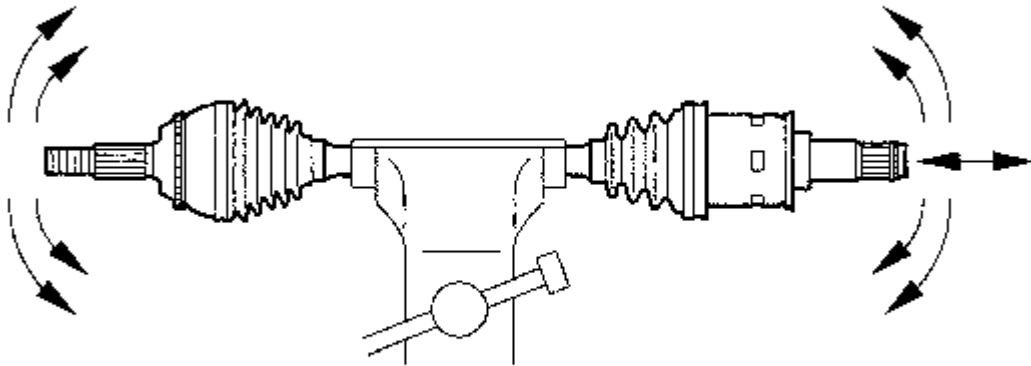
HINT:

The following table shows the dimension (A) of the drive shaft.

Dimension (A)

Drive Type	LH Side	RH Side
for 2WD	650.5 mm (2.13 ft.)	971.7 mm (3.187 ft.)
for AWD	650.5 mm (2.13 ft.)	973.1 mm (3.191 ft.)

- b. Check that there is no excessive play in the outboard joint.



P

Fig. 83: Inspecting Front Drive Shaft Assembly
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Check that the inboard joint slides smoothly in the thrust direction.
- d. Check that there is no excessive play in the radial direction of the inboard joint and outboard joint.
- e. Check the boots for damage.

REASSEMBLY

REASSEMBLY

1. **INSTALL BEARING BRACKET HOLE SNAP RING (for RH Side)**
 - a. Install a new bearing bracket hole snap ring to the front drive shaft assembly RH.
2. **INSTALL FRONT DRIVE SHAFT BEARING (for RH Side)**
 - a. Using SST, install a new front drive shaft bearing.

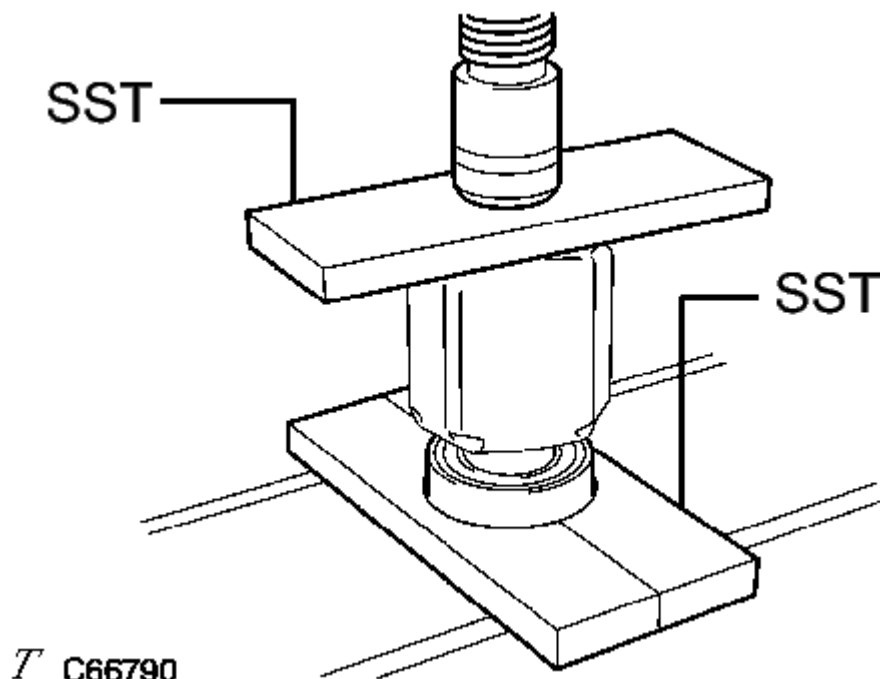
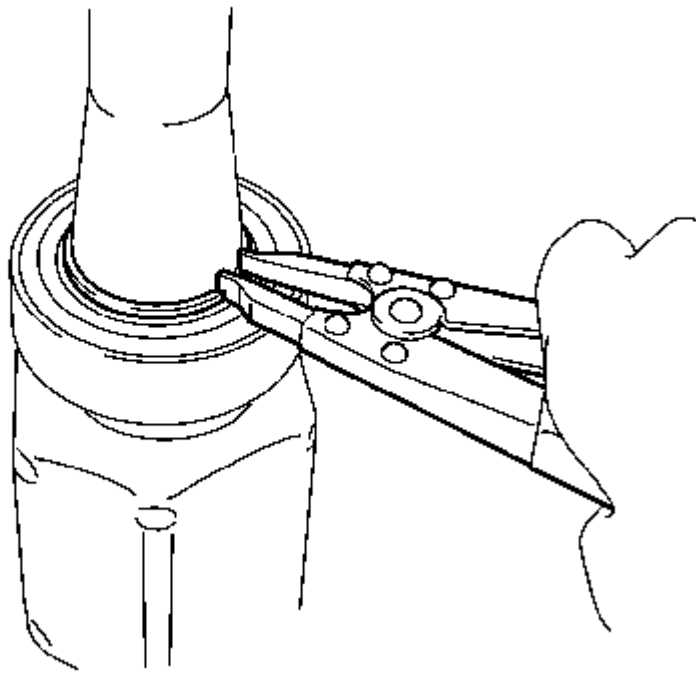


Fig. 84: Installing Front Drive Shaft Bearing Using SST
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09527-10011
- SST: 09527-30010

NOTE: The bearing should be completely installed.

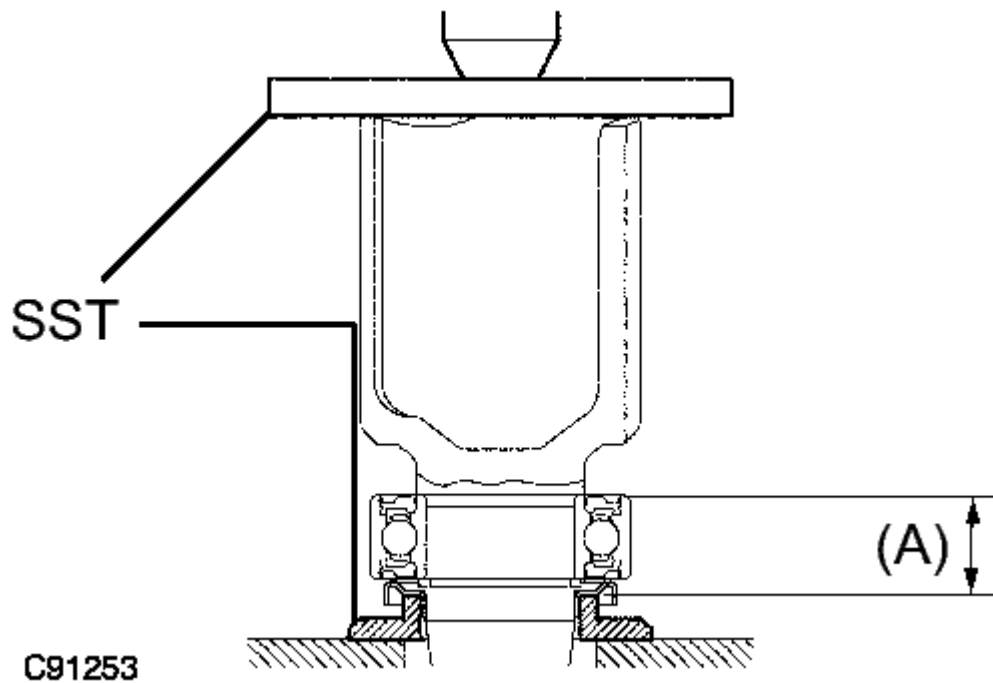
- b. Using a snap ring expander, install a new drive shaft hole snap ring.



T C66605

Fig. 85: Installing Drive Shaft Hole Snap Ring
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **INSTALL FRONT DRIVE SHAFT DUST COVER (for 2WD RH Side)**
 - a. Using SST and a press, install a new front drive shaft dust cover.



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Fig. 86: Installing Front Drive Shaft Dust Cover, SST & Press
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09527-10011
- SST: 09726-40010

Distance (A)

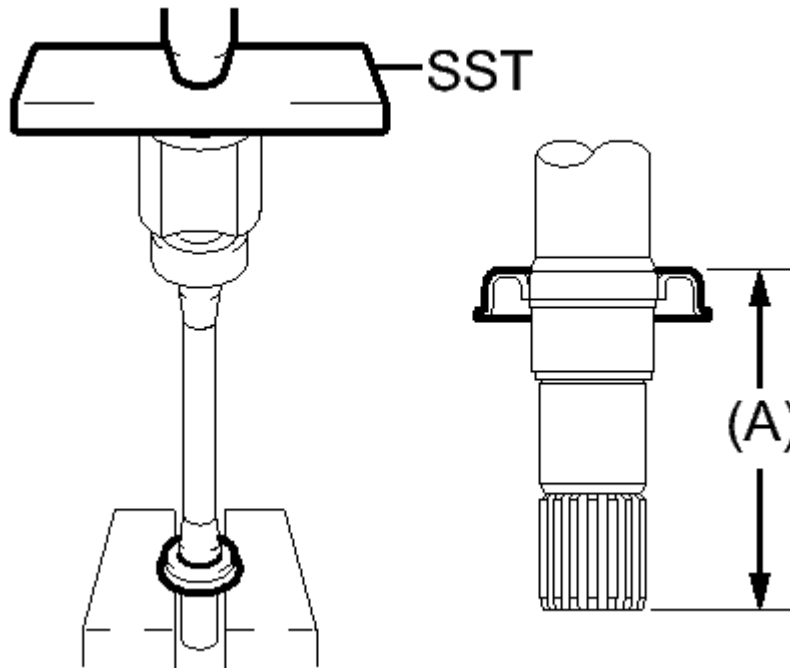
26.6 to 27.6 mm (1.05 to 1.09 in.)

NOTE:

- The front drive shaft dust cover should be completely installed.
- Be careful not to damage the front drive shaft dust cover.

4. INSTALL FRONT DRIVE SHAFT DUST COVER RH (for 2WD RH Side)

- Using SST and a press, install a new front drive shaft dust cover RH until the distance (A) from the tip of the center drive shaft to the front drive shaft dust cover RH meets the specification.



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Fig. 87: Identifying Front Drive Shaft Dust Cover (For RH Side)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09527-10011

Distance (A)

110 to 111 mm (4.33 to 4.37 in.)

NOTE:

- The front drive shaft dust cover RH should be completely installed.

- Be careful not to damage the front drive shaft dust cover RH.

5. **INSTALL FRONT DRIVE SHAFT DUST COVER LH (for LH Side)**

- a. Using SST and a press, install a new front drive shaft dust cover LH.

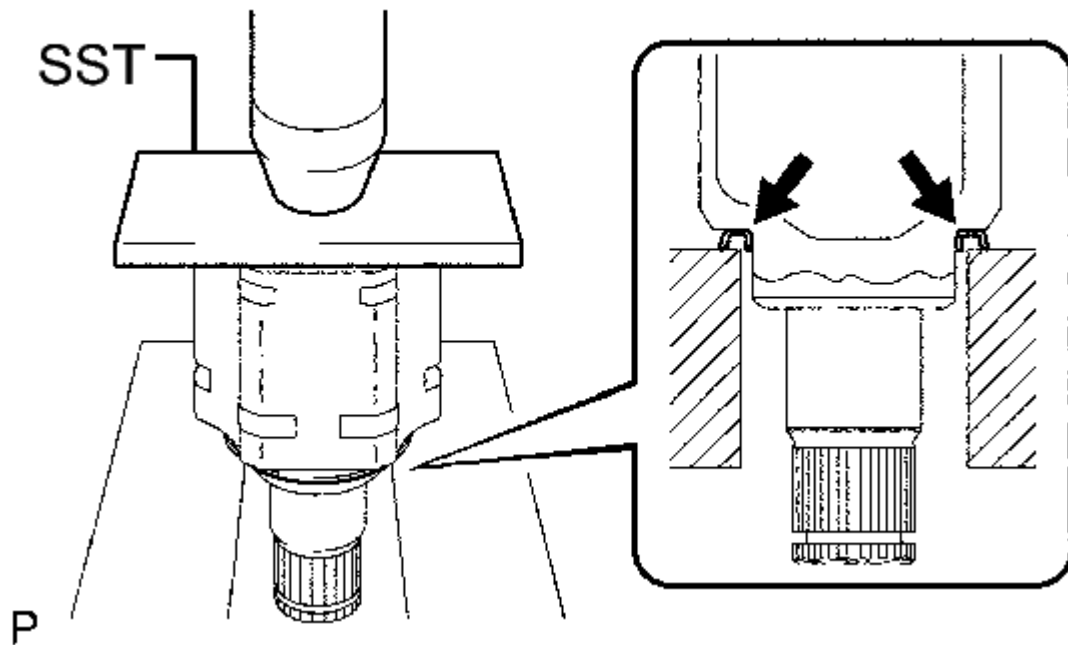


Fig. 88: Installing Drive Shaft Dust Cover LH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

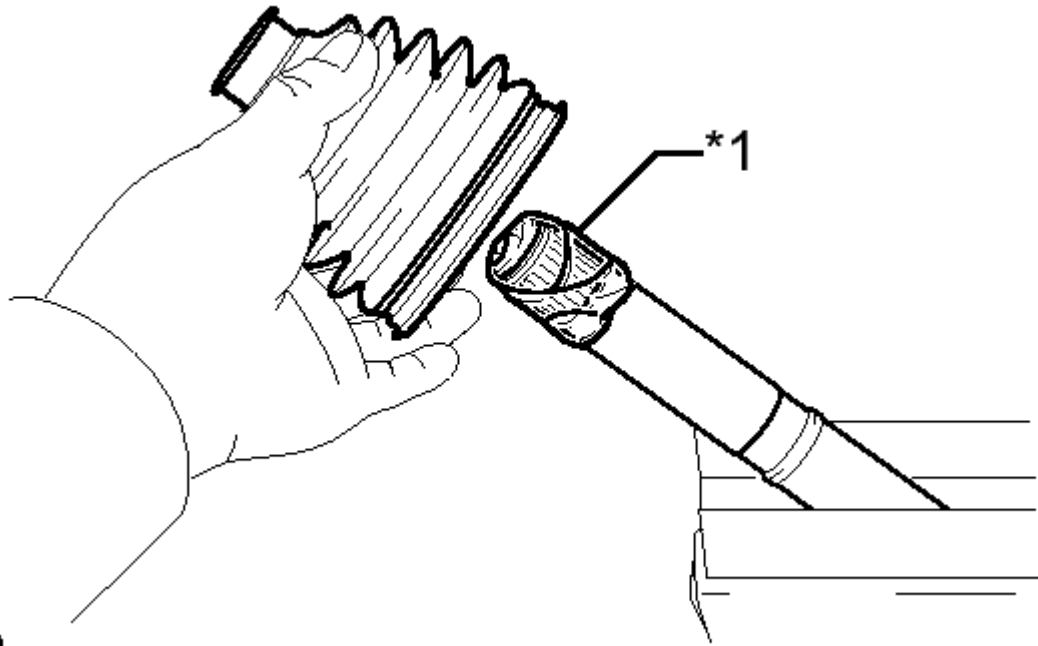
- SST: 09527-10011

NOTE:

- The front drive shaft dust cover LH should be completely installed.
- Be careful not to damage the front drive shaft dust cover LH.

6. **INSTALL FRONT AXLE OUTBOARD JOINT BOOT**

- a. Wrap the spline of the drive shaft with vinyl tape to prevent the boot from being damaged.



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Fig. 89: Identifying Outboard Joint Boot & Tape Wrapped Around Drive Shaft Spline
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION



- b. Install new parts to the front drive outboard joint shaft assembly in the following order.
 1. Front No. 2 axle outboard joint boot clamp
 2. Front axle outboard joint boot
 3. Front axle outboard joint boot clamp
- c. Pack the front drive outboard joint shaft assembly and front axle outboard joint boot with grease from the boot kit.

Grease capacity

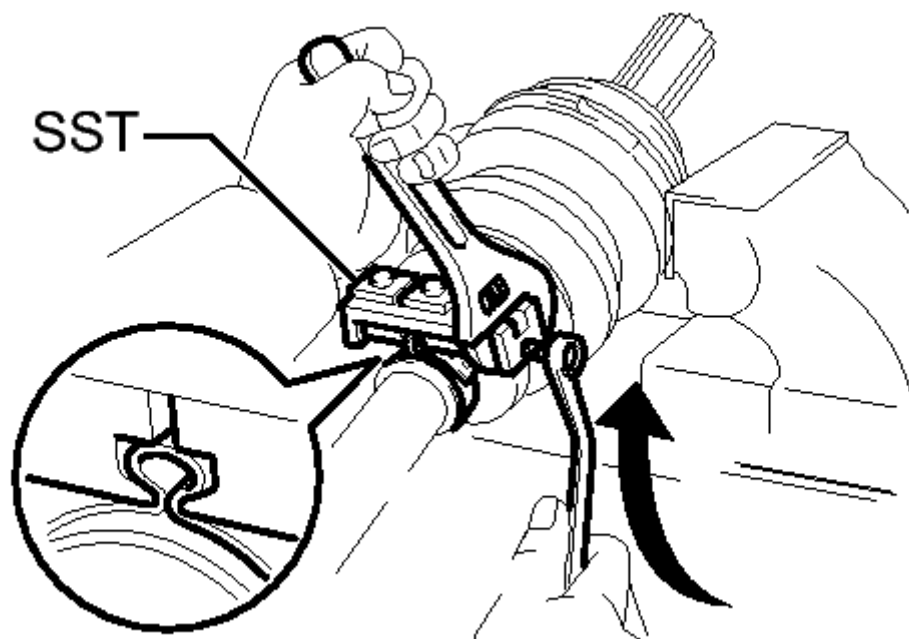
170 to 190 g (6.0 to 6.7 oz.)

7. INSTALL FRONT AXLE OUTBOARD JOINT BOOT CLAMP

- a. Hold the drive shaft lightly in a vise between aluminum plates.

NOTE: **Do not overtighten the vise.**

- b. Install the front axle outboard joint boot clamp onto the front axle outboard joint boot.
- c. Place SST onto the front axle outboard joint boot clamp.



T

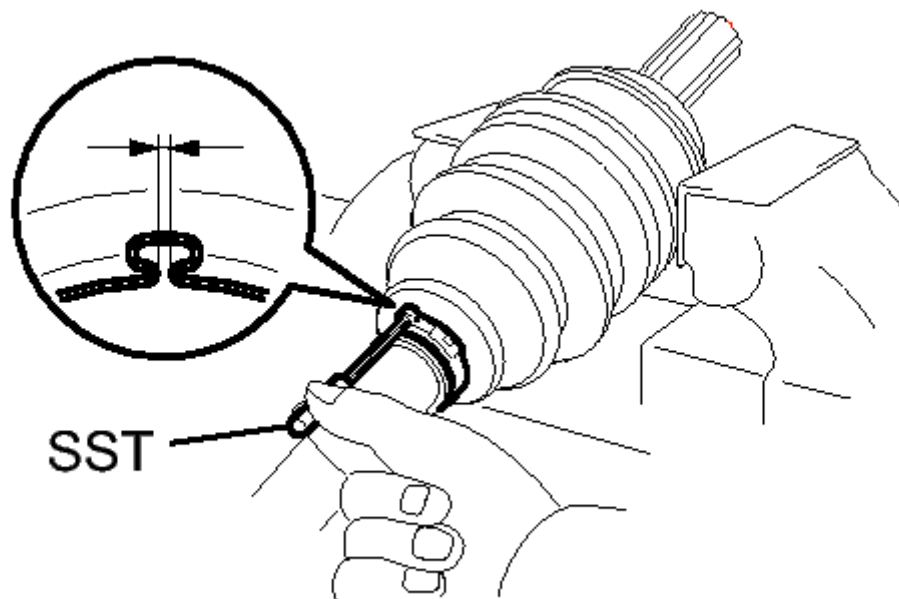
Fig. 90: Installing Front Axle Outboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09521-24010

d. Tighten SST so that the front axle outboard joint boot clamp is pinched.

NOTE: Do not overtighten SST.

e. Using SST, measure the clearance of the front axle outboard joint boot clamp.



T

Fig. 91: Measuring Clearance Of Outboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09240-00020

Clearance

0.5 to 1.5 mm (0.0197 to 0.0591 in.)

NOTE: If the measured value is greater than the specified value, retighten the clamp.

8. INSTALL FRONT NO. 2 AXLE OUTBOARD JOINT BOOT CLAMP

- Install the front No. 2 axle outboard joint boot clamp onto the front axle outboard joint boot.
- Place SST onto the front No. 2 axle outboard joint boot clamp.

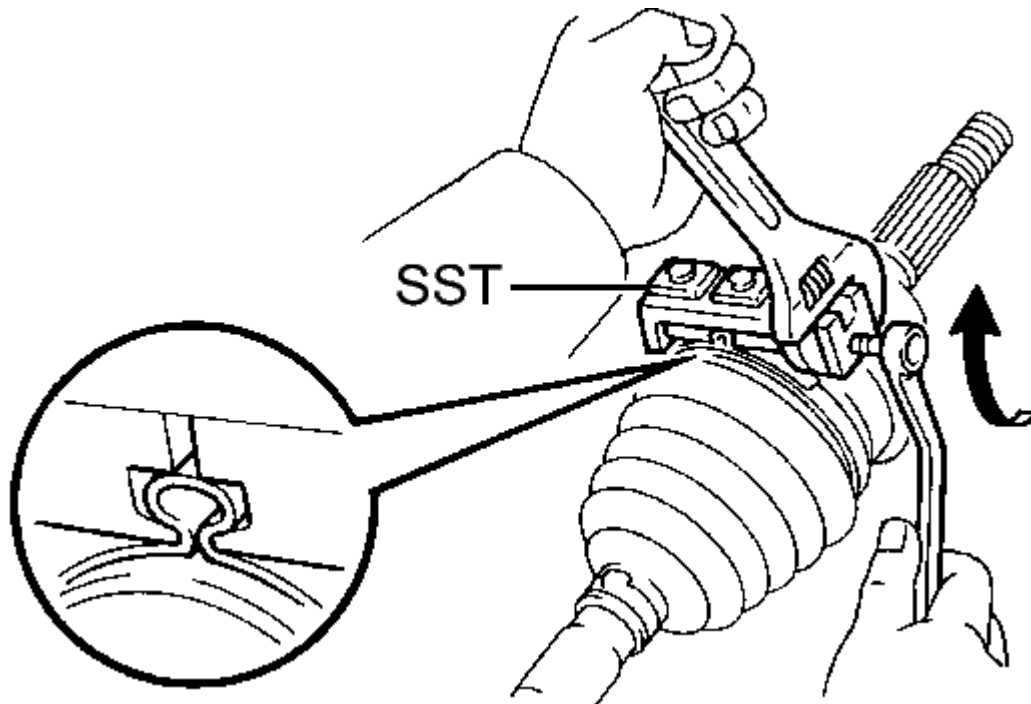


Fig. 92: Installing No. 2 Front Axle Outboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09521-24010

c. Tighten SST so that the front No. 2 axle outboard joint boot clamp is pinched.

NOTE: Do not overtighten SST.

d. Using SST, measure the clearance of the front No. 2 axle outboard joint boot clamp.

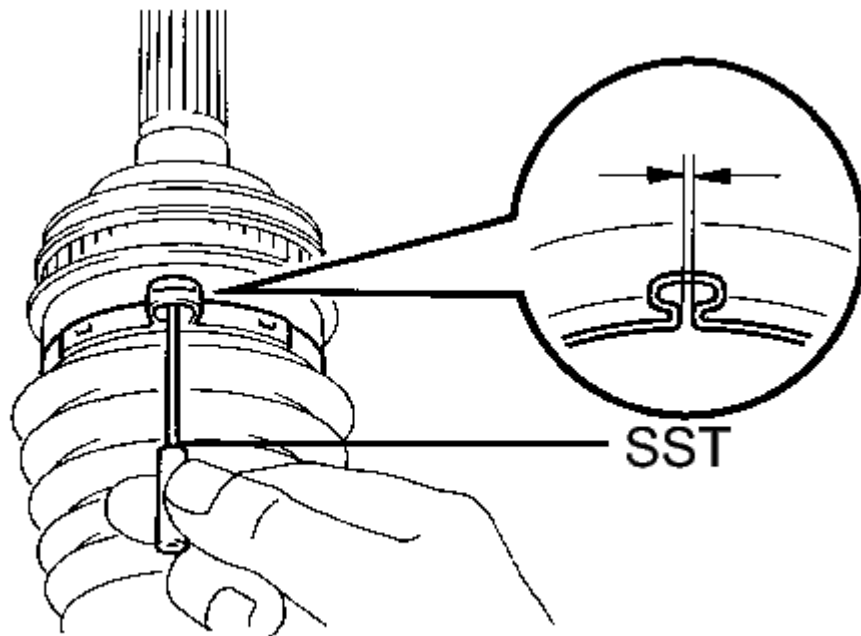


Fig. 93: Measuring Clearance Of No. 2 Outboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09240-00020

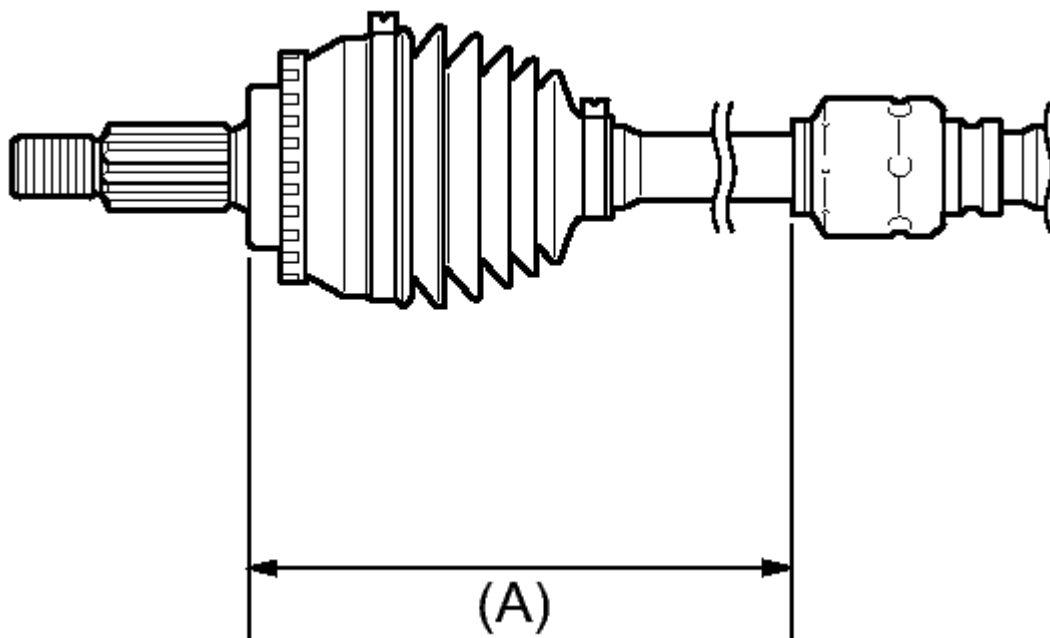
Clearance

0.5 to 1.5 mm (0.0197 to 0.0591 in.)

NOTE: If the measured value is greater than the specified value, retighten the clamp.

9. INSTALL FRONT DRIVE SHAFT DAMPER (for LH Side)

- Install the front drive shaft damper onto dimension (A) shown in the illustration.



C

Fig. 94: Identifying Drive Shaft Damper Dimension
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE: Install the damper in the correct orientation.

