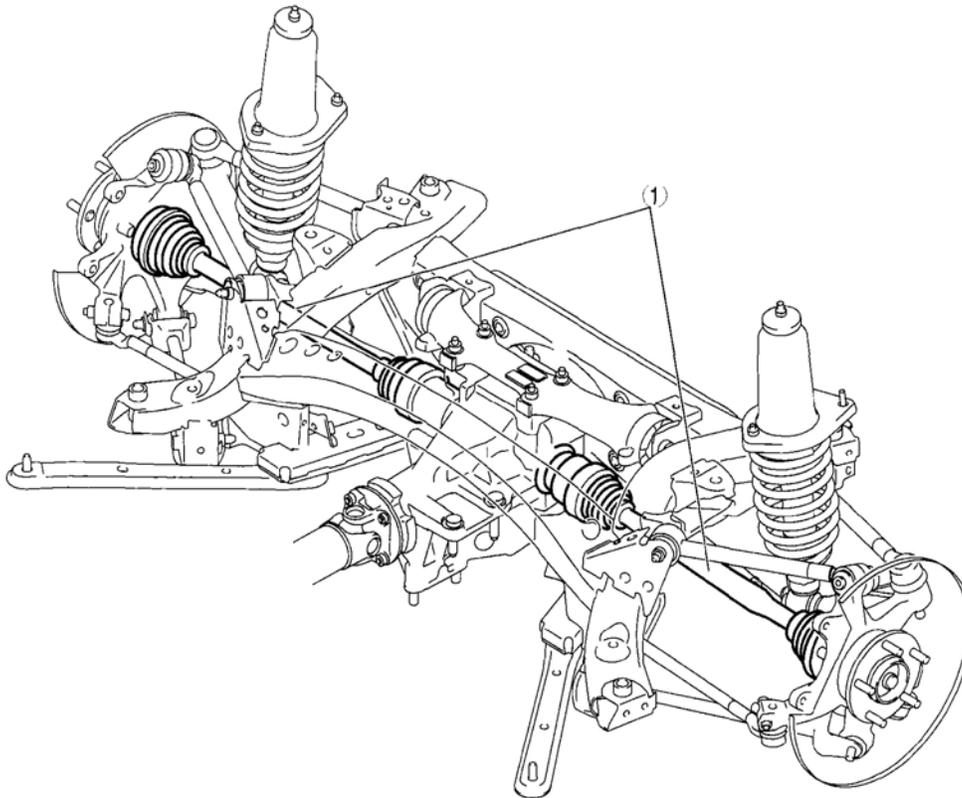


2008 DRIVELINE/AXLES

Drive Shaft - MX-5 Miata

REAR DRIVE SHAFT LOCATION INDEX



E5U313ZW5003

1	Rear drive shaft
---	------------------

Fig. 1: Identifying Location Of Rear Drive Shaft Components
Courtesy of MAZDA MOTORS CORP.

REAR DRIVE SHAFT INSPECTION

1. Verify that the drive shaft is not twisted or damaged.
 - If there is any malfunction, replace the applicable part.
2. Inspect the dust boot for damage and cracks.
 - If there is any malfunction, replace the applicable part.
3. Move the spline and joint up and down, left and right by hand and verify that there is no roughness.
 - If there is any malfunction, replace the applicable part.

