

Transaxle

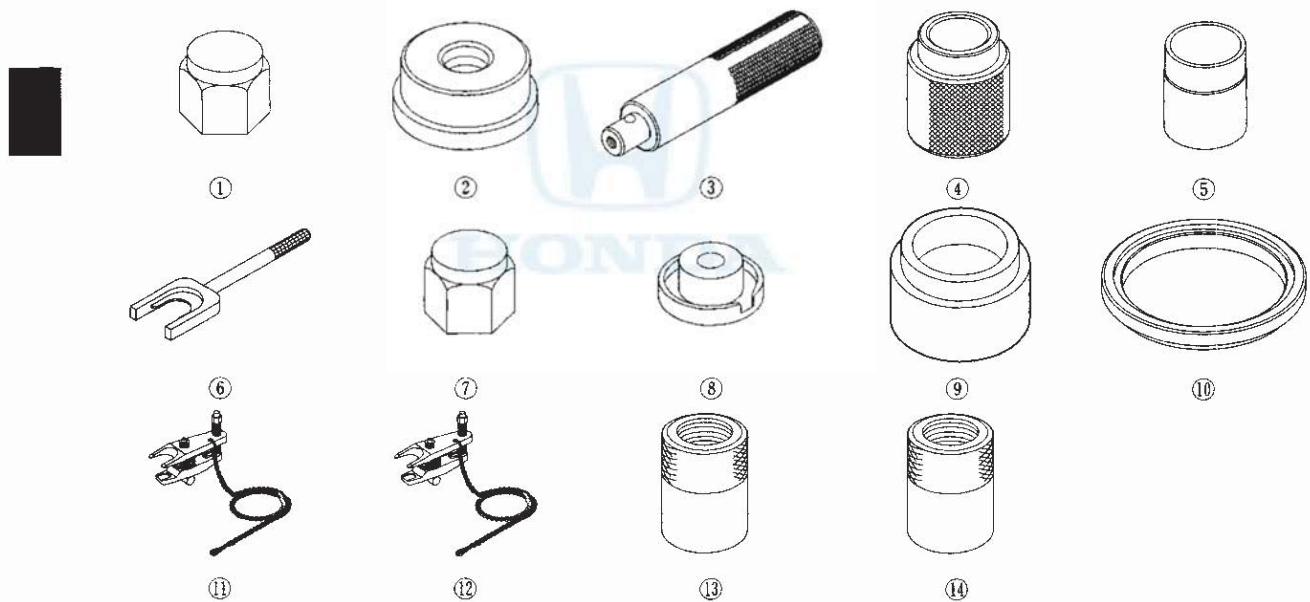
Driveline/Axle

Special Tools	16-2
Component Location Index	16-3
Driveshaft Inspection	16-4
Front Driveshaft Removal	16-4
Front Driveshaft Disassembly	16-6
Front Driveshaft Reassembly	16-10
Front Driveshaft Installation	16-18
Intermediate Shaft Removal	16-20
Intermediate Shaft Disassembly	16-21
Intermediate Shaft Reassembly	16-23
Intermediate Shaft Installation	16-25
Rear Driveshaft Removal	16-26
Rear Driveshaft Disassembly	16-29
Rear Driveshaft Reassembly	16-33
Rear Driveshaft Installation	16-41
Propeller Shaft Inspection	16-43
Propeller Shaft Removal	16-44
Propeller Shaft Installation	16-45

