GROUP 26

FRONT AXLE

CONTENTS

SERVICE SPECIFICATIONS

M1261000301623

Item		Standard value	Limit
Wheel bearing axial looseness mm		–	0.05
Wheel bearing rotation starting torque N·m		–	1.5
PTJ boot assembly dimension mm		85 ± 3	–
Opening dimension of boot band clipping tool (Special tool: MB991561) mm	EBJ boot band (small) crimping	2.9	–
	EBJ boot band (large) crimping	3.2	–
EBJ boot band crimping size mm		2.4 – 2.8	–

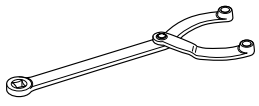
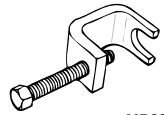
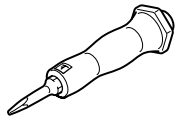
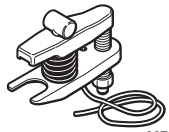
LUBRICANTS

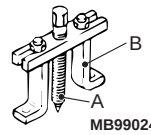
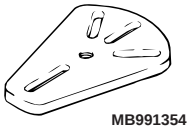
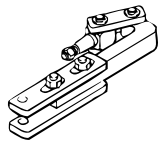
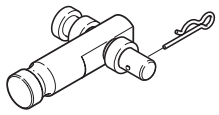
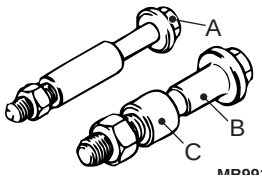
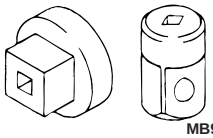
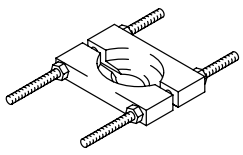
M1261000401835

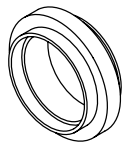
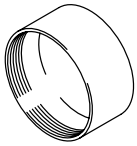
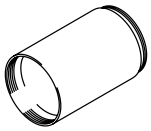
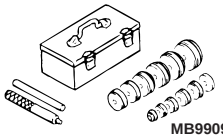
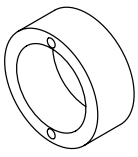
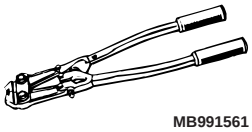
Item	Specified lubricant		Quantity
Inside of knuckle bore	Shell Sunlight Grease BD2 or equivalent		As required (1.0 – 1.5 g)
PTJ	Repair kit grease	2WD, 4WD-LH	210 ± 10 g
		4WD-RH	200 ± 10 g
EBJ	Repair kit grease	2WD-LH, 4WD	120 ± 10 g

SPECIAL TOOLS

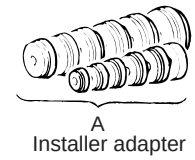
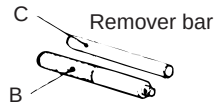
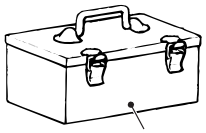
M1261000601851

Tool	Number	Name	Use
 B990767	MB990767	Front hub and flange yoke holder	Fixing of hub
 MB991618	MB991618	Hub bolt remover	Removal of hub bolt
 MB992700	MB992700	Lock nut chisel	Raising up the swaged part driveshaft nut
 MB991897	MB991897 or MB992011	Ball joint remover	Ball joint disconnection *NOTE: Conventional steering linkage puller MB991406, MB990635, or MB991113 can also be used.*

Tool	Number	Name	Use
 MB990241AD	MB990241 A:MB990242 B:MB990244	Axle shaft puller A: Puller shaft B: Puller bar	• Driveshaft removal • Hub assembly removal
 MB991354	MB991354	Puller body	
	MB991056 or MB991355	Knuckle arm bridge	• Hub removal • Driveshaft removal
 B992250	MB992250	Knuckle arm bridge attachment	Hub removal *NOTE: Replace this attachment with a guide of MB991355 and use them.*
	A:MB991017 B:MB990998 C:MB991000	A, B: Front hub remover and installer C: Spacer	• Wheel bearing temporarily fixing • Wheel bearing rotation starting torque measurement • Wheel bearing axial looseness measurement Use MB991000 (a part of MB990998) for spacer • Removal of the wheel bearing inner race (outside) (Use MB991000 with MD998801.)
 MB991099	MB991099	Oil seal installer guide	Wheel bearing rotation starting torque measurement
 MB990326	MB990326	Preload socket	
	MD998801	Remover	• Removal of the wheel bearing inner race (outside) • Removal of PTJ case

Tool	Number	Name	Use
	MB992150	Oil seal installer	Installation of the wheel bearing inner race (outside)
	MD998812	Installer cap	
	MD998813	Installer	
 MB990925	MB990925	Bearing and oil seal installer set	Bearing removal and press-fit
 MB991388	MB991388	Bush remover base	Press-fitting of the dust shield
 MB991576	MB991576	Base	
 MB990890	MB990890	Rear suspension bushing base	• Wheel bearing installation • Dust seal outer and dust seal inner press-fit
	MD999528	Adapter	Wheel bearing installation
 MB991561	MB991561	Boot band clipping tool	Resin boot band installation

MB990925 BEARING AND OIL SEAL INSTALLER SET

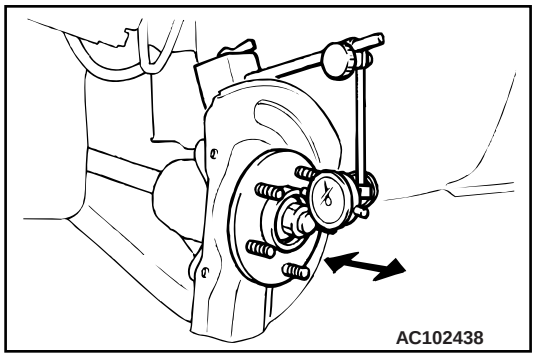
Tool	Type	Number	Outer diameter mm
MB990925  A Installer adapter  C Remover bar B Installer bar (Snap-in type)  Toolbox ACX02372AE	A	MB990926	39
		MB990927	45
		MB990928	49.5
		MB990929	51
		MB990930	54
		MB990931	57
		MB990932	61
		MB990933	63.5
		MB990934	67.5
		MB990935	71.5
		MB990936	75.5
		MB990937	79
	B	MB990938	–
	C	MB990939	–

ON-VEHICLE SERVICE

WHEEL BEARING CHECK FOR LOOSENESS IN THE AXIAL DIRECTION

M1261001100715

1. Remove the front caliper assembly and front brake disc, and retain the front caliper assembly with a wire and the like to prevent from falling (Refer to P.26-7).



2. Set a dial gauge as shown in the figure. Move the hub in the axial direction and measure the looseness.

   Limit : 0.05 mm

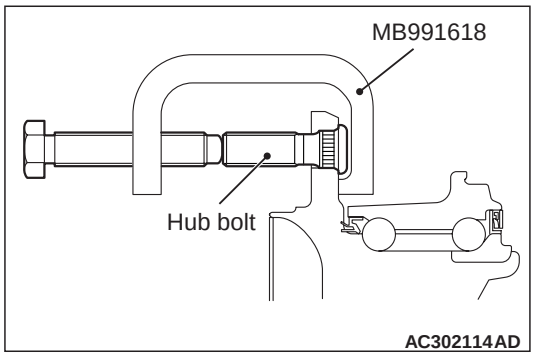
3. If the play exceeds the limit, disassemble hub knuckle to check each component. If the front hub bearing is faulty, replace it.
4. After checking, install the front brake disc and the front caliper assembly.

   Tightening torque: 100 ± 10 N·m

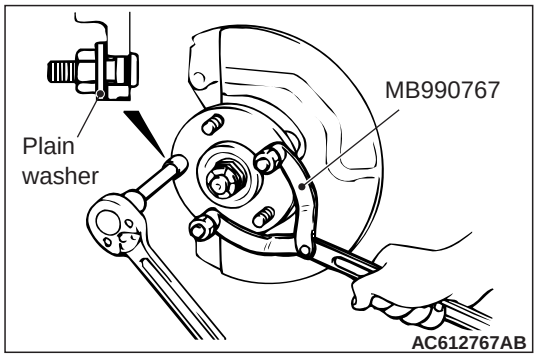
HUB BOLT REPLACEMENT

M1261001000923

1. Remove the front caliper assembly and front brake disc, and retain the front caliper assembly with a wire and the like to prevent from falling (Refer to P.26-7).



2. Use special tool hub bolt remover (MB991618) to remove the hub bolt.



3. After fixing the hub using special tool front hub and flange yoke holder (MB990767), install the plain washer to the new hub bolt, and tighten the bolt with a nut.
4. Install the front brake disc and the front caliper assembly.

   Tightening torque: 100 ± 10 N·m

FRONT AXLE HUB ASSEMBLY

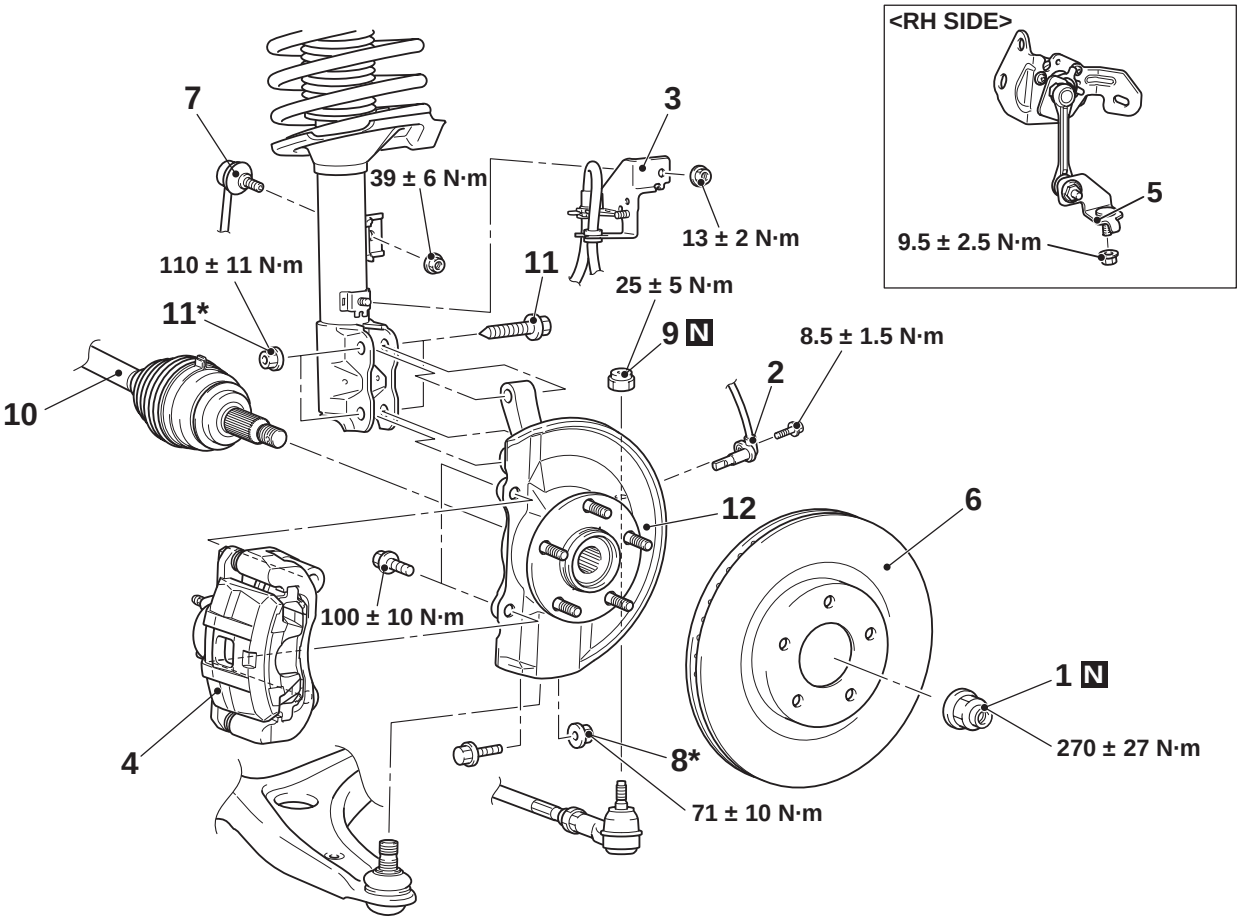
REMOVAL AND INSTALLATION

M1261001702058

⚠ CAUTION

- **The wheel speed detection magnetic encoder collects metallic particles easily, because it is magnetised. Make sure that the magnetic encoder should not collect metallic particles. Check that there is not any trouble prior to reassembling it.**
- **When removing and installing the front wheel hub assembly, make sure that the magnetic encoder for wheel speed detection (integrated with the inner oil seal) does not contact with surrounding parts to avoid damage.**
- **When removing and installing the front wheel speed sensor, make sure that the pole piece at the end does not contact with surrounding parts to avoid damage.**
- **The parts indicated by * are the nuts with friction coefficient stabilizer. In removal, ensure there is no damage, clean dust and soiling from the bearing and thread surfaces, and tighten them to the specified torque.**

Post-installation operation
- Using your fingers, press the Ball Joint Dust Cover to check for a crack or damage.
- Check the beam direction of the headlamp (Low beam) (Refer to GROUP 54A – Headlamp Aiming).



