

Drive Shaft / Axle

Front

General Description

Front Drive Shaft Construction

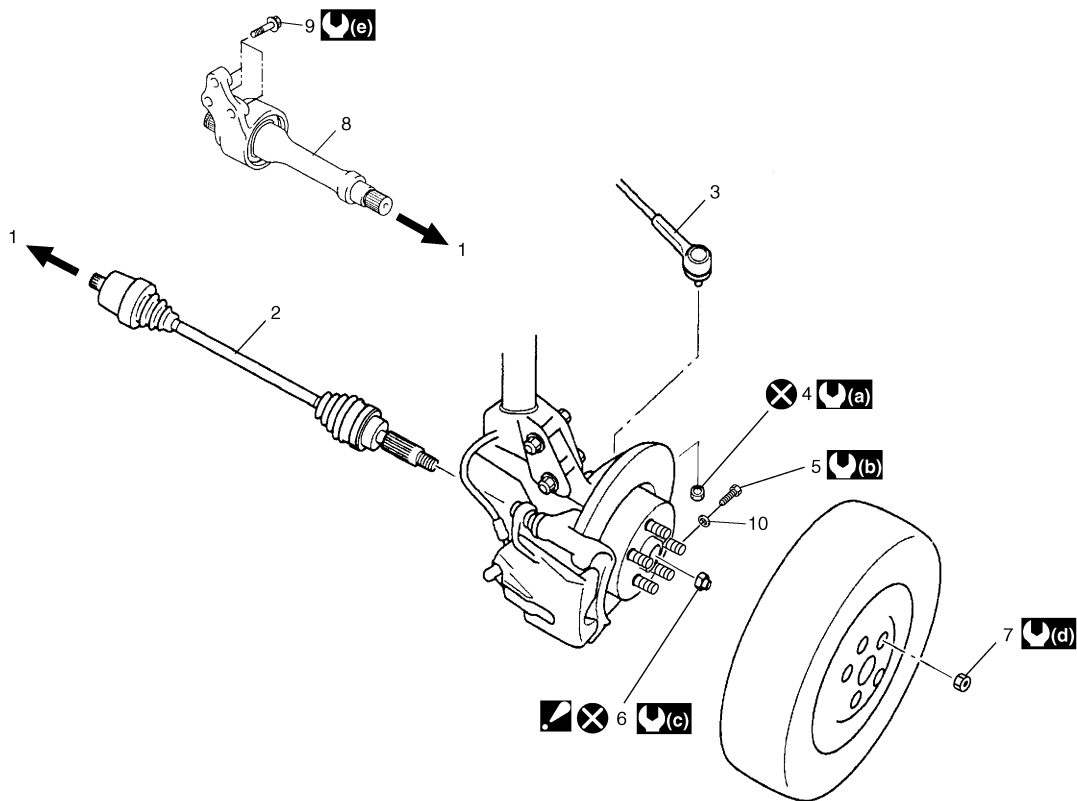
S6RW0C3111001

A constant velocity ball joint is used on the wheel side of both right and left side drive shaft assemblies. A tripod type constant velocity joint is used on the differential side and center shaft side. The drive shaft can slide through the tripod joint in the extension/contraction direction.

Component Location

Front Drive Shaft Assembly Components Location

S6RW0C3113001



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1. To transaxle	7. Wheel nut	: 200 N·m (20.0 kgf·m, 145.0 lb-ft)
2. Drive shaft assembly	8. Center shaft assembly (if equipped)	: 85 N·m (8.5 kgf·m, 61.5 lb-ft)
3. Tie-rod end	9. Center bearing support bolts (if equipped)	: 55 N·m (5.5 kgf·m, 40.0 lb-ft)
4. Tie-rod end nut	10. Washer	: Do not reuse.
5. Ball stud bolt	: 45 N·m (4.5 kgf·m, 32.5 lb-ft)	
6. Drive shaft nut : After tightening nut to specified torque, caulk nut securely.	: 60 N·m (6.0 kgf·m, 43.5 lb-ft)	