Driveline/Axle

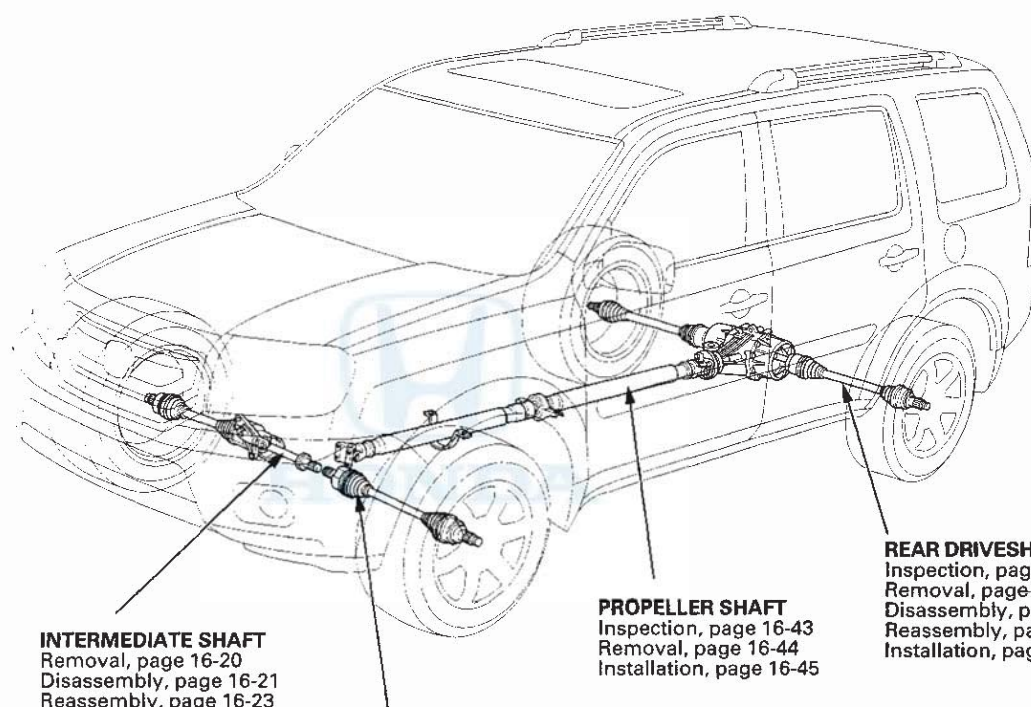
Special Tools

Ref.No.	Tool Number	Description	Qty
①	071AF-S3VA000	Ball Joint Thread Protector, 14 mm	1
②	07746-0010300	Attachment, 42 x 47 mm	1
③	07749-0010000	Driver	1
④	07947-4630100	Fork Seal Driver, 39.2 x 49.5 x 15 mm	1
⑤	07965-SD90100	Support Base	1
⑥	07AAD-S9VA000	Driveshaft Remover	1
⑦	07AAF-SDAA100	Ball Joint Thread Protector, 12 mm	1
⑧	07JAD-PH80101	Oil Seal Driver Attachment	1
⑨	07LAD-PW50601	Attachment, 40 x 50 mm	1
⑩	07LAF-SM40300	Support Base Attachment	1
⑪	07MAC-SL0A102	Ball Joint Remover, 32 mm	1
⑫	07MAC-SL0A202	Ball Joint Remover, 28 mm	1
⑬	07XAC-001020A	Threaded Adapter, 24 x 1.5 mm	1
⑭	07XAC-001030A	Threaded Adapter, 26 x 1.5 mm	1





Component Location Index



INTERMEDIATE SHAFT
Removal, page 16-20
Disassembly, page 16-21
Reassembly, page 16-23
Installation, page 16-25

FRONT DRIVESHAFT
Inspection, page 16-4
Removal, page 16-4
Disassembly, page 16-6
Reassembly, page 16-10
Installation, page 16-18

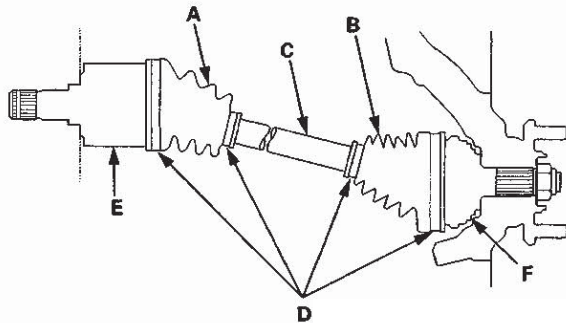
PROPELLER SHAFT
Inspection, page 16-43
Removal, page 16-44
Installation, page 16-45

REAR DRIVESHAFT
Inspection, page 16-4
Removal, page 16-26
Disassembly, page 16-29
Reassembly, page 16-33
Installation, page 16-41

Driveline/Axle

Driveshaft Inspection

1. Check the inboard boot (A) and the outboard boot (B) on the driveshaft (C) for cracks, damage, leaking grease, and loose boot bands (D). If any damage is found, replace the boot and the boot bands.