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Removal steps

<<**A**>> >>**B**<< 1. Driveshaft nut
2. Front wheel speed sensor
3. Brake hose bracket
<<**B**>> 4. Caliper assembly

Removal steps (Continued)

5. Front height sensor to lower arm connection <Vehicles with discharge headlamp>
6. Brake disc

Removal steps (Continued)

<<**C**>> >>**A**<< 7. Stabilizer link connection
8. Nut (lower arm ball joint connection)
<<**D**>> 9. Self-locking nut (tie-rod end connection)
<<**E**>> 10. Driveshaft and hub knuckle connection
11. Hub knuckle assembly and strut mounting bolt and nuts
12. Hub knuckle assembly

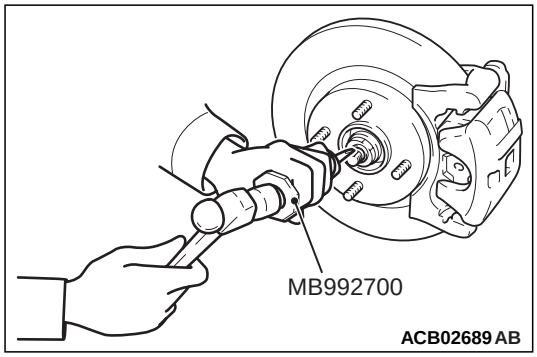
REMOVAL SERVICE POINTS

<<A>> DRIVESHAFT NUT REMOVAL

1. The staked portion of the driveshaft nut must face upwards.

⚠ CAUTION

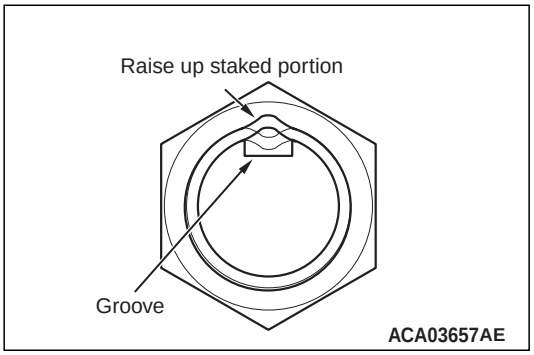
- **Make sure that the lock nut chisel is set in the correct direction. Otherwise, the groove or thread in the driveshaft may be broken, or the tip of the chisel may be chipped.**
- **Never use a chisel which tip is damaged.**
- **For how to use the lock nut chisel, refer to the manufacturer's operating instructions.**



2. Set the special tool lock nut chisel (MB992700) in the groove of the driveshaft with its "UPPER" mark facing upwards. Then strike the staked portion of the driveshaft nut with the chisel and a hammer to raise up.

⚠ CAUTION

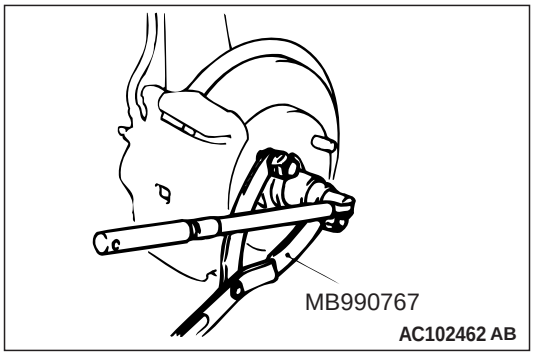
Be careful not to damage the thread of the driveshaft.



3. Raise up the staked portion of the driveshaft nut until it does not interfere with the shaft thread.

⚠ CAUTION

- **Never use a impact wrench to loosen the driveshaft nut.**
- **Do not apply the vehicle weight on the wheel bearing with the driveshaft nut loosened. Otherwise, the wheel bearing may be broken.**

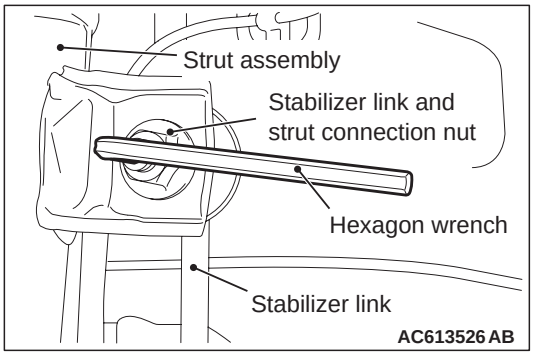


4. Use special tool front hub and flange yoke holder (MB990767) to counter the hub as shown in the figure to remove the driveshaft nut.

<<B>> CALIPER ASSEMBLY REMOVAL

1. Remove the caliper assembly with brake hose.
2. Secure the removed caliper assembly with a wire or other similar material at a position where it will not interfere with the removal and installation of the hub knuckle assembly.

<<C>> STABILIZER LINK DISCONNECTION

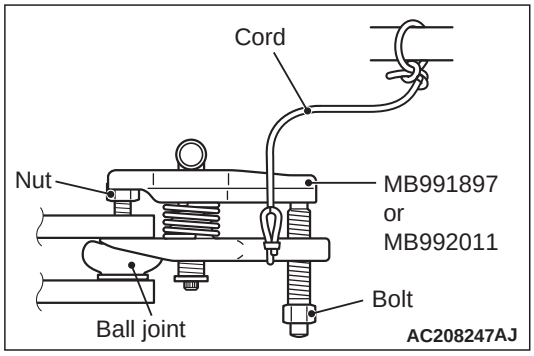


Use a hexagon wrench to remove the stabilizer link and strut connection nut as shown in the figure.

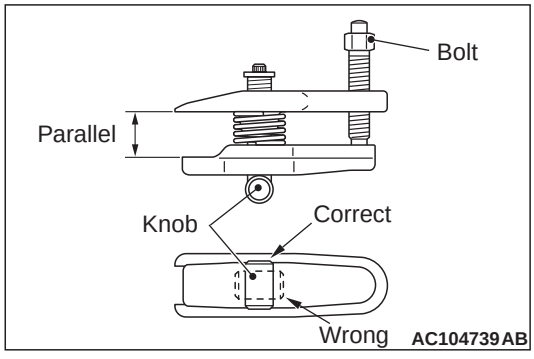
<<D>> SELF-LOCKING NUT (TIE-ROD END CONNECTION) REMOVAL

⚠ CAUTION

- **Do not remove the nut from ball joint. Loosen it and use the special tool to avoid possible damage to ball joint threads.**
- **Hang the special tool with cord to prevent it from falling.**



1. Install special too ball joint remover (MB991897 or MB992011) as shown in the figure.

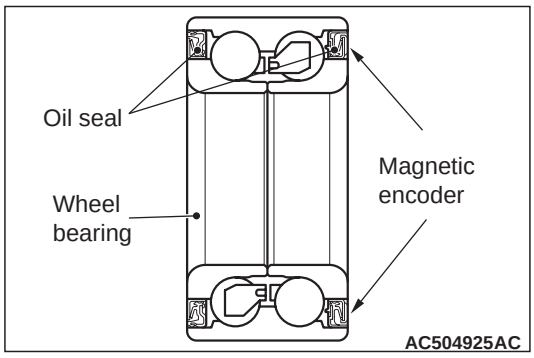


2. Turn the bolt and knob to make the special tool jaws parallel, then hand-tighten the bolt. After tightening, check that the jaws are still parallel.

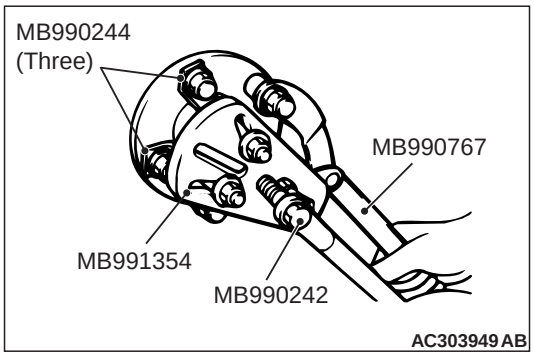
   NOTE: To adjust the special tool jaws to be parallel, set the orientation of the knob as shown in the figure.
3. Unscrew the bolt to disconnect the ball joint.

<<E>> DRIVESHAFT AND HUB KNUCKLE DISCONNECTION

⚠ CAUTION



- **The wheel speed detection magnetic encoder collects metallic particles easily, because it is magnetised. Make sure that the magnetic encoder does not collect metallic particles.**
- **When removing the driveshaft, make sure that it does not contact with the wheel speed detection magnetic encoder (integrated with the inner oil seal) to avoid damage.**

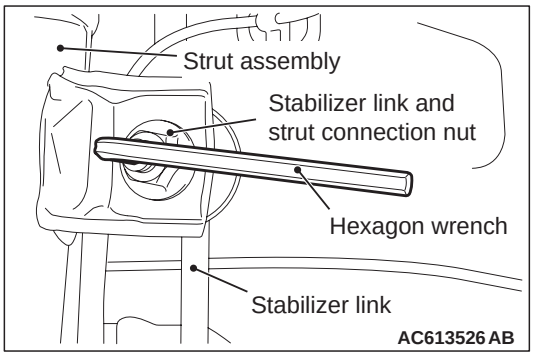


If the driveshaft is seized, use the following special tools to push the driveshaft out from the hub:

- Puller shaft (MB990242)
- Puller bar (MB990244)
- Front hub and flange yoke holder (MB990767)
- Puller body (MB991354)

INSTALLATION SERVICE POINTS

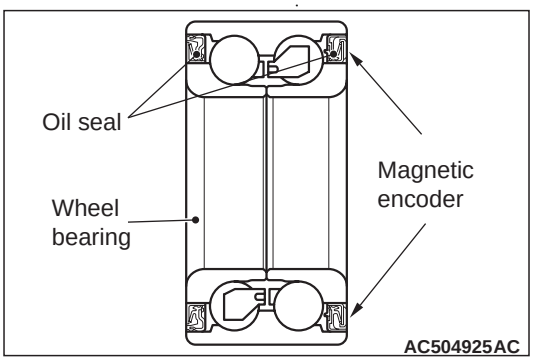
>>A<< STABILIZER LINK CONNECTION



Use a hexagon wrench to install the stabilizer link and strut connection nut as shown in the figure.

>>B<< DRIVESHAFT NUT INSTALLATION

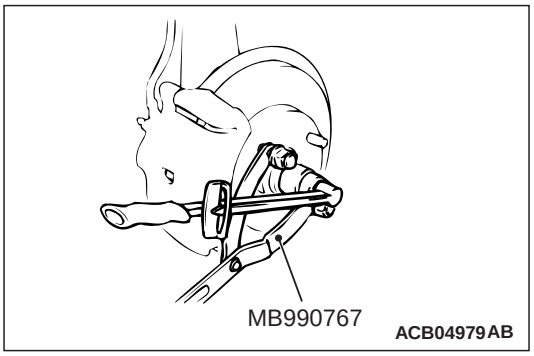
⚠ CAUTION



The magnetic encoder collects metallic particles easily, because it is magnetized. Make sure that the magnetic encoder should not collect metallic particles. Check that there is not any trouble prior to reassembling it.