Diagnostic Information and Procedures

Front Drive Shaft Symptom Diagnosis

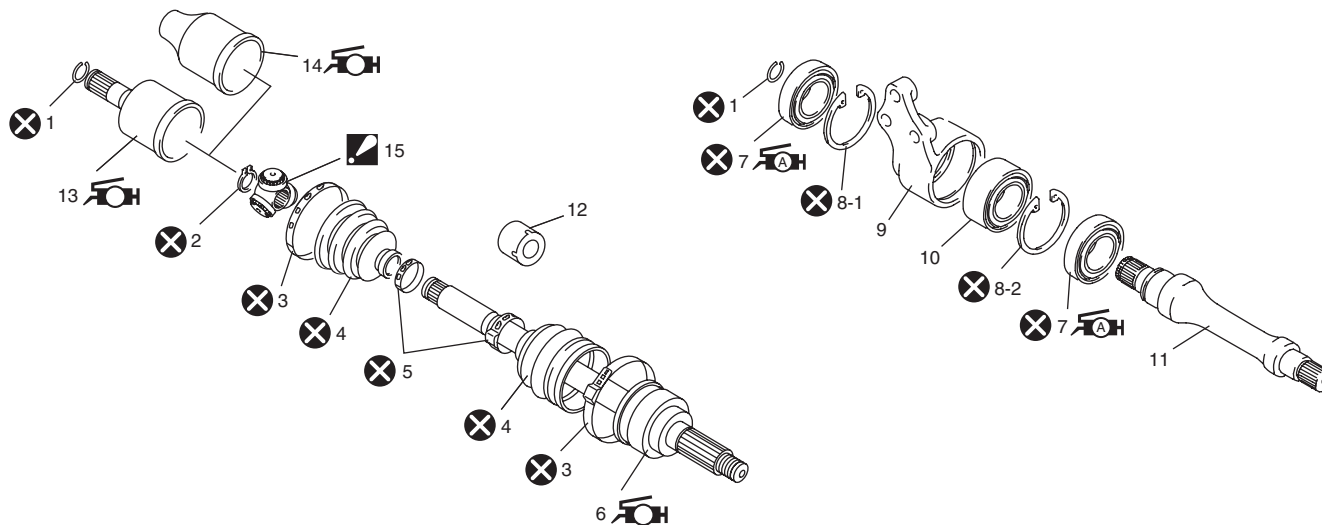
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Condition	Possible cause	Correction / Reference Item
Abnormal noise	Worn or breakage of the drive shaft joint	Replace.
	Worn or breakage of the center bearing	Replace.







Repair Instructions

Front Drive Shaft Components

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1. Circlip	9. Center bearing support
2. Snap ring	10. Center bearing
3. Boot band (Large)	11. Center shaft
4. Boot	12. Damper (if equipped)
5. Boot band (Small)	 13. Differential side joint (Constant velocity tripod joint) : Apply dark gray grease included in spare part to joint
 6. Wheel side joint (Constant velocity ball joint) : Apply black grease included spare part to joint.	 14. Center shaft side joint (Constant velocity tripod joint) : Apply dark gray grease included in spare part to joint
 7. Oil seal : Apply grease to oil seal lip.	 15. Tripod joint spider : Never disassemble
8-1. Center bearing support circlip (M/T model only)	 : Do not reuse.
8-2. Center bearing support circlip	

Front Drive Shaft Assembly On-Vehicle Inspection

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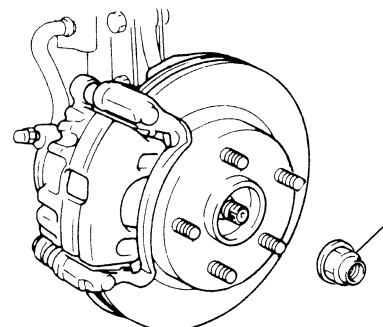
- Check boots for breakage or deterioration.
 - Check wheel side joint for rattle or smooth rotation.
 - Check differential side (or center shaft side) joint for smooth rotation.
- If any abnormality is found, replace.