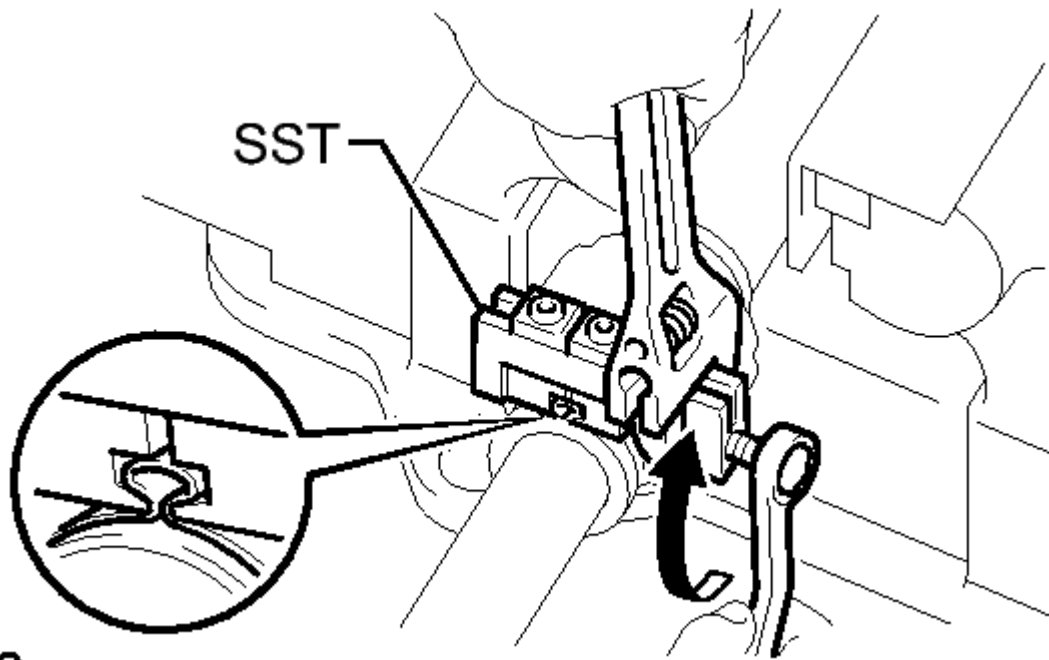
Dimension (A)

283 to 287 mm (11.1 to 11.3 in.)

- b. Install a new front drive shaft damper clamp onto the front drive shaft damper.

NOTE: Be sure to install the clamp in the correct position.

- c. Place SST onto the front drive shaft damper clamp.



C

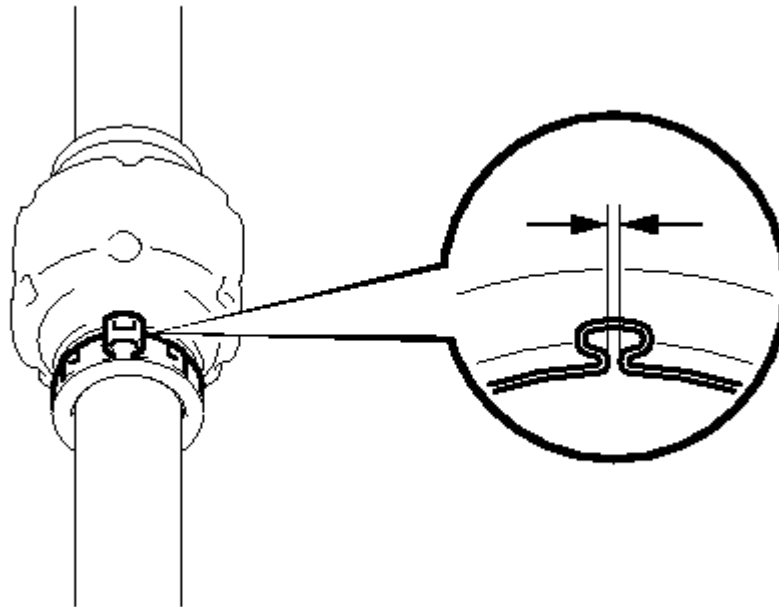
Fig. 95: Installing Front Drive Shaft Damper Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09521-24010

d. Tighten SST so that the clamp is pinched.

NOTE: **Do not overtighten SST.**

e. Using SST, measure the clearance of the front drive shaft damper clamp.



C

Fig. 96: Measuring Clearance Of Front Drive Shaft Damper Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09240-00020

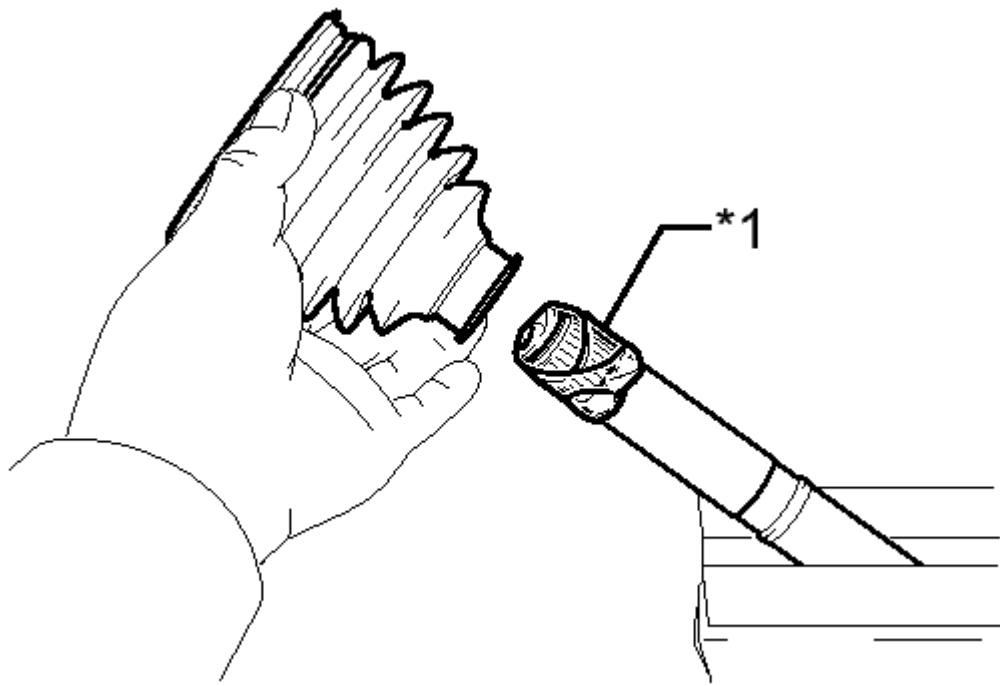
Clearance

0.5 to 1.5 mm (0.0197 to 0.0591 in.)

NOTE: If the measured value is greater than the specified value, retighten the clamp.

10. INSTALL FRONT DRIVE INBOARD JOINT ASSEMBLY

- Wrap the spline of the outboard joint shaft with vinyl tape to prevent the boot from being damaged.
- Install new parts to the front drive outboard joint shaft assembly in the following order.



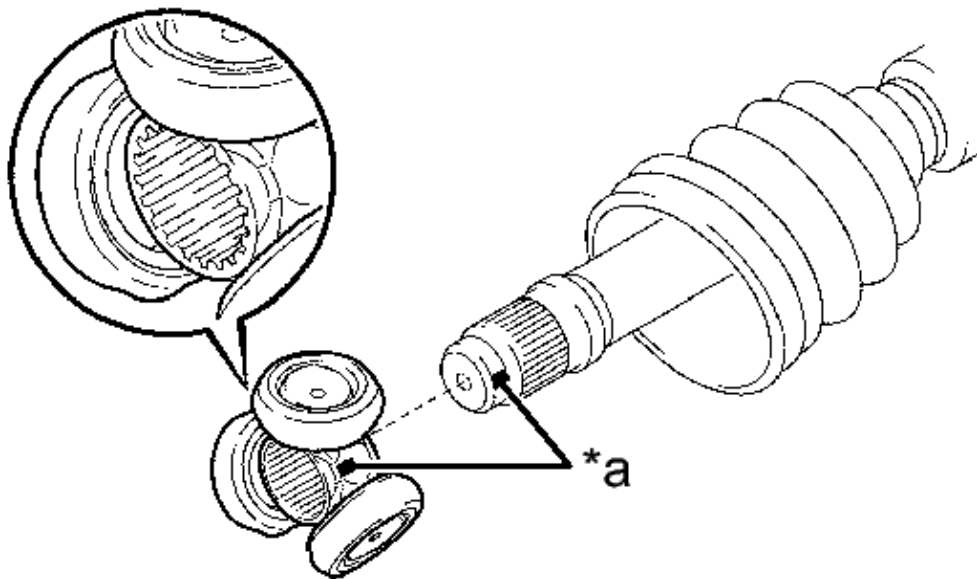
C

Fig. 97: Identifying Inboard Joint Boot & Tape Wrapped Spline
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Vinyl tape
----	---------------

1. Front axle inboard joint boot clamp
 2. Front axle inboard joint boot
 3. Front No. 2 axle inboard joint boot clamp
- c. Place the beveled side of the tripod joint axial spline toward the front drive outboard joint shaft assembly.



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Fig. 98: Identifying Tripod Joint Axial Spline & Front Drive Outboard Joint Shaft Matchmarks

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

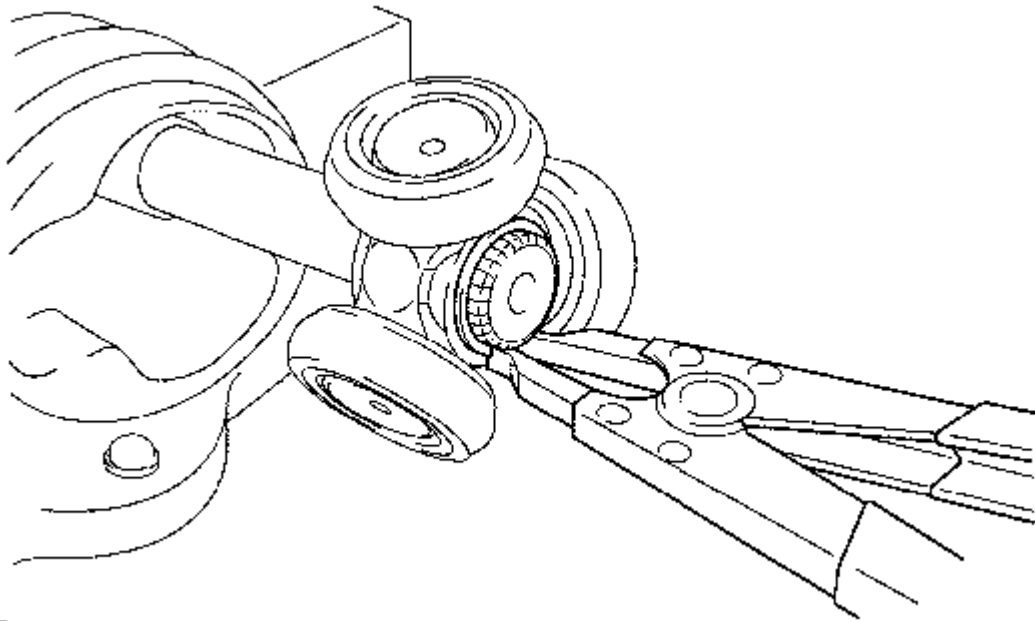
*a	Matchmark
----	-----------

- d. Align the matchmarks placed before removal.
- e. Using a brass bar and a hammer, tap in the tripod joint to the front drive outboard joint shaft assembly.

NOTE:

- Do not tap the roller.
- Be sure to install the tripod joint in the correct direction.

- f. Using a snap ring expander, install a new shaft snap ring.



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Fig. 99: Identifying Snap Ring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- g. Pack the front drive inboard joint assembly and front axle inboard boot with grease.

Grease capacity

155 to 175 g (5.5 to 6.2 oz.)

- h. Align the matchmarks and install the front drive inboard joint assembly to the front drive outboard joint shaft assembly.

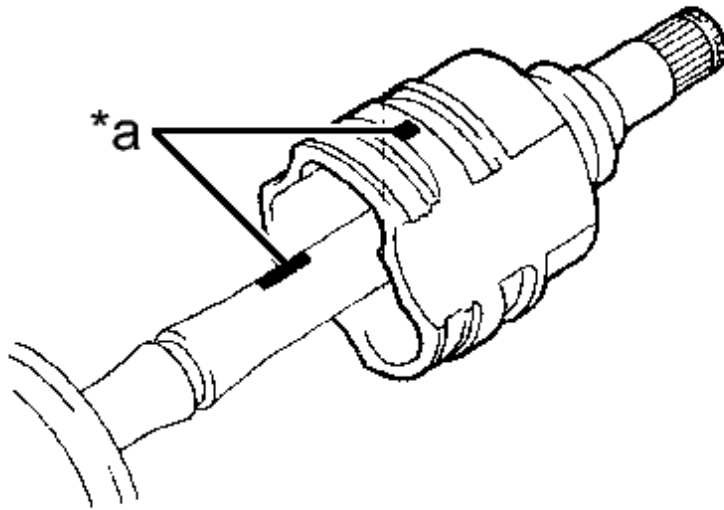


Fig. 100: Identifying Front Drive Inboard & Outboard Joint Shaft Assembly Matchmarks
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

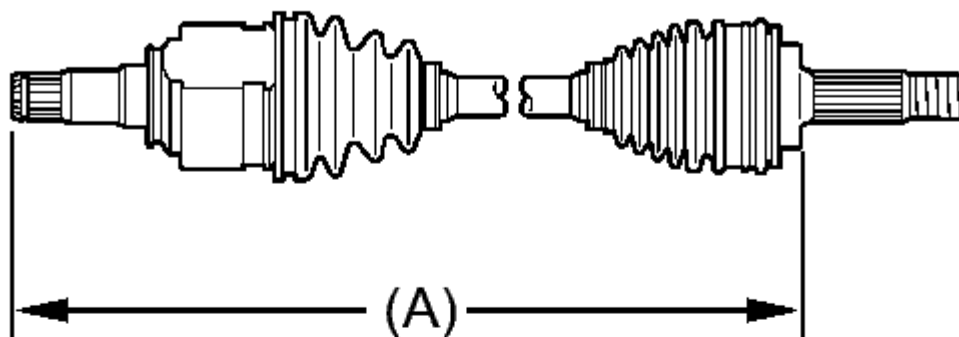
TEXT IN ILLUSTRATION

*a	Matchmark
----	-----------

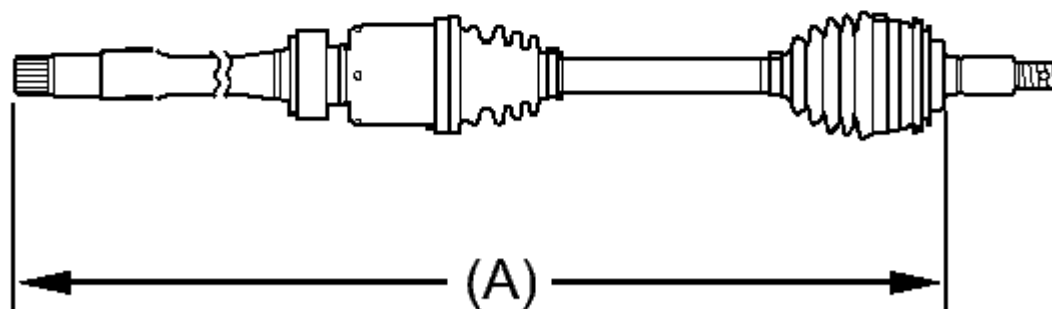
11. INSTALL FRONT AXLE INBOARD JOINT BOOT

- a. Install the front axle inboard joint boot to the front drive inboard joint assembly.
- b. Check whether the drive shaft dimensions are within the following specifications.

*a



*b



T

Fig. 101: Inspecting Drive Shaft Assembly Dimensions
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

LH

*a	Side:
*b	RH Side:

HINT:

The following table shows the dimension (A) of the drive shaft.

Dimension (A)

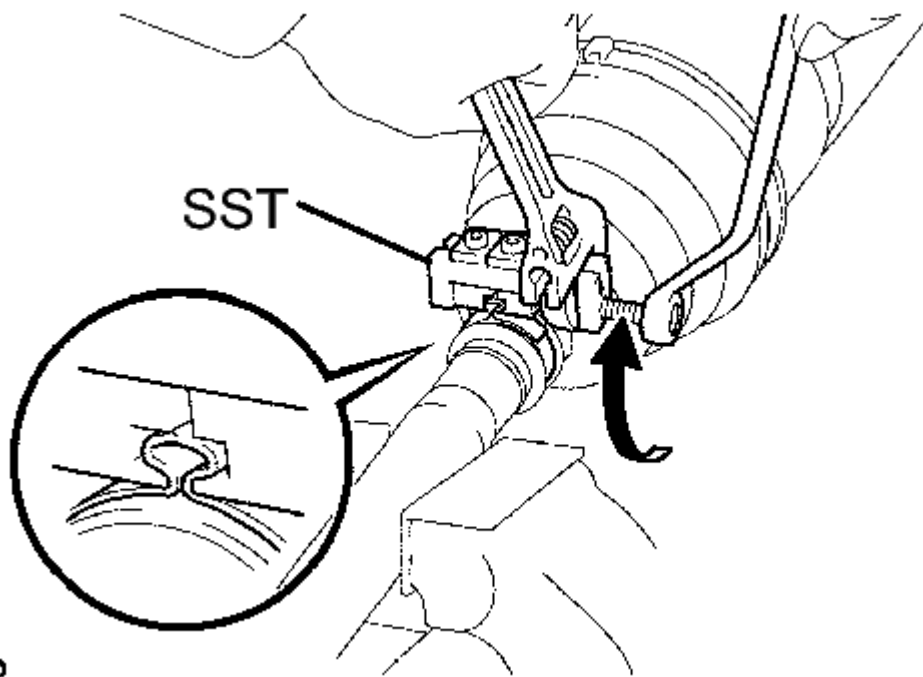
Drive Type	LH Side	RH Side
for 2WD	650.5 mm (2.13 ft.)	971.7 mm (3.187 ft.)
for AWD	650.5 mm (2.13 ft.)	973.1 mm (3.191 ft.)

12. INSTALL FRONT AXLE INBOARD JOINT BOOT CLAMP

- a. Hold the drive shaft lightly in a vise between aluminum plates.

NOTE: Do not overtighten the vise.

- b. Secure the front axle inboard joint boot clamp onto the front axle inboard joint boot.
- c. Place SST onto the front axle inboard joint boot clamp.



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Fig. 102: Installing Front Axle Inboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09521-24010

d. Tighten SST so that the front axle inboard joint boot clamp is pinched.

NOTE: **Do not overtighten SST.**

e. Using SST, measure the clearance of the front axle inboard joint boot clamp.

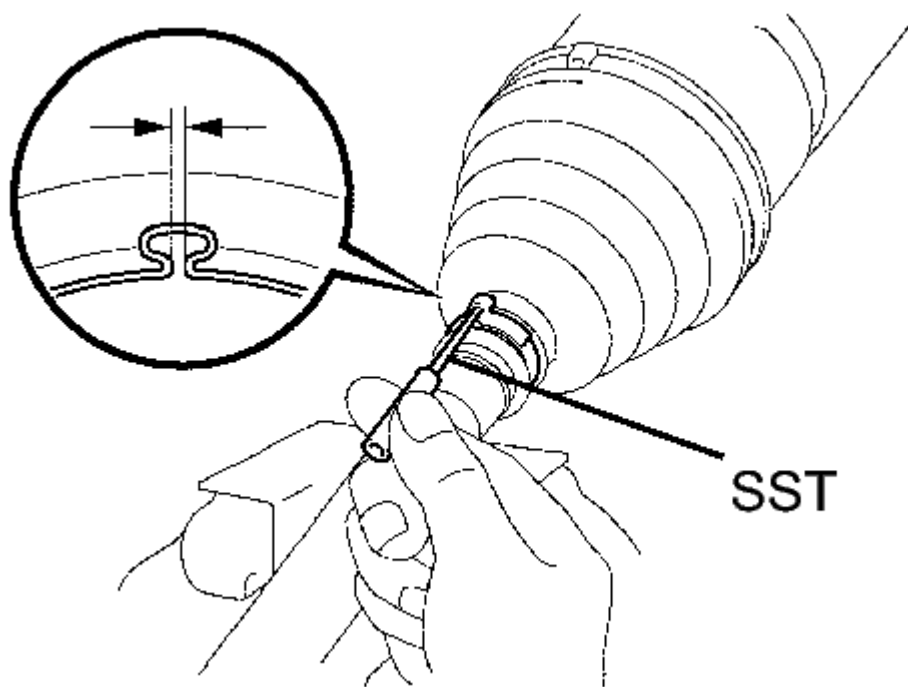


Fig. 103: Measuring Clearance Of Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09240-00020

Clearance

0.5 to 1.5 mm (0.0197 to 0.0591 in.)

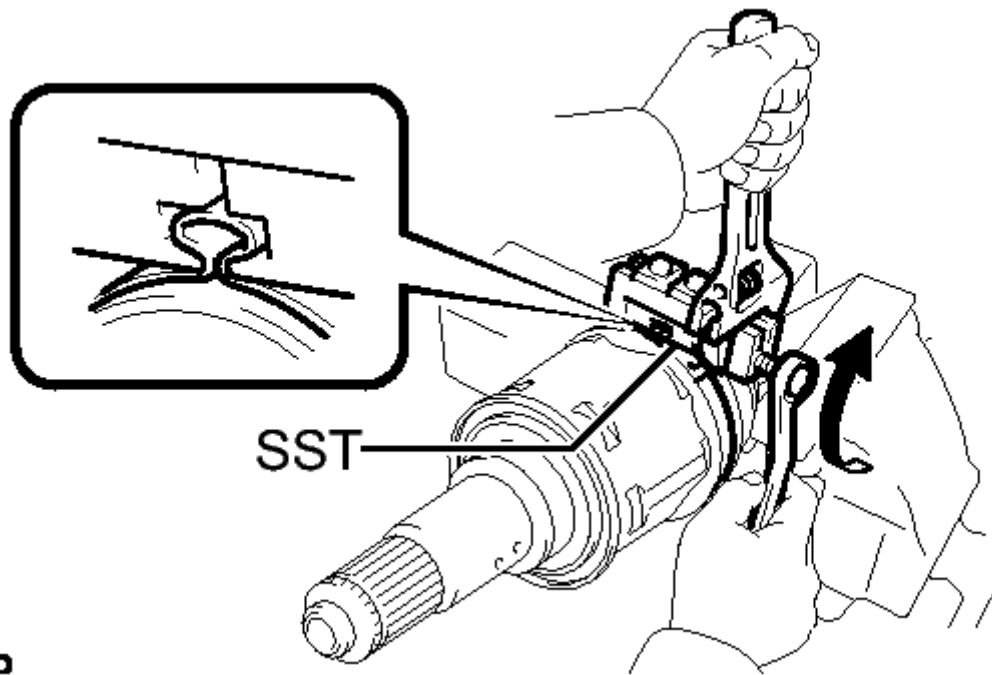
NOTE: If the measured value is greater than the specified value, retighten the clamp.

13. INSTALL FRONT NO. 2 AXLE INBOARD JOINT BOOT CLAMP

- Hold the front drive inboard joint shaft assembly in a vise between aluminum plates.

NOTE: Do not overtighten the vise.

- Secure the front No. 2 axle inboard joint boot clamp onto the front axle inboard joint boot.
- Place SST onto the front No. 2 axle inboard joint boot clamp.



P

Fig. 104: Installing No. 2 Front Axle Inboard Joint Boot Clamp

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09521-24010

d. Tighten SST so that the front No. 2 axle inboard joint boot clamp is pinched.

NOTE: Do not overtighten SST.

e. Using SST, measure the clearance of the front No. 2 axle inboard joint boot clamp.

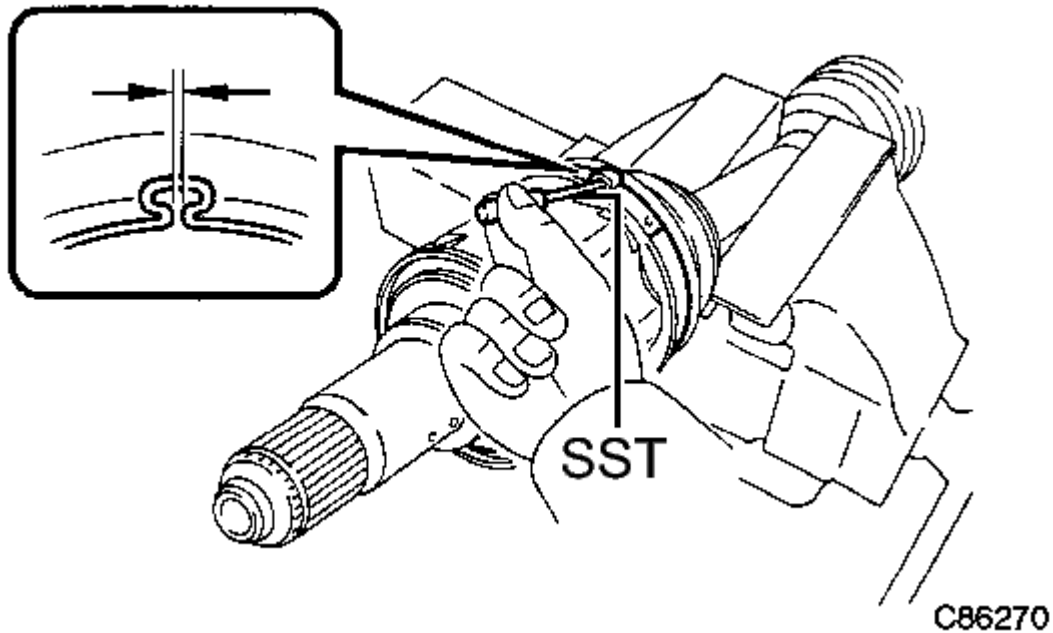


Fig. 105: Measuring Clearance Of No. 2 Front Axle Inboard Joint Boot Clamp
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09240-00020

Clearance

0.5 to 1.5 mm (0.0197 to 0.0591 in.)

NOTE: If the measured value is greater than the specified value, retighten the clamp.

14. **INSTALL FRONT DRIVE SHAFT HOLE SNAP RING**
 - a. Install a new front drive shaft hole snap ring.
15. **INSPECT FRONT DRIVE SHAFT ASSEMBLY LH** See step 1

INSTALLATION

INSTALLATION

INSTALLATION

1. **INSTALL FRONT DRIVE SHAFT ASSEMBLY LH**
 - a. Align the splines of the shaft and install the front drive shaft assembly LH using a brass bar and a hammer.

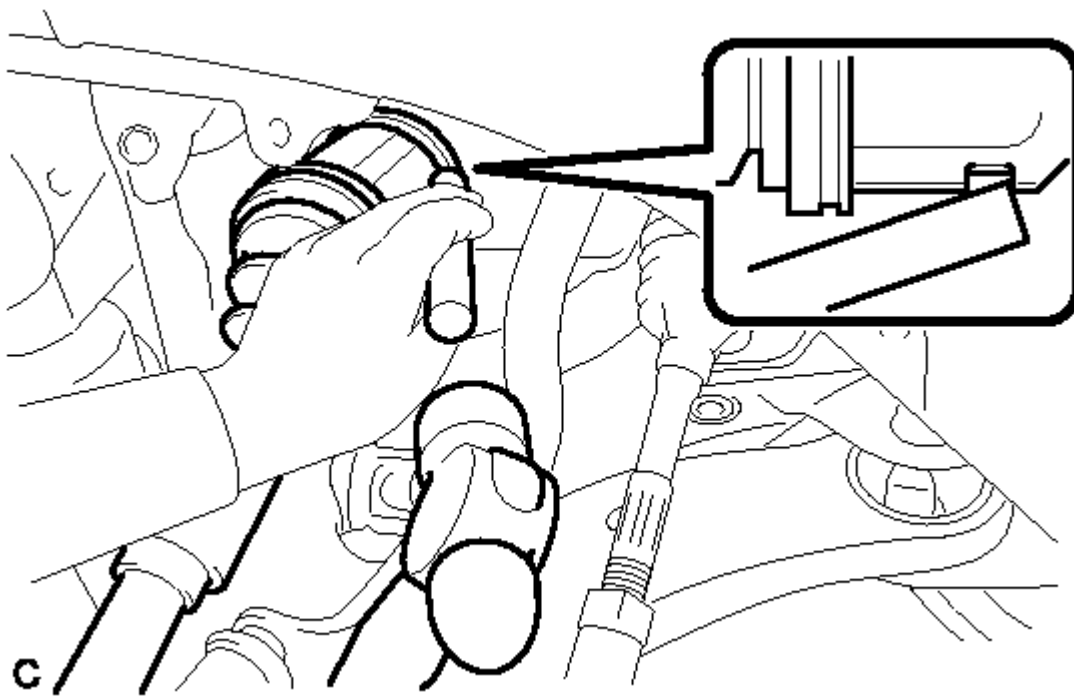


Fig. 106: Installing Drive Shaft Assembly LH With Brass Bar And Hammer
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE:

- Set the shaft snap ring with the opening facing down.
- Be careful not to damage the drive shaft dust cover, boot or oil seal.
- Move the drive shaft assembly while keeping it level.