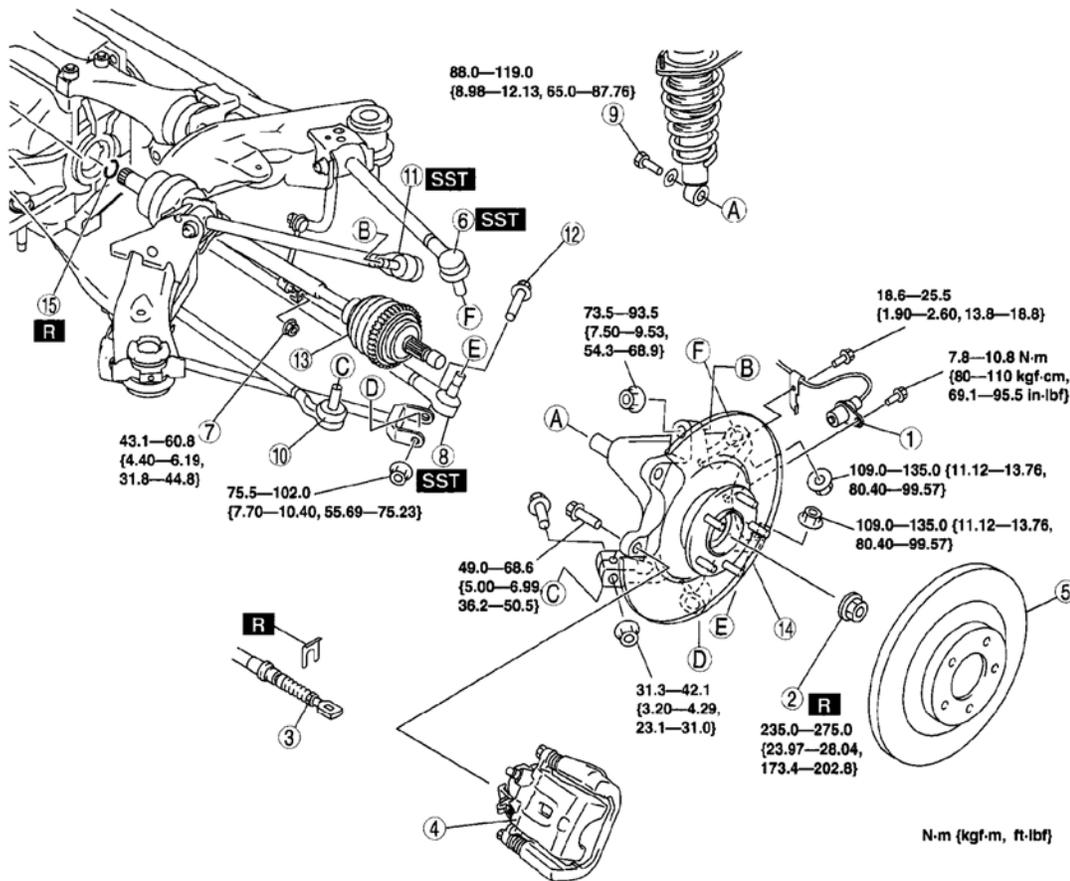
REAR DRIVE SHAFT REMOVAL/INSTALLATION

- CAUTION:**
- Performing the following procedures without first removing the ABS wheel-speed sensor may possibly cause an open circuit in the wiring harness if it is pulled by mistake. Before performing the following procedures, remove the ABS wheel-speed sensor (axle side) and fix it to an appropriate place where the sensor will not be pulled by mistake while servicing the vehicle.

1. Drain the rear differential oil.
2. Remove in the order indicated in the table.
3. Install in the reverse order of removal.
4. Add rear differential oil. (See **DIFFERENTIAL OIL REPLACEMENT** .)

2008 Mazda MX-5 Miata Grand Touring

2008 DRIVELINE/AXLES Drive Shaft - MX-5 Miata



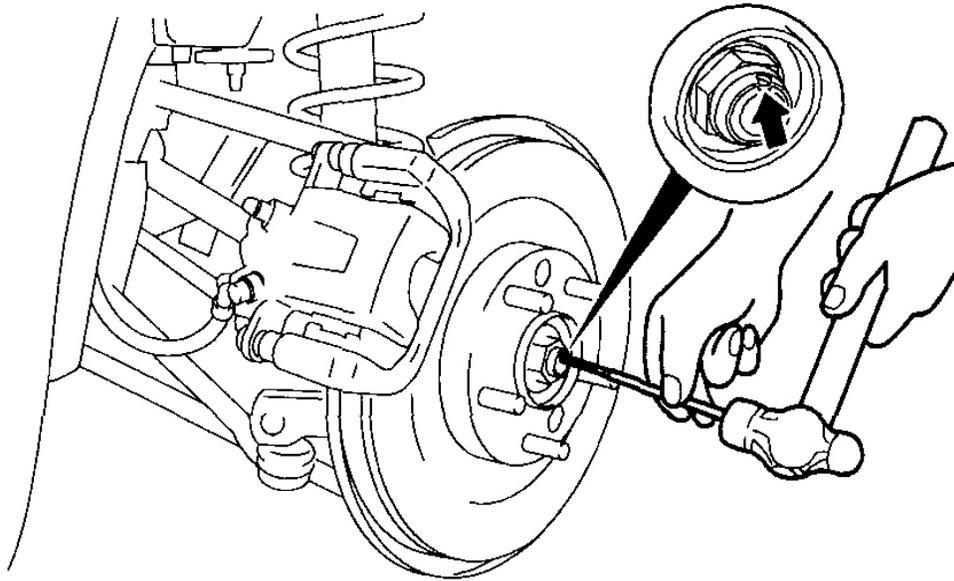
ESU313ZW5002

1	ABS wheel-speed sensor
2	Locknut
3	Parking brake cable
4	Brake caliper component
5	Disc plate
6	Rear lateral link (upper) ball joint
7	Stabilizer control link (lower)
8	Rear lateral link (lower) ball joint
9	Shock absorber bolt (lower)
10	Toe control link ball joint
11	Rear trailing link (upper) ball joint
12	Rear trailing link (lower) bolt (outer side)
13	Rear drive shaft
14	Rear knuckle component
15	Clip

Fig. 2: Identifying Rear Drive Shaft (With Torque Specifications)
 Courtesy of MAZDA MOTORS CORP.

LOCKNUT REMOVAL NOTE

1. Lock the disc plate by applying the brakes.
2. Knock the crimped portion of the locknut outward using a chisel and a hammer.



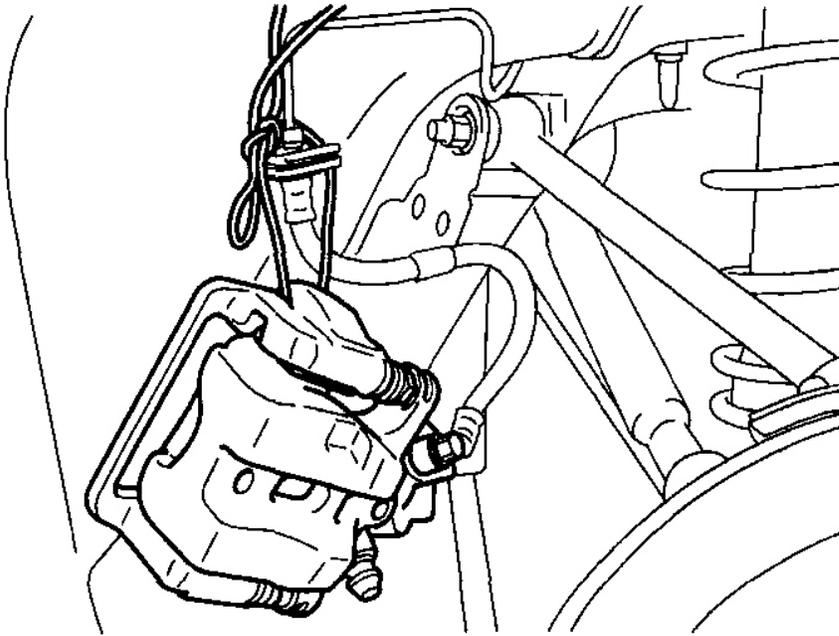
BHJ0312W004

Fig. 3: Knocking Out Crimped Portion Of Locknut Using Chisel & Hammer
Courtesy of MAZDA MOTORS CORP.