Front Drive Shaft Assembly Removal and Installation

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Removal

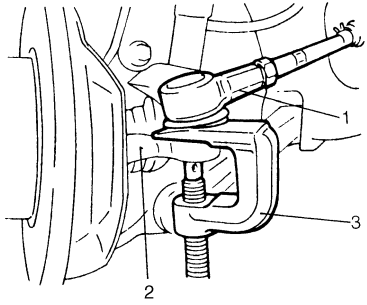
- 1) Hoist vehicle and remove front wheel.
- 2) Undo caulking and remove drive shaft nut (1) with brake pedal depressed.



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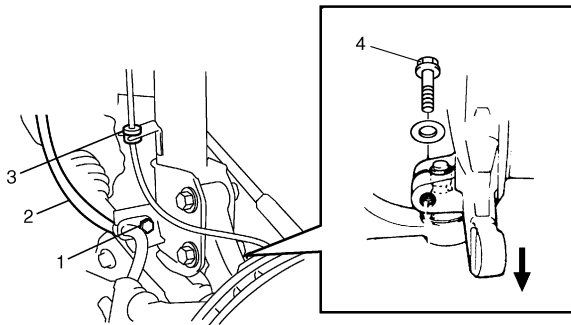
3A-3 Drive Shaft / Axle: Front

- 3) Drain transaxle oil and transfer oil (4WD model).
- 4) Disconnect tie-rod end (1) from steering knuckle (2) using puller (3).



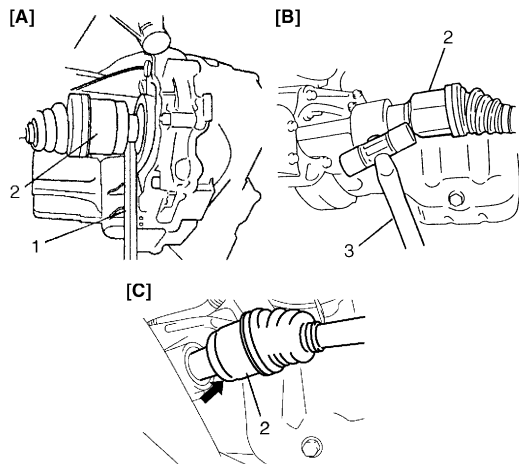
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- 5) Remove brake hose mounting bolt (1) and brake hose (2) from bracket and then detach wheel speed sensor harness (3) from strut bracket.
- 6) Remove suspension control arm ball joint bolt (4) from knuckle.



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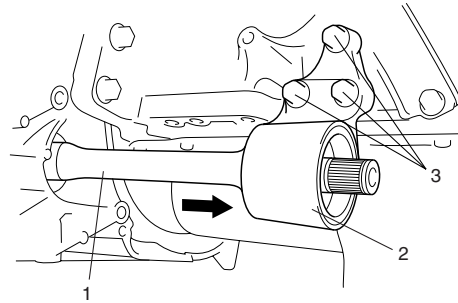
- 7) Disconnect front suspension control arm ball joint stud from steering knuckle.
- 8) Using tire lever (1) or plastic hammer (3), pull out drive shaft joint (2) so as to release snap ring fitting of joint spline at differential side or at center shaft.



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[A]: Left side shaft	[C]: Right side shaft of 4WD model
[B]: Right side shaft of 2WD model	

- 9) Remove drive shaft assembly.
- 10) Remove center bearing support bolts (3) and remove center bearing support (2) with center shaft (1) from differential side gear.



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Installation

⚠ CAUTION

- Be careful not to damage oil seals and boots when installing drive shaft.
- Do not hit joint boot with hammer. Inserting joint only by hands is allowed.
- Make sure that differential side joint is inserted fully and its snap ring is seated as it was.

Install drive shaft assembly by reversing removal procedure and noting the following points.

- Tighten each bolt and nut to the specified torque referring to "Front Drive Shaft Assembly Components Location".
- Tighten brake hose mounting bolt to specified torque.

Tightening torque

Brake hose mounting bolt: 25 N·m (2.5 kgf-m, 18.0 lb-ft)

- Fill transaxle with oil as specified referring to "Manual Transaxle Oil Change in Section 5B" or "A/T Fluid Change in Section 5A" and "Transfer Oil Change in Section 3C" (4WD model).
- Check toe setting referring to "Front Wheel Alignment Inspection and Adjustment in Section 2B" and adjust as required.