- **When installing the driveshaft, make sure that it does not contact with the magnetic encoder (integrated with the inner oil seal) to avoid damage.**
- **Do not apply the vehicle weight on the wheel bearing before fully tightening the driveshaft nut. Otherwise, the wheel bearing may be broken.**
- **Insert the driveshaft so that no hub bolt is vertically above the groove of the driveshaft assembly.**

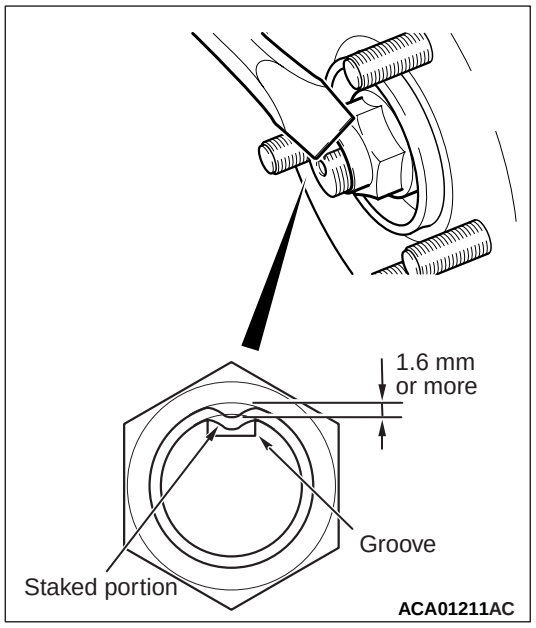
1. Check the hub seated surface for damage or corrosion. Whenever solvent is used for removing the corrosion, the surface should be degreased.
2. Check that the new driveshaft nut can be turned smoothly by hand. Then tighten it until it is seated.



3. Using special tool front hub and flange yoke holder (MB990767), tighten the driveshaft nut.

   Tightening torque: 270 ± 27 N·m

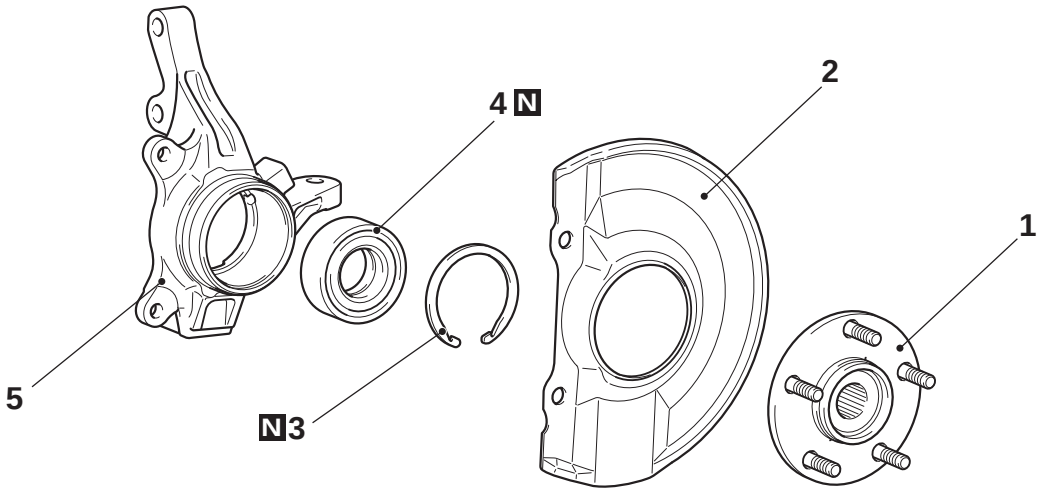
4. After tightening to the specified torque, check that the nut is seated securely.



5. Use the chisel and a hammer to stake the nut until the centre in the staked portion reaches the shown dimension.
6. Finally, check that the nut is not cracked at its staked portion.

DISASSEMBLY AND REASSEMBLY

M1261001900993



AC505536 AB

Disassembly steps

<<A>> 1. Hub
2. Dust shield
3. Snap ring
<<B>> 4. Wheel bearing
5. Knuckle

Reassembly steps

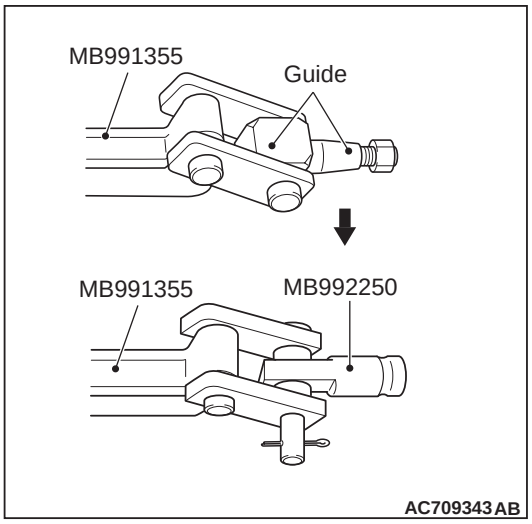
5. Knuckle
>>A<< 4. Wheel bearing
3. Snap ring
>>B<< 2. Dust shield
1. Hub
>>C<< • Hub rotation starting torque check
>>D<< • Wheel bearing axial play check

DISASSEMBLY SERVICE POINTS

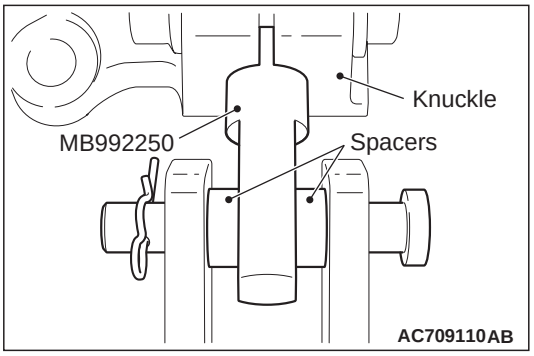
<<A>> HUB REMOVAL

⚠ CAUTION

In the hub removal operation, make sure to replace the wheel bearing with new one.

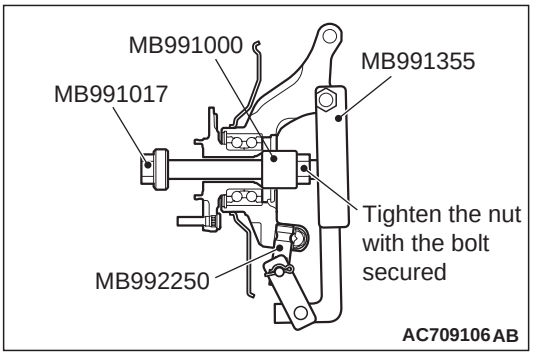


1. Replace special tool Knuckle arm bridge attachment (MB992250) with a guide of special tool Knuckle arm bridge (MB991355) as shown in the figure.



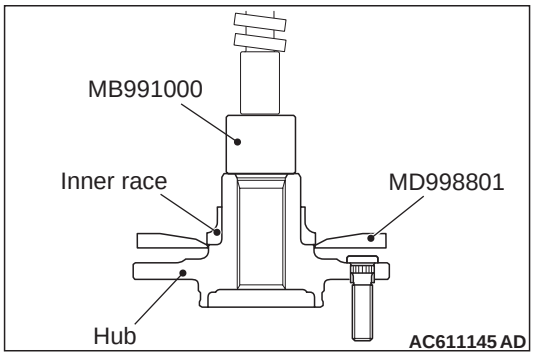
2. Insert special tool MB992250 in the knuckle and tighten it with a bolt and nut.

   NOTE: Set the spacers of special tool MB992250 as shown in the figure.

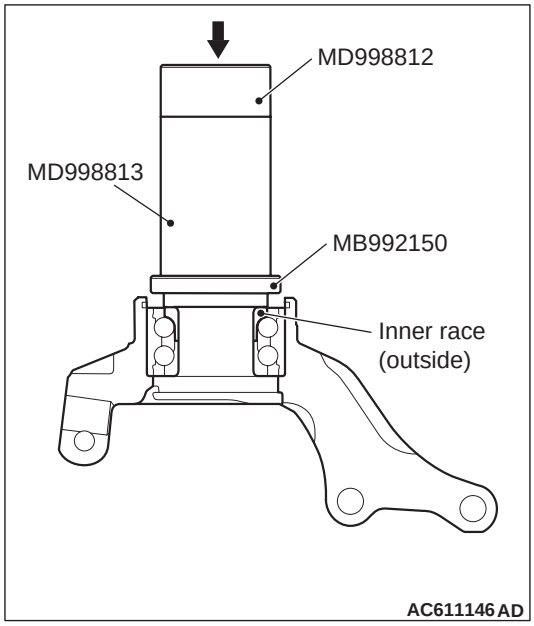


3. Use the following special tools to remove the hub:
   - Spacer (MB991000)
   - Front hub remover and installer (MB991017)
   - Knuckle arm bridge (MB991355)
   - Knuckle arm bridge attachment (MB992250)

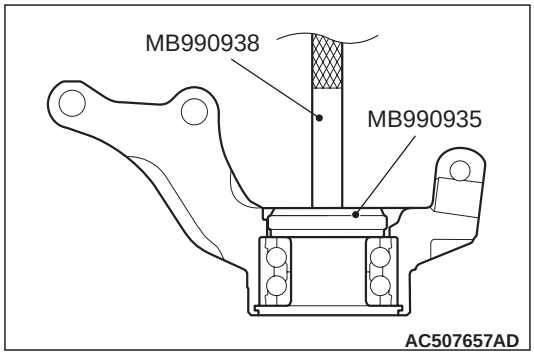
<<B>> WHEEL BEARING REMOVAL



1. Use the following special tools to remove the wheel bearing inner race (outside) from the hub.
   - Spacer (MB991000)
   - Remover (MD998801)



2. Use the following special tools to assemble the inner race (outside) removed from the hub to the wheel bearing.
   - Oil seal installer (MB992150)
   - Installer cap (MD998812)
   - Installer (MD998813)

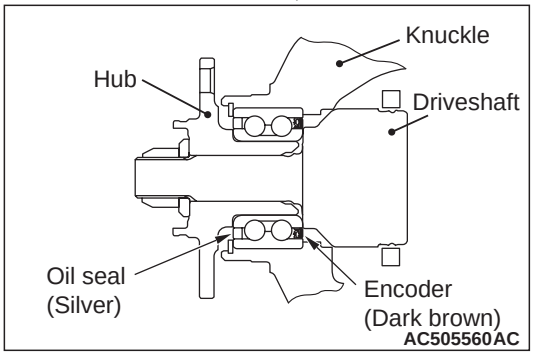


3. Use the following special tools to remove the wheel bearing.
   - Installer adapter (MB990935)
   - Installer bar (MB990938)

REASSEMBLY SERVICE POINTS

>>A<< WHEEL BEARING INSTALLATION

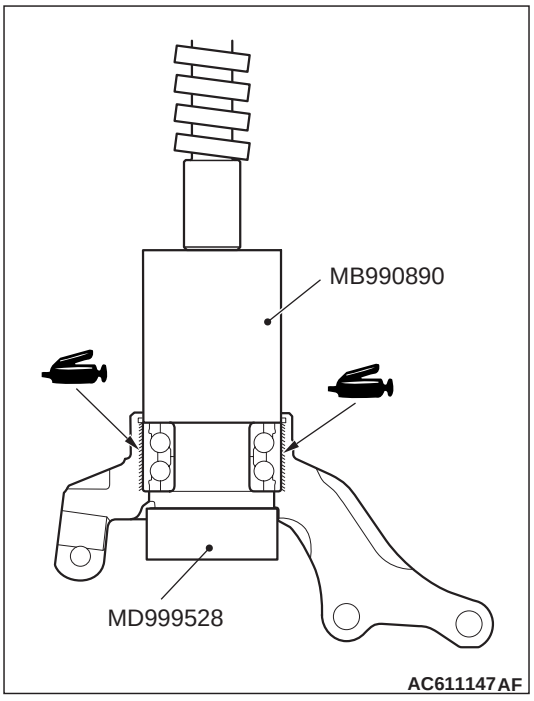
⚠ CAUTION



The magnetic encoder for wheel speed sensor is installed in the wheel bearing. Install the wheel bearing so that the encoder is positioned in the direction shown in the figure.

- **When press-fit the wheel bearing, push the outer race.**
- **After press-fit the wheel bearing, wipe off the extra grease in order not to remain on the magnetic encoder.**

1. Remove grease and foreign material cleanly from the inside of knuckle bore.



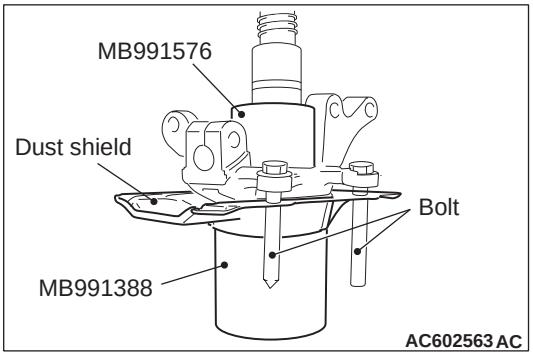
2. Apply the specified grease thinly and evenly to the inside of knuckle as shown in the figure.