3. Remove the locknut.

BRAKE CALIPER COMPONENT REMOVAL NOTE

1. Suspend the brake caliper component using a cable or equivalent.



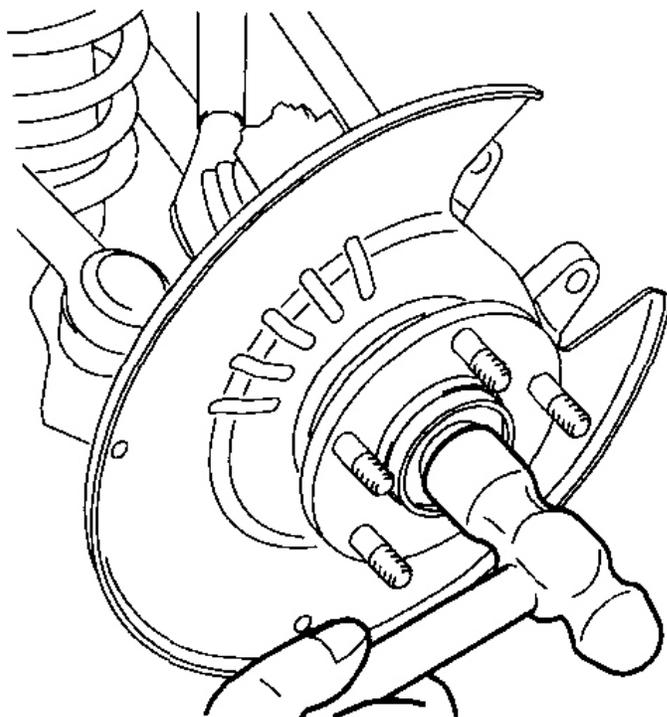
E5U314ZW5001

Fig. 4: Suspending Brake Caliper Component
Courtesy of MAZDA MOTORS CORP.

2. Temporarily tighten the wheel nut to prevent the disc plate from falling off.

REAR DRIVE SHAFT REMOVAL NOTE

1. Temporarily install a spare nut to the end of the rear drive shaft.
2. Knock the nut with copper hammer lightly and remove the rear drive shaft from the wheel hub.



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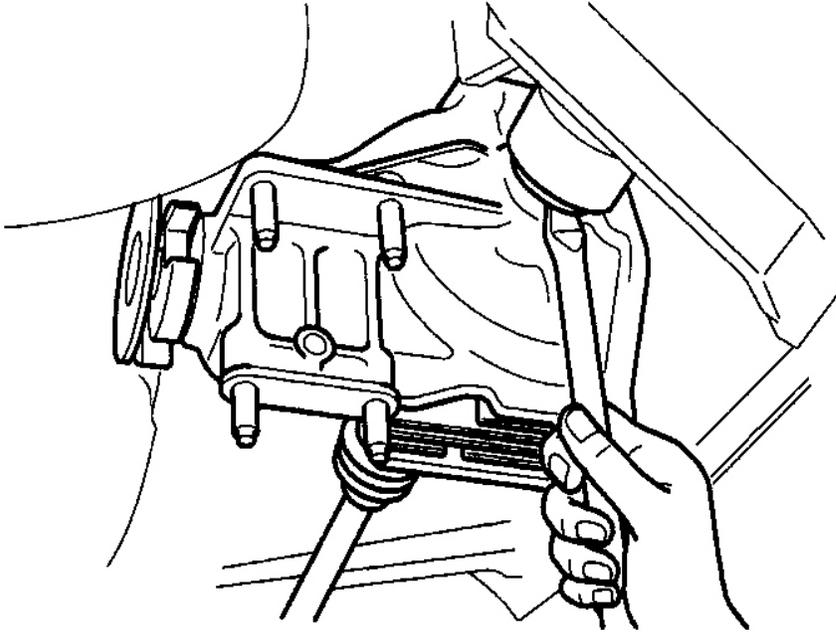
Fig. 5: Using Hammer To Remove Rear Drive Shaft From Wheel Hub
Courtesy of MAZDA MOTORS CORP.

3. Separate the rear drive shaft from the wheel hub.
4. Insert a tire lever or equivalent between the rear differential and differential side outer ring, and then remove the rear drive shaft.

CAUTION:

- The sharp edges of the drive shaft can slice or puncture the oil seal. Be careful not to damage the oil seal when removing the drive shaft from the differential.

5. Pull the rear drive shaft to the outer side of the vehicle and disconnect it from the rear differential.
6. To hold the rear knuckle component, install the rear lateral link (upper) to the rear knuckle temporarily after disconnecting the rear drive shaft.



BHJ0314W012

Fig. 6: Removing Rear Shaft
Courtesy of MAZDA MOTORS CORP.