Front Drive Shaft Disassembly and Reassembly

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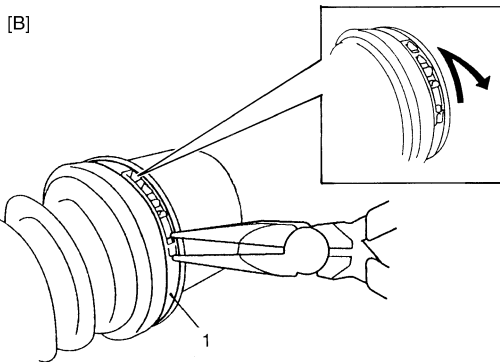
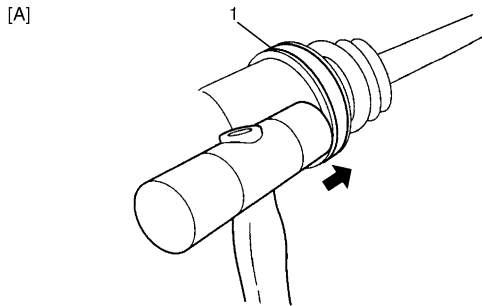
Disassembly

⚠ CAUTION

- Disassembly of wheel side joint is not allowed. If any noise or damage exists in it, replace it as assembly.
- Do not disassemble tripod joint spider. If any malcondition is found in it, replace it as differential side joint assembly.

1) Remove differential side (or center shaft side) boot big band (1) as follows.

- For boot big band without joint:
Remove boot big band by tapping boot and band with plastic hammer. If it is hard to remove boot big band, cut it using a nipper or an iron saw with care not to damage joint housing.
- For boot big band with joint:
Draw hooks of boot big band together and remove band.

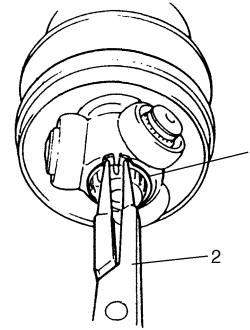


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[A]: For boot big band without joint

[B]: For boot big band with joint

2) Wipe off grease from shaft and take off snap ring (1) using snap ring pliers (2).

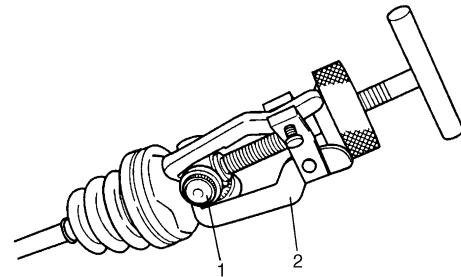


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3) Remove tripod joint spider (1) using 3 arms puller (2).

⚠ CAUTION

To prevent any problem caused by washing solution, do not wash tripod joint except its housing. Degreasing of tripod joint with cloth is allowed.

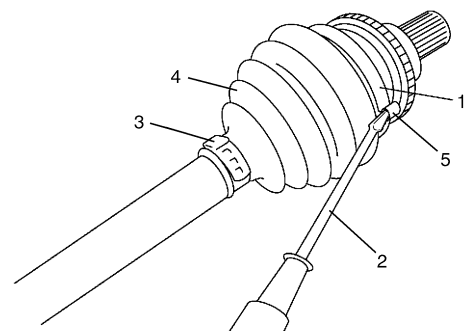


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4) Remove differential side (or center shaft side) boot small band, and then pull out differential side (or center shaft side) boot from shaft.

5) Remove damper from shaft, if equipped.

6) Undo caulking (5) of wheel side boot big band (1) and small band (3) using flat end rod (2) or the like, then pull out wheel side boot (4) from shaft.