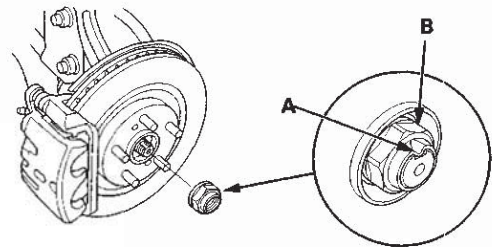
2. Check the driveshaft for cracks and damage. If any damage is found, replace the driveshaft.
3. Check the inboard joint (E) and the outboard joint (F) for cracks and damage. If any damage is found, replace the inboard joint or the outboard joint as an assembly.
4. Hold the inboard joint and turn the front wheel by hand, then make sure the joint is not excessively loose. If necessary, replace the inboard joint or the outboard joint as an assembly.

Front Driveshaft Removal

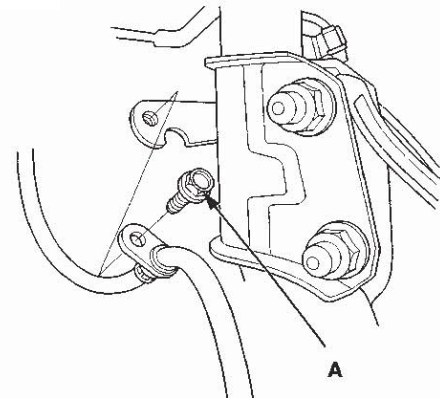
Special Tools Required

- Ball Joint Remover, 32 mm 07MAC-SL0A102
- Ball Joint Thread Protector, 14 mm 071AF-S3VA000

1. Raise the vehicle on a lift.
2. Remove the front wheels.
3. Pry up the locking tab (A) on the spindle nut (B), then remove the nut.



4. Drain the transmission fluid, then reinstall the drain plug with a new sealing washer (see page 14-209).
5. Remove the brake hose mounting bolt (A).

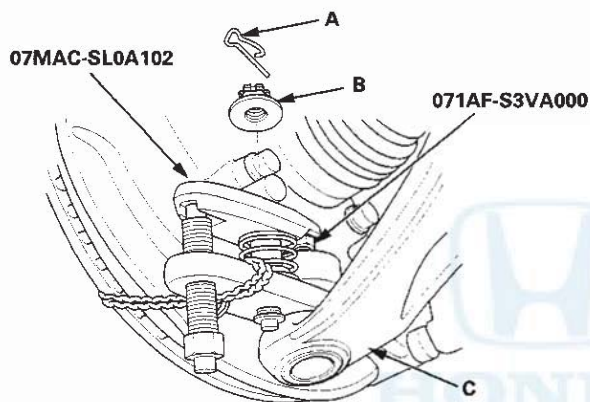




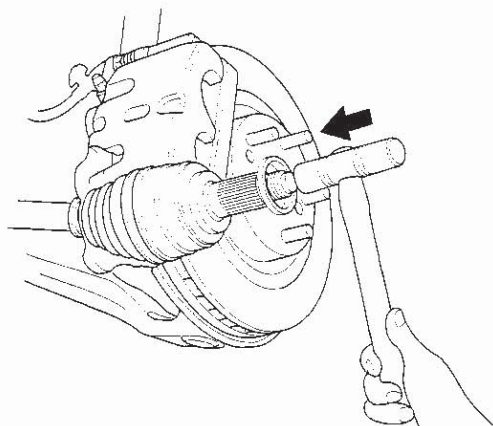
6. Remove the lock pin (A) from the lower arm ball joint, then remove the castle nut (B). Separate the knuckle from the lower arm (C) using the 14 mm ball joint thread protector and the 32 mm ball joint remover (see page 18-12).