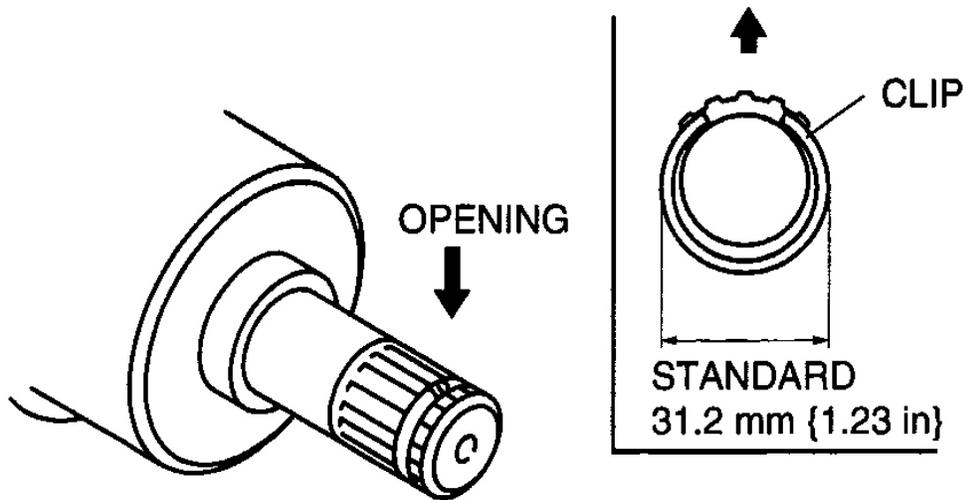
CLIP INSTALLATION NOTE

1. Point the opening of the new drive shaft clip upward, install it to the clip groove at the end of the rear drive shaft with the installation width within the specification.

Standard 31.2

mm {1.23 in}

2. After installing the clip, measure the outer diameter. If it exceeds the specification, reinstall the new clip.



E5U314ZW5006

Fig. 7: Identifying Clip Groove End Of Rear Drive Shaft
Courtesy of MAZDA MOTORS CORP.

REAR DRIVE SHAFT INSTALLATION NOTE

1. Apply differential oil to the differential oil seal lip.

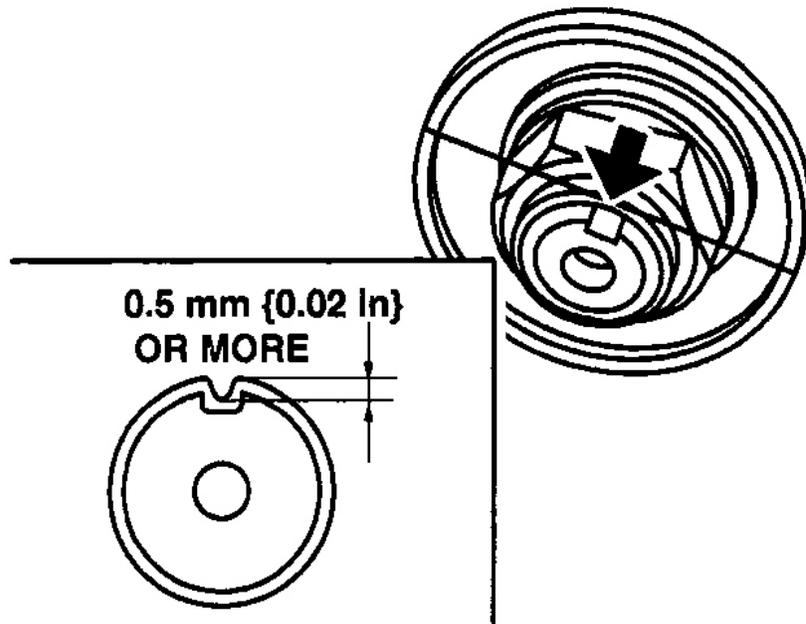
CAUTION:

- The sharp edges of the rear drive shaft can slice or puncture the oil seal. Be careful not to damage the oil seal when installing the rear drive shaft from the rear differential.

2. Insert the rear drive shaft into the rear differential with the clip opening facing upward.
3. After installation, verify that the rear drive shaft is securely held by the clip by pulling the outer ring on the differential side towards the axle.

LOCKNUT INSTALLATION NOTE

1. Tighten a new locknut.



CHU0312W002

Fig. 8: Tightening New Locknut (With Torque Specifications)
Courtesy of MAZDA MOTORS CORP.

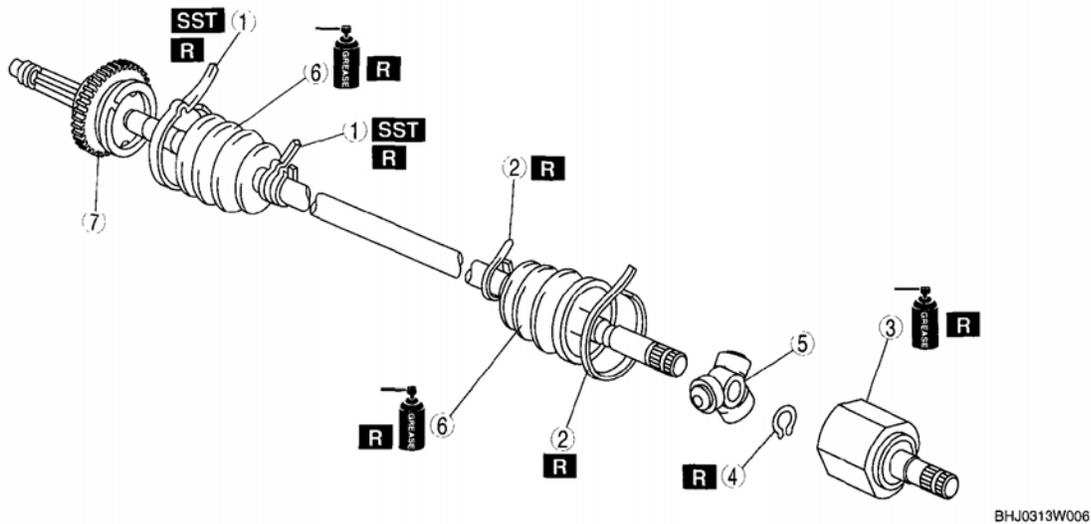
2. Crimp the locknut, using a chisel and hammer.