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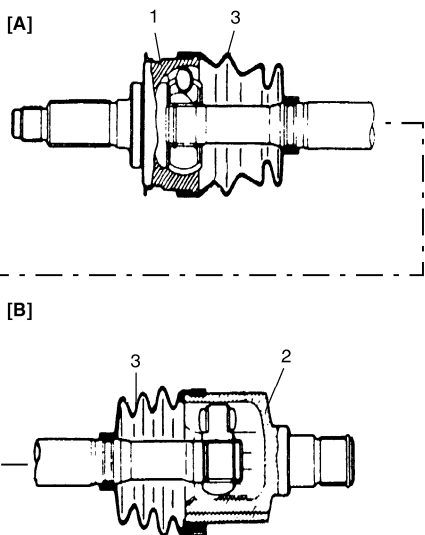
Reassembly

Judging from abnormality noted before disassembly and what is found through visual check of component parts after disassembly, prepare replacing parts and proceed to reassembly.

Make sure that wheel side joint assembly (1) and tripod joint housing (2) are washed thoroughly and air dried. Replace boot(s) (3) with new one(s).

CAUTION

- Do not wash boots in degreaser such as gasoline or kerosene. etc. Washing in degreaser causes deterioration of boot.
- To ensure full performance of joint as designed, be sure to distinguish between two types of grease in repair set and apply specified volume to respective joint referring to the followings for identification of the grease.



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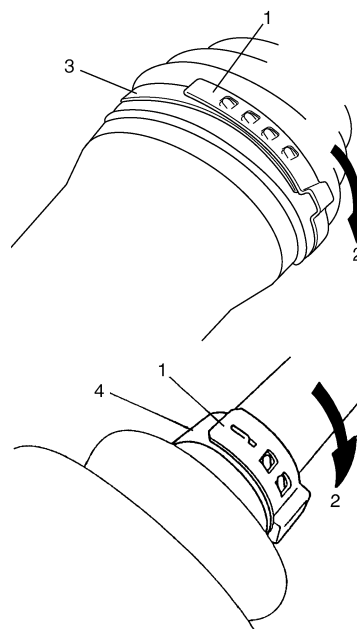
[A]: Wheel side [B]: Differential side (or center shaft side)

- 1) Wash disassembled parts (except boots). After washing, dry parts completely by blowing air.
- 2) Clean boots with cloth.
- 3) Apply grease to wheel side joint. Use specified grease in tube in wheel side boot set as a spare parts.

Grease color
: Black

Amount
: 70 – 90 g (2.5 – 3.2 oz)

- 4) Install wheel side boot on shaft.
- 5) Fill up boot inside with specified grease.
- 6) Place new wheel side boot big band (3) and small band (4) onto boot putting band outer end (1) against forward rotation (2) as shown in figure.



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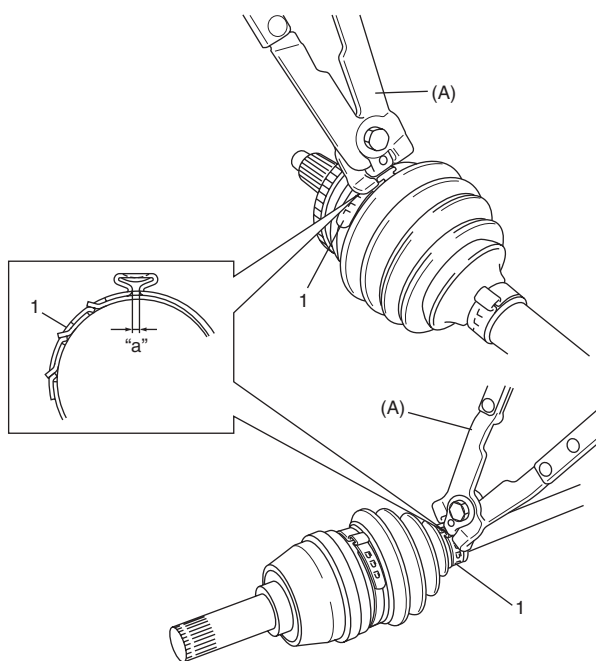
- 7) Fasten boot bands (1) securely using special tool as shown in figure.

CAUTION

Do not squeeze or distort boot when fastening it with bands. Distorted boot caused by squeezing air may reduce its durability.