NOTE:

- Be careful not to damage the ball joint boot when installing the remover.
- Do not force or hammer on the lower arm, or pry between the lower arm and the knuckle. You could damage the ball joint.



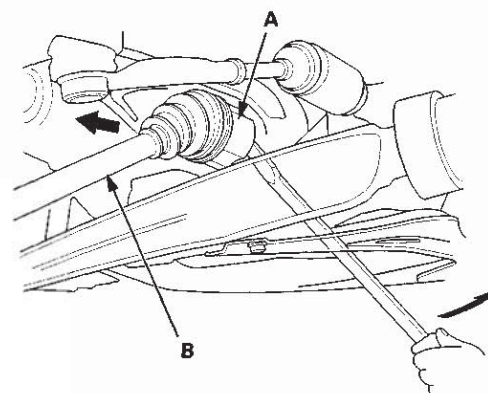
7. Pull the knuckle outward, and separate the outboard joint from the front hub using a plastic hammer.



8. Left driveshaft: Pry the inboard joint (A) from the differential using a prybar. Remove the driveshaft as an assembly.

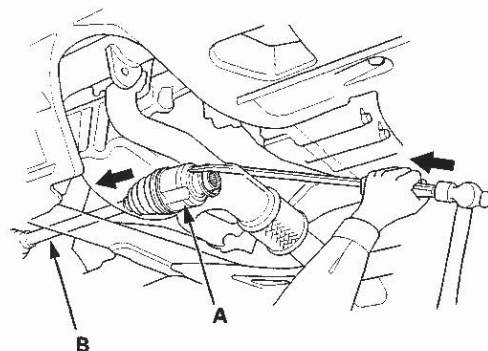
NOTE:

- Do not pull on the driveshaft (B), or the inboard joint may come apart. Pull the inboard joint straight out to avoid damaging the oil seal.
- Be careful not to damage the oil seal with the prybar.



9. Right driveshaft: Drive the inboard joint (A) off of the intermediate shaft using a drift and a hammer. Remove the driveshaft as an assembly.

NOTE: Do not pull on the driveshaft (B), or the inboard joint may come apart.

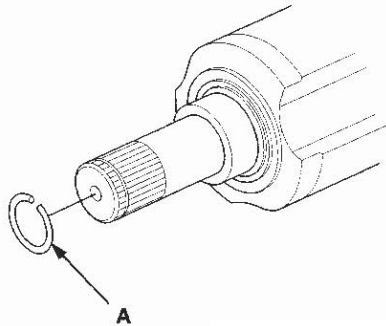


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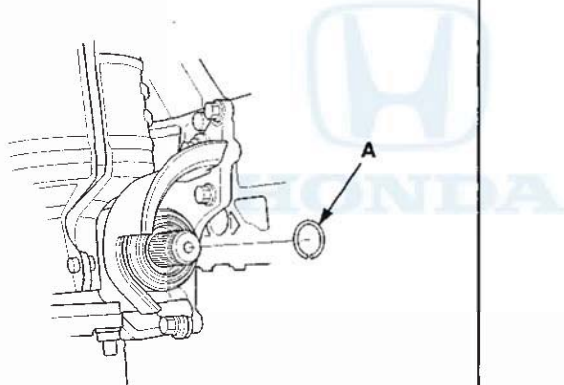
Driveline/Axle

Front Driveshaft Removal (cont'd)

10. Remove the set ring (A) from the left driveshaft inboard joint.



11. Remove the set ring (A) from the intermediate shaft.



Front Driveshaft Disassembly

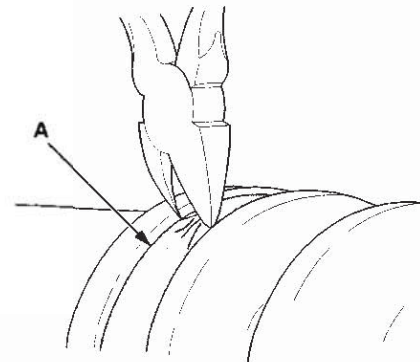
Special Tools Required

- Threaded Adapter, 26 x 1.5 mm 07XAC-001030A
- Slide Hammer 5/8"-18 UNF, commercially available
- Boot Band Pliers, commercially available
- Bearing Puller, commercially available