REAR DRIVE SHAFT DISASSEMBLY/ASSEMBLY

1. Disassemble in the order indicated in **Fig. 9** .

2008 Mazda MX-5 Miata Grand Touring

2008 DRIVELINE/AXLES Drive Shaft - MX-5 Miata



1	Boot band (axle side)
2	Boot band (differential side)
3	Tripod joint socket
4	Snap ring
5	Tripod joint
6	Boot
7	Shaft and ball joint component

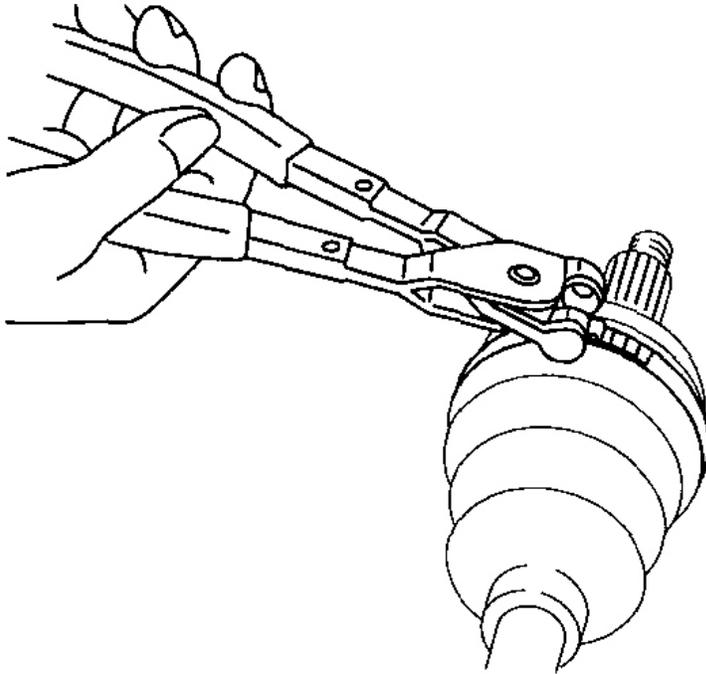
Fig. 9: View Of Rear Drive Shaft Components
Courtesy of MAZDA MOTORS CORP.

2. Assemble in the reverse order of disassembly.

BOOT BAND (AXLE SIDE) DISASSEMBLY NOTE

NOTE: • Remove the boot band only if there is an abnormality.

1. Remove the boot band using end clamp pliers.

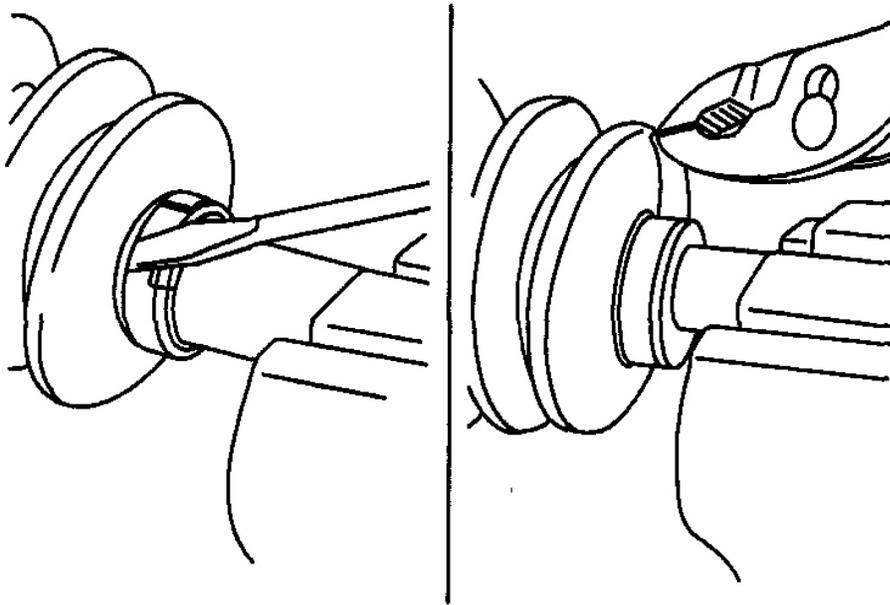


A6E6316W004

Fig. 10: Removing Boot Band Using End Clamp Pliers
Courtesy of MAZDA MOTORS CORP.