Distance "a"
: 2.6 ± 1.4 mm (0.102 ± 0.055 in.)

Special tool
(A): 09943-57010



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- 8) Install damper (1) to specified position on drive shaft, if equipped.

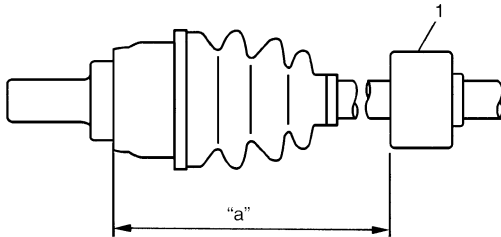
Drive shaft damper installing position (right side)

“a”: 359 mm (14.1 in.) (2WD model)

“a”: 362 mm (14.3 in.) (4WD model)

Drive shaft damper installing position (left side)

“a”: 252 mm (9.9 in.) (M/T model)

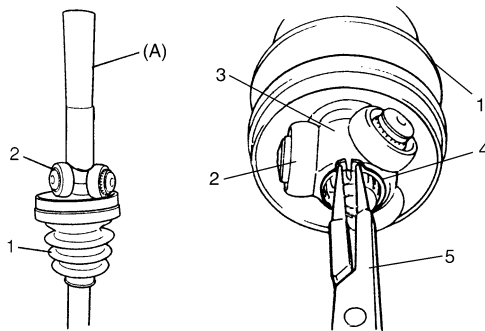


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- 9) Set new differential side (or center shaft side) small band and new differential side (or center shaft side) boot (1) on shaft temporarily, and then apply grease to tripod joint (2). Use specified grease in tube included in spare parts.
- 10) Install tripod joint spider (3) on shaft using special tool with hammer, directing its chamfered spline toward wheel side, and then fasten it with new snap ring (4) using snap ring pliers (5).

Special tool

(A): 09925-98221



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- 11) Apply grease (including in spare parts) to inside of tripod joint housing (1), joint it with tripod joint.

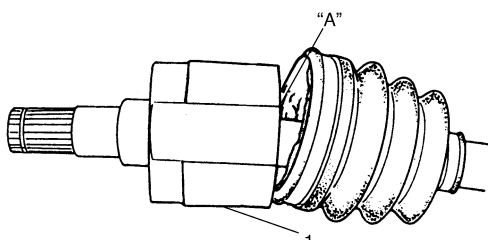
Grease color

“A”: Dark gray

Amount

“A”: 95 – 115 g (3.4 – 4.1 oz) (right side)

“A”: 90 – 110 g (3.2 – 3.9 oz) (left side)



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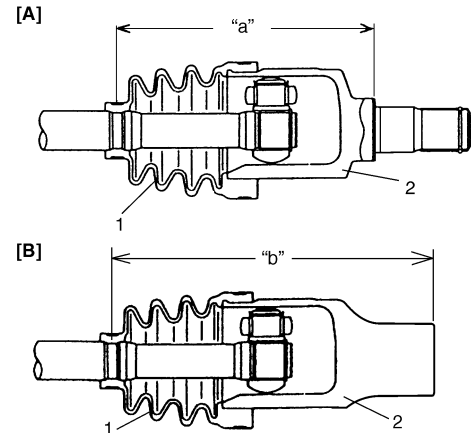
- 12) Fit boot (1) to grooves of shaft and housing (2) adjust length to specification below.
- 13) Insert screw driver into boot and allow air to enter boot so that air pressure in boot becomes the same as atmospheric pressure.

Drive shaft boot fixing position (distance between housing end and small boot band)

Left side drive shaft “a”: 167.8 mm (6.61 in.) (M/T model)

Left side drive shaft “a”: 171.2 mm (6.74 in.) (A/T model)

Right side drive shaft “b”: 191.0 mm (7.52 in.)