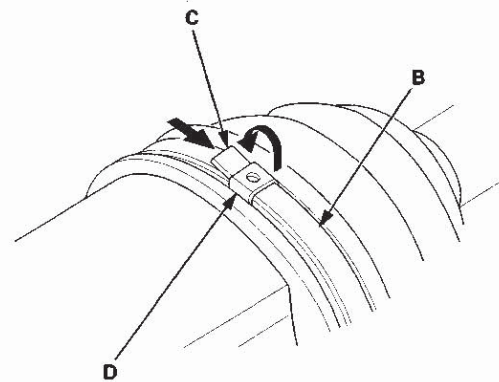
Inboard Joint Side

1. Remove the boot bands. Be careful not to damage the boot.
 - If the boot band is a welded type (A), cut the boot band.
 - If the boot band is a double loop type (B), lift up the band end (C), and push it into the clip (D).
 - If the boot band is a low profile type (E), pinch the boot band using commercially available boot band pliers (F).

Welded type

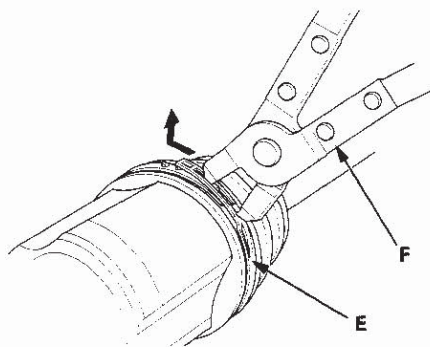


Double loop type



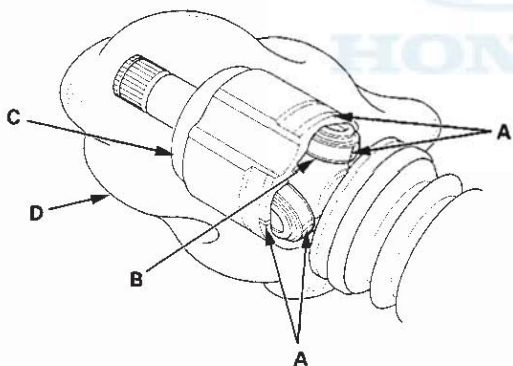


Low profile type



2. Make marks (A) on each roller (B) and the inboard joint (C) to identify the locations of the rollers to the grooves in the inboard joint.

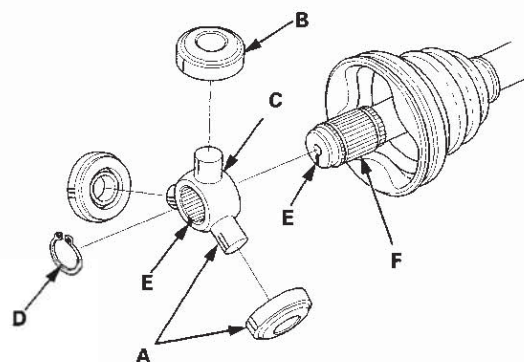
NOTE: Do not engrave or scribe any marks on the rolling surface.



3. Remove the inboard joint on a clean shop towel (D). Be careful not to drop the rollers when separating them from the inboard joint.

4. Make marks (A) on the rollers (B) and the spider (C) to identify the locations of the rollers on the spider, then remove the rollers.

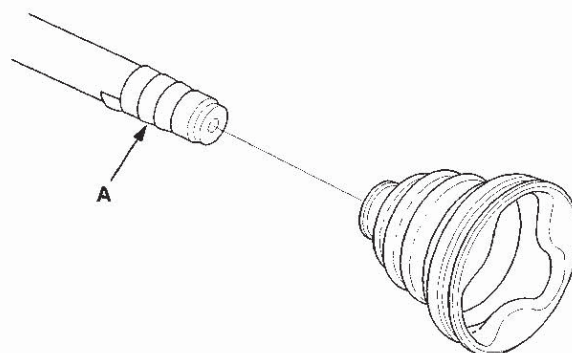
NOTE: Do not engrave or scribe any marks on the rolling surface.