   Specified grease: Shell Sunlight Grease BD2 or equivalent

   Amount to use: as required (1.0 – 1.5 g)

3. Use the following special tools to press-fit the wheel bearing:
   - Rear suspension bushing base (MB990890)
   - Adapter (MD999528)
4. Remove excessive grease seeped out between knuckle and wheel bearing outer race after press-fitting the wheel bearing.

>>B<< DUST SHIELD INSTALLATION

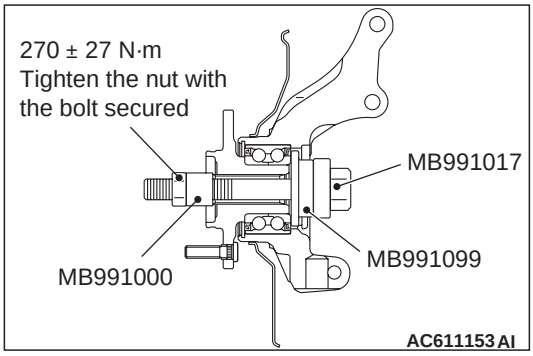


Use the following special tools to press-fit the knuckle into the dust shield.

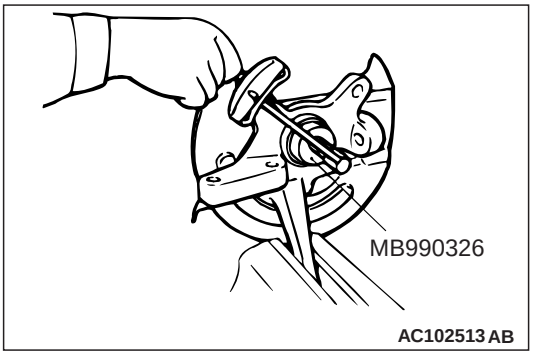
- Bush remover base (MB991388)
- Base (MB991576)

NOTE: Use the bolts (M12) to align the caliper mounting holes.

>>C<< HUB ROTATION STARTING TORQUE CHECK



1. Set the following special tools as shown in the figure, tighten the nut to the specified torque, and press-fit the hub into the knuckle:
   - Spacer (MB991000)
   - Front hub remover and installer (MB991017)
   - Oil seal installer guide (MB991099)
2. Rotate the hub to make the bearing well-greased.

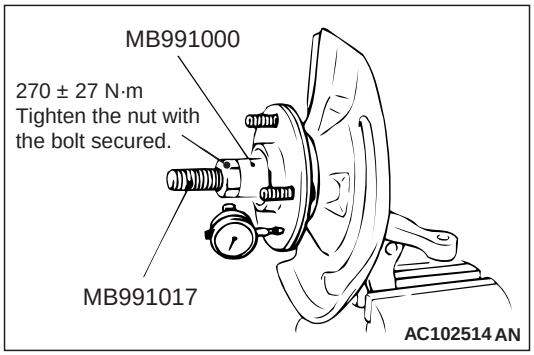


3. Use special tool preload socket (MB990326) to measure the hub rotation starting torque.

   Limit: 1.5 N·m

4. Hub rotation starting torque should be within the limit value, and there should be no roughness and gritty feeling in rotation.

>>D<< WHEEL BEARING AXIAL PLAY CHECK



1. Use the following special tools to measure the wheel bearing axial play:
   - Spacer (MB991000)
   - Front hub remover and installer (MB991017)

   Limit: 0.05 mm

2. If the axial play is not within the limit range while the nut is tightened to the specified torque, the bearing, hub and/or knuckle have probably not been installed correctly. Replace the bearing and re-install.

   Tightening torque: 270 ± 27 N·m

DRIVESHAFT ASSEMBLY

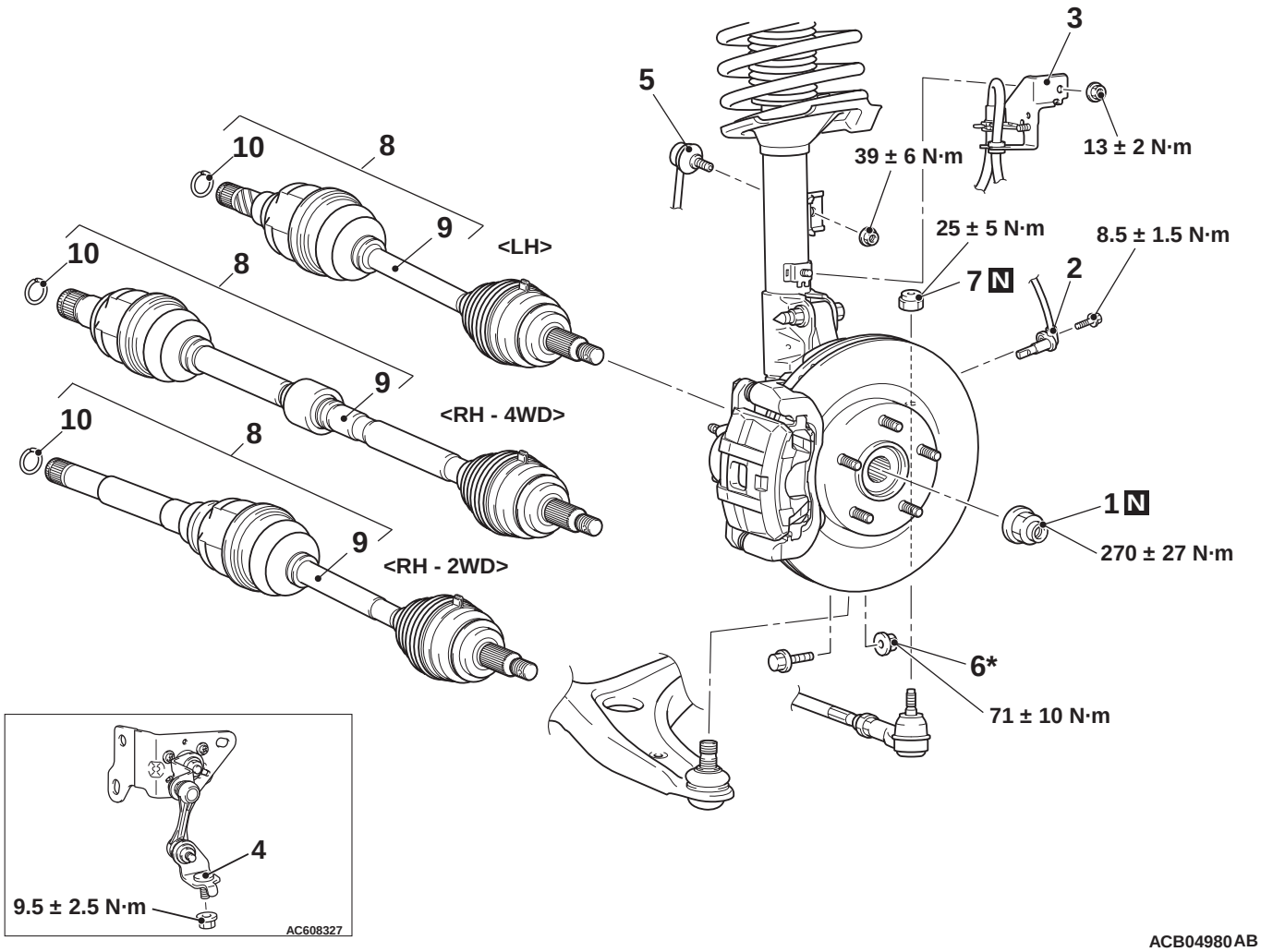
REMOVAL AND INSTALLATION

M1261003502403

⚠ CAUTION

- **The wheel speed detection magnetic encoder collects metallic particles easily, because it is magnetised. Make sure that the magnetic encoder should not collect metallic particles. Check that there is not any trouble prior to reassembling it.**
- **When removing and installing the driveshaft assembly, make sure that the wheel speed detection magnetic encoder (integrated with the inner oil seal) does not contact with surrounding parts to avoid damage.**
- **When removing and installing the front wheel speed sensor, make sure that the pole piece at the end does not contact with surrounding parts to avoid damage.**
- **The parts indicated by * are the nuts with friction coefficient stabilizer. In removal, ensure there is no damage, clean dust and soiling from the bearing and thread surfaces, and tighten them to the specified torque.**

Pre-removal operation	Post-installation operation
• Engine Room Under Cover Removal (Refer to GROUP 51, Under Cover .) • CVT fluid draining (Refer to GROUP 23A, On-vehicle Service, CVT Fluid Change .)	• Using your fingers, press the ball joint dust cover to check for a crack or damage. • Engine Room Under Cover Installation (Refer to GROUP 51, Under Cover .) • CVT fluid refilling (Refer to GROUP 23A, On-vehicle Service, CVT Fluid Change .) • Check the beam direction of the headlamp (Low beam) (Refer to GROUP 54A – Headlamp Aiming).



Removal steps

<<**A**>>	>>**C**<<	1.	Driveshaft nut
		2.	Front wheel speed sensor
		3.	Brake hose bracket
		4.	Front height sensor to lower arm connection <Vehicles with discharge headlamp>
<<**B**>>	>>**B**<<	5.	Stabilizer link connection
		6.	Nut (lower arm ball joint connection)
<<**C**>>		7.	Self-locking nut (tie-rod end connection)
<<**D**>>	>>**A**<<	8.	Driveshaft assembly
		9.	Driveshaft
		10.	Circlip

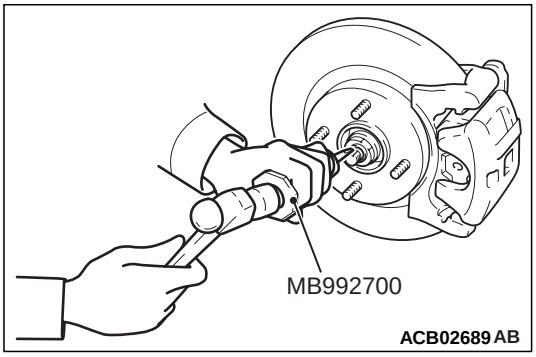
REMOVAL SERVICE POINTS

<<A>> DRIVESHAFT NUT REMOVAL

1. The staked portion of the driveshaft nut must face upwards.

⚠ CAUTION

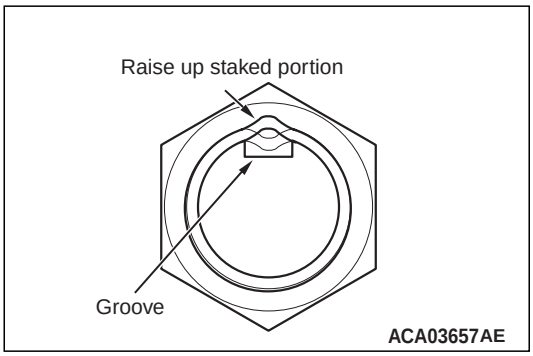
- **Make sure that the lock nut chisel is set in the correct direction. Otherwise, the groove or thread in the driveshaft may be broken, or the tip of the chisel may be chipped.**
- **Never use a chisel which tip is damaged.**
- **For how to use the lock nut chisel, refer to the manufacturer's operating instructions.**



2. Set the special tool lock nut chisel (MB992700) in the groove of the driveshaft with its "UPPER" mark facing upwards. Then strike the staked portion of the driveshaft nut with the chisel and a hammer to raise up.

⚠ CAUTION

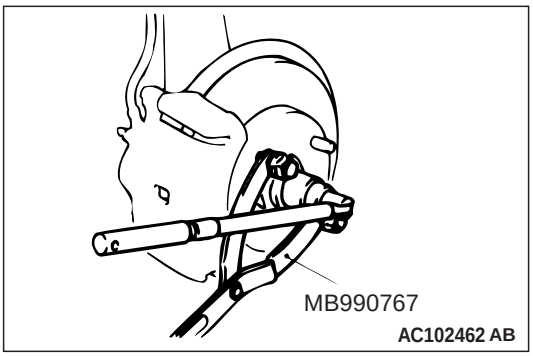
Be careful not to damage the thread of the driveshaft.