2. INSTALL FRONT DRIVE SHAFT ASSEMBLY RH

- a. Install the front drive shaft assembly RH.
- b. Install the bearing bracket hole snap ring and a new bolt.

Torque: 32 N*m (330 kgf*cm, 23 ft.*lbf)

NOTE:

- Do not damage the boot or oil seal.
- Move the drive shaft assembly while keeping it level.

3. INSTALL ENGINE MOUNTING INSULATOR RH (for AWD)

- a. Temporarily install the engine mounting insulator RH with the 3 nuts.

4. INSTALL ENGINE MOUNTING BRACKET RH (for AWD)

- a. Install the engine mounting bracket RH with the 3 bolts.

Torque: 54 N*m (551 kgf*cm, 39 ft.*lbf)

5. FULLY TIGHTEN ENGINE MOUNTING INSULATOR RH (for AWD)

- a. Fully tighten engine mounting insulator RH with the 3 nuts.

Torque: 87 N*m (887 kgf*cm, 64 ft.*lbf)

- b. Install the 2 hole plugs.
- c. Install the engine mounting insulator RH with the nut.

Torque: 95 N*m (969 kgf*cm, 70 ft.*lbf)

6. INSTALL FRONT FENDER APRON SEAL RH (for AWD)

7. INSTALL FRONT AXLE ASSEMBLY

- a. Pull the front axle out of the vehicle to align the spline of the drive shaft with the front axle and insert the front axle.

NOTE:

- Do not pull the front axle further out of the vehicle than is necessary.
- Do not damage the outboard joint boot.
- Check for any foreign matter on the speed sensor rotor and insertion part.
- Do not damage the speed sensor rotor.

8. INSTALL FRONT LOWER SUSPENSION ARM . Refer to INSTALLATION - Step 7

9. INSTALL TIE ROD ASSEMBLY

- a. Connect the tie rod assembly to the steering knuckle with the nut.

Torque: 49 N*m (500 kgf*cm, 36 ft.*lbf)

- b. Install a new cotter pin.

NOTE:

Further tighten the nut up to 60° if the holes for the cotter pin are not aligned.

10. INSTALL FRONT SPEED SENSOR

- a. Install the front speed sensor and front flexible hose with the bolt.

Torque: 19 N*m (192 kgf*cm, 14 ft.*lbf)

NOTE:

- Do not twist the front speed sensor when installing it.
- First install the speed sensor harness bracket, and then install the flexible hose bracket.

- b. Install the front speed sensor to the steering knuckle with the bolt.

Torque: 8.3 N*m (85 kgf*cm, 73 in.*lbf)

NOTE:

- 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.
- To prevent interference between the front speed sensor and magnetic rotor, do not rotate the front speed sensor body during or after the insertion of the front speed sensor body to the steering knuckle.

11. **INSTALL FRONT STABILIZER LINK ASSEMBLY** . Refer to **INSTALLATION - Step 10**

12. **INSTALL FRONT AXLE SHAFT NUT**

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

NOTE:

- Be sure to perform this work for a new drive shaft.
- Keep the threaded parts free of oil and foreign matter.

- b. Install the new front axle shaft nut.

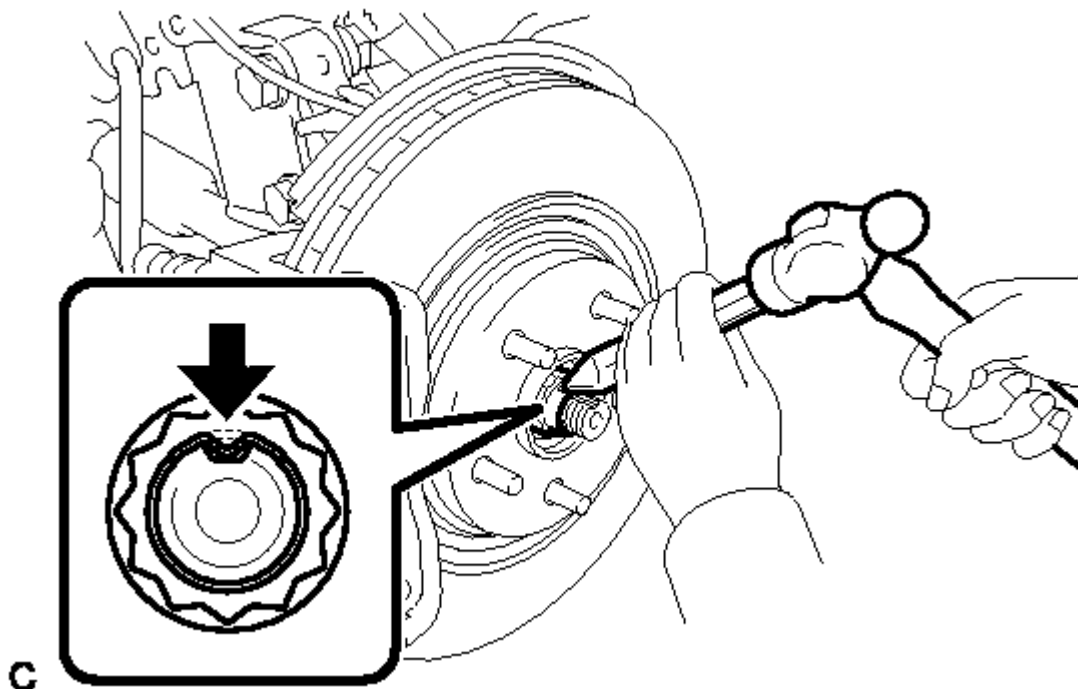


Fig. 107: Staking Front Axle Shaft Nut

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Torque: 294 N*m (2998 kgf*cm, 217 ft.*lbf)

- c. Using a chisel and hammer, stake the front axle shaft nut.

13. INSTALL FRONT WHEELS

Torque: 103 N*m (1050 kgf*cm, 76 ft.*lbf)

14. ADD TRANSFER OIL (for AWD) . Refer to REPLACEMENT - Step 2

15. ADJUST TRANSFER OIL (for AWD) . Refer to ON-VEHICLE INSPECTION - Step 1

16. ADD AUTOMATIC TRANSAXLE FLUID (for 2WD)

Refer to ADJUSTMENT

17. ADD AUTOMATIC TRANSAXLE FLUID (for AWD)

Refer to ADJUSTMENT

18. ADJUST FRONT WHEEL ALIGNMENT

Refer to ADJUSTMENT

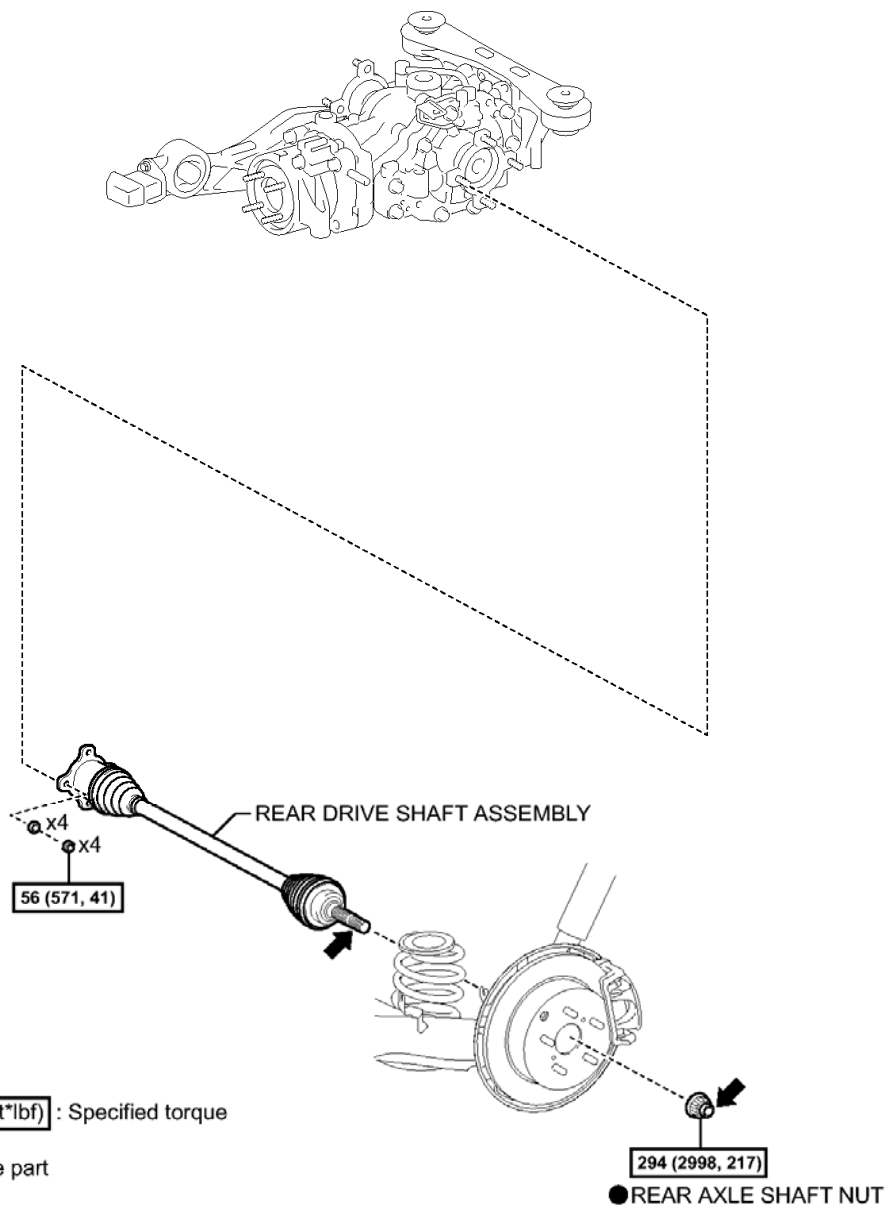
19. INSPECT SPEED SENSOR SIGNAL

Refer to TEST MODE PROCEDURE

REAR DRIVE SHAFT ASSEMBLY

COMPONENTS

ILLUSTRATION



P

Fig. 108: Rear Drive Shaft Assembly Replacement Components With Torque Specifications
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

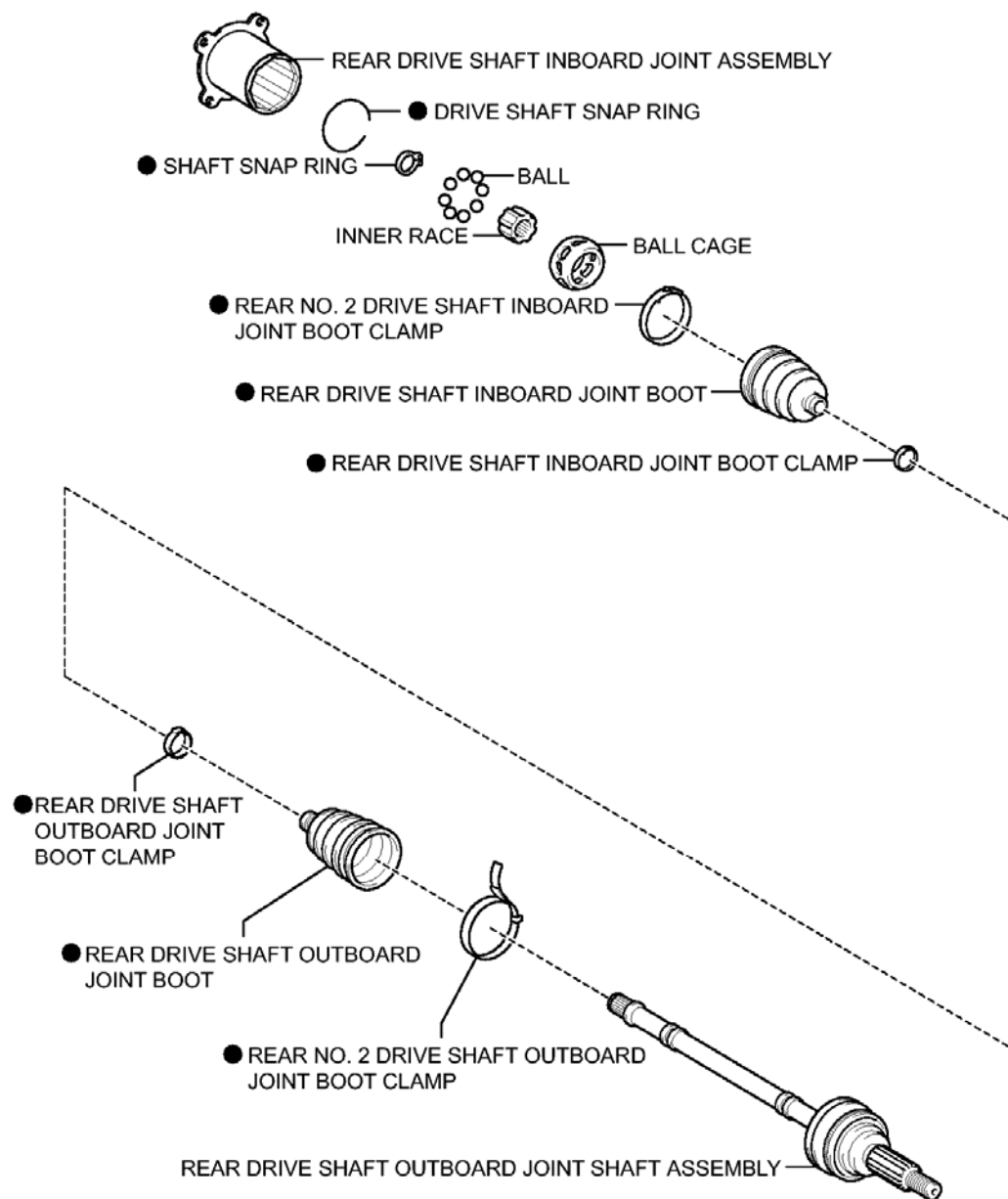


Fig. 109: Exploded View Of Rear Drive Shaft Assembly Replacement Components
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

REMOVAL

HINT:

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

1. REMOVE REAR WHEEL

2. REMOVE REAR AXLE SHAFT NUT

- a. Using SST and a hammer, unstake part of the axle shaft nut.

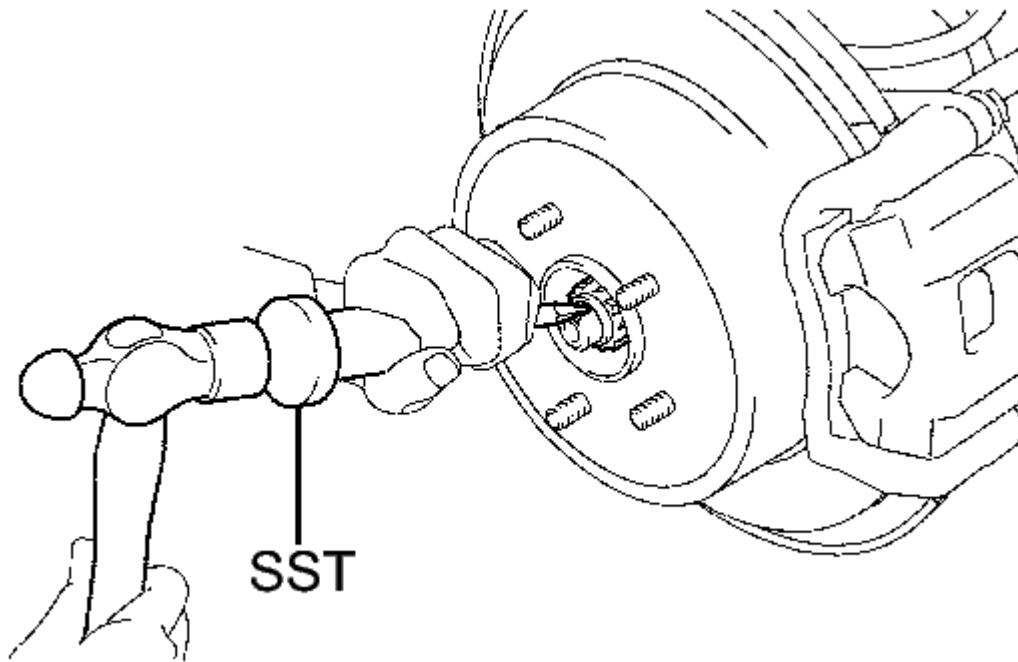


Fig. 110: Unstaking Axle Shaft Nut Using SST & Hammer
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

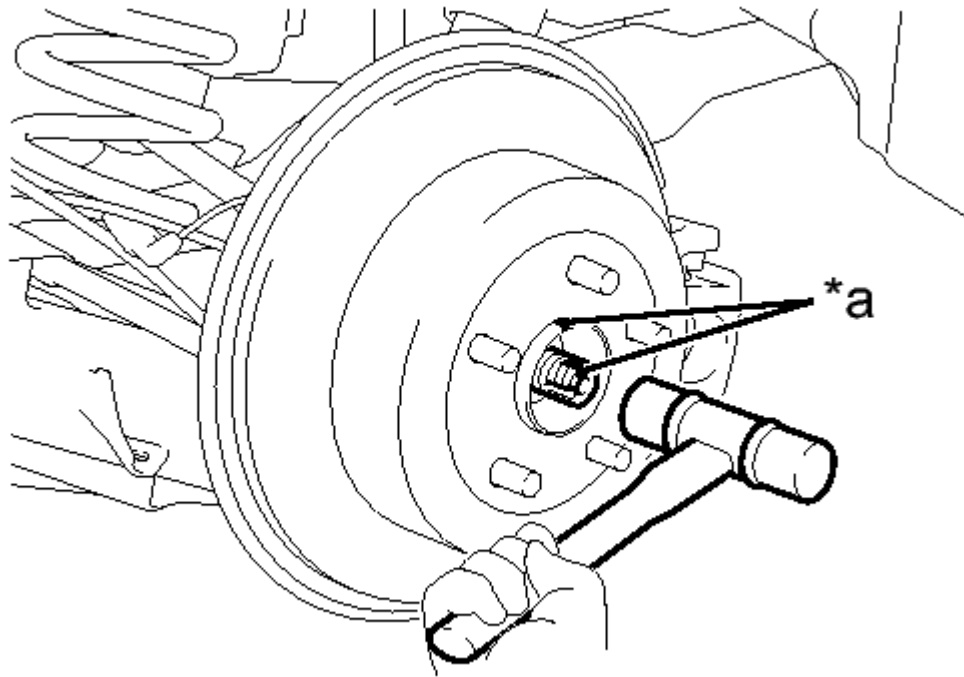
- SST: 09930-00010

NOTE: Loosen the staked part of the nut completely, otherwise the threads of the drive shaft may be damaged.

- b. While applying the brakes, remove the axle shaft nut.

3. REMOVE REAR DRIVE SHAFT ASSEMBLY

- a. Put matchmarks on the rear drive shaft assembly and rear axle hub and bearing assembly.



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Fig. 111: Identifying Rear Drive Shaft Assembly, Plastic Hammer & Matchmarks
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a Matchmark

NOTE: **Do not punch the matchmarks.**

- b. Using a plastic hammer, separate the rear drive shaft assembly from the axle hub and bearing assembly.

HINT:

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

NOTE:

- **Do not pull the rear axle further out of the vehicle than is necessary.**
- **Do not damage the outboard joint boot.**

- c. Put matchmarks on the rear drive shaft and differential side gear shaft.

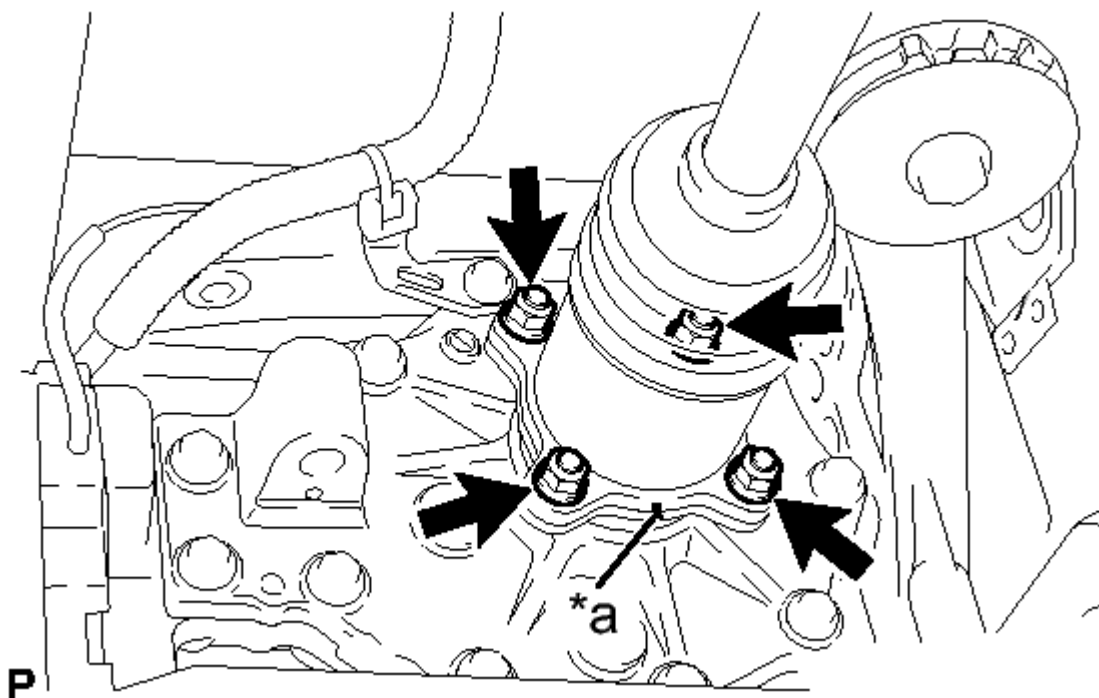


Fig. 112: Identifying Rear Drive Shaft Fasteners
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a Matchmark

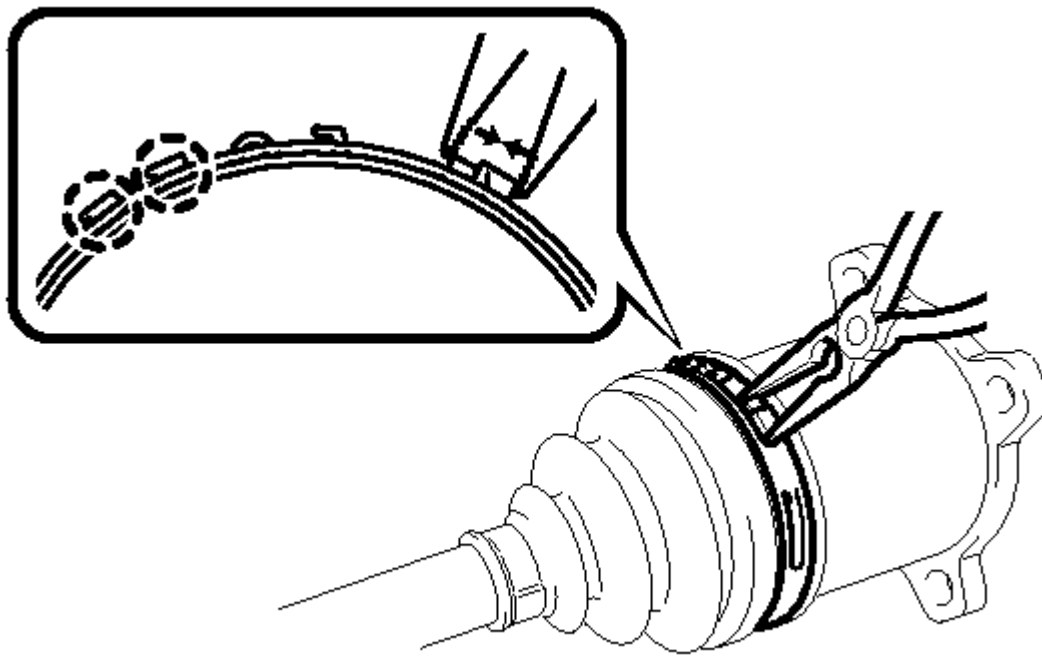
- d. Remove the 4 nuts and washers, and separate the rear drive shaft from the differential side gear shaft.
- e. Remove the rear drive shaft from the axle carrier.

DISASSEMBLY

DISASSEMBLY

1. REMOVE REAR NO. 2 DRIVE SHAFT INBOARD JOINT BOOT CLAMP

- a. Using needle-nose pliers, disengage the 2 claws and remove the rear No. 2 drive shaft inboard joint boot clamp as shown in the illustration.



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Fig. 113: Remove/Install No. 2 Drive Shaft Inboard Joint Boot Clamp & Claws Using Needle-Nose Pliers

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. REMOVE REAR DRIVE SHAFT INBOARD JOINT BOOT CLAMP

HINT:

Perform the same procedure as for the rear drive shaft inboard joint boot clamp.

3. SEPARATE REAR DRIVE SHAFT INBOARD JOINT BOOT

- a. Separate the rear drive shaft inboard joint boot from the rear drive shaft inboard joint assembly.

4. REMOVE REAR DRIVE SHAFT INBOARD JOINT ASSEMBLY

- a. Put matchmarks on the rear drive shaft inboard joint assembly and rear drive shaft outboard joint shaft assembly.

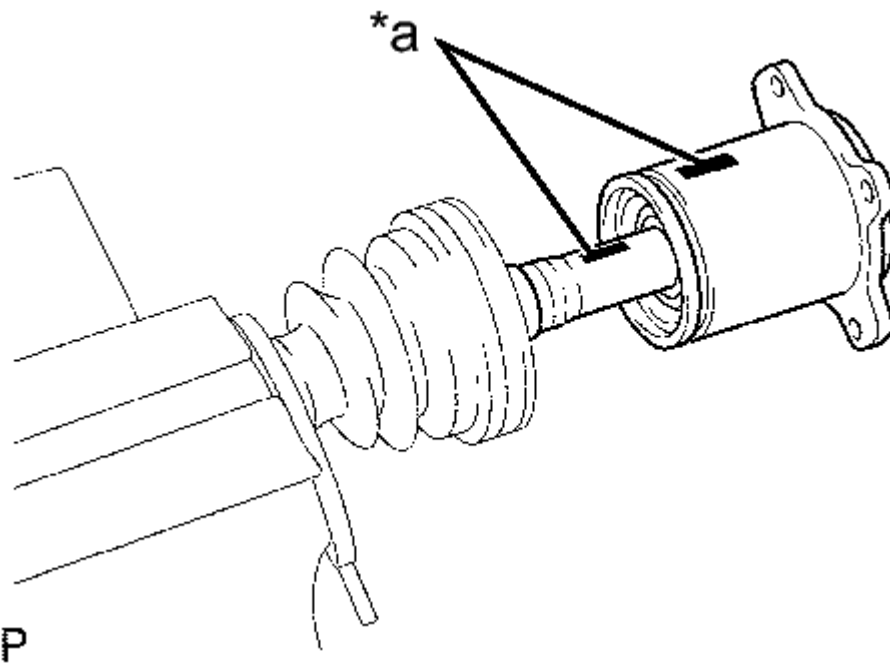


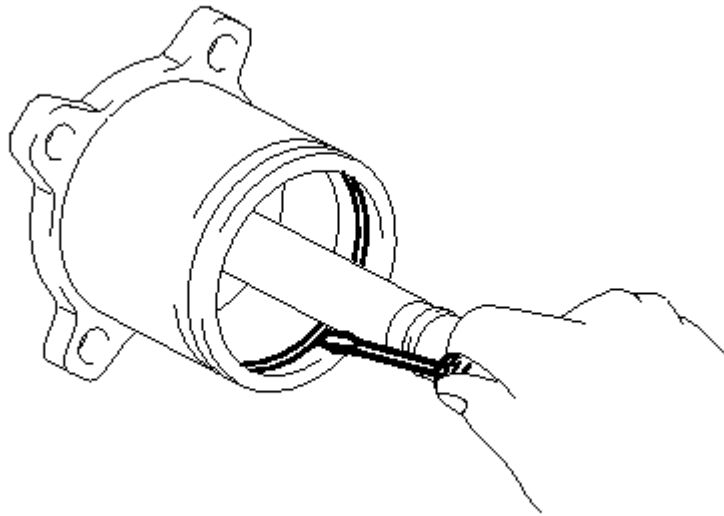
Fig. 114: Identifying Inboard & Outboard Drive Shaft Joint Assembly Matchmarks
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Matchmark
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NOTE: **Do not use a punch for the marks.**

- b. Using a screwdriver, remove the drive shaft snap ring from the rear drive shaft inboard joint assembly.