5. Remove the circlip (D).
6. Make marks (E) on the spider and the driveshaft (F) to identify the position of the spider on the shaft.
7. Remove the spider.

NOTE: If necessary, use a commercially available puller.

8. Wrap the splines on the driveshaft with vinyl tape (A) to prevent damaging the boot.



9. Remove the inboard boot. Be careful not to damage the boot.
10. Remove the vinyl tape.

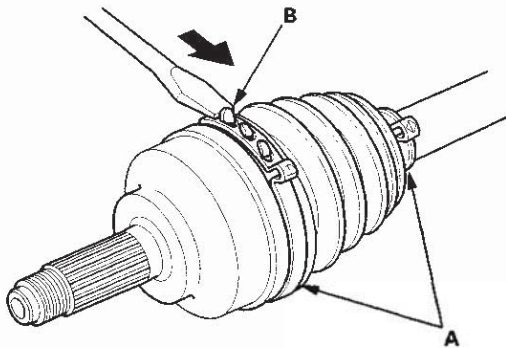
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Driveline/Axle

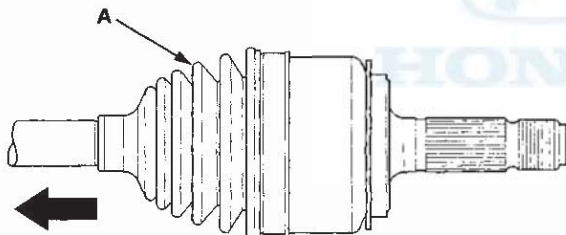
Front Driveshaft Disassembly (cont'd)

Outboard Joint Side

1. Remove the boot bands (A). Lift up the three tabs (B) using a screwdriver, then release the band. Be careful not to damage the boot.

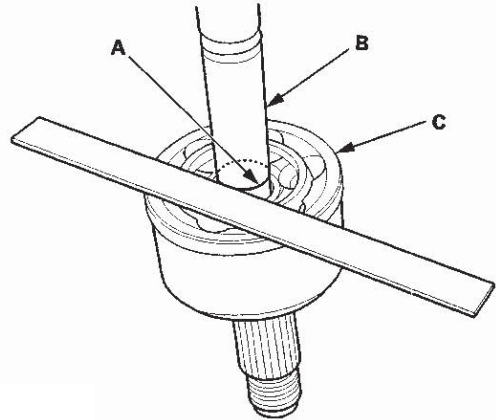


2. Slide the outboard boot (A) partially to the inboard joint side. Be careful not to damage the boot.

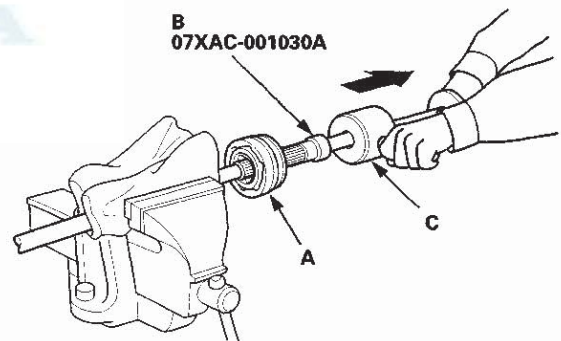


3. Wipe off the grease to expose the driveshaft and the outboard joint inner race.

4. Make a mark (A) on the driveshaft (B) at the same level as the outboard joint end (C).

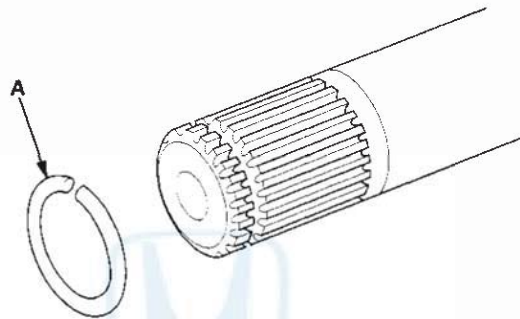


5. Securely clamp the driveshaft in a bench vise with a shop towel.
6. Remove the outboard joint (A) using the 26 x 1.5 mm threaded adapter (B) and a commercially available 5/8"-18 UNF slide hammer (C).