BOOT BAND (DIFFERENTIAL SIDE) DISASSEMBLY NOTE

1. Remove the crimp of the clip using a flathead screwdriver.

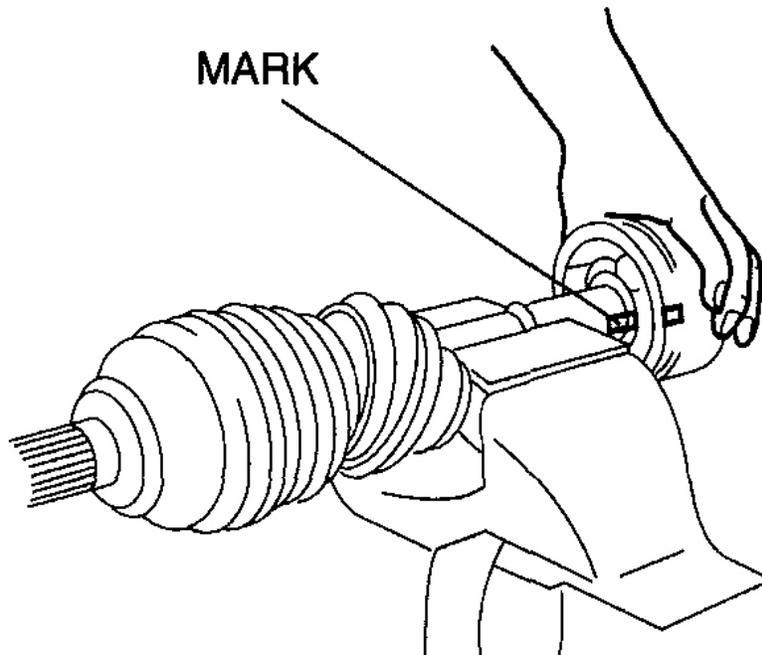


A6E6316W005

Fig. 11: Removing Crimp Of Clip Using Flathead Screwdriver
Courtesy of MAZDA MOTORS CORP.

TRIPOD JOINT SOCKET DISASSEMBLY NOTE

1. Place an alignment mark on the drive shaft and the outer ring.



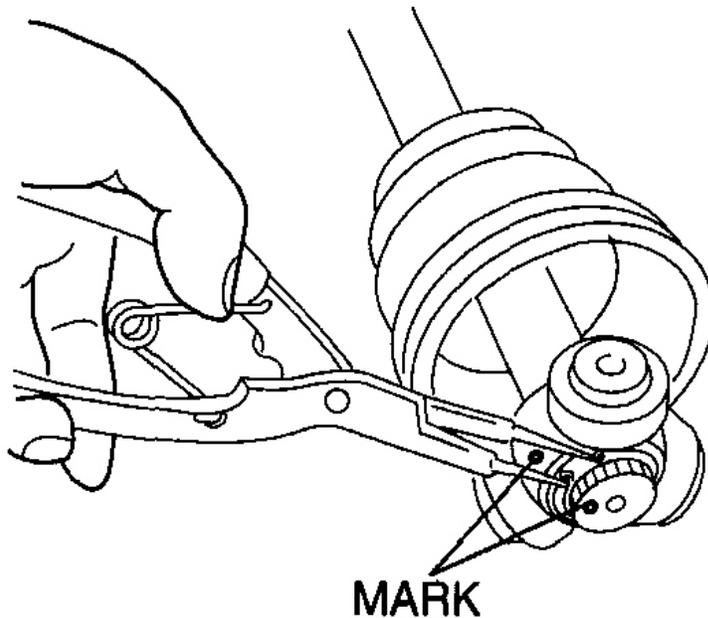
CHU0313W005

Fig. 12: View Of Alignment Mark On Drive Shaft & Outer Ring
Courtesy of MAZDA MOTORS CORP.

2. Remove the outer ring.

SNAP RING, TRIPOD JOINT DISASSEMBLY NOTE

1. Place an alignment mark on the shaft and tripod joint.
2. Remove the snap ring using a snap ring plier.



CHU0313W006

Fig. 13: Removing Snap Ring
Courtesy of MAZDA MOTORS CORP.

3. Remove the tripod joint from the shaft.

CAUTION:

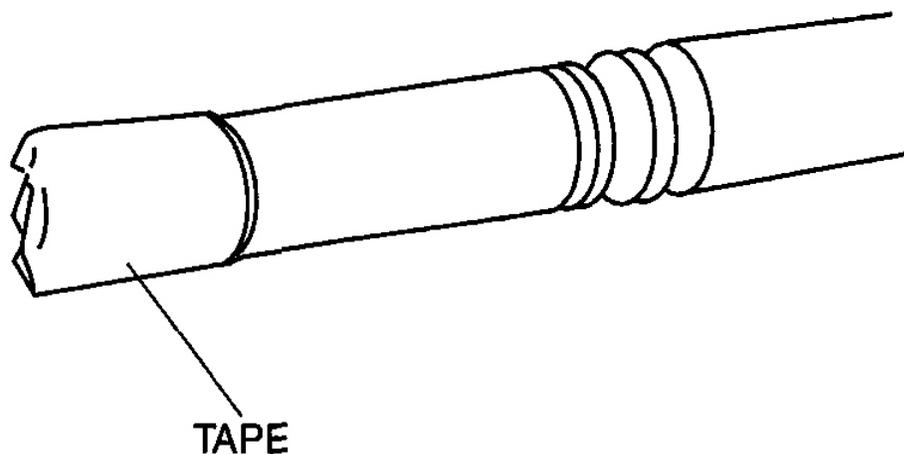
- To prevent damage to the component, do not use a hammer when removing it.

BOOT DISASSEMBLY NOTE

NOTE:

- Remove the axle side boot only if there is an abnormality.

1. Wrap the shaft spline with vinyl tape.



CHU0313W007

Fig. 14: View Of Shaft Spline With Vinyl Tape
Courtesy of MAZDA MOTORS CORP.

2. Remove the boot.

BOOT ASSEMBLY NOTE

NOTE:

- The boot shapes on the axle side and the differential side are different so do not miss install them.

1. Fill the inside of the new dust boot (wheel side) with grease.

NOTE:

- Do not touch the grease with your hand. Apply it from the tube to prevent foreign matter from entering the boot.