3. Raise up the staked portion of the driveshaft nut until it does not interfere with the shaft thread.

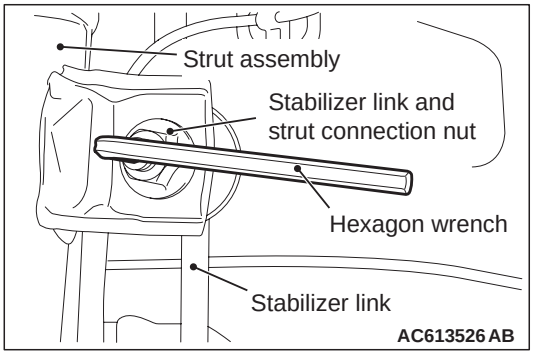
⚠ CAUTION

- **Never use a impact wrench to loosen the driveshaft nut.**
- **Do not apply the vehicle weight on the wheel bearing with the driveshaft nut loosened. Otherwise, the wheel bearing may be broken.**



4. Use special tool front hub and flange yoke holder (MB990767) to counter the hub as shown in the figure to remove the driveshaft nut.

<<B>> STABILIZER LINK DISCONNECTION

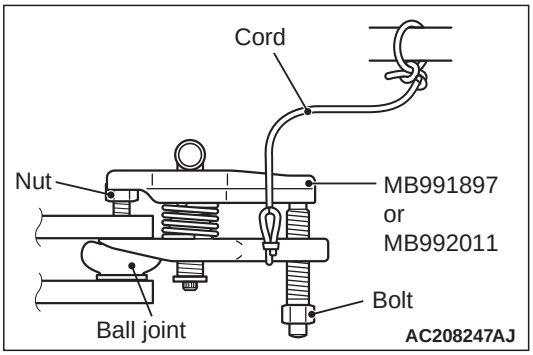


Use a hexagon wrench to remove the stabilizer link and strut connection nut as shown in the figure.

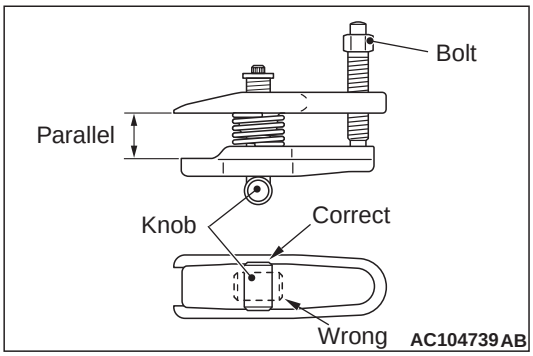
<<C>> SELF-LOCKING NUT (TIE-ROD END CONNECTION) REMOVAL

⚠ CAUTION

- **Loosen the self-locking nut (tie-rod end connection) from the ball joint, but do not remove here. Use the special tool.**
- **To prevent the special tool from dropping off, suspend it with a cord.**



1. Install special tool ball joint remover (MB991897 or MB992011) as shown in the figure.



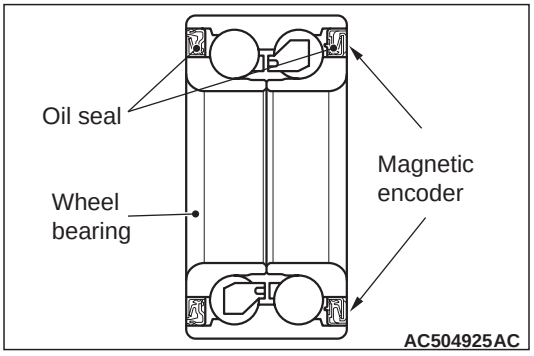
2. Turn the bolt and knob to make the special tool jaws parallel, then hand-tighten the bolt. After tightening, check that the jaws are still parallel.

NOTE: To adjust the special tool jaws to be parallel, set the orientation of the knob as shown in the figure.

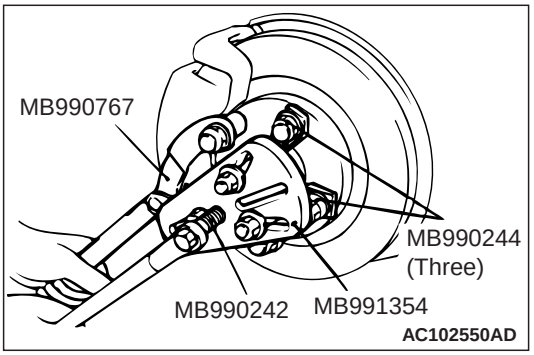
3. Unscrew the bolt to disconnect the ball joint.

<<D>> DRIVESHAFT ASSEMBLY REMOVAL

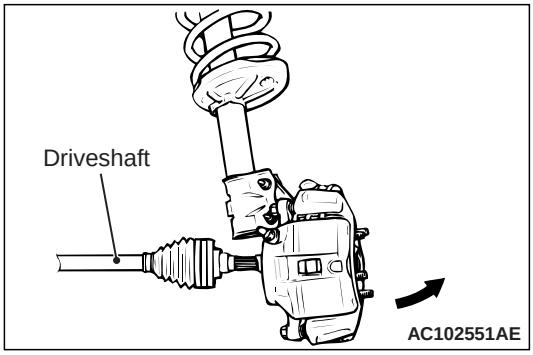
⚠ CAUTION



- **The wheel speed detection magnetic encoder collects metallic particles easily, because it is magnetised. Make sure that the magnetic encoder does not collect metallic particles.**
- **When removing the driveshaft, make sure that it does not contact with the wheel speed detection magnetic encoder (integrated with the inner oil seal) to avoid damage.**



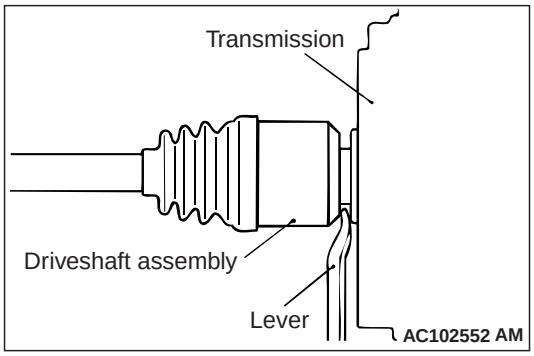
1. If the driveshaft is seized with the hub, use the following special tools to push the driveshaft assembly out from the hub:
- Puller shaft (MB990242)
- Puller bar (MB990244)
- Front hub and flange yoke holder (MB990767)
- Puller body (MB991354)



2. While pulling the lower side of the brake disc toward you, remove the driveshaft assembly from the hub.

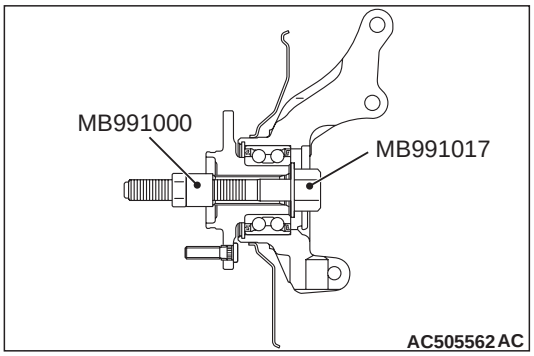
⚠ CAUTION

- **Never pull out the driveshaft assembly from the EBJ assembly side. Otherwise, the PTJ assembly may be damaged. Always pull out from the PTJ side with a lever.**
- **Care must be taken to ensure that the oil seal of the transmission is not damaged by the spline part of the driveshaft assembly.**



3. For driveshafts other than 2WD-RH driveshaft, insert a lever between the transmission case or transfer and driveshaft assembly, and then pull the driveshaft assembly out from the transmission.

⚠ CAUTION



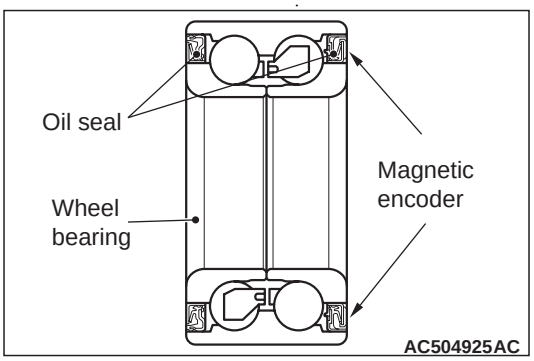
Do not apply the vehicle weight to the wheel bearing with the driveshaft assembly removed. If, however, the vehicle weight shall be applied to the bearing (in order to move the vehicle), tighten the following special tools to the specified torque (270 ± 27 N·m):

- **Spacer (MB991000)**
- **Front hub remover and installer (MB991017)**

INSTALLATION SERVICE POINTS

>>A<< DRIVESHAFT ASSEMBLY INSTALLATION

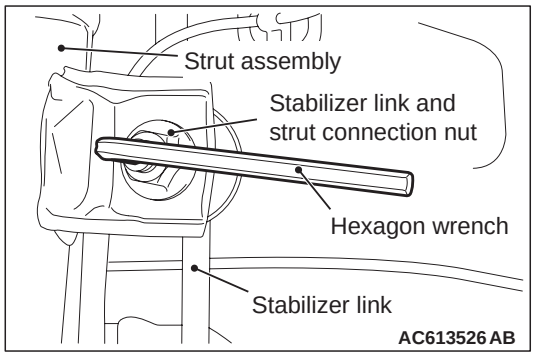
⚠ CAUTION



The wheel speed detection magnetic encoder collects metallic particles easily, because it is magnetised. Make sure that the magnetic encoder should not collect metallic particles. Check that there is not any trouble prior to reassembling it.

- **When installing the driveshaft, make sure that it does not contact with the wheel speed detection magnetic encoder (integrated with the inner oil seal) to avoid damage.**
- **Care must be taken to ensure that the oil seal of the transmission is not damaged by the spline part of the driveshaft assembly.**

>>B<< STABILIZER LINK CONNECTION



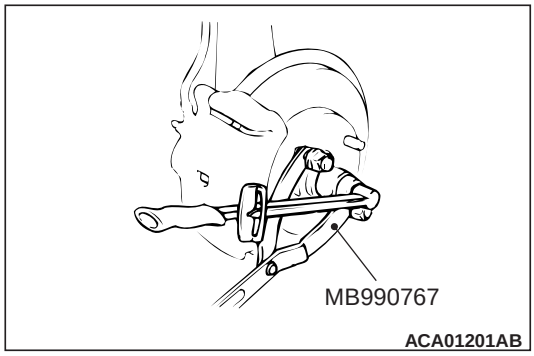
Use a hexagon wrench to install the stabilizer link and strut connection nut as shown in the figure.

>>C<< DRIVESHAFT NUT INSTALLATION

⚠ CAUTION

Do not apply the vehicle weight on the front wheel hub assembly before fully tightening the driveshaft nut. Otherwise, the wheel bearing may be broken.

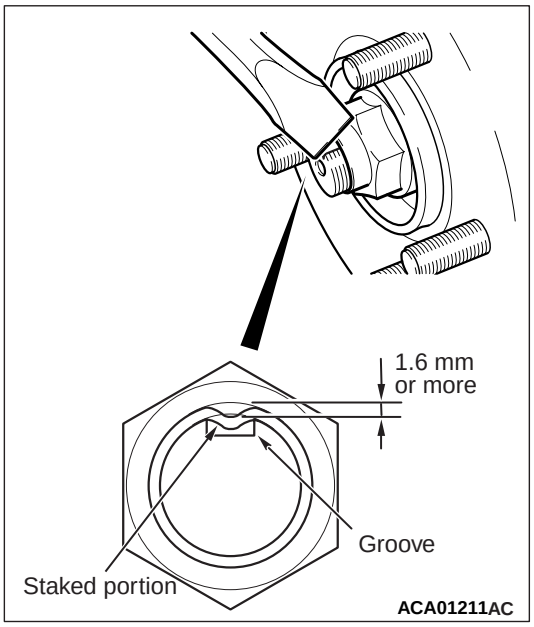
1. Check the hub seated surface for damage or corrosion. Whenever solvent is used for removing the corrosion, the surface should be degreased.
2. Check that the new driveshaft nut can be turned smoothly by hand. Then tighten it until it is seated.



3. Using special tool front hub and flange yoke holder (MB990767), tighten the driveshaft nut.

   Tightening torque: 270 ± 27 N·m

4. After tightening to the specified torque, check that the nut is seated securely.



5. Use the chisel and a hammer to stake the nut until the centre in the staked portion reaches the shown dimension.
6. Finally, check that the nut is not cracked at its staked portion.