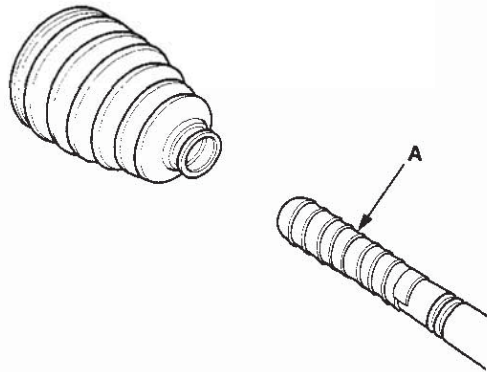


7. Remove the driveshaft from the bench vise.

8. Remove the stop ring (A) from the driveshaft.



9. Wrap the splines on the driveshaft with vinyl tape (A) to prevent damaging the boot.



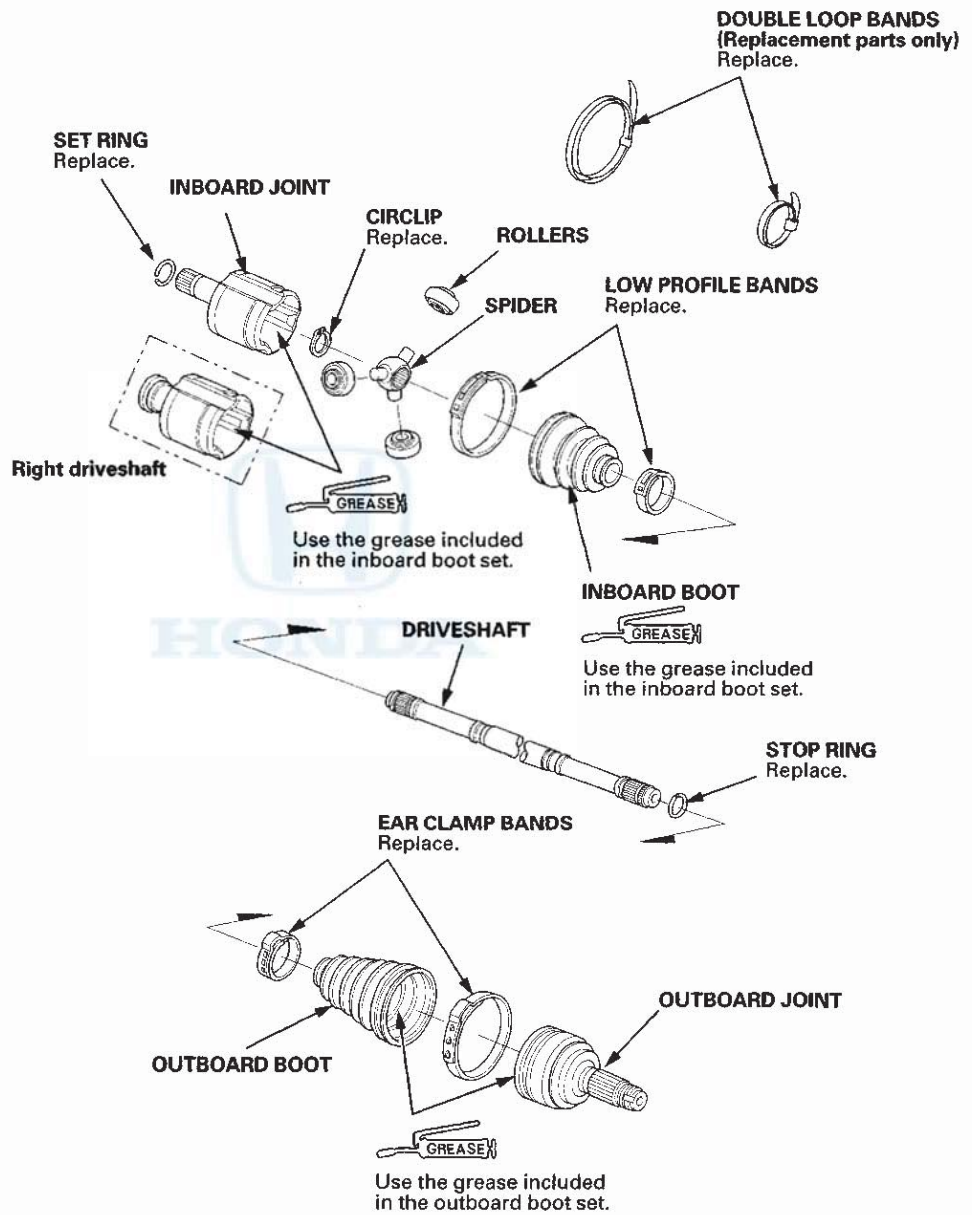
10. Remove the outboard boot. Be careful not to damage the boot.