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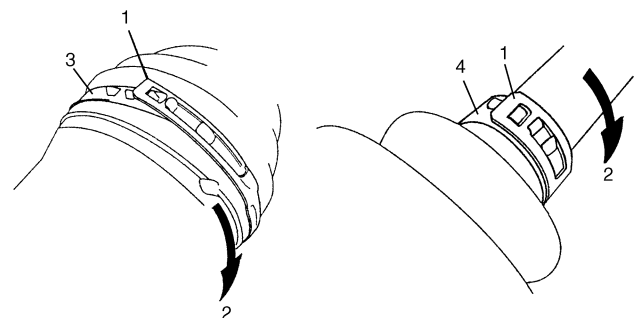
[A]: Drive shaft inserted into differential side

[B]: Drive shaft inserted into center shaft side

CAUTION

- Bend each boot band against forward rotation.
- Do not squeeze or distort boot when fastening it with bands. Distorted boot caused by squeezing air may reduce its durability.

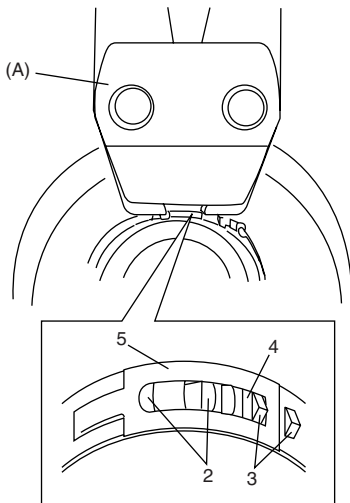
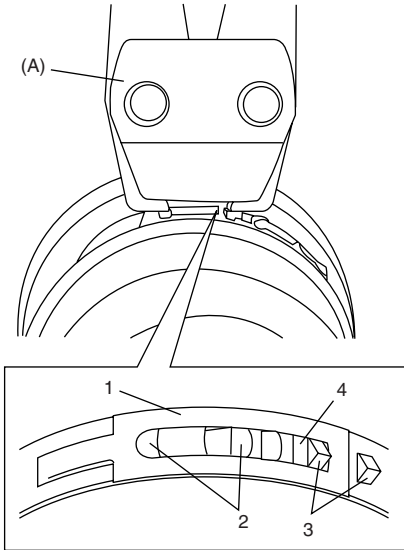
- 14) Place differential side (or center shaft side) boot new big band (3) and new small band (4) onto boot putting band outer end (1) against forward rotation (2) as shown in figure.



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15) Fasten differential side (or center shaft side) boot big band (1) and small band (5) by drawing hooks (2) with special tool and engage hooks (3) in slot and window (4).

Special tool
(A): 09943-57021



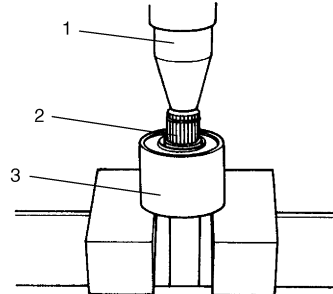
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Center Shaft and Center Bearing Support Disassembly and Reassembly (2WD Model)

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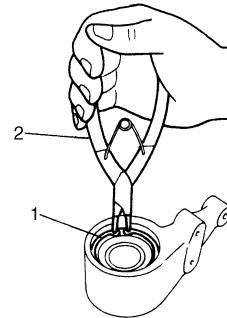
Disassembly

- 1) Using hydraulic press (1), draw out center shaft (2) from center bearing.
- 2) Remove oil seals from center bearing support (3).



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- 3) Remove bearing support circlip (1) using snap ring pliers (2).



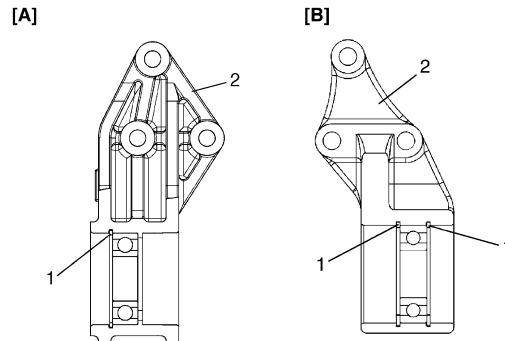
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- 4) Remove center bearing from center bearing support.

Reassembly

Reassemble center shaft by reversing disassembly procedure and noting the following points.