DISASSEMBLY AND REASSEMBLY

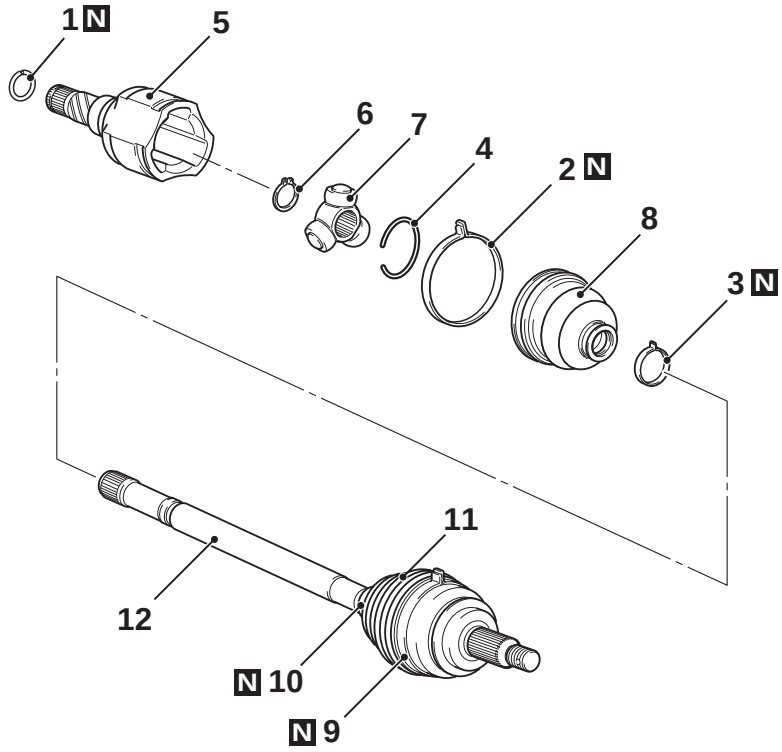
<2WD>

M1261003702775

⚠ CAUTION

As for the EBJ assembly, only the EBJ boot can be replaceable, and other parts cannot be disassembled.

<LH>



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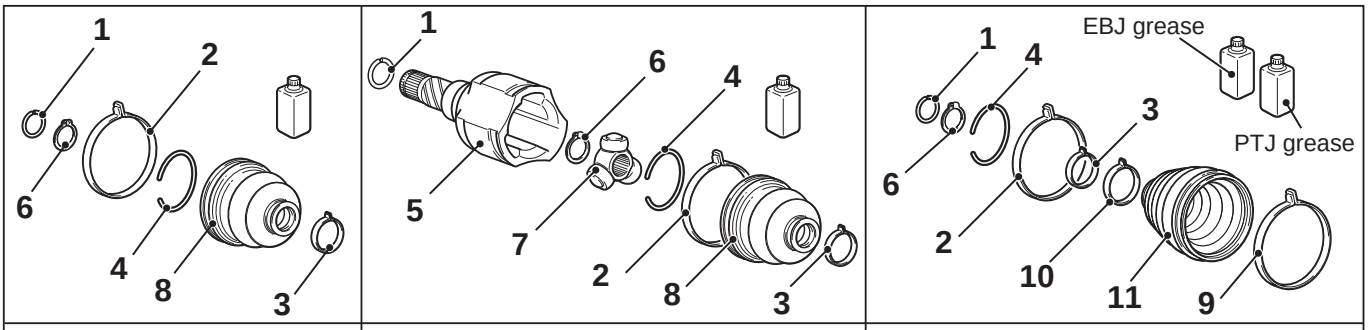


PTJ boots repair kit	PTJ repair kit	EBJ boots repair kit

AC701756AB

Disassembly steps

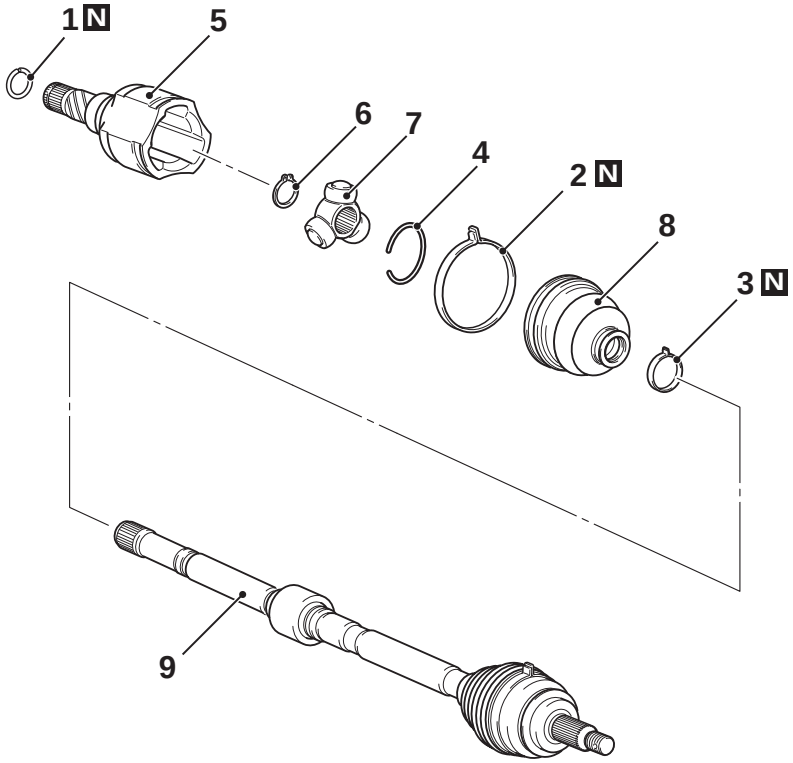
		1.	Circlip
	>>**C**<<	2.	PTJ boot band (large)
	>>**C**<<	3.	PTJ boot band (small)
		4.	Circlip
<<**A**>>	>>**B**<<	5.	PTJ case
		6.	Snap ring

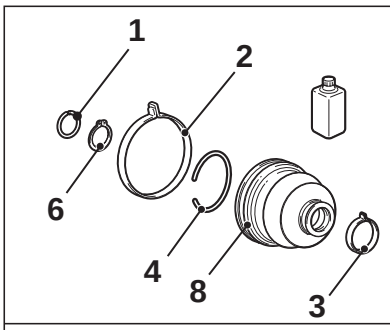
Disassembly steps (Continued)

	>>**B**<<	7.	Spider assembly
<<**B**>>	>>**A**<<	8.	PTJ boot
		9.	EBJ boot band (large)
		10.	EBJ boot band (small)
		11.	EBJ boot
		12.	EBJ assembly

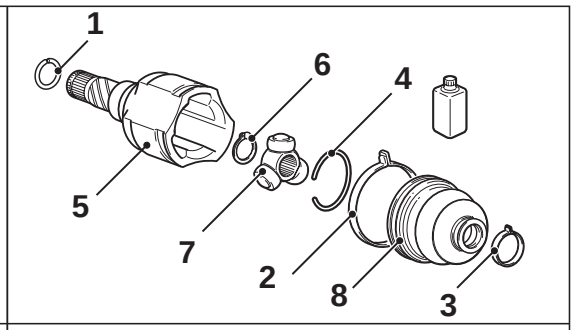
⚠ CAUTION
For the EBJ assembly, parts cannot be disassembled.

<RH>





PTJ boots repair kit



PTJ repair kit

AC700736 AB

Disassembly steps

		1.	Circlip
	>>**C**<<	2.	PTJ boot band (large)
	>>**C**<<	3.	PTJ boot band (small)
		4.	Circlip
<<**A**>>	>>**B**<<	5.	PTJ case
		6.	Snap ring
	>>**B**<<	7.	Spider assembly

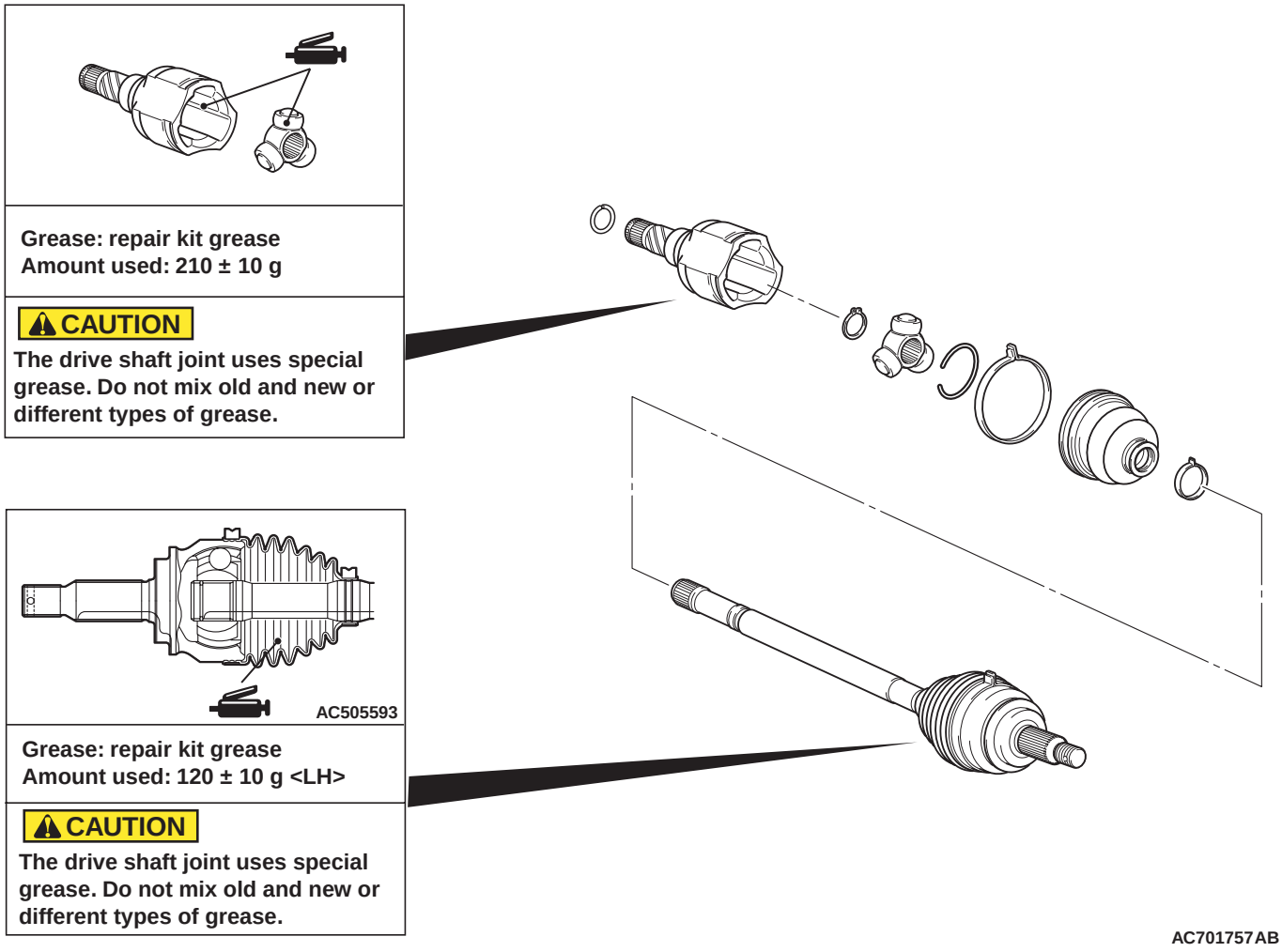
Disassembly steps (Continued)

<<**B**>>	>>**A**<<	8.	PTJ boot
		9.	EBJ assembly

NOTE:

- *PTJ: Pillow Tripod Joint*
- *EBJ: High Efficiency Compact Birfield Joint*

LUBRICATION POINTS



DISASSEMBLY SERVICE POINT

<<A>> PTJ CASE REMOVAL

⚠ CAUTION
Pay attention to the spider assembly roller because it may be disconnected easily.

<<B>> PTJ BOOT REMOVAL

1. Wipe off the grease on the shaft spline.
2. If the PTJ boot is reused, protect the shaft spline area with a tape from damage in pulling out the boot.

ASSEMBLY SERVICE POINT

>>A<< PTJ BOOT INSTALLATION

Apply a tape to the shaft spline area, and then incorporate the PTJ boot.