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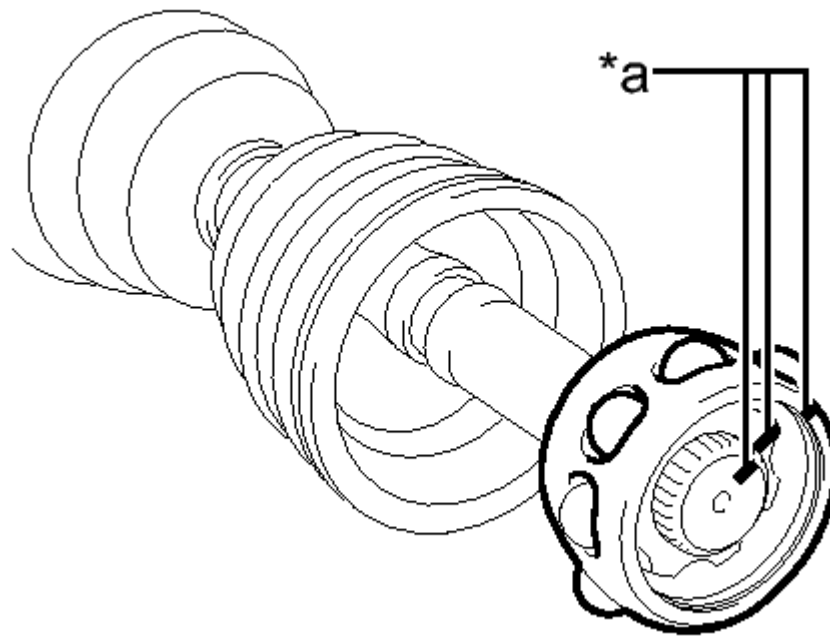
Fig. 115: Remove/Install Drive Shaft Snap Ring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Remove the rear drive shaft inboard joint assembly from the rear drive shaft outboard joint shaft assembly.

NOTE: Be careful not to drop the balls.

- d. Put matchmarks on the rear drive shaft outboard joint shaft assembly, inner race and ball cage.



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Fig. 116: Identifying Rear Drive Shaft Outboard Joint Shaft Assembly, Inner Race & Ball Cage Matchmarks

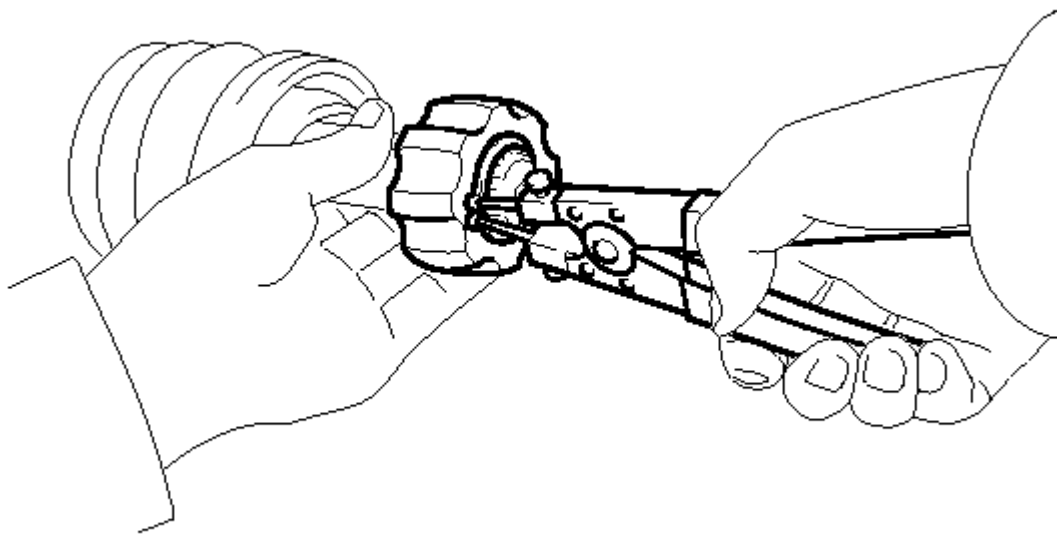
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Matchmark
----	-----------

NOTE: Do not use a punch for the marks.

- e. Remove the 8 balls and slide the ball cage toward the outboard joint.
- f. Using a snap ring expander, remove the shaft snap ring.

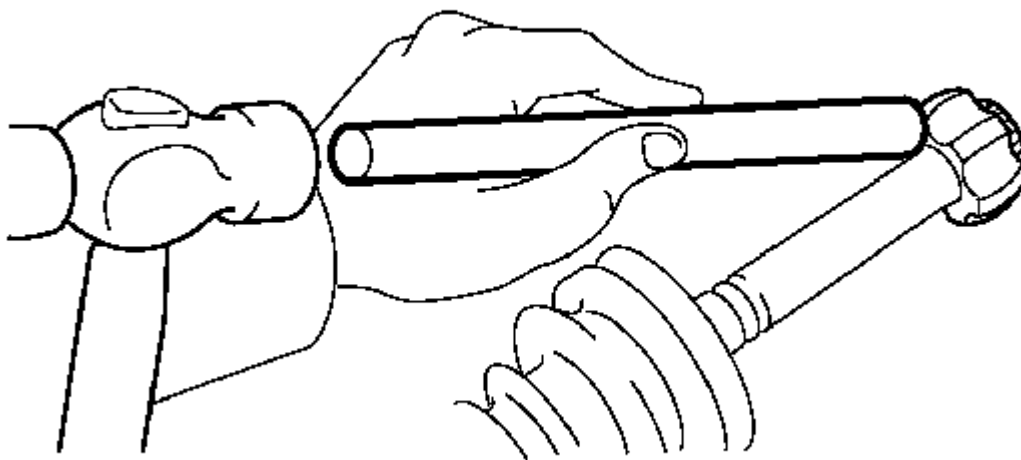


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Fig. 117: Remove/Install Shaft Snap Ring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- g. Using a brass bar and a hammer, remove the inner race from the rear drive shaft outboard joint shaft assembly.



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Fig. 118: Removing Inner Race

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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NOTE: Be careful not to damage the inner race.

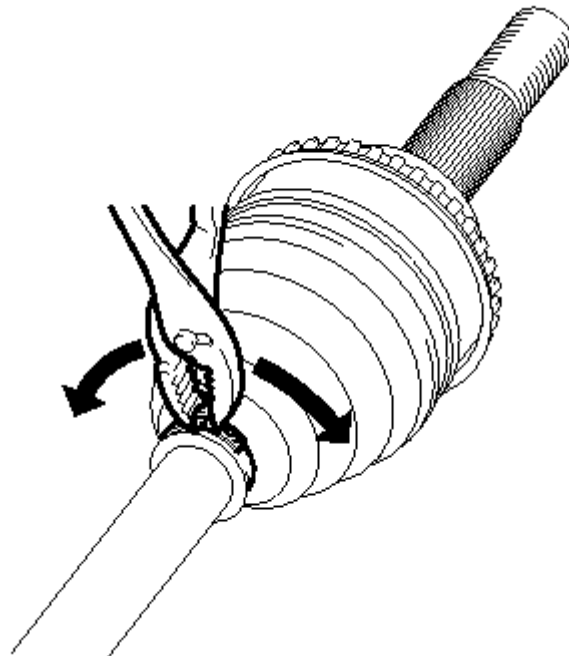
h. Remove the ball cage.

5. REMOVE REAR DRIVE SHAFT INBOARD JOINT BOOT

a. Remove the rear drive shaft inboard joint boot from the rear drive shaft outboard joint shaft assembly.

6. REMOVE REAR DRIVE SHAFT OUTBOARD JOINT BOOT CLAMP

a. Using a pliers, remove the rear drive shaft outboard joint boot clamp as shown in the illustration.



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Fig. 119: Removing Rear Drive Shaft Outboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. REMOVE REAR NO. 2 DRIVE SHAFT OUTBOARD JOINT BOOT CLAMP

a. Using a screwdriver, release the staked part of the rear No. 2 drive shaft outboard joint boot clamp and separate the rear No. 2 drive shaft outboard joint boot clamp as shown in the illustration.

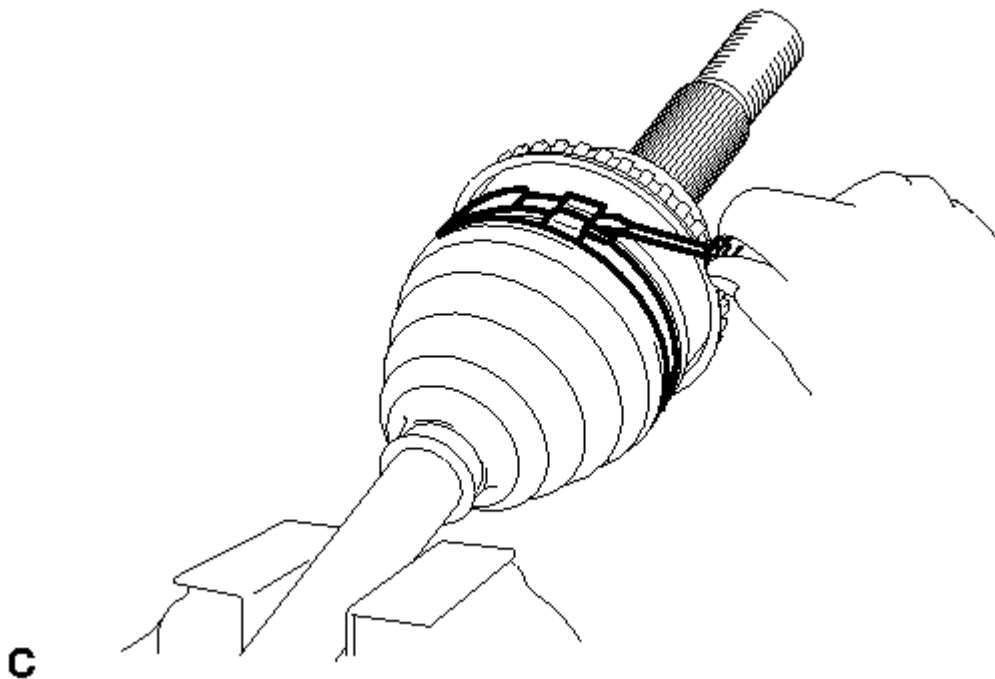


Fig. 120: Removing No. 2 Rear Drive Shaft Outboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. REMOVE REAR DRIVE SHAFT OUTBOARD JOINT BOOT

- a. Remove the rear drive shaft outboard joint boot from the rear drive shaft outboard joint shaft assembly.
- b. Remove the old grease from the rear drive shaft outboard joint assembly.

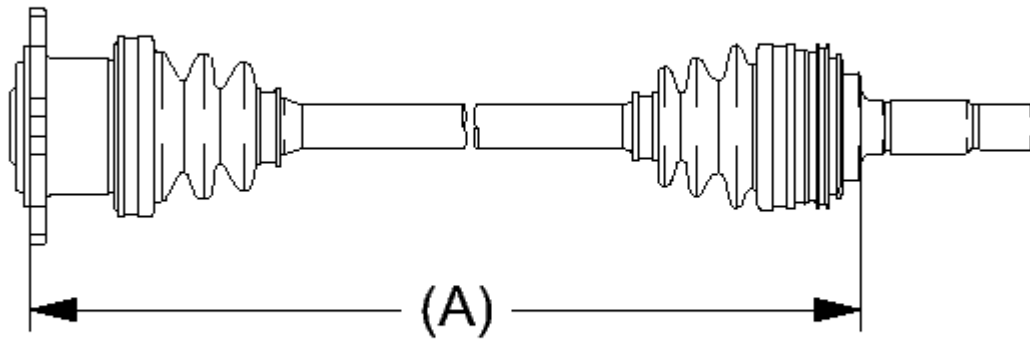
NOTE: **Do not disassemble the rear drive shaft outboard joint shaft assembly.**

INSPECTION

INSPECTION

1. INSPECT REAR DRIVE SHAFT ASSEMBLY

- a. Check whether the drive shaft dimensions are within the following specifications.



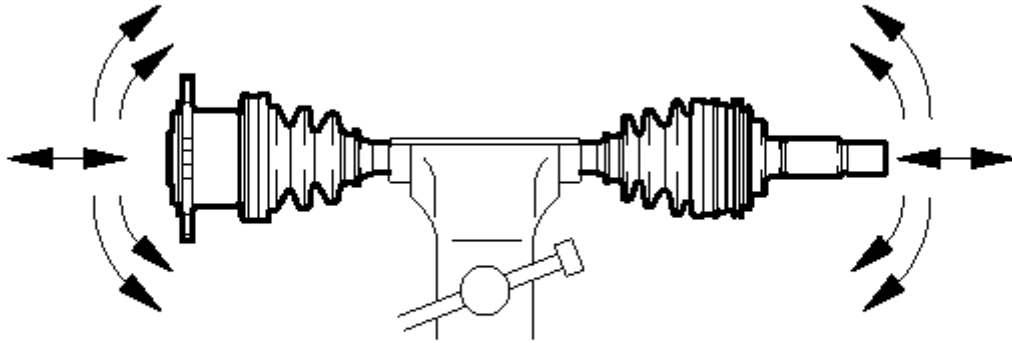
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Fig. 121: Inspecting Rear Drive Shaft Assembly Dimensions
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Dimension (A)

698.3 to 704.3 mm (27.5 to 27.7 in.)

- b. Check that there is no excessive play in the radial direction of the outboard joint.



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Fig. 122: Inspecting Rear Drive Shaft Assembly

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

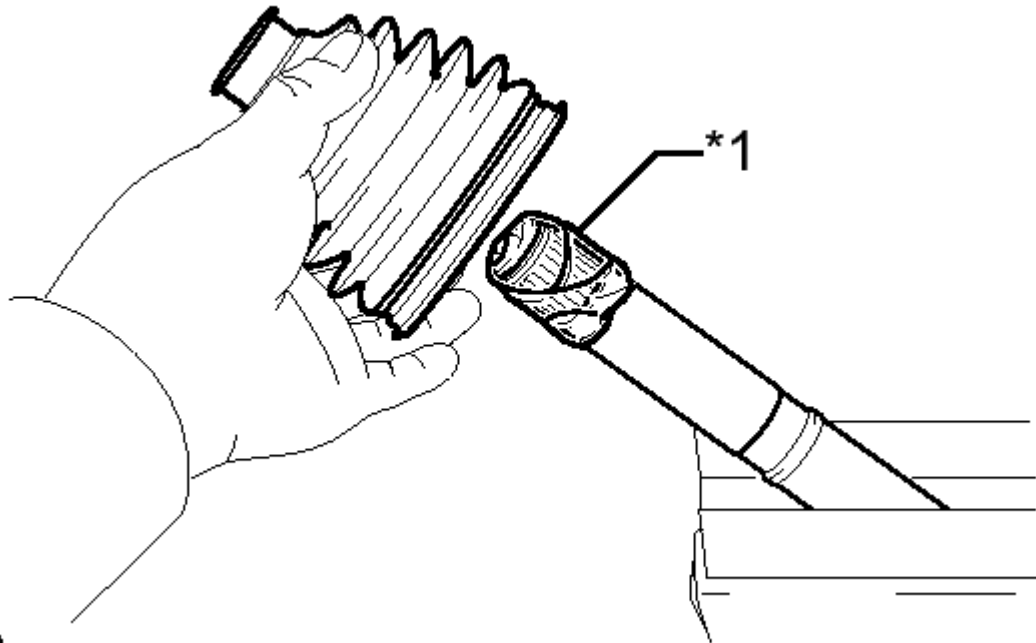
- c. Check that the inboard joint slides smoothly in the thrust direction.
- d. Check that there is no excessive play in the radial direction of the inboard joint and outboard joint.
- e. Check the boots for damage.

REASSEMBLY

REASSEMBLY

1. INSTALL REAR DRIVE SHAFT OUTBOARD JOINT BOOT

- a. Wrap the spline of the drive shaft with vinyl tape to prevent the boot from being damaged.
- b. Install new parts to the rear drive shaft outboard joint shaft assembly in the following order.



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Fig. 123: Identifying Rear Shaft Outboard Boot And Tape Wrapped Spline
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Vinyl Tape
----	---------------

1. Rear No. 2 drive shaft outboard joint boot clamp
2. Rear drive shaft outboard joint boot clamp
3. Rear drive shaft outboard joint boot
- c. Pack the rear drive outboard joint shaft assembly and rear drive shaft outboard joint boot with grease from the boot kit.

Grease capacity

50 to 70 g (1.8 to 2.5 oz.)

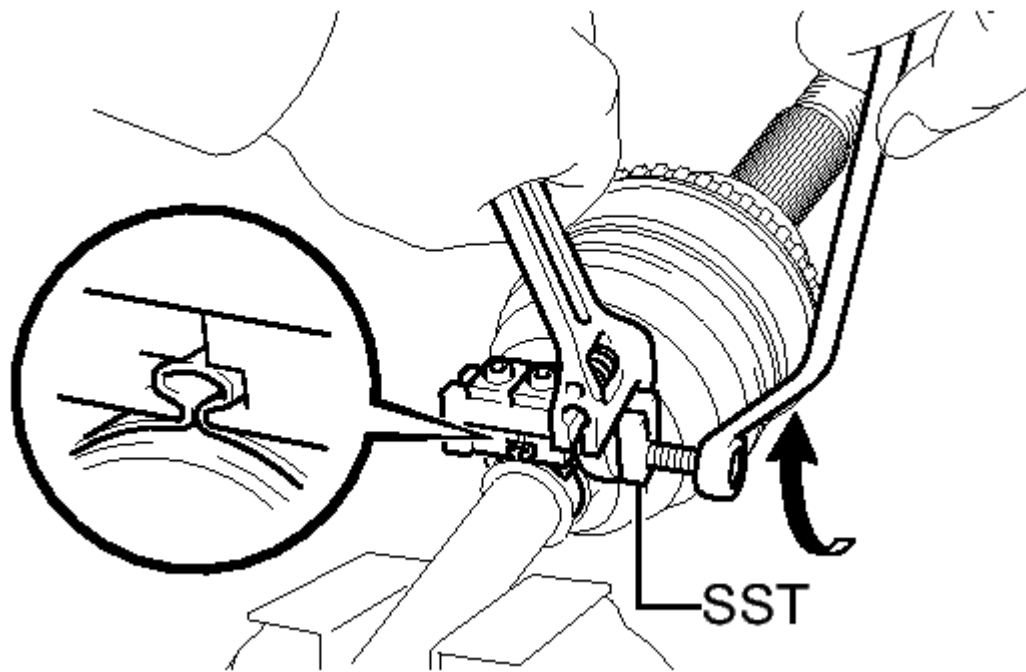
2. INSTALL REAR DRIVE SHAFT OUTBOARD JOINT BOOT CLAMP

- a. Hold the rear drive shaft assembly lightly in a vise between aluminum plates.

NOTE: **Do not overtighten the vise.**

- b. Secure the rear drive shaft outboard joint boot clamp onto the boot.
- c. Place SST onto the rear drive shaft outboard joint boot clamp.

- **SST: 09521-24010**



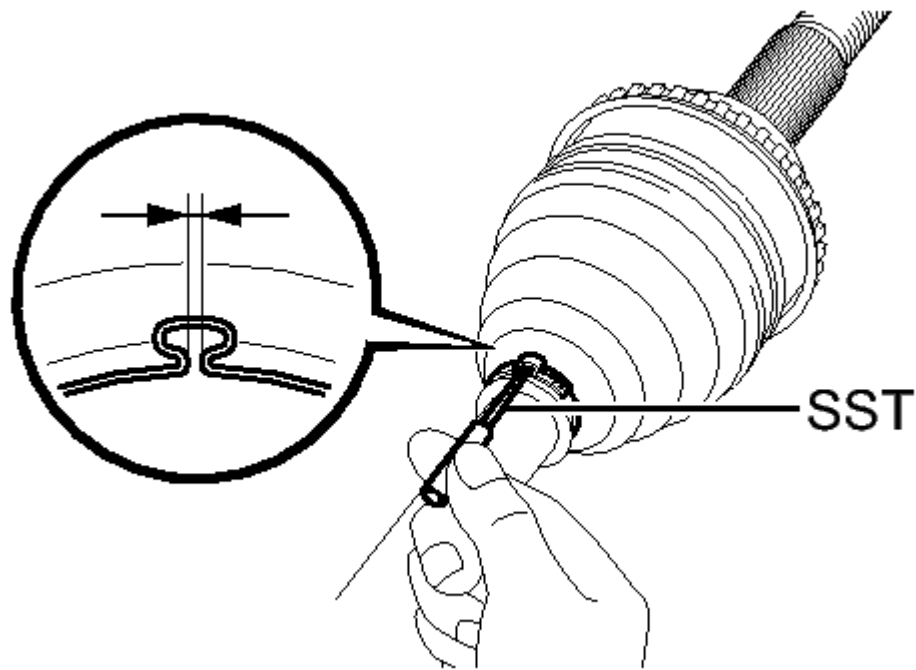
P

Fig. 124: Installing Rear Drive Shaft Outboard Joint Boot Clamp Using SST
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- d. Tighten the SST so that the rear drive shaft outboard joint boot clamp is pinched.

NOTE: **Do not overtighten the SST.**

- e. Using SST, inspect the clearance of the rear drive shaft outboard joint boot clamp.



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Fig. 125: Measuring Clearance Of Rear Drive Shaft Outboard Joint Boot Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09240-00020

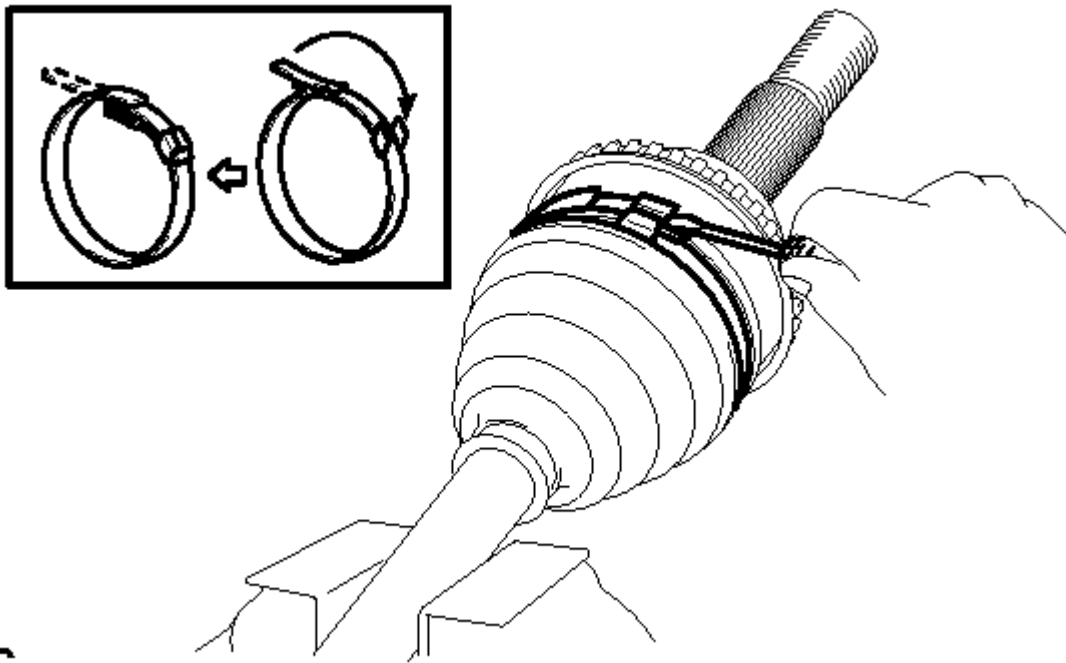
Clearance

1.2 to 4.0 mm (0.047 to 0.157 in.)

NOTE: If the measured value exceeds the specified value, retighten the clamp.

3. INSTALL REAR NO. 2 DRIVE SHAFT OUTBOARD JOINT BOOT CLAMP

- a. Using a screwdriver, install a new rear No. 2 drive shaft outboard joint boot clamp as shown in the illustration.



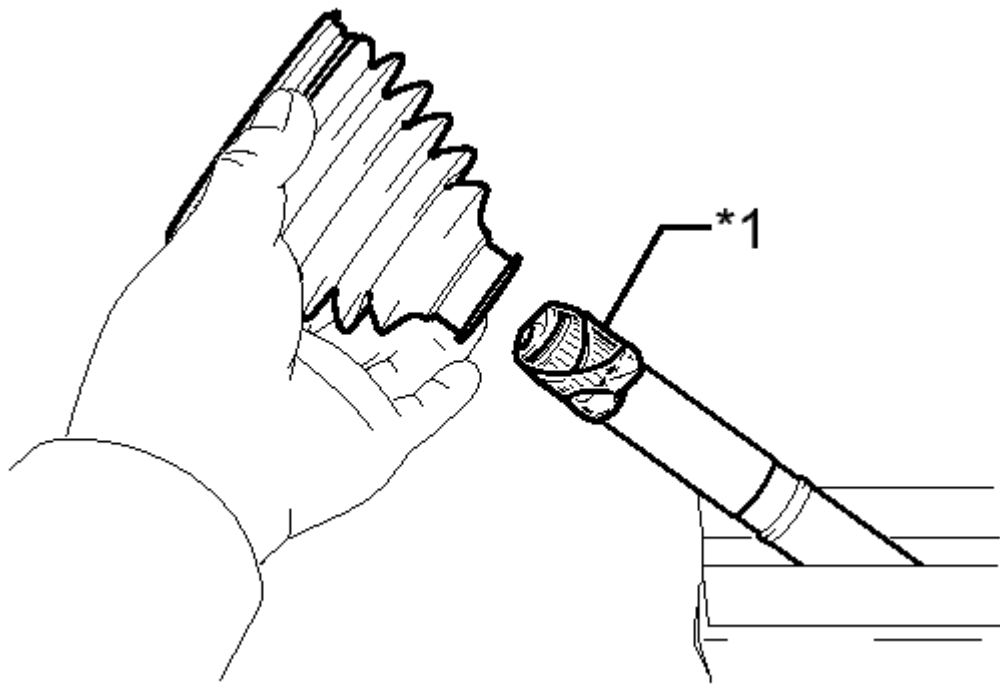
C

Fig. 126: Installing No. 2 Rear Drive Shaft Outboard Joint Clamp
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE: **Do not damage the outboard joint boot.**

4. INSTALL REAR DRIVE SHAFT INBOARD JOINT ASSEMBLY

- a. Wrap the spline of the rear drive shaft outboard joint shaft assembly with vinyl tape to prevent the boot from being damaged.



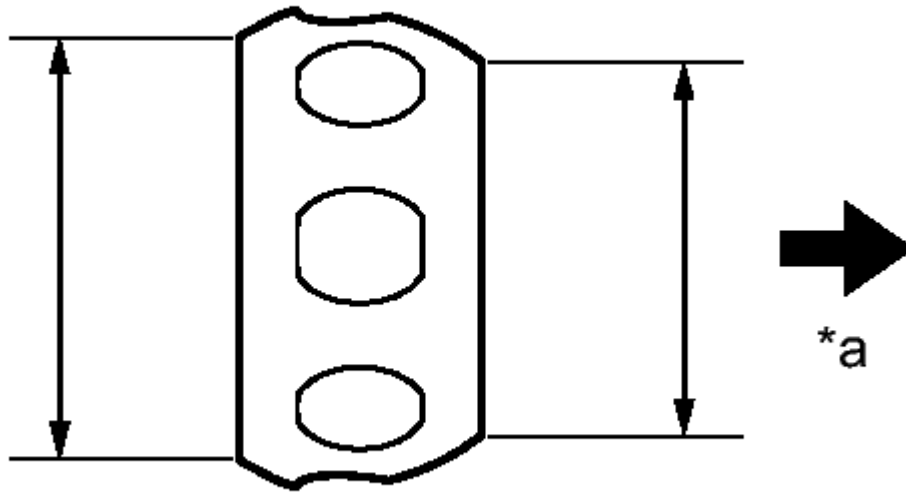
C

Fig. 127: Identifying Inboard Joint Boot And Tape Wrapped Spline
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Vinyl Tape
----	---------------

- b. Install new parts to the rear drive shaft outboard joint shaft assembly in the following order.
 - 1. Rear drive shaft inboard joint boot
 - 2. Rear drive shaft inboard joint boot clamp
 - 3. Rear No. 2 drive shaft inboard joint boot clamp
- c. Install the ball cage to the rear drive shaft outboard joint shaft assembly.