- When installing bearing support circlip (1), make sure that it fits in circlip groove in center bearing support (2) securely as shown.



I7RW01311006-02

[A]: A/T model	[B]: M/T model
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- When installing left oil seal (1) and right oil seal (2) using special tool, use care so that oil seals in proper direction and position as shown in figure.

Special tool
 : 09925-15410

Distance

A/T model

“a”: 0 – 1 mm (0 – 0.04 in.)

“b”: 11 – 12 mm (0.43 – 0.47 in.)

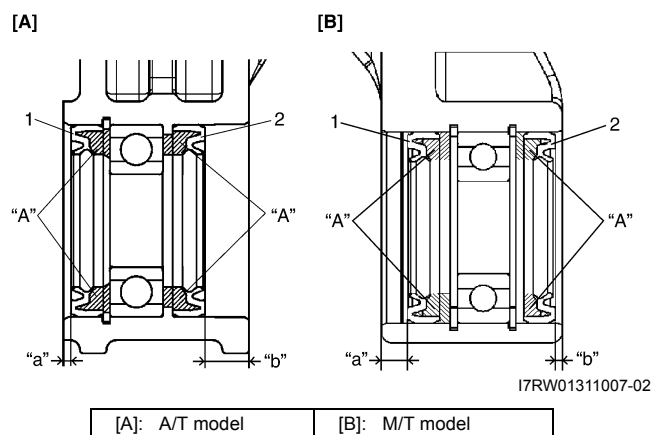
M/T model

“a”: 6 – 7 mm (0.24 – 0.35 in.)

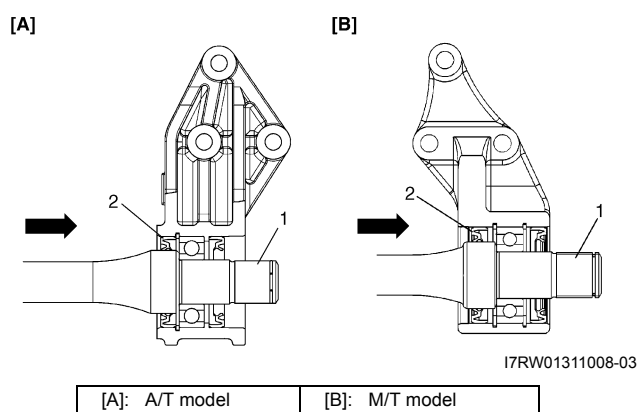
“b”: 2 – 3 mm (0.08 – 0.12 in.)

- Be sure to apply grease to oil seal lip and bearing side space indicated in figure.

“A”: Grease 99000-25011 (SUZUKI Super Grease A)



- Press-fit center shaft (1) from left oil seal (2) side.



Specifications

Tightening Torque Specifications

S6RW0C3117001

Fastening part	Tightening torque			Note
	N·m	kgf·m	lb·ft	
Brake hose mounting bolt	25	2.5	18.0	⌚

NOTE

The specified tightening torque is also described in the following.
 “Front Drive Shaft Assembly Components Location”

Reference:

For the tightening torque of fastener not specified in this section, refer to “Fasteners Information in Section 0A”.

Special Tools and Equipment

Recommended Service Material

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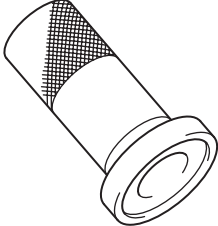
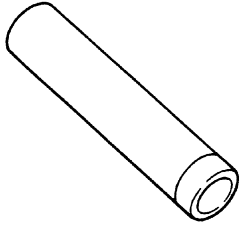
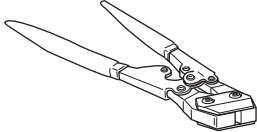
Material	SUZUKI recommended product or Specification	Note
Grease	SUZUKI Super Grease A P/No.: 99000-25011	

NOTE

Required service material is also described in the following.
 "Front Drive Shaft Components"

Special Tool

S6RW0C3118002

09925-15410 Oil seal installer 	09925-98221 Bearing installer 
09943-57010 Band compressor 	09943-57021 Pliers, Low-Profile Clamp 