Grease amount

90-110 g {3.18-3.88 oz.}

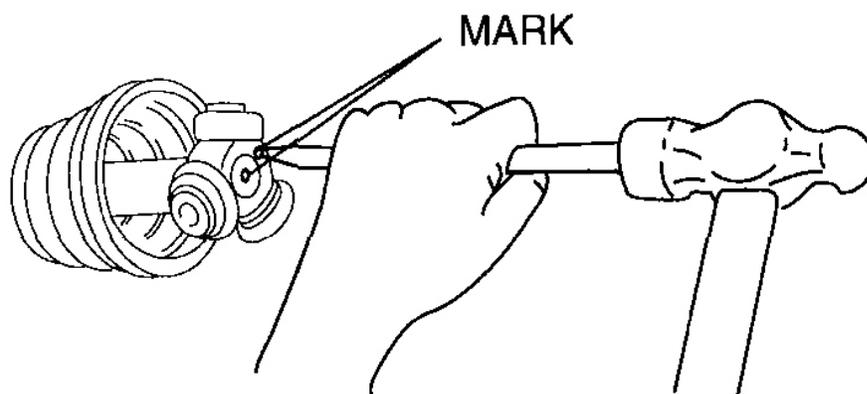
2. Install the boot with the drive shaft spline still wrapped with vinyl tape.
3. Remove the vinyl tape.

TRIPOD JOINT, SNAP RING ASSEMBLY NOTE

1. Align the tripod joint with the shaft mark and insert it using a brass bar.

CAUTION:

- To prevent damage to the component, do not tap the roller part when installing.



CHU0313W008

Fig. 15: Aligning Tripod Joint With Shaft Mark
Courtesy of MAZDA MOTORS CORP.

2. Install the new snap ring to the shaft installation slot securely using a snap ring pliers.

TRIPOD JOINT SOCKET ASSEMBLY NOTE

1. Fill the outer ring and boot (differential side) with the repair kit grease.

NOTE:

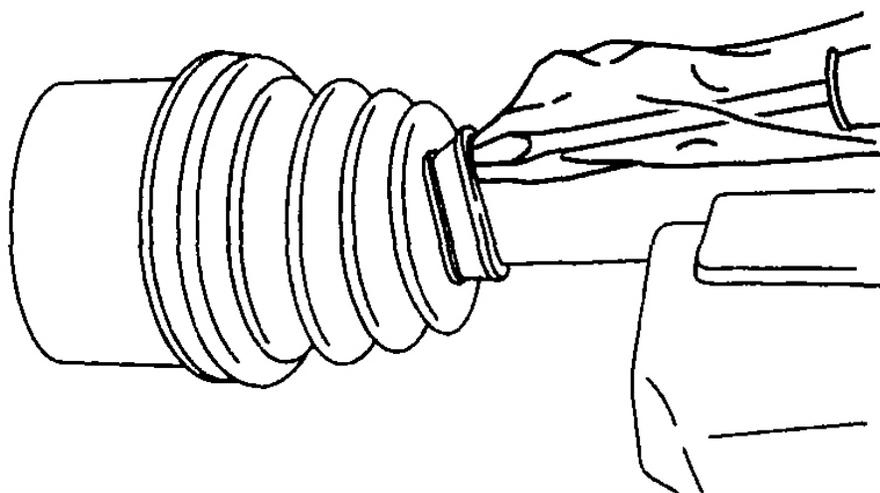
- Do not touch the grease with your hand. Apply it from the tube to prevent foreign matter from entering the boot.

Grease amount

135-155 g {4.77-5.46 oz.}

2. Assemble the outer ring.
3. Release any trapped air from the boots by carefully lifting up the small end of each boot with a cloth wrapped screwdriver.

- CAUTION:**
- Do not let the grease leak.
 - Do not damage the boot.



A6E6316W007

Fig. 16: Releasing Trapped Air From Boot
Courtesy of MAZDA MOTORS CORP.

4. Set the drive shaft length to the specification when the inside of the boots is at ambient pressure.

Drive shaft length

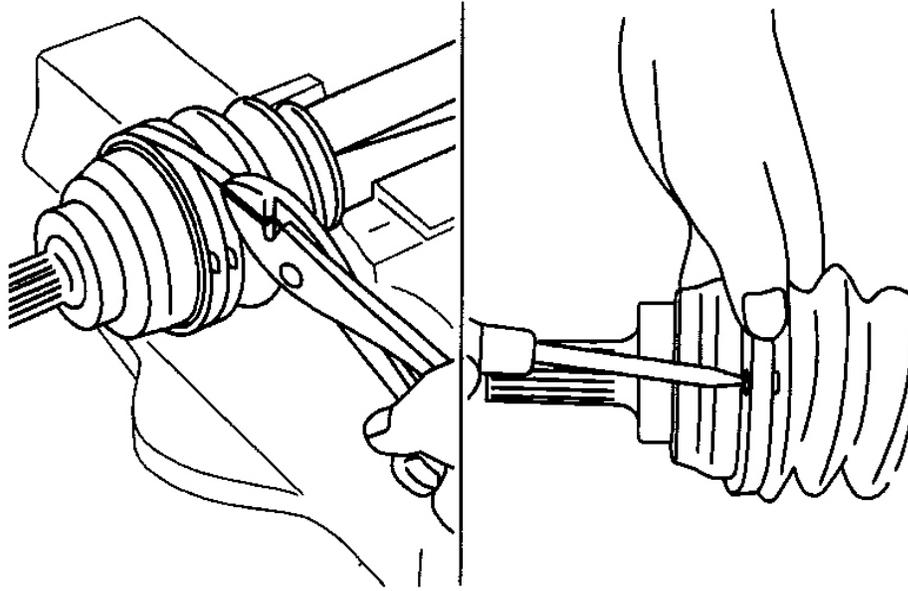
Left side: 778.5-788.5 mm {30.65-31.04 in}

Right side: 818.5-828.5 mm {32.22-32.62 in}

5. After installation, verify that there is no boot damage or grease leakage.

BOOT BAND (DIFFERENTIAL SIDE) ASSEMBLY NOTE

1. Using pliers, pull the boot band around the boot slot in opposite direction of drive shaft forward rotation direction and tighten.
2. Insert the end of the boot band between the boot band clip and fold back the clip tabs using a flathead screwdriver to secure the boot band.