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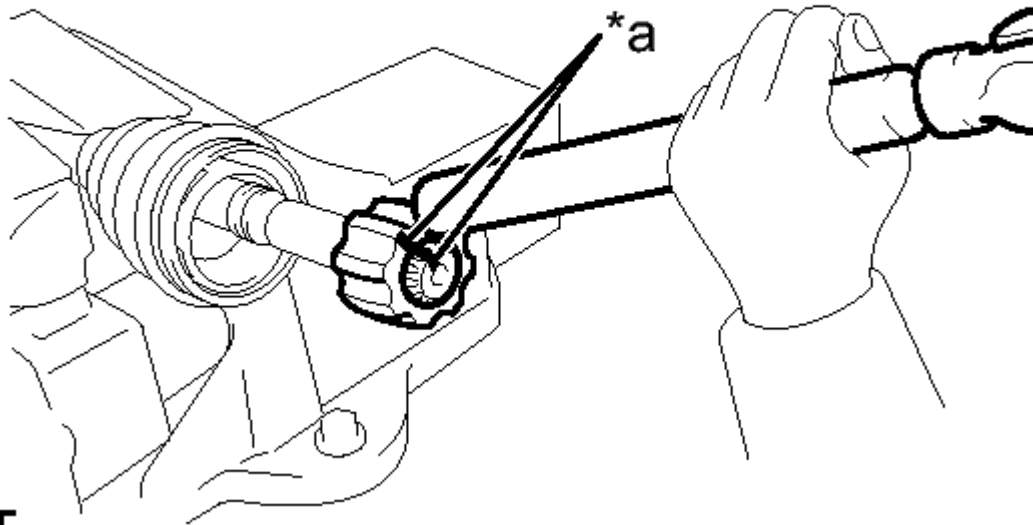
Fig. 128: Identifying Smaller Inner Diameter Of Ball Cage Facing Outboard Joint
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

	Outboard
*a	Joint
	Side

NOTE: **Install the ball cage with its smaller inner diameter side facing the outboard joint.**

- d. Align the matchmarks placed before removal and install the inner race to the rear drive outboard joint shaft assembly using a brass bar and a hammer.



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Fig. 129: Installing Inner Race At Rear Drive Outboard Joint Shaft Assembly Using A Brass Bar & Hammer To Matchmarks

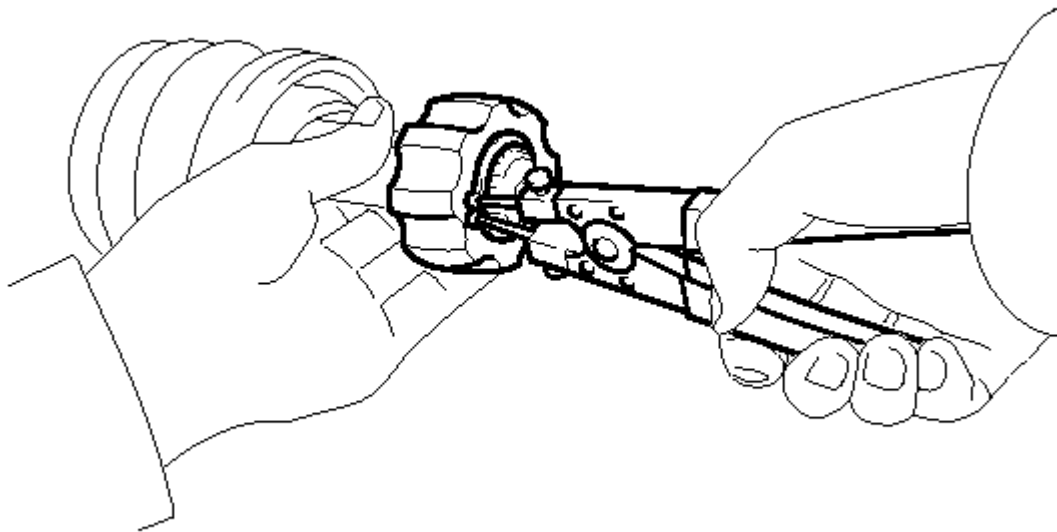
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

***a** Matchmark

NOTE: Be careful not to damage the inner race.

- e. Using a snap ring expander, install a new shaft snap ring.

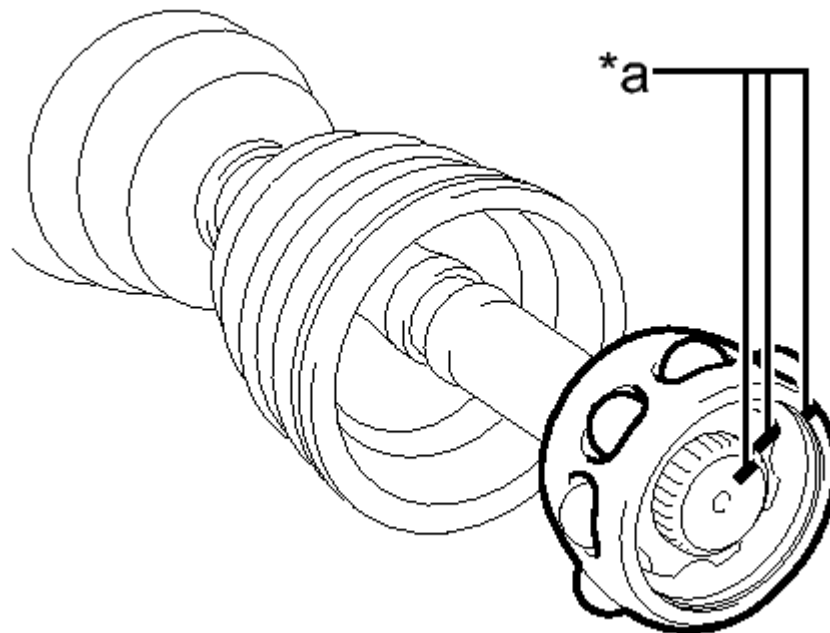


T

Fig. 130: Remove/Install Shaft Snap Ring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- f. Align the matchmarks placed before removal and install the ball cage to the inner race.



T

Fig. 131: Identifying Rear Drive Shaft Outboard Joint Shaft Assembly, Inner Race & Ball Cage Matchmarks

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a Matchmark

- g. Install the 8 balls with grease to the inner race.

NOTE: Be careful not to drop the balls.

HINT:

Apply grease onto the balls to keep them from falling.

- h. Pack the rear drive shaft inboard joint assembly and rear drive shaft inboard boot with grease.

Grease capacity

90 to 110 g (3.2 to 3.8 oz.)

- i. Align the matchmarks and install the rear drive shaft inboard joint assembly to the rear drive shaft outboard joint shaft assembly.

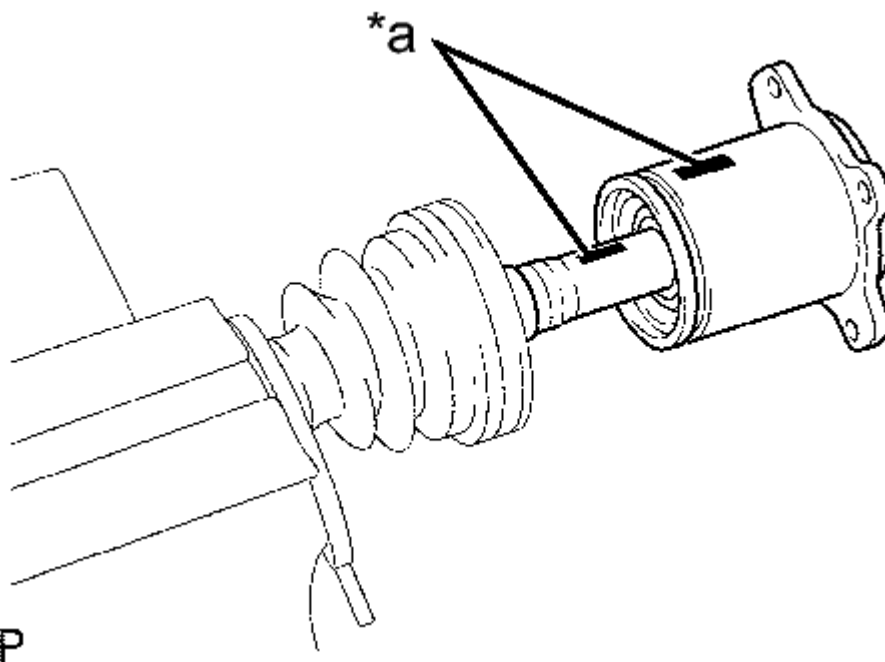
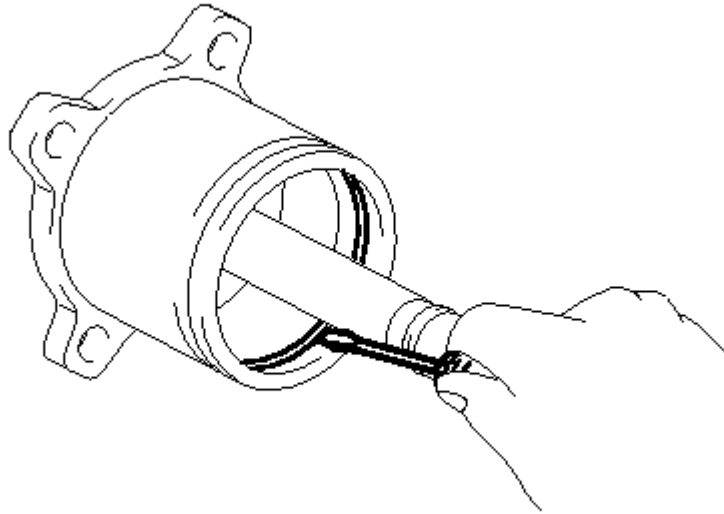


Fig. 132: Identifying Inboard & Outboard Drive Shaft Joint Assembly Matchmarks
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a Matchmark

- j. Using a screwdriver, install the new drive shaft snap ring to the rear drive shaft inboard joint assembly.



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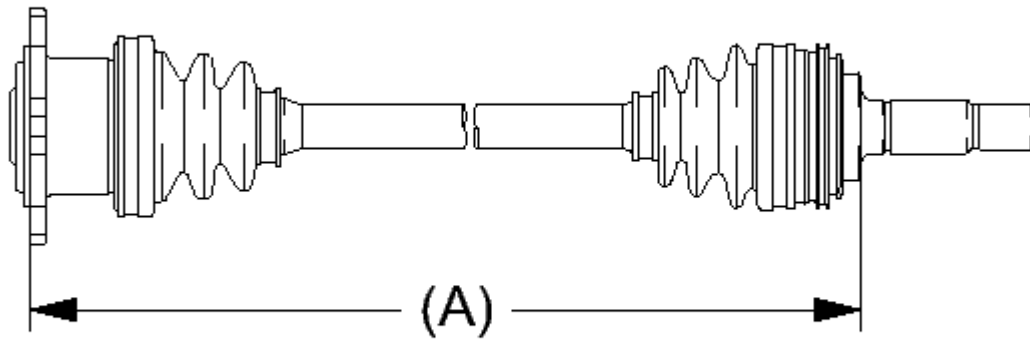
Fig. 133: Remove/Install Drive Shaft Snap Ring
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. INSTALL REAR DRIVE SHAFT INBOARD JOINT BOOT

- a. Install the rear drive shaft inboard joint boot to the rear drive shaft inboard joint assembly.
- b. Check whether the drive shaft dimensions are within the following specifications.

HINT:

The following table shows the dimension (A) of the drive shaft.



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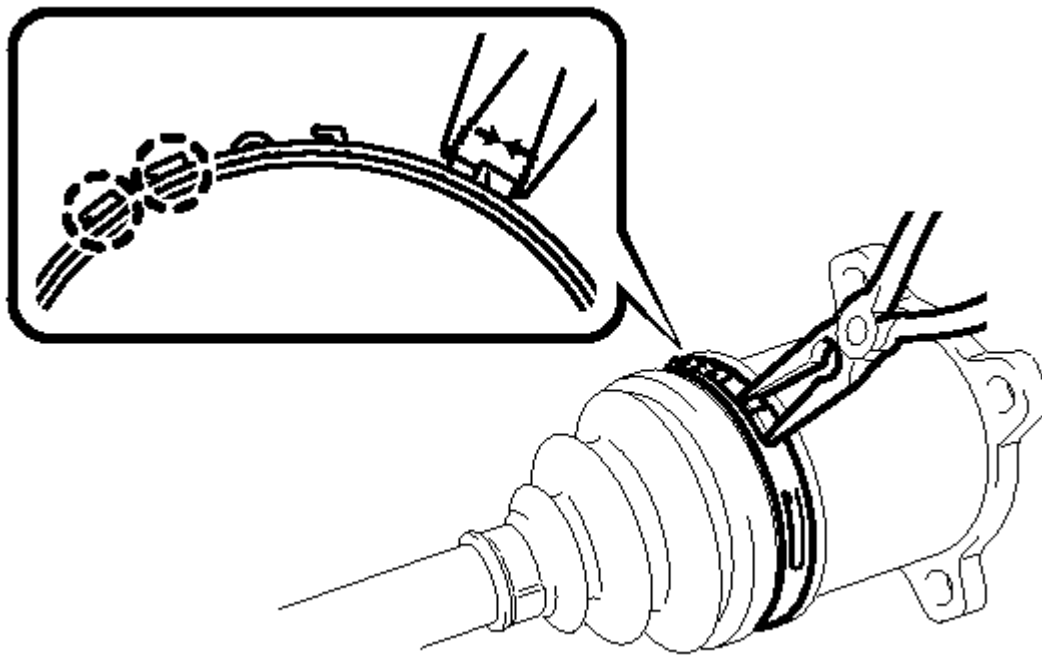
Fig. 134: Inspecting Rear Drive Shaft Assembly Dimensions
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Dimension (A)

698.3 to 704.3 mm (27.5 to 27.7 in.)

6. INSTALL REAR NO. 2 DRIVE SHAFT INBOARD JOINT BOOT CLAMP

- a. Using needle-nose pliers, engage the 2 claws to install a new rear No. 2 drive shaft inboard joint boot clamp as shown in the illustration.



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Fig. 135: Remove/Install No. 2 Drive Shaft Inboard Joint Boot Clamp & Claws Using Needle-Nose Pliers

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. INSTALL REAR DRIVE SHAFT INBOARD JOINT BOOT CLAMP

HINT:

Perform the same procedure as for the rear No. 2 drive shaft inboard joint boot clamp.

8. INSPECT REAR DRIVE SHAFT ASSEMBLY See step 1

INSTALLATION

INSTALLATION

HINT:

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

1. INSTALL REAR DRIVE SHAFT ASSEMBLY

- a. Install the rear drive shaft to the axle carrier.

NOTE: Be careful not to damage the boot and speed sensor rotor of the rear drive shaft and oil seal of the axle hub bearing.

- b. Align the matchmarks and connect the rear drive shaft to the differential side gear shaft.

NOTE: Be careful not to damage the boots and end cover.

- c. Install the rear drive shaft with the 4 nuts and washers.

Torque: 56 N*m (571 kgf*cm, 41 ft.*lbf)

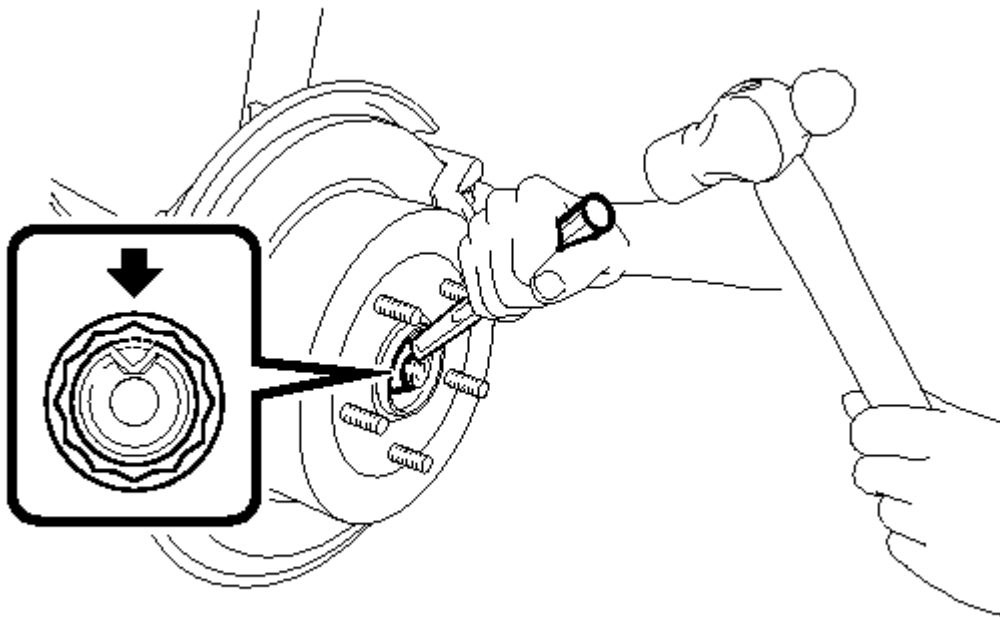
2. INSTALL REAR AXLE SHAFT NUT

- a. Clean the threaded parts on the rear drive shaft and a new rear axle shaft nut using a non-residue solvent.

NOTE:

- Be sure to perform this work for a new drive shaft.
- Keep the threaded parts free of oil and foreign matter.

- b. Install a new axle shaft nut.



C

Fig. 136: Staking Axle Shaft Nut Using A Chisel & Hammer
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Torque: 294 N*m (2998 kgf*cm, 217 ft.*lbf)

- c. Using a chisel and hammer, stake the axle shaft nut.

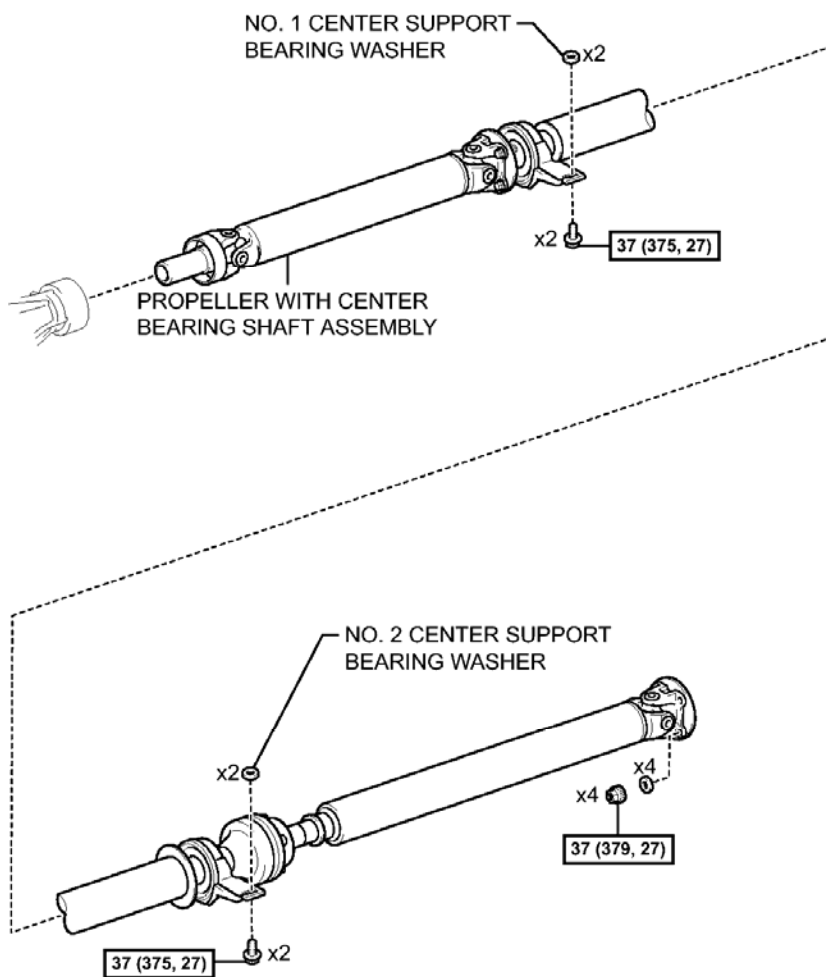
3. INSTALL REAR WHEEL

Torque: 103 N*m (1050 kgf*cm, 76 ft.*lbf)

PROPELLER SHAFT ASSEMBLY

COMPONENTS

ILLUSTRATION



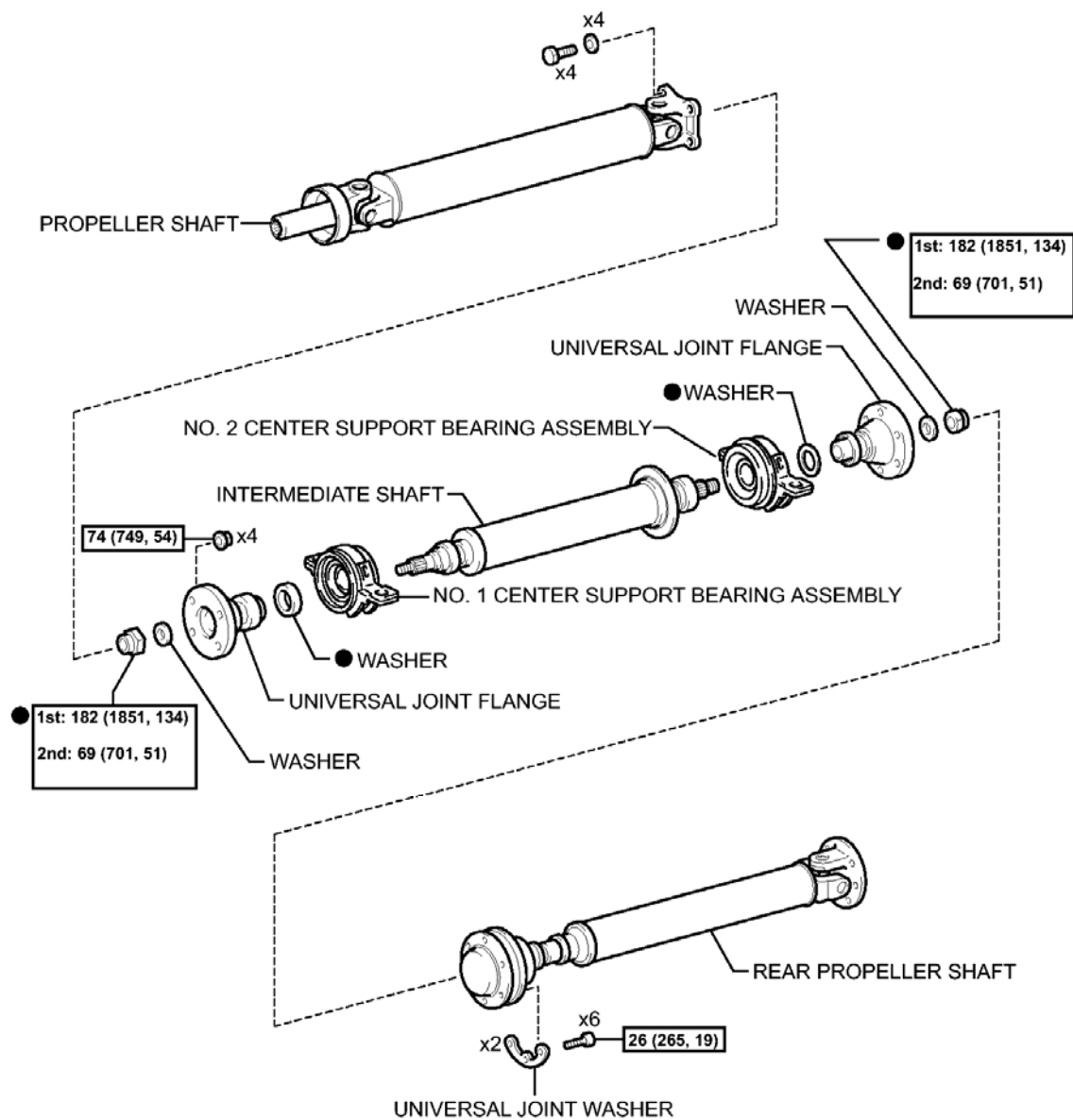
N*m (kgf*cm, ft*lbf) : Specified torque

c

Fig. 137: Propeller Shaft Assembly Replacement Components With Torque Specifications

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION



[N*m (kgf*cm, ft.*lbf)]: Specified torque

● Non-reusable part

Fig. 138: Exploded View Of Propeller Shaft Assembly Replacement Components With Torque Specifications

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

REMOVAL

1. **DRAIN TRANSFER OIL** . Refer to **REPLACEMENT - Step 1**
2. **REMOVE PROPELLER WITH CENTER BEARING SHAFT ASSEMBLY**
 - a. Depress the brake pedal and hold it.
 - b. Using a hexagon wrench (6 mm), loosen the bolts 1/2 turn.

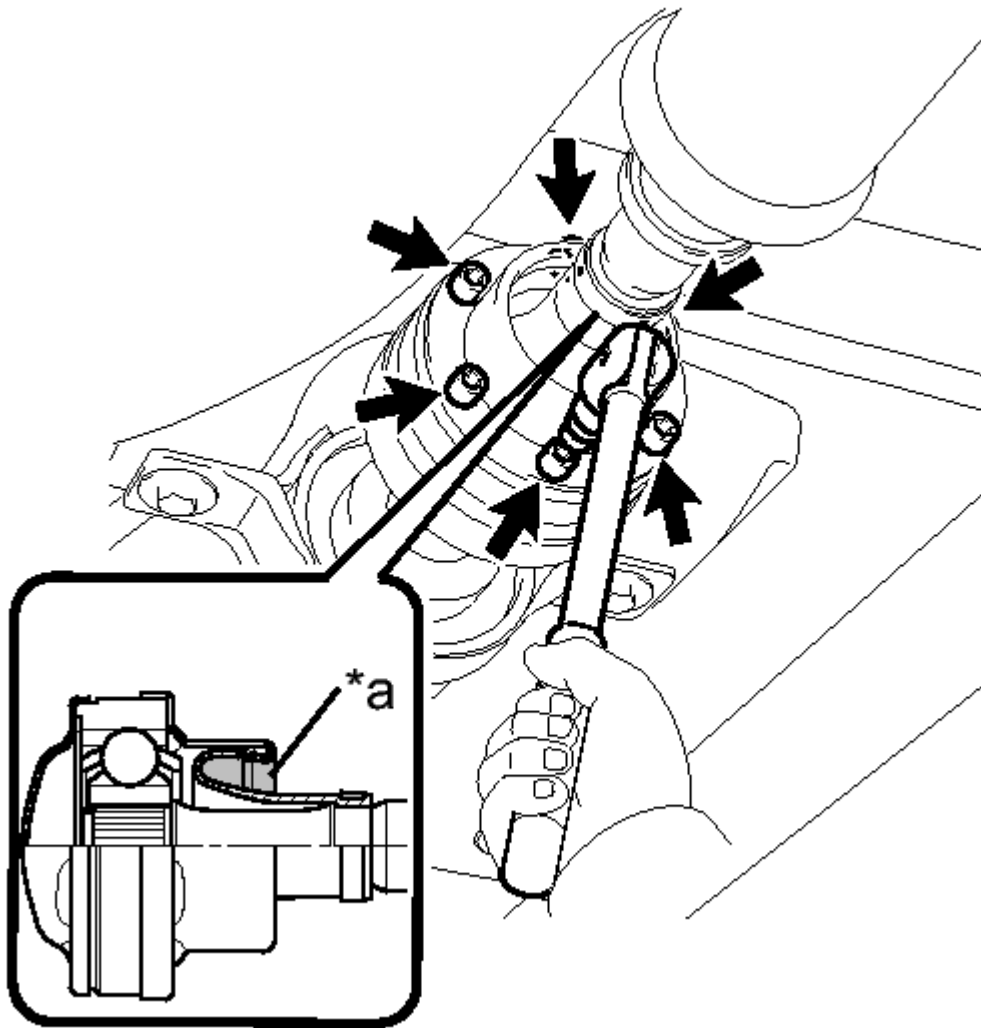


Fig. 139: Loosening Propeller With Center Bearing Shaft Assembly Fasteners
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE:

- Put a piece of cloth or equivalent into the inside of the universal joint cover so that the boot does not touch the inside of the universal joint cover.
- Do not remove the bolts.