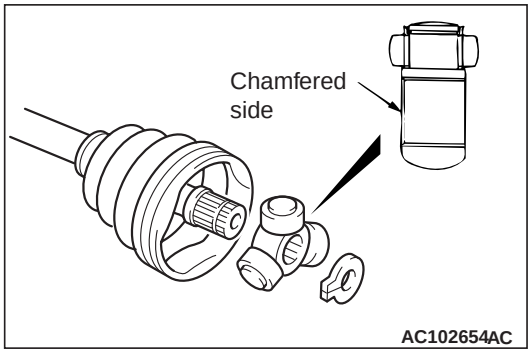
>>B<< SPIDER ASSEMBLY/PTJ CASE INSTALLATION

⚠ CAUTION

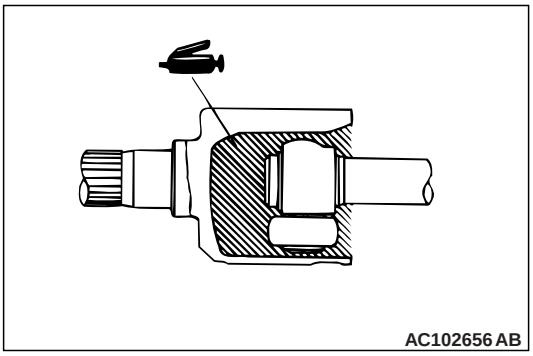
- **Special grease is used for the joint. Do not mix the new and previous types of grease or different types of grease.**
- **When the spider assembly is cleaned, apply the specified grease carefully more than usual.**

1. Fill the specified grease fully into the clearance between the spider shaft of the spider assembly and the roller.

   Specified grease: Repair kit grease



2. Install the spider assembly to the shaft of the spline area from the bevelling side.

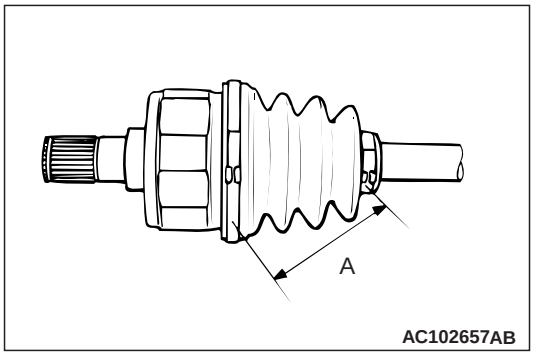


3. Insert the driveshaft into the PTJ case after filling the specified grease to the PTJ case, and then fill the grease again.

Specified grease: Repair kit grease
Application amount: 210 ± 10 g

NOTE: When using the repair kit grease, fill the half of the grease into the joint and the other half into the boot as a guideline, and consume the grease completely.

>>C<< PTJ BOOT BAND (SMALL)/PTJ BOOT BAND (LARGE) INSTALLATION



Adjust the distance between the boot bands to the standard value to make the air volume inside the PTJ boot to the specified value, then be sure to tighten the PTJ boot band (large) and PTJ boot band (small).

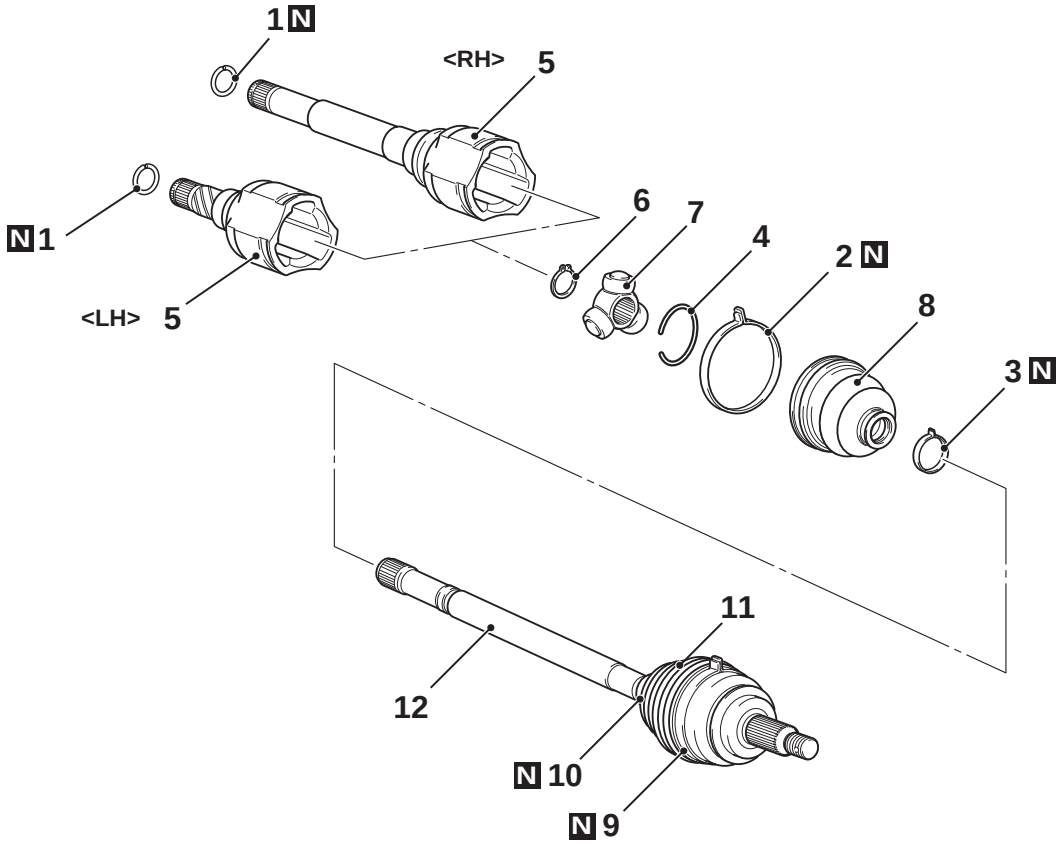
Standard value: 85 ± 3 mm

DRIVESHAFT ASSEMBLY DISASSEMBLY AND REASSEMBLY <4WD>

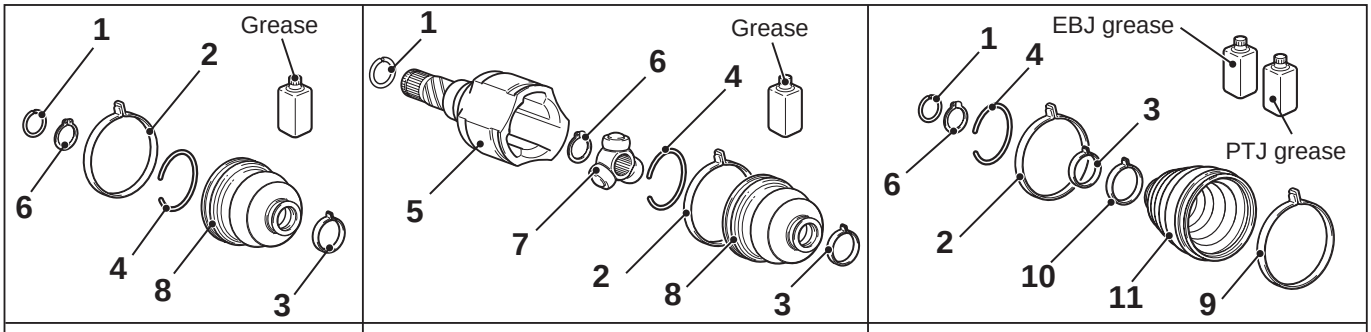
M1261003702786

⚠ CAUTION

As for the EBJ assembly, only the EBJ boot can be replaceable, and other parts cannot be disassembled.



AC505537



PTJ boots repair kit	PTJ repair kit	EBJ boots repair kit

AC605465AD

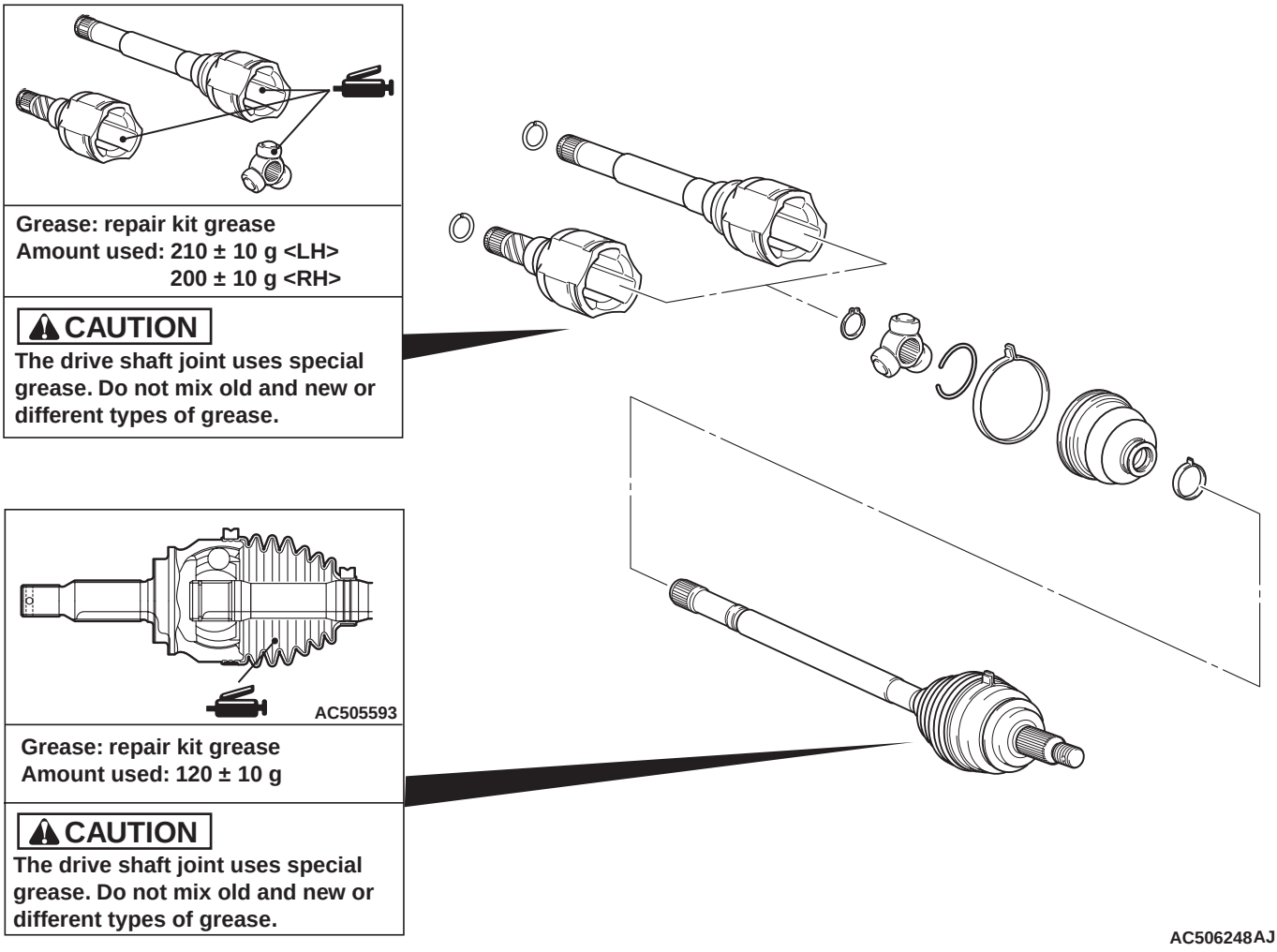
Disassembly steps

		1.	Circlip
	>>**C**<<	2.	PTJ boot band (large)
	>>**C**<<	3.	PTJ boot band (small)
		4.	Circlip
<<**A**>>	>>**B**<<	5.	PTJ case
		6.	Snap ring

Disassembly steps (Continued)

	>>**B**<<	7.	Spider assembly
<<**B**>>	>>**A**<<	8.	PTJ boot
		9.	EBJ boot band (large)
		10.	EBJ boot band (small)
		11.	EBJ boot
		12.	EBJ assembly

LUBRICATION POINTS



Grease: repair kit grease
Amount used: 210 ± 10 g <LH>
200 ± 10 g <RH>

⚠ CAUTION
The drive shaft joint uses special grease. Do not mix old and new or different types of grease.

AC505593

Grease: repair kit grease
Amount used: 120 ± 10 g

⚠ CAUTION
The drive shaft joint uses special grease. Do not mix old and new or different types of grease.