A6E6316W008

Fig. 17: Inserting End Of Boot Band Between Boot Band Clip & Fold Back Clip Tabs Using Flathead Screwdriver

Courtesy of MAZDA MOTORS CORP.

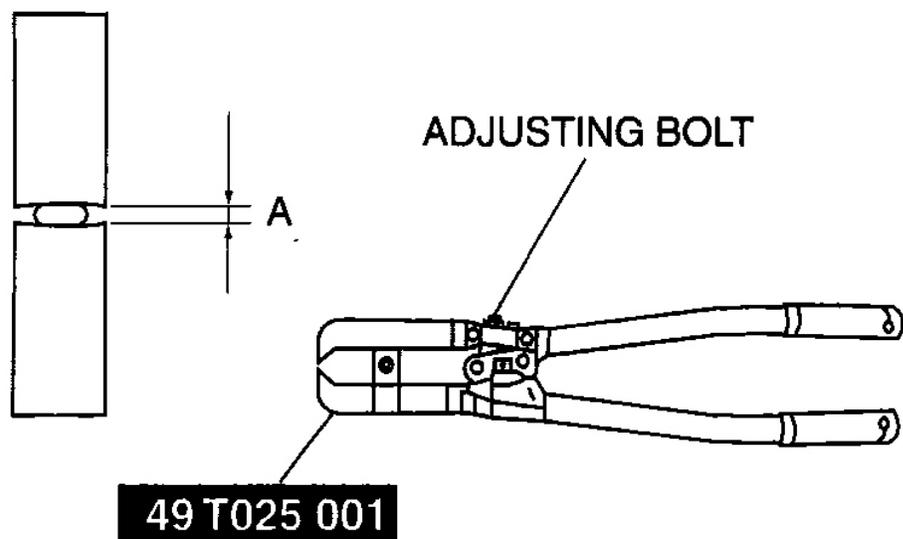
3. Verify that the boot band is installed to the boot slot securely.

BOOT BAND (AXLE SIDE) ASSEMBLY NOTE

1. Turn the adjusting bolt of the SST and adjust the opening size to the specification A.

Specification A

2.9 mm {0.11 in}



CHU0313W009

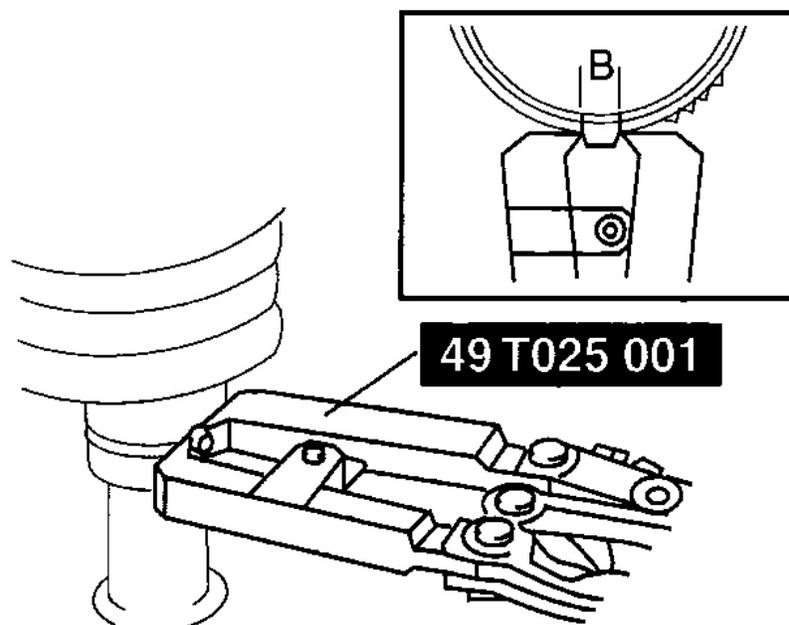
Fig. 18: Identifying Adjusting Bolt Of SST
Courtesy of MAZDA MOTORS CORP.

2. Crimp the boot band (small-size) using the SST.
3. Verify that the crimp value B is within the specification.
 - If the crimp value B exceeds the specification, reduce opening length A of the SST and recrimp the boot band.
 - If the crimp value B is less than the specification, increase opening length A of the SST and crimp the new boot band.

Specification B

2.4-2.8 mm {0.095-0.110 in}

4. Verify that the boot band does not protrude from the boot band installation area.
 - If the boot band protrudes from the installation area, replace it with a new band and repeat Step 2 thru 4.



A6E0350W013

Fig. 19: Crimping Boot Band
Courtesy of MAZDA MOTORS CORP.

5. Fill the boot with the repair kit grease.
6. Adjust opening length A of the SST to the specification.

Specification A

3.2 mm {0.13 in}

7. Crimp the boot band (large-size) using the SST.
8. Verify that the boot band crimp value B is within the specification.
 - If crimp value B exceeds the specification, reduce opening length A of the SST and recrimp the boot band.
 - If the crimp value B is less than the specification, replace the boot band, increase opening length A of the SST, and then recrimp the new boot band.

Specification B

2.4-2.8 mm {0.095-0.110 in}

2008 Mazda MX-5 Miata Grand Touring

2008 DRIVELINE/AXLES Drive Shaft - MX-5 Miata

9. Verify that the boot band does not protrude from the boot band installation area.
 - If the boot band protrudes from the installation area, replace it with a new band and repeat Step 7 thru 9.