TEXT IN ILLUSTRATION

	Piece
*a	of
	Cloth

- c. Place matchmarks on the rear propeller shaft and electromagnetic control coupling assembly.

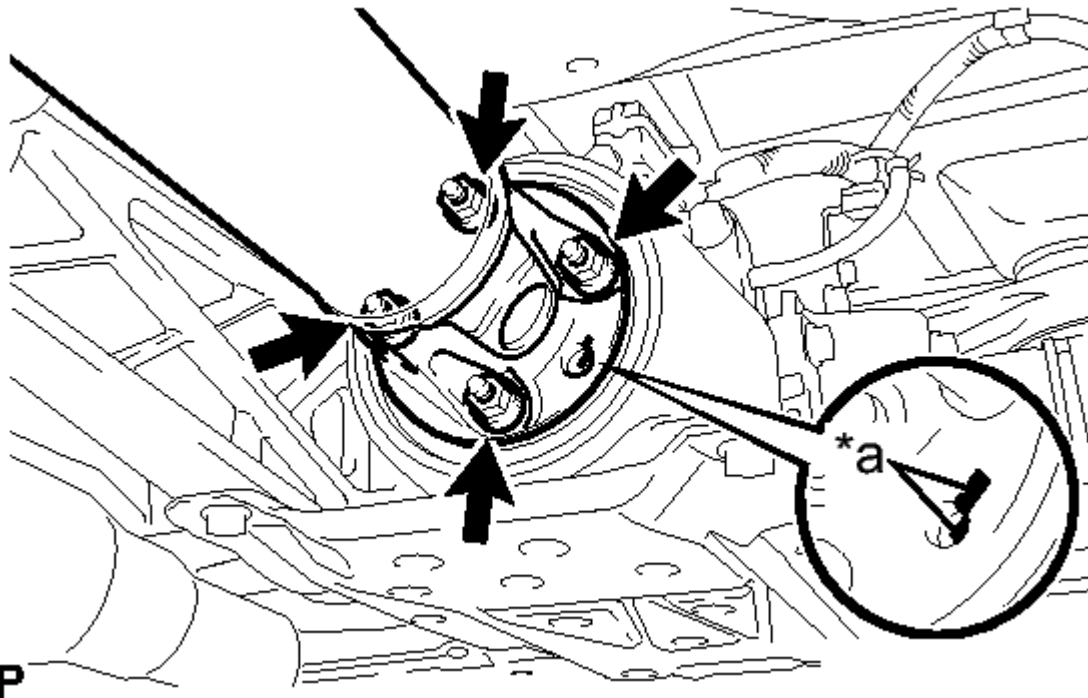


Fig. 140: Identifying Rear Propeller Shaft & Electromagnetic Control Coupling Assembly Matchmarks

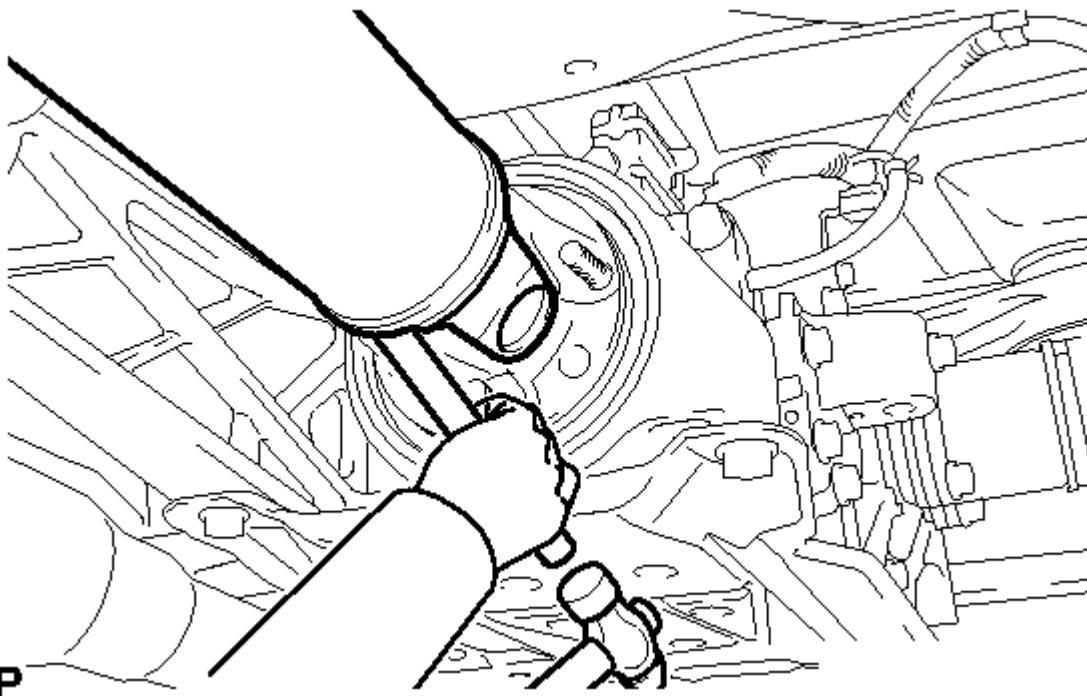
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Matchmark
----	-----------

NOTE: Do not use a punch for the marks.

- d. Remove the 4 nuts and 4 washers.
e. Using a brass bar and a hammer, separate the propeller with center bearing shaft assembly.

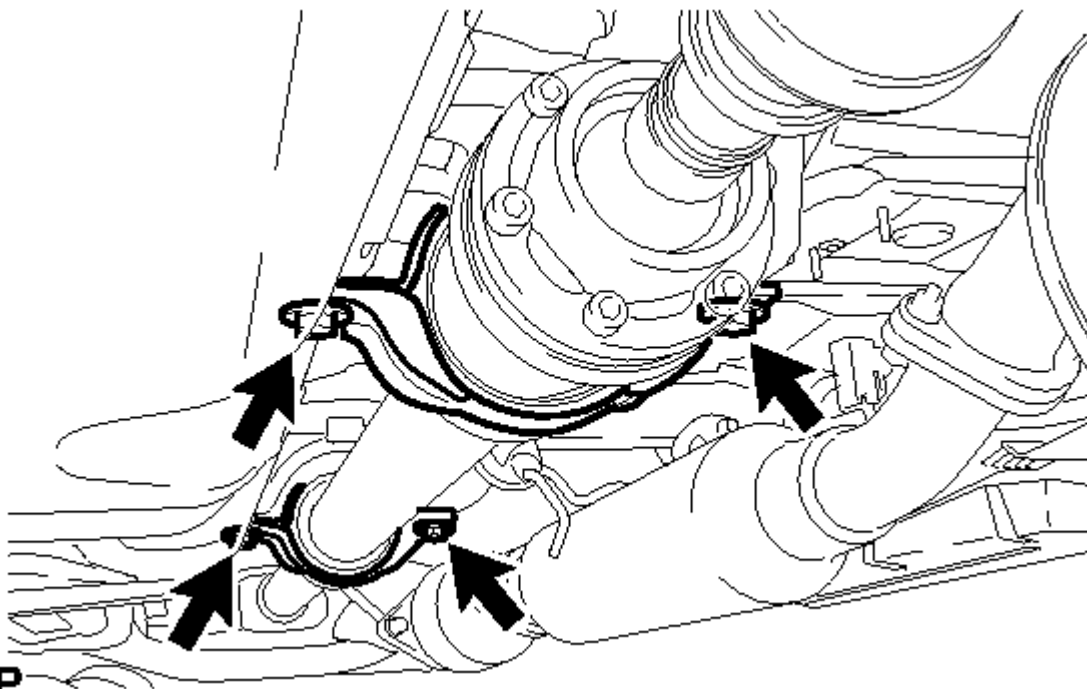


P

Fig. 141: Separating Propeller With Center Bearing Shaft Assembly Using Brass Bar & Hammer

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- f. Remove the 4 bolts, 2 No. 1 center support bearing washers and 2 No. 2 center support bearing washers.



P

Fig. 142: Identifying Propeller With Center Bearing Shaft Assembly Fasteners
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- NOTE:**
- When removing the bolts and washers, do not apply excessive force to the universal joint.
 - Keep the washers and use them again when re-installing.

g. Pull out the propeller with center bearing shaft assembly from the transfer.

- NOTE:**
- When removing the propeller shaft, do not apply excessive force to the universal joint.
 - During and after the removal of the propeller shaft, keep the universal joint angle straight (within 15 degrees).
 - Be careful not to damage the oil seal.

h. Insert SST into the transfer to prevent oil leaks.

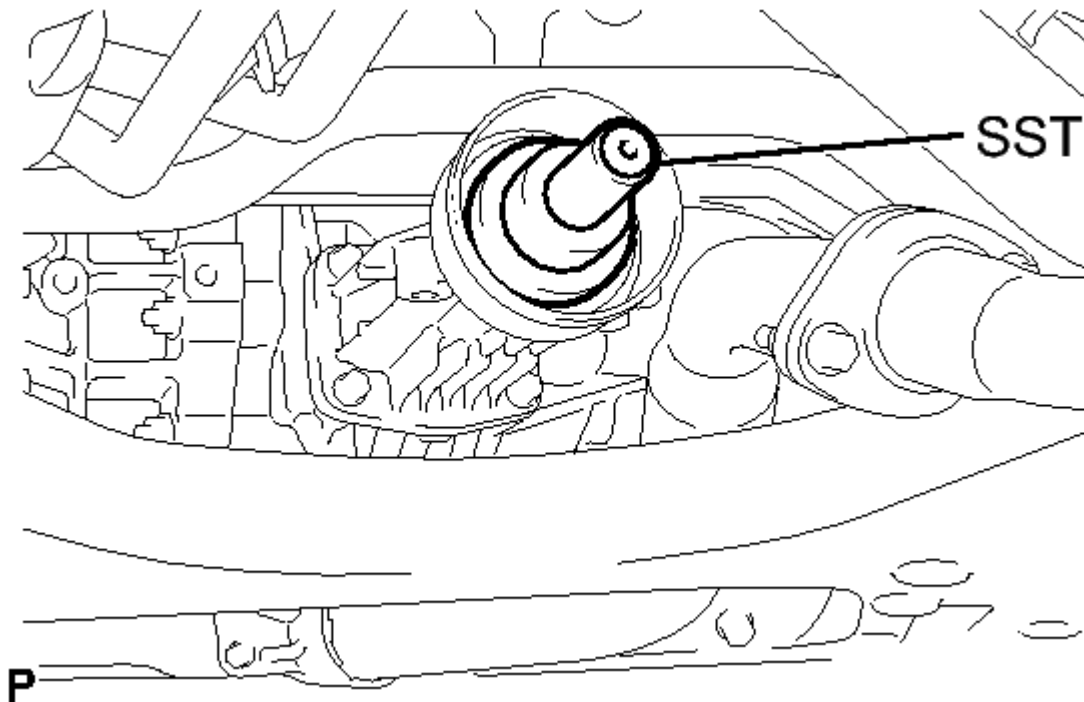


Fig. 143: Preventing Oil Leaks At Transfer Using SST
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- SST: 09325-20010

NOTE: Be careful not to damage the oil seal.

DISASSEMBLY

DISASSEMBLY

1. REMOVE PROPELLER SHAFT

- a. Place matchmarks on both flanges.

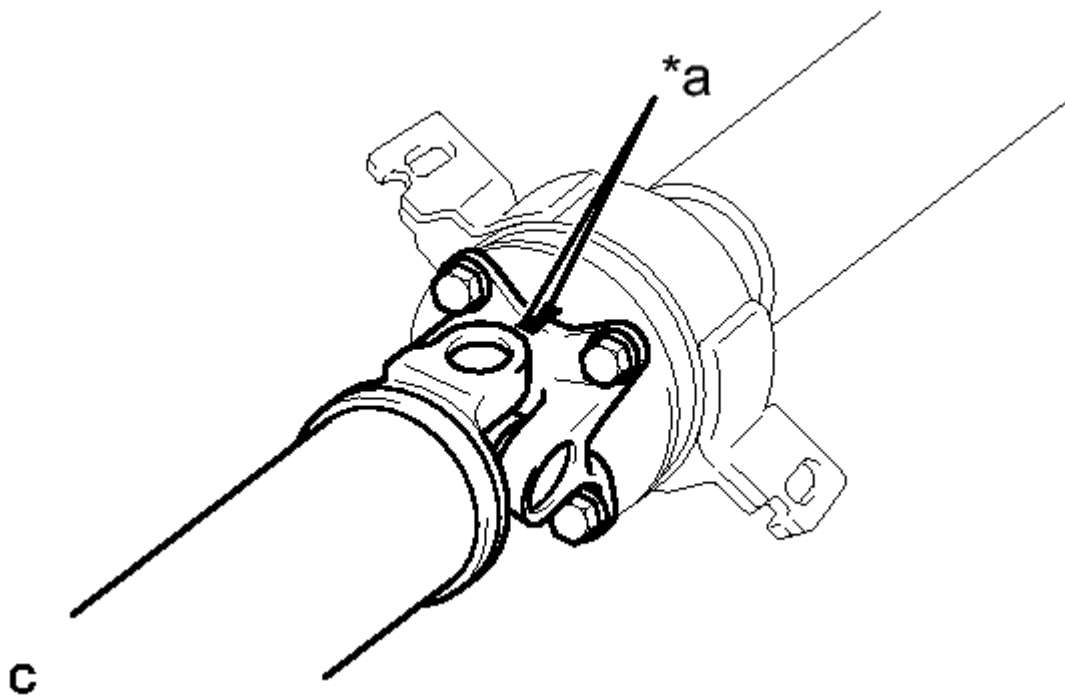


Fig. 144: Identifying Propeller Shaft Matchmarks
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

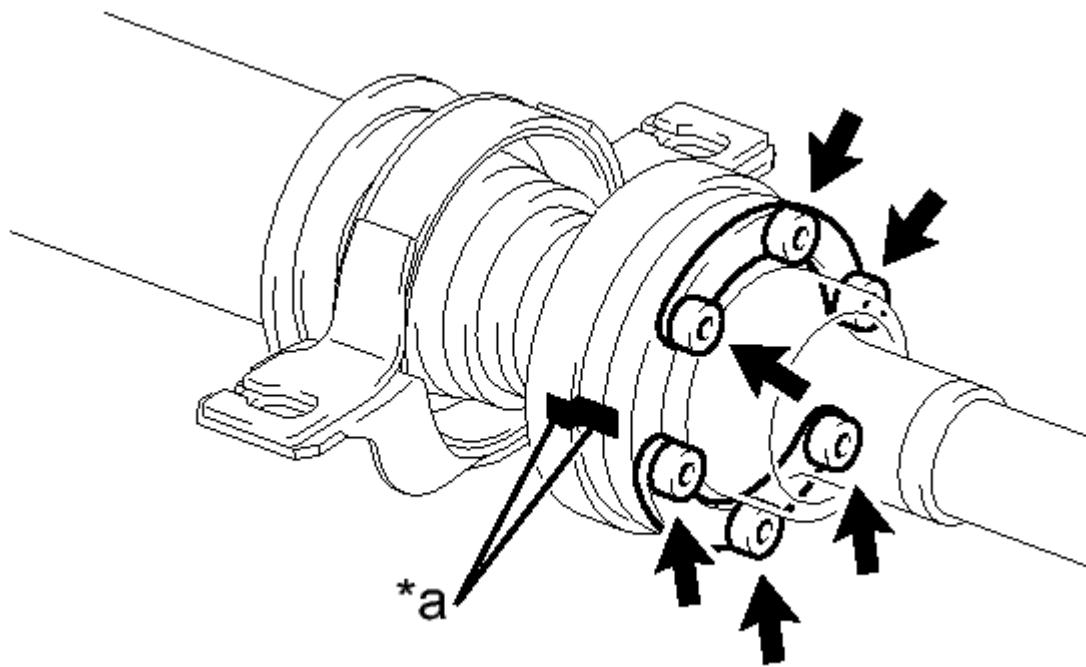
*a Matchmark

NOTE: Do not use a punch for the marks.

- b. Remove the 4 nuts, 4 bolts and 4 washers.

2. REMOVE INTERMEDIATE SHAFT

- a. Place matchmarks on the intermediate shaft and rear propeller shaft.



P

Fig. 145: Identifying Intermediate Shaft & Propeller Shaft Matchmarks & Fasteners
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

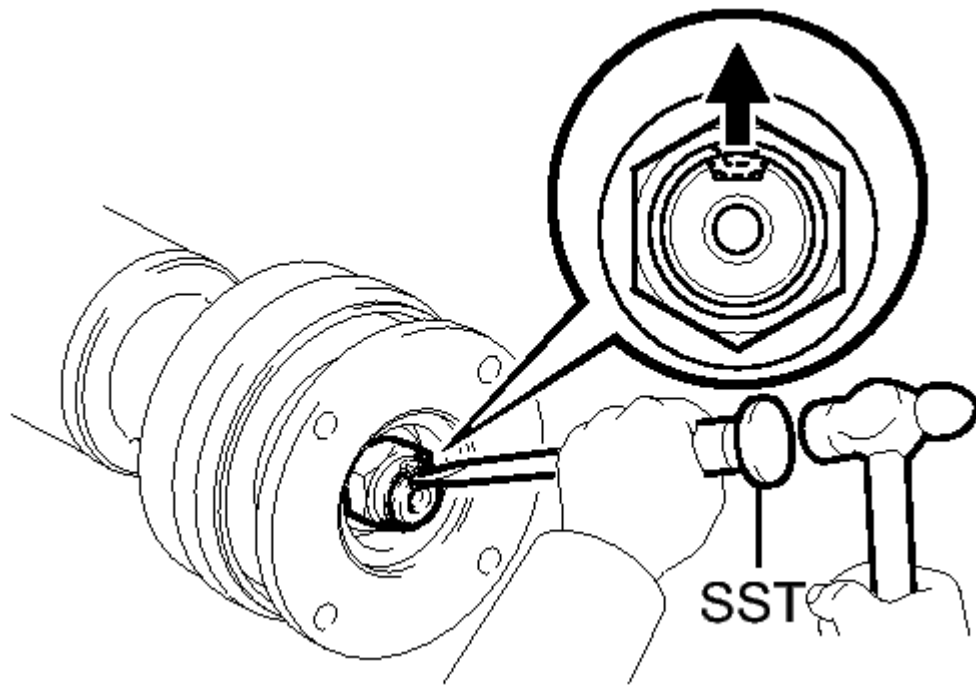
*a Matchmark

NOTE: Do not use a punch for the marks.

- b. Using a hexagon wrench (6 mm), remove the 6 bolts, 2 washers and intermediate shaft from the rear propeller shaft.

3. REMOVE NO. 1 CENTER SUPPORT BEARING ASSEMBLY

- a. Using SST and a hammer, loosen the staked part of the nut.
 - **SST: 09930-00010**



P

Fig. 146: Loosening Staked Part Of Nut

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Using SST to hold the universal joint flange, remove the nut and washer
 - SST: 09330-00021

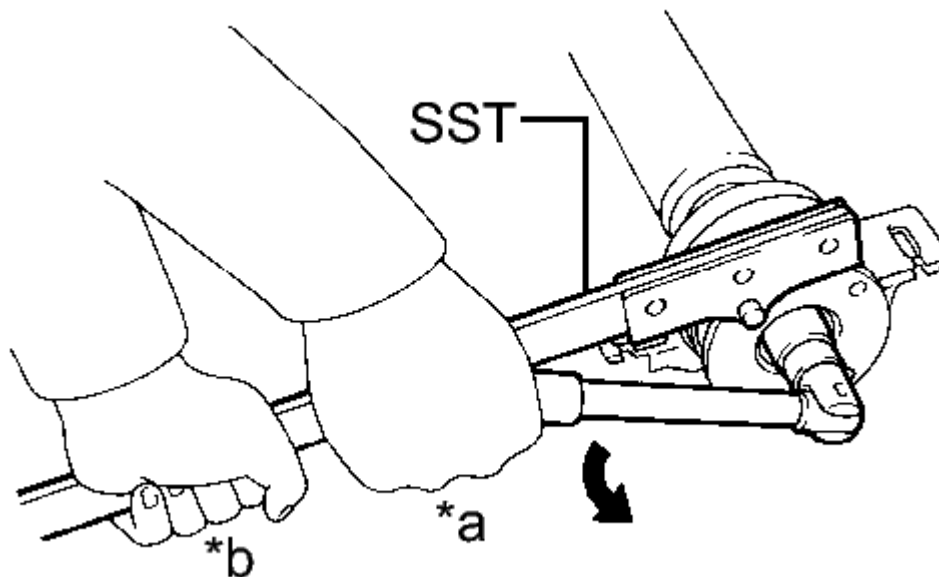


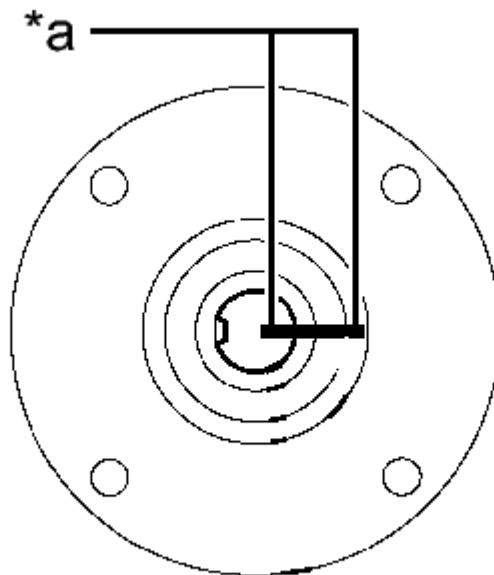
Fig. 147: Removing Universal Joint Flange Fasteners Using SST

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Turn
*b	Hold

- c. Place matchmarks on the universal joint flange and intermediate shaft.



T

Fig. 148: Identifying Universal Joint Flange & Intermediate Shaft Matchmarks
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Matchmark
----	-----------

NOTE: Do not use a punch for the marks.

- d. Using SST, remove the universal joint flange.

- SST: 09950-30012

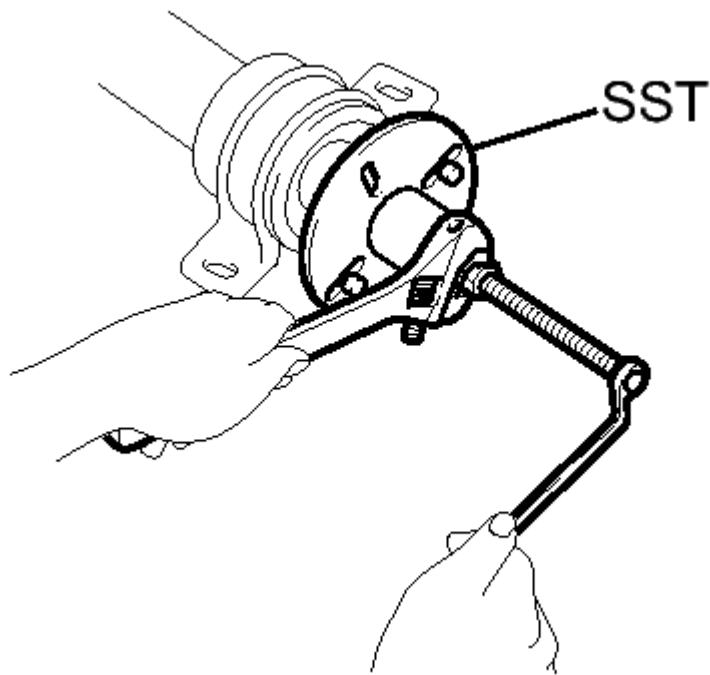
09951-03010

09953-03010

09954-03010

09955-03030

09956-03020

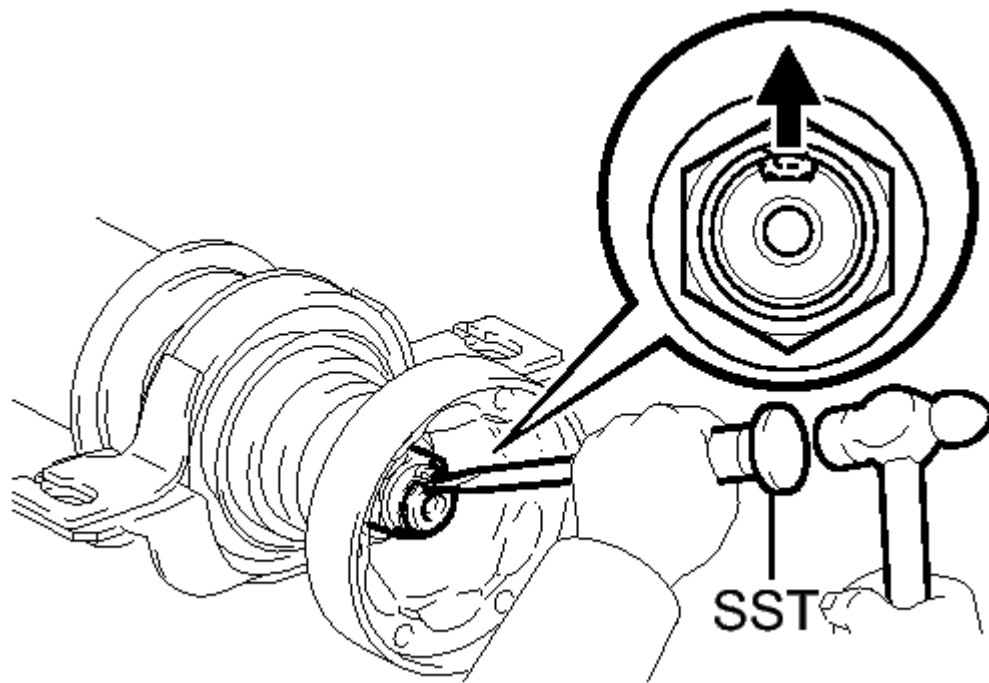


P

Fig. 149: Removing Center Support Bearing Assembly, Universal Joint Flange & Washer Using SST

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- e. Remove the No. 1 center support bearing assembly, washer and universal joint flange.
4. **REMOVE NO. 2 CENTER SUPPORT BEARING ASSEMBLY**
 - a. Using SST and a hammer, loosen the staked part of the nut.
 - SST: 09930-00010



P

Fig. 150: Loosening Staked Part Of Nut

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Using SST to hold the universal joint flange, remove the nut and washer.
 - SST: 09330-00021

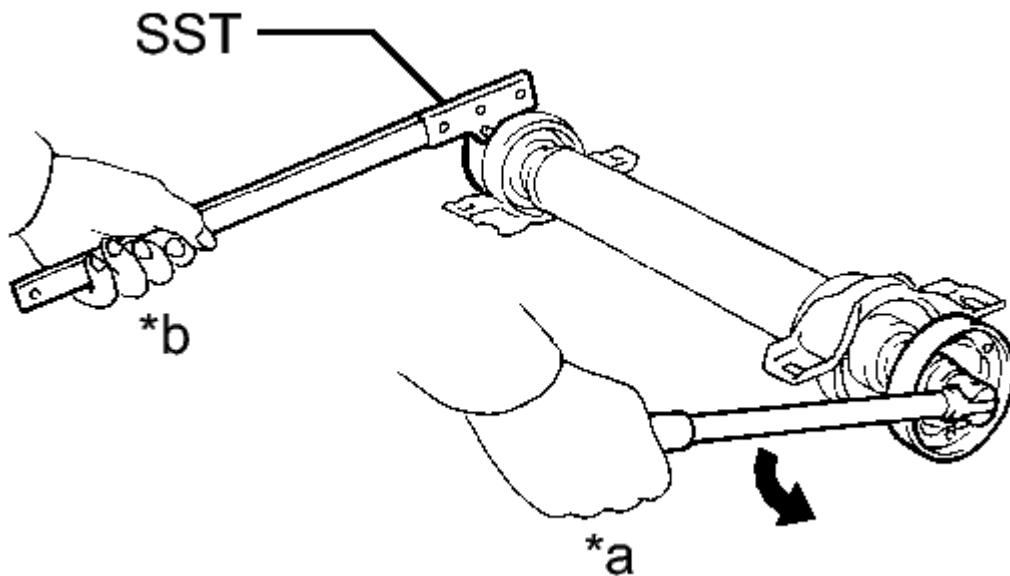


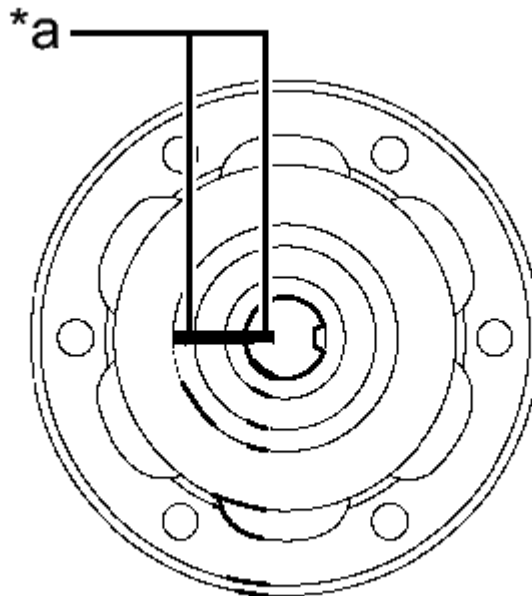
Fig. 151: Removing Universal Joint Flange Fasteners Using SST

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Turn
*b	Hold

- c. Place matchmarks on the universal joint flange and intermediate shaft.