AC506248AJ

DISASSEMBLY SERVICE POINT

<<A>> PTJ CASE REMOVAL

⚠ CAUTION
Pay attention to the spider assembly roller because it may be disconnected easily.

<<B>> PTJ BOOT REMOVAL

1. Wipe off the grease on the shaft spline.
2. If the PTJ boot is reused, protect the shaft spline area with a tape from damage in pulling out the boot.

ASSEMBLY SERVICE POINT

>>A<< PTJ BOOT INSTALLATION

Apply a tape to the shaft spline area, and then incorporate the PTJ boot.

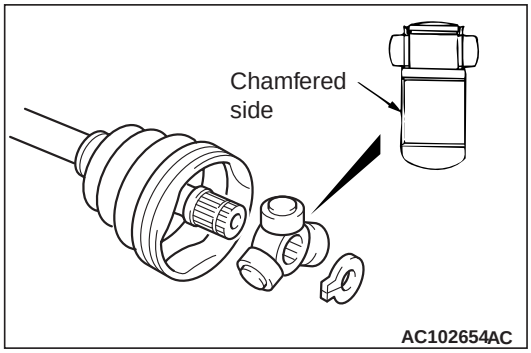
>>B<< SPIDER ASSEMBLY/PTJ CASE INSTALLATION

⚠ CAUTION

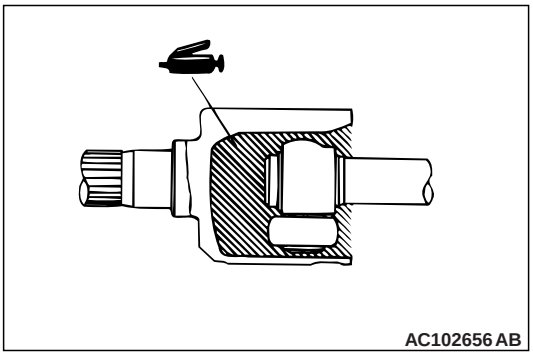
- **Special grease is used for the joint. Do not mix the new and previous types of grease or different types of grease.**
- **When the spider assembly is cleaned, apply the specified grease carefully more than usual.**

1. Fill the specified grease fully into the clearance between the spider shaft of the spider assembly and the roller.

   Specified grease: Repair kit grease



2. Install the spider assembly to the shaft of the spline area from the bevelling side.

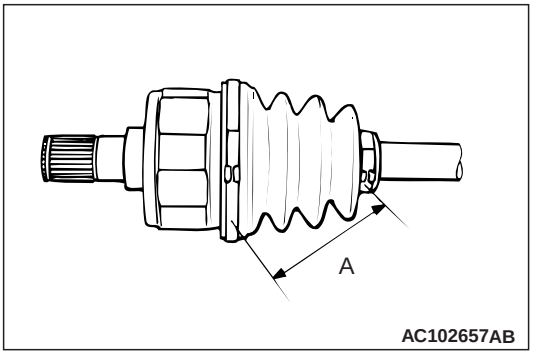


3. Insert the driveshaft into the PTJ case after filling the specified grease to the PTJ case, and then fill the grease again.

   Specified grease: Repair kit grease
   Application amount:
   210 ± 10 g <LH>
   200 ± 10 g <RH>

   NOTE: When using the repair kit grease, fill the half of the grease into the joint and the other half into the boot as a guideline, and consume the grease completely.

>>C<< PTJ BOOT BAND (SMALL)/PTJ BOOT BAND (LARGE) INSTALLATION



Adjust the distance between the boot bands to the standard value to make the air volume inside the PTJ boot to the specified value, then be sure to tighten the PTJ boot band (large) and PTJ boot band (small).

Standard value: 85 ± 3 mm

EBJ BOOT REPLACEMENT

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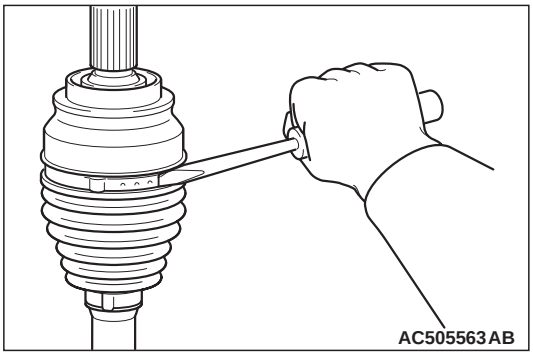
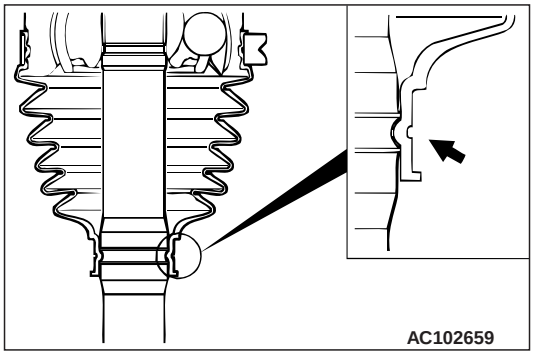
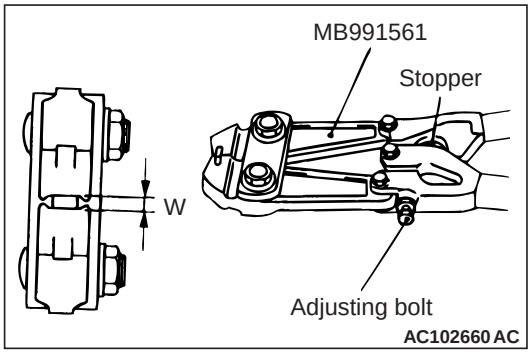


1. Remove the boot band (large) and (small).
   NOTE: Boot band cannot be reused.
2. Remove the boot.
3. Apply a tape to the shaft spline area, and then incorporate the boot band and boot.



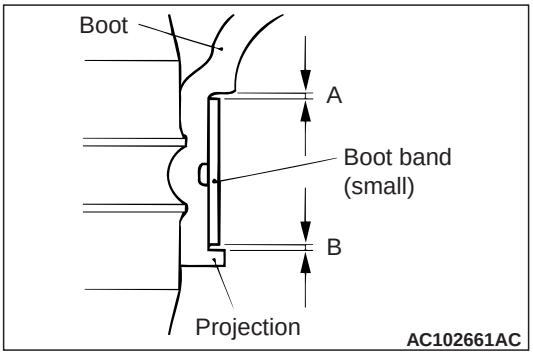
4. Install the boot, aligning with the centre groove on the boot small diameter.



5. Turn the adjusting bolt of the boot band clipping tool (Special tool: MB991561) to adjust the opening dimension (W) to the standard value.

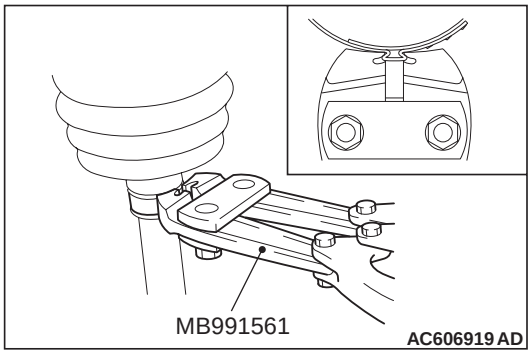
   Standard value (W): 2.9 mm
   <Over 2.9 mm> Tighten the adjusting bolt.
   <Below 2.9 mm> Loosen the adjusting bolt.

NOTE:
- *The adjusting bolt changes W approximately 0.7 mm for each rotation.*
- *Do not rotate the adjusting bolt more than one rotation.*

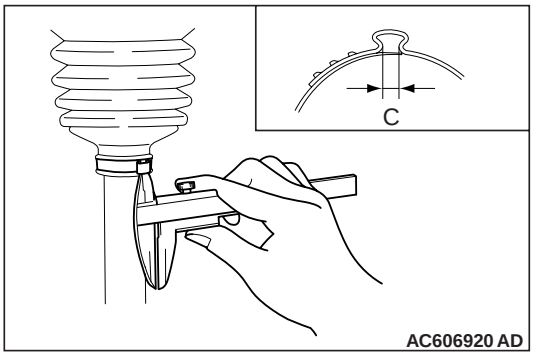


6. Roughly position the boot band (small) at the centre so that there are clearance at both ends (A and B).

⚠ CAUTION
- **Fix the driveshaft in an upright position, and pinch the crimping area of the boot band securely between the jaws of the special tool.**
- **Be sure to compress the boot band until the special tool touches the stopper.**



7. Using the special tool to crimp the boot band (small).



8. Check that the crimping value of the boot band (C) is equal to the standard value.

Standard value (C): 2.4 to 2.8 mm

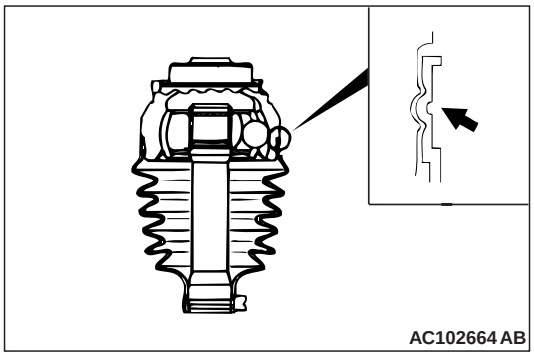
<When the crimping value is over 2.8 mm>
Readjust W in step 5 according to the following expression, and then perform the operation in step 7 again.
W = 5.5 – C (Example: W = 2.6 for C = 2.9)
<When the crimping value is below 2.4 mm>
Remove the boot band, readjust W in step 5 according to the following expression, and then perform the operations in steps 6 and 7 again using a new boot band.
W = 5.5 – C (Example: W = 3.2 for C = 2.3)

9. Check that the boot band is seated within the installation area. If it is not seated within the area, remove the band and use a new band to perform the operations shown in steps from 6 to 8.

⚠ CAUTION
- **The special grease is used for the joint: Do not mix old and new grease, or grease in different types.**

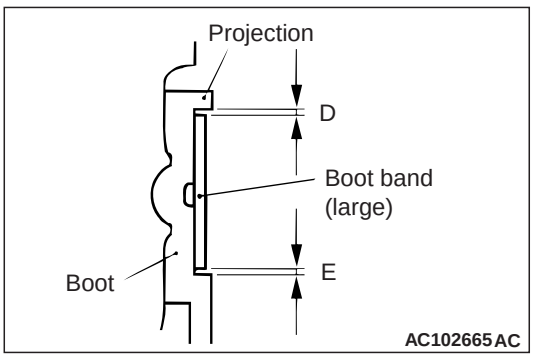
10. Fill the boot with the specified amount of specified grease.

Specified grease: Repair kit grease
Amount used: Refer to P.26-2.



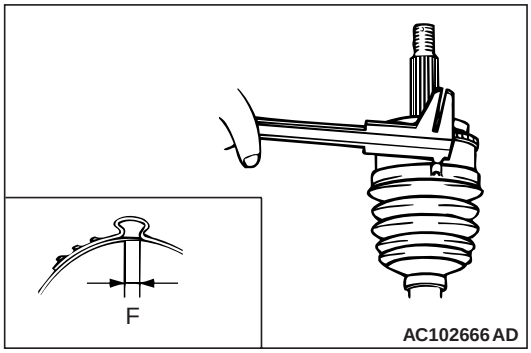
11. Align the centre groove on the resin boot large diameter with the shaft groove.
12. As shown in step 5, using the special tool (MB991561), adjust the opening dimension (W) to the standard value.

Standard value (W): 3.2 mm



13.Roughly position the boot band (large) at the centre so that there are clearance at both ends (D and E).

14.As shown in step 7, use the special tool to crimp the boot band (large).



15.Check that the crimping value of the boot band (F) is equal to the standard value.

Standard value (C): 2.4 to 2.8 mm
<When the crimping value is over 2.8 mm>
Readjust W in step 12 according to the following expression, and then perform the operation in step 14 again.
W = 5.8 – F (Example: W = 2.9 for F = 2.9)
<When the crimping value is below 2.4 mm>
Remove the boot band, readjust W in step 12 according to the following expression, and then perform the operations in steps 13 and 14 again using a new boot band.
W = 5.8 – F (Example: W = 3.5 for F = 2.3)

16.Check that the boot band is seated within the installation area. If it is not seated within the area, remove the band and use a new band to perform the operations shown in steps from 13 to 15.