T

Fig. 152: Identifying Universal Flange & Intermediate Shaft Matchmarks
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Matchmark
----	-----------

NOTE: Do not use a punch for the marks.

- d. Using SST, remove the universal joint flange.

- **SST: 09950-30012**

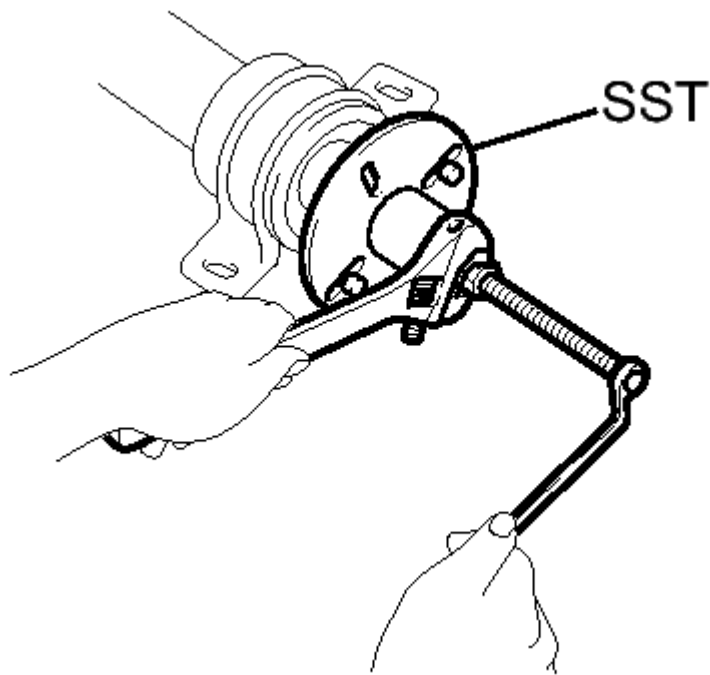
09951-03010

09953-03010

09954-03010

09955-03030

09956-03020



P

Fig. 153: Removing Center Support Bearing Assembly, Universal Joint Flange & Washer Using SST

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

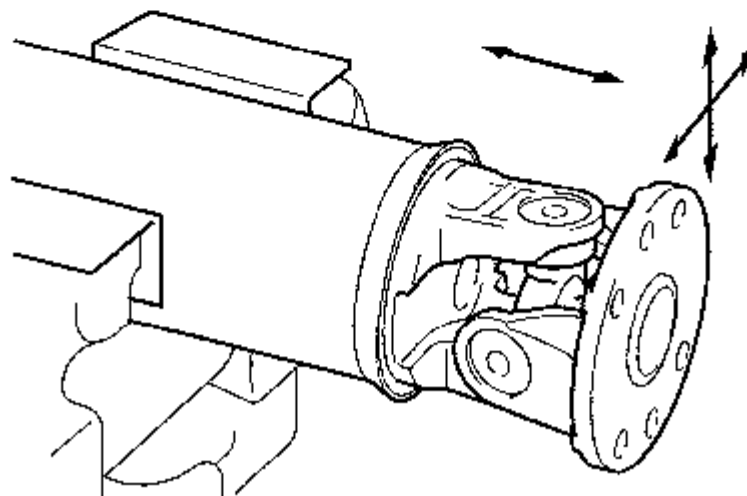
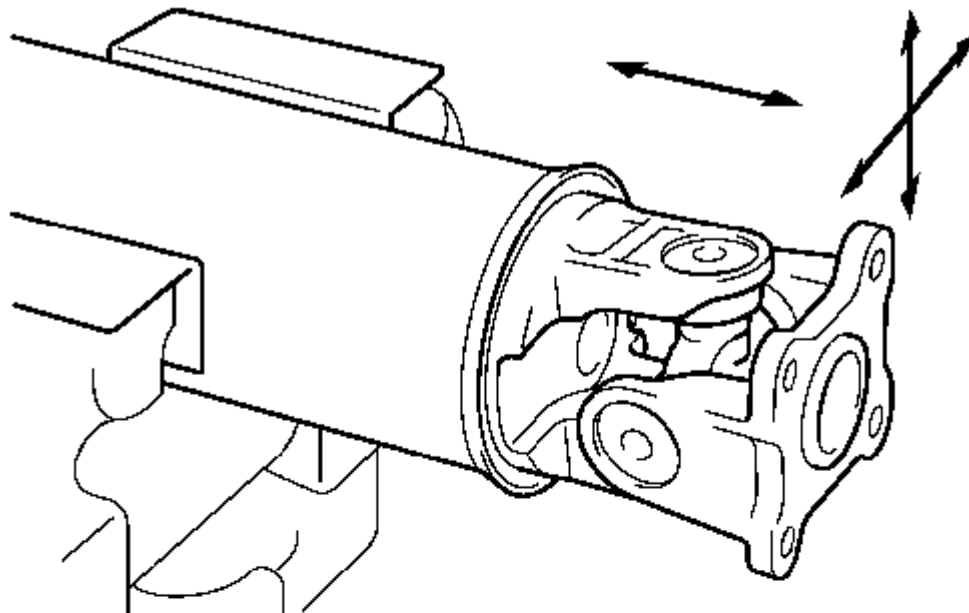
- e. Remove the No. 2 center support bearing assembly, washer and universal joint flange.

INSPECTION

INSPECTION

1. INSPECT UNIVERSAL JOINT SPIDER ASSEMBLY

- a. Check the spider bearing axial play by turning the flange while holding the shaft tightly.



P

C90623

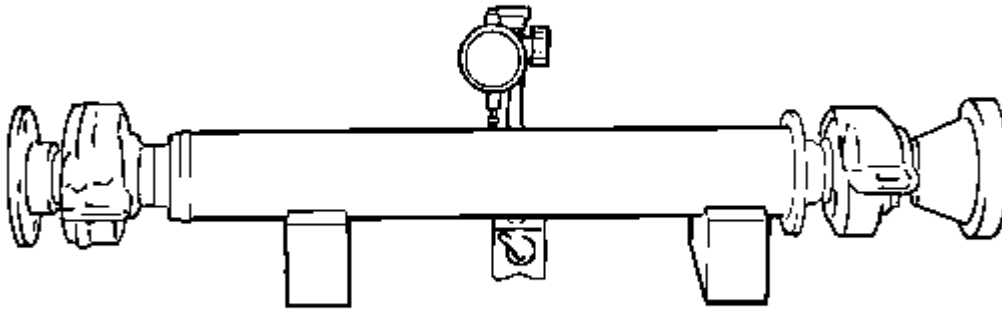
Fig. 154: Checking Spider Bearing Axial Play
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

If necessary, replace the propeller with center bearing shaft assembly.

NOTE: Do not overtighten the vise.

2. INSPECT INTERMEDIATE SHAFT

- a. Using a dial indicator, inspect the intermediate shaft.



T

C53258

Fig. 155: Identifying Intermediate Shaft
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Maximum runout

0.4 mm (0.0157 in.)

NOTE: The dial indicator must be set at a right angle to the center of the intermediate shaft.

If the shaft runout is greater than the maximum, replace the propeller with center bearing shaft assembly.

- b. Using a dial indicator, inspect the front side universal joint flange runout in the vertical direction.

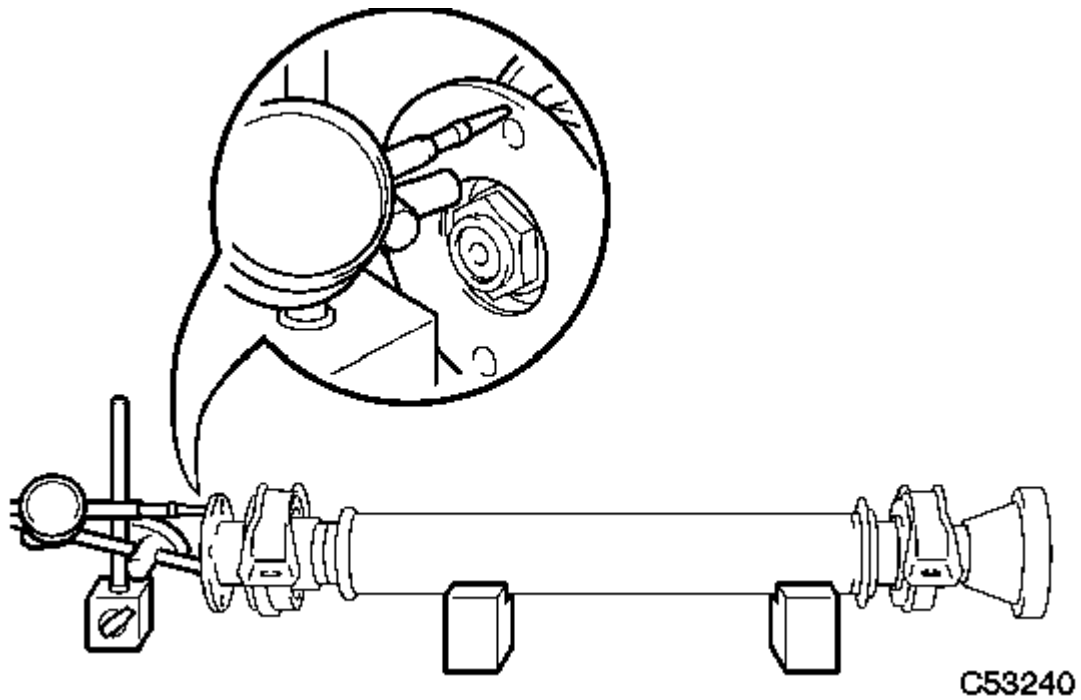


Fig. 156: Identifying Runout Of Front Side Of Intermediate Shaft Flange
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Maximum runout

0.1 mm (0.00394 in.)

If the flange runout is greater than the maximum, replace the propeller with center bearing shaft assembly.

- c. Using a dial indicator, inspect the rear side universal joint flange runout in the vertical direction.

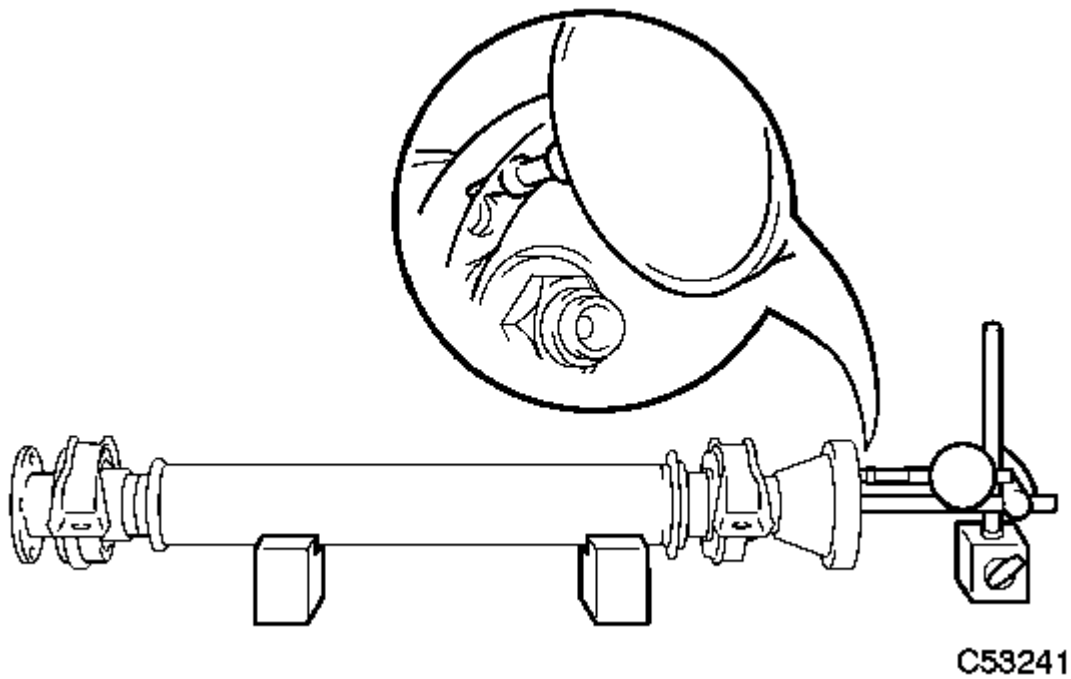


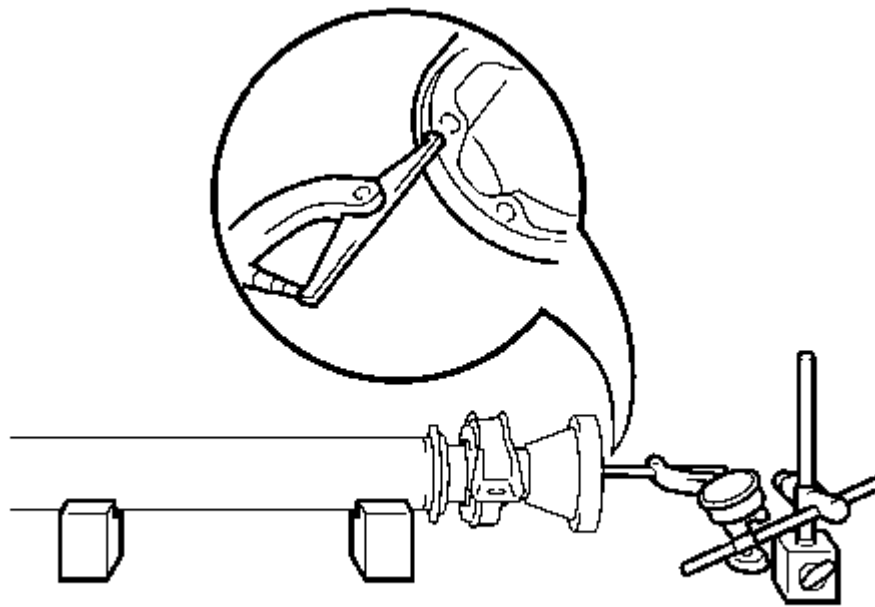
Fig. 157: Identifying Intermediate Shaft Flange Runout In Horizontal Direction
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Maximum runout

0.1 mm (0.00394 in.)

If the flange runout is greater than the maximum, replace the propeller with center bearing shaft assembly.

- d. Using a dial indicator, inspect the rear side universal joint flange runout in the horizontal direction.



C69051

Fig. 158: Measuring Rear Side Of Universal Joint Flange Runout In Horizontal Direction
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

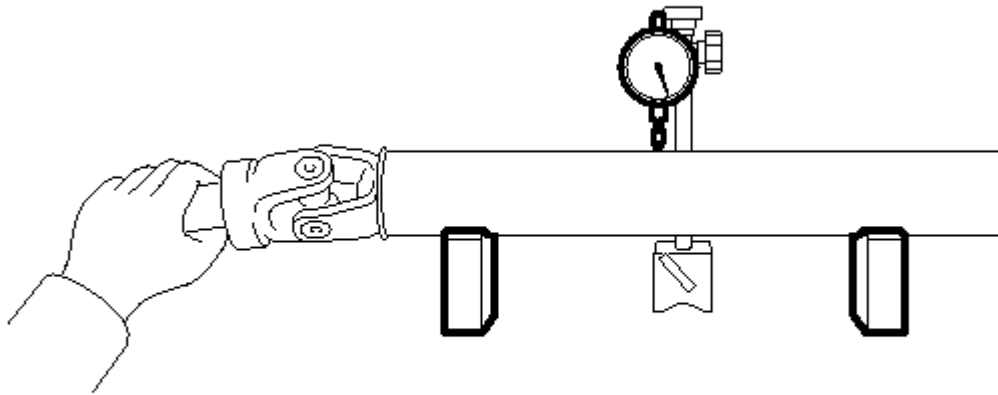
Maximum runout

0.1 mm (0.00394 in.)

If the flange runout is greater than the maximum, replace the propeller with center bearing shaft assembly.

3. INSPECT PROPELLER SHAFT

- a. Using a dial indicator, inspect the propeller shaft.



T

Fig. 159: Measuring Propeller Shaft Runout

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Maximum runout

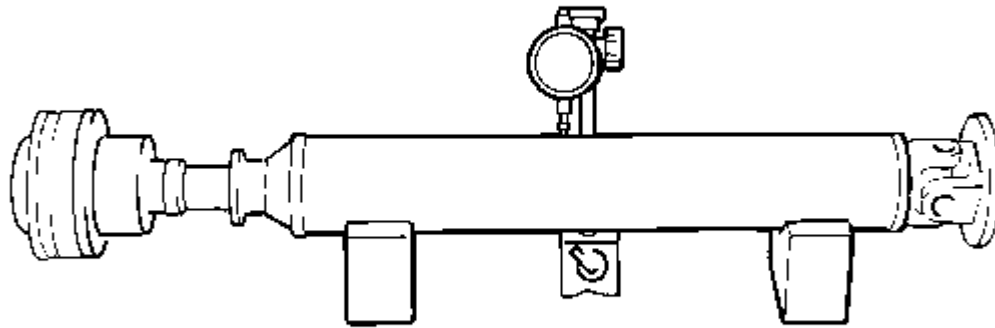
0.4 mm (0.0157 in.)

NOTE: **The dial indicator must be set at a right angle to the center of the propeller shaft.**

If the shaft runout is greater than the maximum, replace the propeller with center bearing shaft assembly.

4. INSPECT REAR PROPELLER SHAFT

- a. Using a dial indicator, inspect the rear propeller shaft.



T

C53259

Fig. 160: Checking Runout Of Propeller Shaft Assembly Rear
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Maximum runout

0.4 mm (0.0157 in.)

NOTE: **The dial indicator must be set at a right angle to the center of the rear propeller shaft.**

If the shaft runout is greater than the maximum, replace the propeller with center bearing shaft assembly.

5. INSPECT NO. 1 CENTER SUPPORT BEARING ASSEMBLY

- a. Turn the No. 1 center support bearing assembly by hand while applying force in the rotation direction. Check that the bearing turns smoothly.
- b. Check that the seals and bracket are not cracked or damaged.

If the No. 1 center support bearing assembly is damaged, worn, or does not turn freely, replace it.

6. INSPECT NO. 2 CENTER SUPPORT BEARING ASSEMBLY

- a. Turn the No. 2 center support bearing assembly by hand while applying force in the rotation direction. Check that the bearing turns smoothly.
- b. Check that the seals and bracket are not cracked or damaged.

If the No. 2 center support bearing assembly is damaged, worn, or does not turn freely, replace it.

REASSEMBLY

REASSEMBLY

1. INSTALL NO. 1 CENTER SUPPORT BEARING ASSEMBLY

- a. Set the No. 1 center support bearing assembly on the intermediate shaft as shown in the illustration.

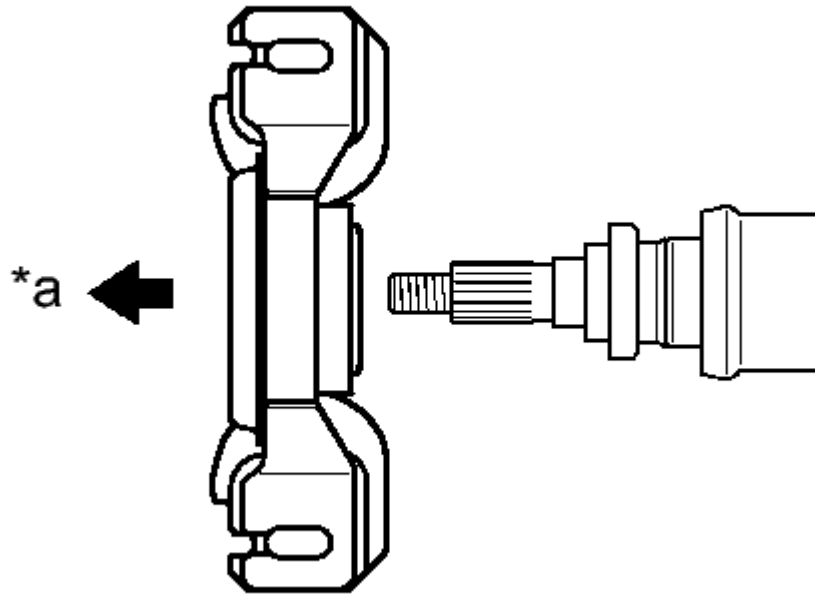
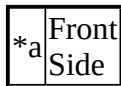


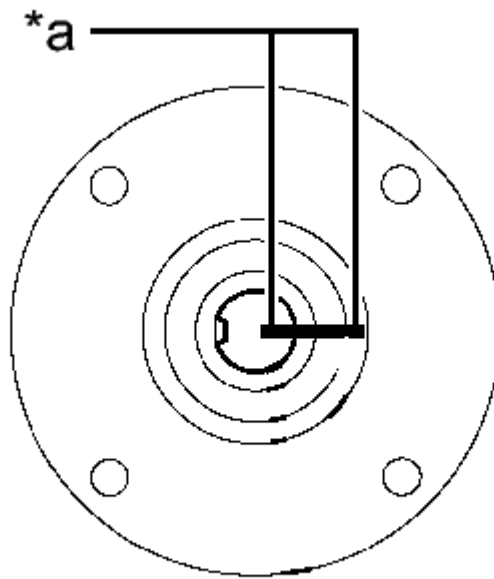
Fig. 161: Installing No. 1 Center Support Bearing Assembly At Intermediate Shaft
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION



NOTE: **Make sure to install the bearing in the correct position.**

- b. Install a new washer to the intermediate shaft.
- c. Align the matchmarks on the universal joint flange and intermediate shaft and place the flange on the shaft.



T

Fig. 162: Identifying Universal Joint Flange & Intermediate Shaft Matchmarks
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a Matchmark

- d. Using SST to hold the universal joint flange, press the No. 1 center support bearing assembly into position by tightening a new nut and washer.

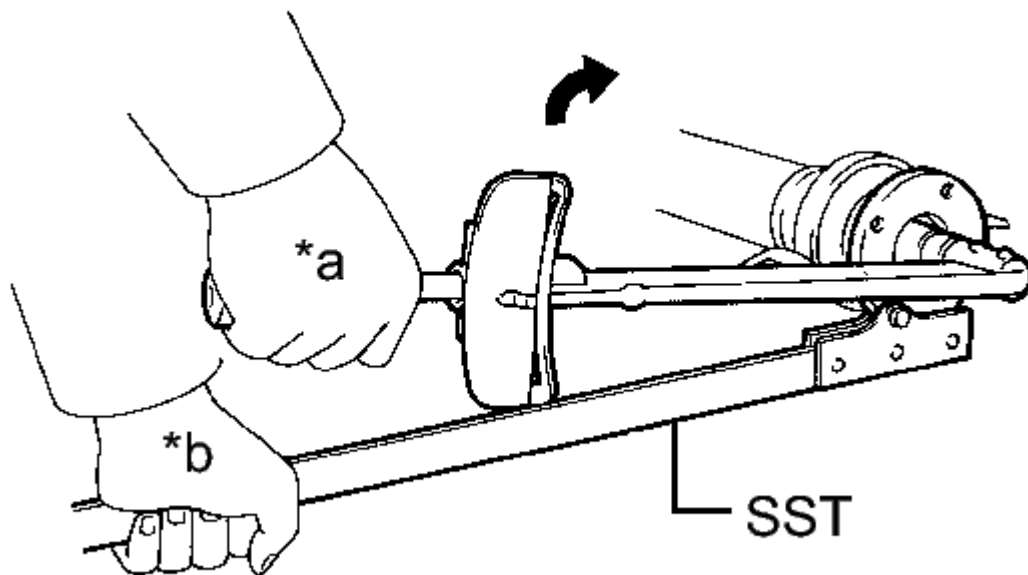


Fig. 163: Installing No. 1 Center Support Bearing Assembly Fasteners Using SST
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Turn
*b	Hold

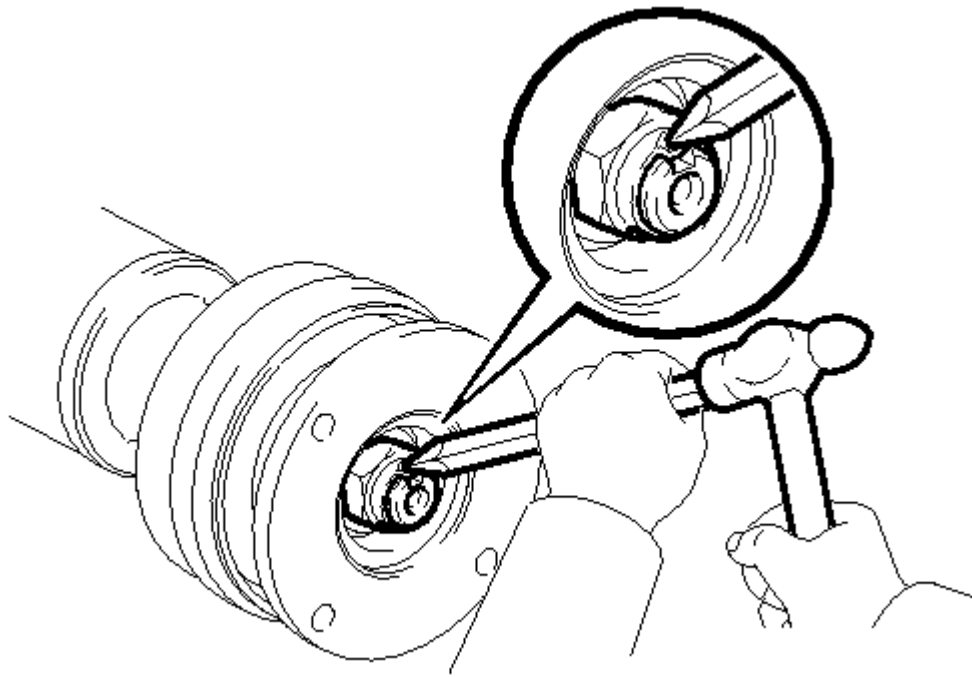
- SST: 09330-00021

Torque: 182 N*m (1851 kgf*cm, 134 ft.*lbf)

- Loosen the nut.
- Tighten the nut again.

Torque: 69 N*m (701 kgf*cm, 51 ft.*lbf)

- Using a chisel and a hammer, stake the nut.



P

Fig. 164: Staking Nut

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. INSTALL NO. 2 CENTER SUPPORT BEARING ASSEMBLY

- a. Set the No. 2 center support bearing assembly on the intermediate shaft as shown in the illustration.

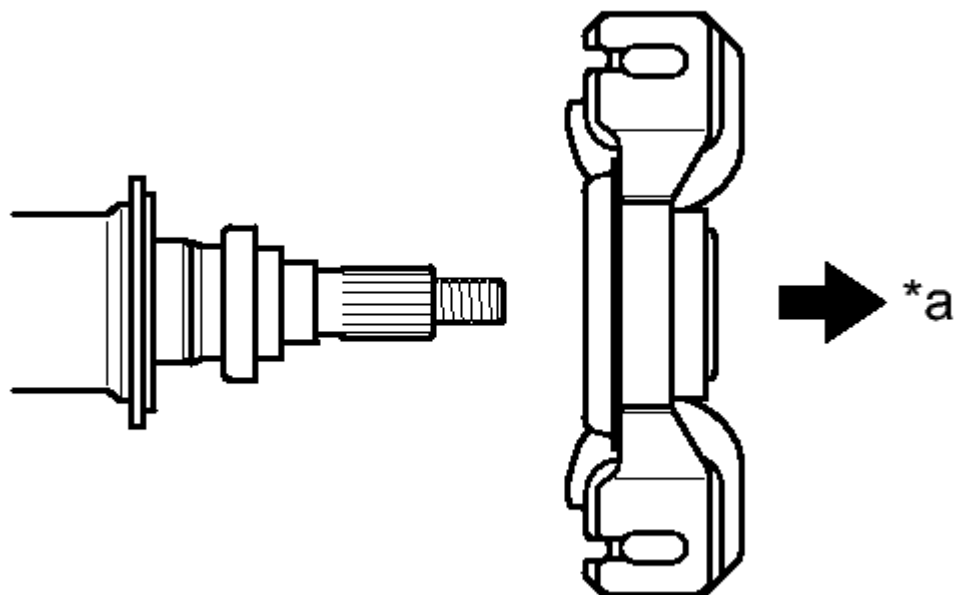
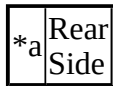


Fig. 165: Installing No. 2 Center Support Bearing Assembly At Intermediate Shaft

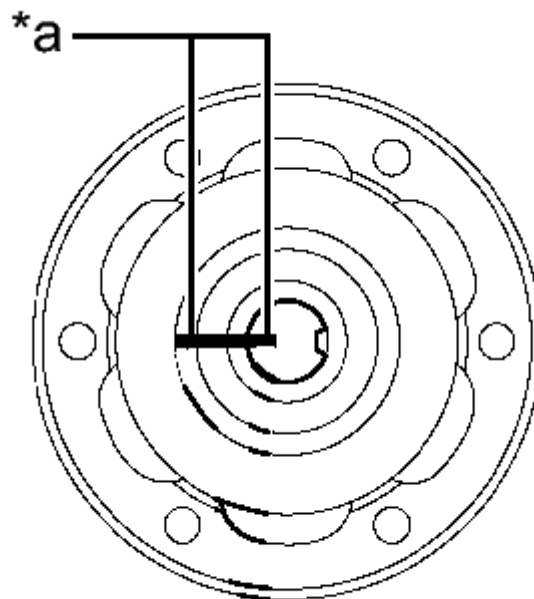
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION



NOTE: Make sure to install the bearing in the correct position.

- b. Install a new washer to the intermediate shaft.
- c. Align the matchmarks on the universal joint flange and intermediate shaft, and place the flange on the shaft.



T

Fig. 166: Identifying Universal Flange & Intermediate Shaft Matchmarks
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION



- d. Using SST to hold the universal joint flange, press the No. 2 center support bearing assembly into position by tightening a new nut and washer.

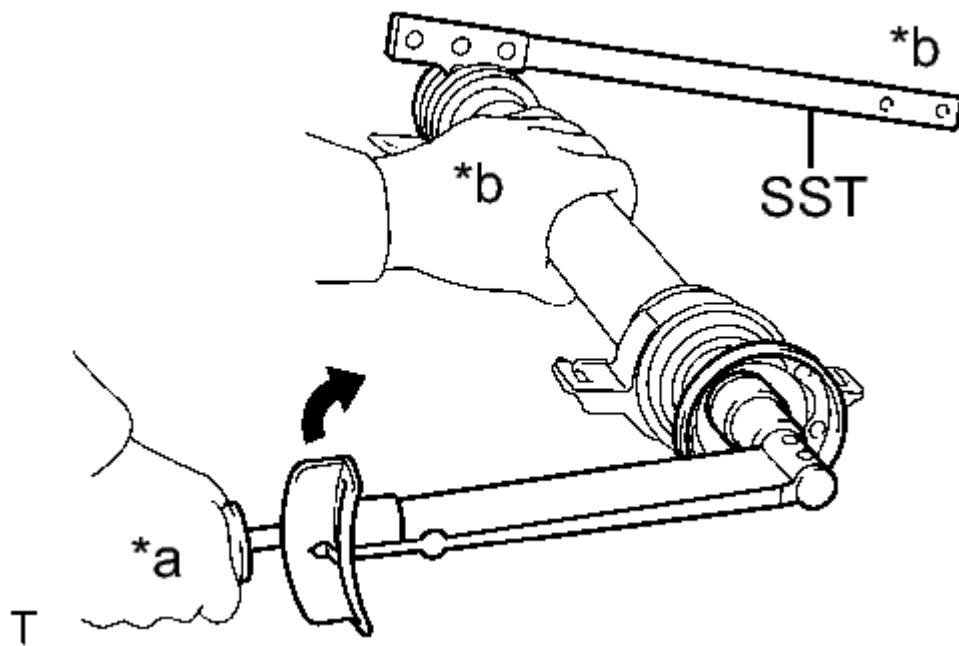


Fig. 167: Installing No. 2 Center Support Bearing Assembly Fasteners Using SST
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Turn
*b	Hold

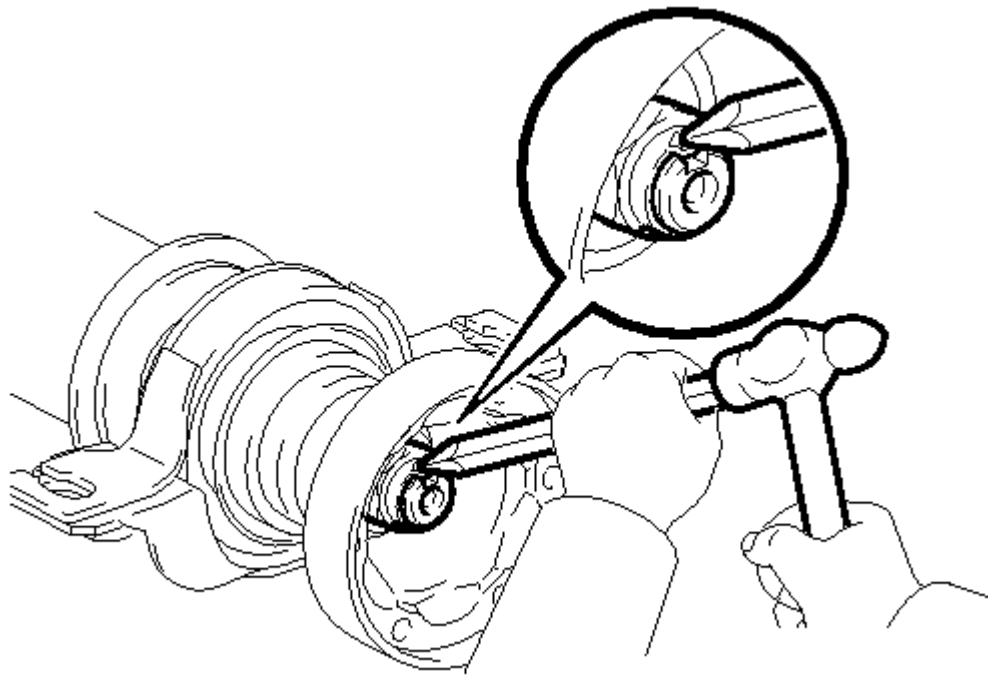
- SST: 09330-00021

Torque: 182 N*m (1851 kgf*cm, 134 ft.*lbf)

- Loosen the nut.
- Tighten the nut again.

Torque: 69 N*m (701 kgf*cm, 51 ft.*lbf)

- Using a chisel and a hammer, stake the nut.



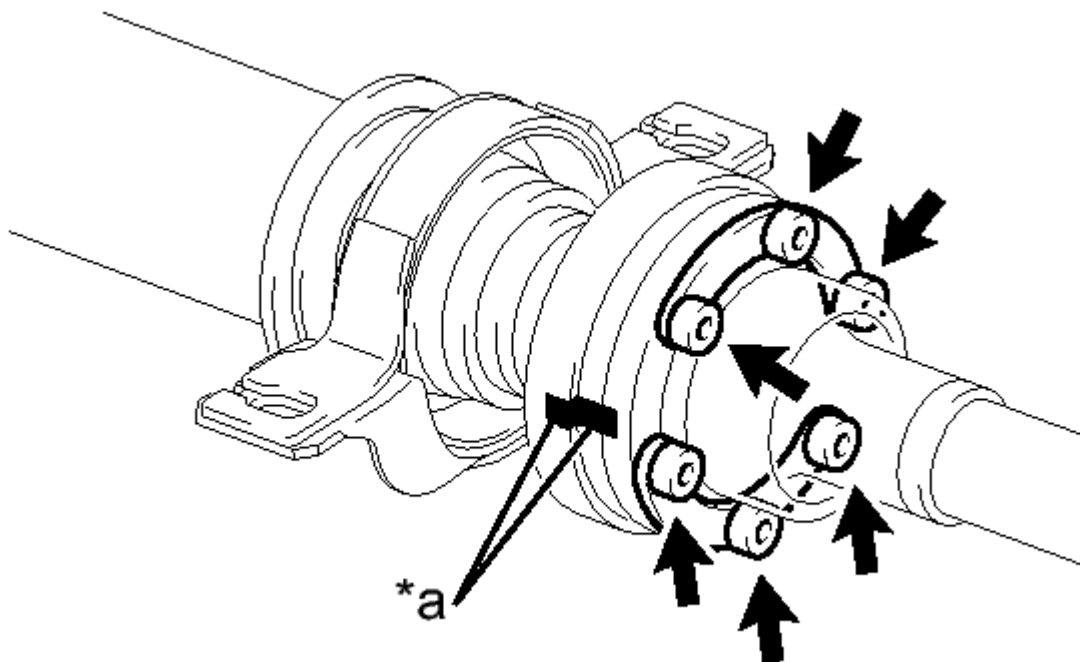
P

Fig. 168: Staking Nut

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. INSTALL INTERMEDIATE SHAFT

- a. Align the matchmarks on the intermediate shaft and rear propeller shaft, and then install 2 washers and 6 bolts.



P

Fig. 169: Identifying Intermediate Shaft & Propeller Shaft Matchmarks & Fasteners
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a Matchmark

- b. Using a hexagon wrench (6 mm), tighten the 6 bolts with 2 washers temporarily.

4. INSTALL PROPELLER SHAFT

- a. Align the matchmarks on the propeller shaft and the universal joint flange.
- b. Install the propeller shaft to the front flange with the 4 bolts, 4 washers and 4 nuts.

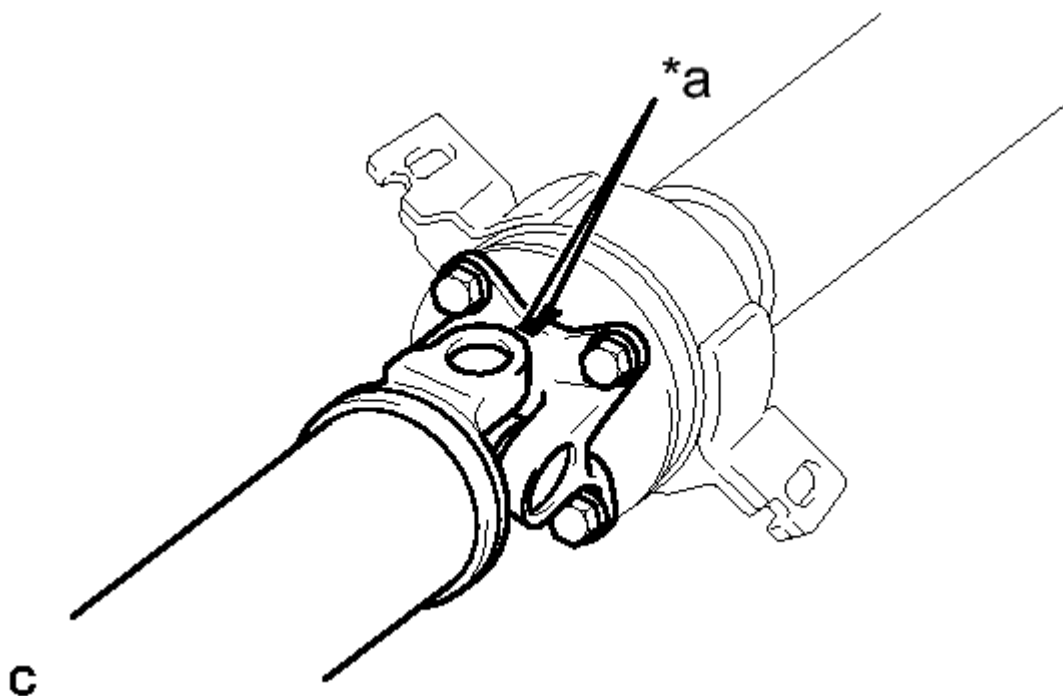


Fig. 170: Identifying Propeller Shaft Matchmarks
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

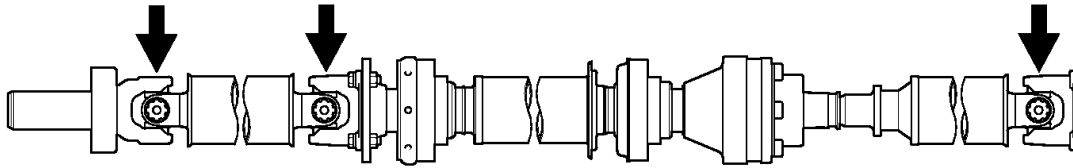
TEXT IN ILLUSTRATION

*a Matchmark

Torque: 74 N*m (749 kgf*cm, 54 ft.*lbf)

NOTE:

- Install the washers between the bolts and the propeller shaft.
 - Do not allow grease to adhere to the bolts, washers, or nuts.
- c. Check that each joint of the propeller with center bearing shaft assembly is facing the direction shown in the illustration.



P

Fig. 171: Identifying Each Joint Of Propeller With Center Bearing Shaft Assembly
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSTALLATION

INSTALLATION

1. TEMPORARILY TIGHTEN PROPELLER WITH CENTER BEARING SHAFT ASSEMBLY

- a. Remove SST from the transfer.
 - **SST: 09325-20010**
- b. Install the propeller with center bearing shaft assembly.

NOTE:

- Be careful not to damage the oil seal.
- Be careful not to damage the universal joint boot when installing the propeller shaft.

- c. Align the matchmarks on the rear propeller shaft and electromagnetic control coupling assembly and install the 4 nuts and 4 washers temporarily.

NOTE:

Do not allow grease to adhere to be bolts or washers.

- d. Temporarily install the propeller with center bearing shaft assembly with the 4 bolts, 2 No. 1 center support bearing washers and 2 No. 2 center support bearing washers.

NOTE:

- Reuse the original washers. If different washers are used, it will be necessary to adjust the installation angle later.
- Do not allow grease to adhere to the bolts or washers.

- e. Fully tighten the 4 nuts.

Torque: 37 N*m (379 kgf*cm, 27 ft.*lbf)

2. FULLY TIGHTEN PROPELLER WITH CENTER BEARING SHAFT ASSEMBLY

- a. Remove the piece of cloth or equivalent from the universal joint.
- b. Depress the brake pedal and hold it.
- c. Using a hexagon wrench (6 mm), tighten the 6 bolts.

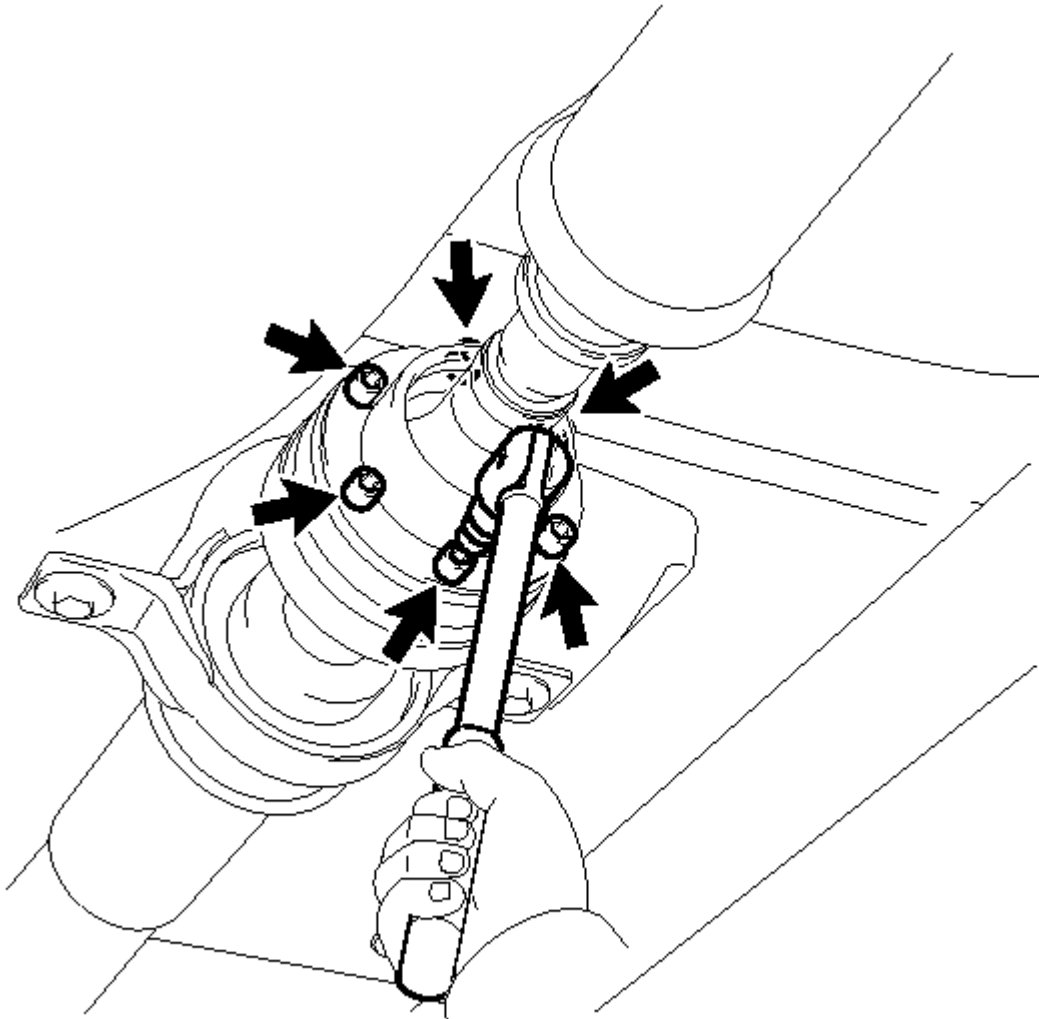


Fig. 172: Tightening Propeller With Center Bearing Shaft Assembly Fasteners
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Torque: 26 N*m (265 kgf*cm, 19 ft.*lbf)

- d. With the vehicle unloaded, adjust the dimension between the rear side of the cover and shaft as shown in the illustration.

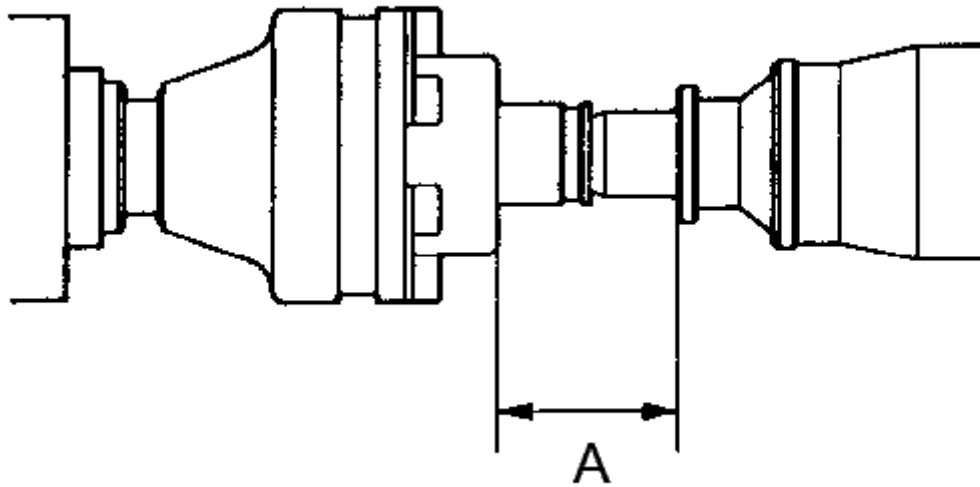


Fig. 173: Identifying Dimension Between Rear Side Of Cover And Shaft
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Length A

57.5 to 58.5 mm (2.264 to 2.303 in.)

- e. With the vehicle unloaded, adjust the front and rear dimensions between the edge surface of the center support bearing and the edge surface of the cushion respectively as shown in the illustration, and then tighten the bolts.

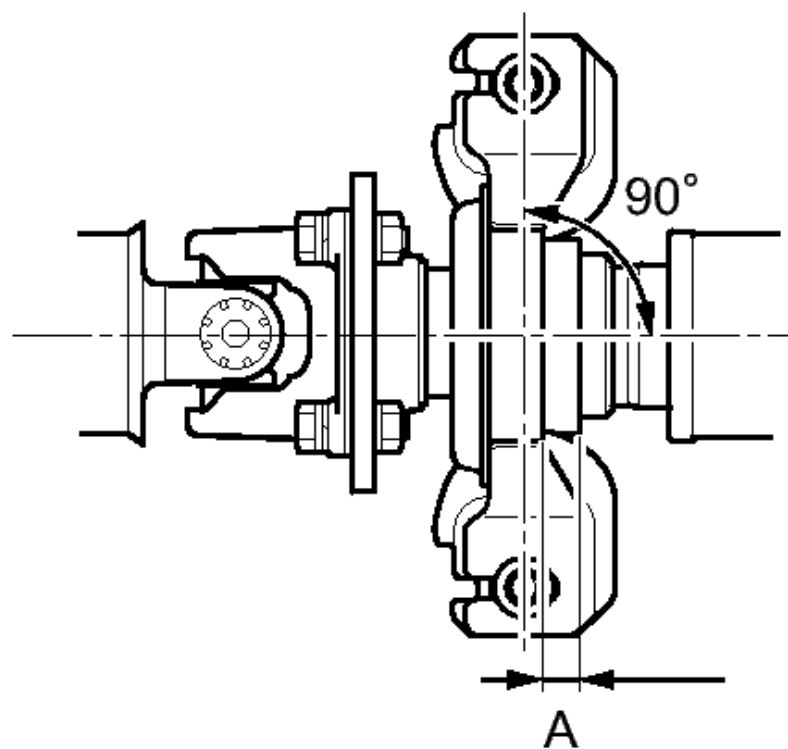
Length A

11.5 to 13.5 mm (0.453 to 0.532 in.)

TEXT IN ILLUSTRATION

*1	No. 1 Center Support Bearing Assembly
*2	No. 2 Center Support Bearing Assembly

*1



*2

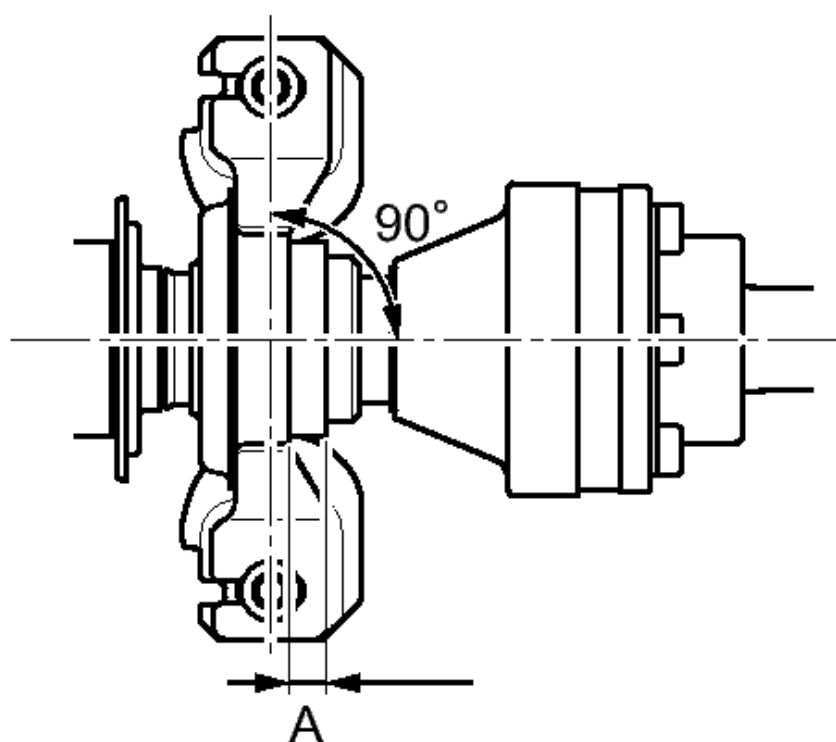


Fig. 174: Identifying Center Line of Bracket Angle To Shaft Axial Direction
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

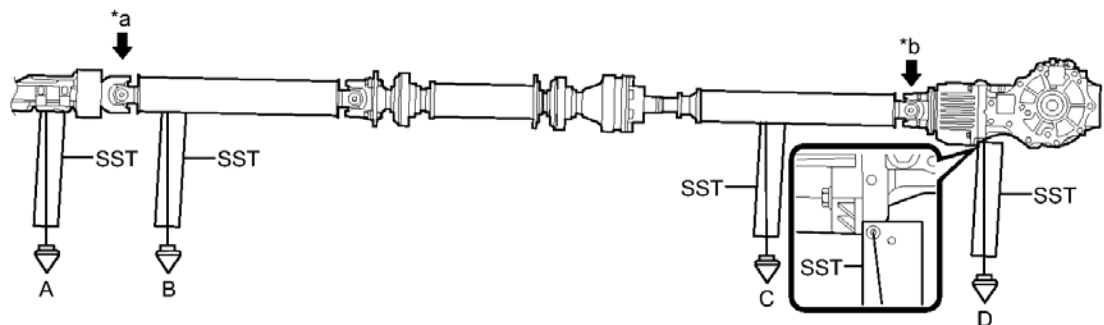
- f. Check that the center line of the bracket is at a right angle to the shaft axial direction.
- g. Fully tighten the 4 bolts.

Torque: 37 N*m (375 kgf*cm, 27 ft.*lbf)

3. **ADD TRANSFER OIL** . Refer to **REPLACEMENT - Step 2**
4. **INSPECT TRANSFER OIL** . Refer to **ON-VEHICLE INSPECTION - Step 1**
5. **INSPECT FOR OIL LEAK**
6. **INSPECT AND ADJUST JOINT ANGLE**
 - a. If any vibration or noise occurs, perform joint angle check as follows and replace the No. 2 center support bearing washer with a proper one.
 1. Turn the propeller shaft several times by hand to stabilize the center support bearings.
 2. Using a jack, raise and lower the differential to stabilize the differential mounting cushion.

NOTE: **Measure the joint angle while the vehicle is lifted using a 4 pillar lift or while working in a pit.**

3. Remove the differential protector. Refer to **REMOVAL - Step 5** .
4. Using SST, measure the propeller shaft installation angle (A) and intermediate shaft installation angle (B) as shown in the following illustration.



c

Fig. 175: Measuring Propeller Shaft Installation Angle (A) & Intermediate Shaft Installation Angle (B) Using SST
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	No. 1	*b	No. 4
	joint		joint

| angle | angle |

- **SST: 09370-50010**

No. 1 joint angle

$$(A) - (B) = -1.77^{\circ} \text{ to } 0.23^{\circ}$$

5. Using SST, measure the rear propeller shaft installation angle (C) and rear differential installation angle (D) as shown in the preceding illustration.

- **SST: 09370-50010**

No. 4 joint angle

$$(C) - (D) = 1.80^{\circ} \text{ to } 3.80^{\circ}$$

6. If the calculated amount is not within the specification, adjust it with the No. 2 center support bearing washer.

NOTE:

- **Make sure to use a washer of the same thickness on both right and left sides.**
- **Do not use 2 or more washers on a bolt.**

Parts No.	Thickness mm (in.)
90201-10095	3.2 (0.126)
90201-10081	4.5 (0.177)
90201-10083	6.5 (0.256)
90201-10084	9.0 (0.354)
90201-10085	11.0 (0.433)
90201-10086	13.5 (0.531)
90201-10134	15.5 (0.610)
90201-10135	17.5 (0.689)

7. Install the differential protector.

Torque: 44 N*m (449 kgf*cm, 32 ft.*lbf)