11. Remove the vinyl tape.

Driveline/Axle

Front Driveshaft Reassembly

Exploded View





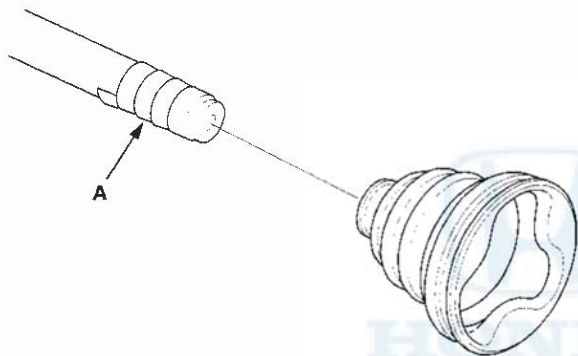
Special Tools Required

- Boot Band Tool KD-3191 or equivalent, commercially available
- Seal Clamp Tool Kent-Moore J-35910 or equivalent, commercially available
- Boot Band Pliers, commercially available

NOTE: Refer to the Exploded View, as needed, during this procedure.

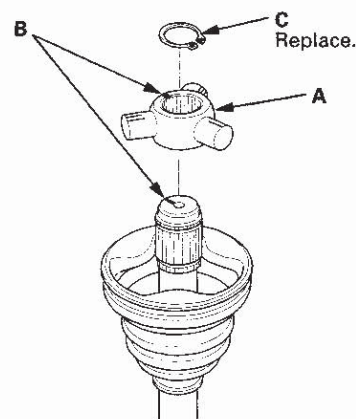
Inboard Joint Side

1. Wrap the splines with vinyl tape (A) to prevent damaging the inboard boot.



2. Install the inboard boot onto the driveshaft, then remove the vinyl tape. Be careful not to damage the inboard boot.

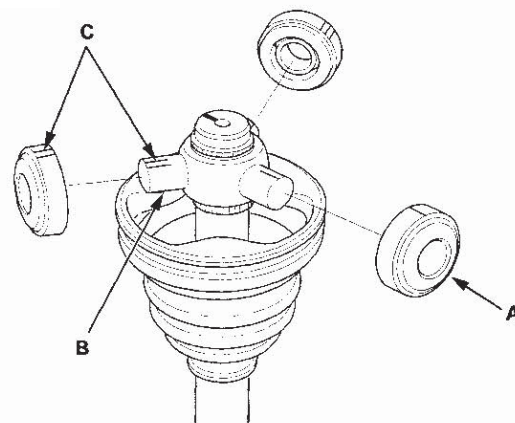
3. Install the spider (A) onto the driveshaft by aligning the marks (B) you made on the spider and the end of the driveshaft.



4. Install a new circlip (C) into the driveshaft groove. Always rotate the circlip in its groove to make sure it is fully seated.

5. Fit the rollers (A) onto the spider (B) as shown, and note these items:

- Reinstall the rollers in their original positions on the spider by aligning the marks (C) you made.
- Hold the driveshaft pointed up to prevent the rollers from falling off.



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Driveline/Axle

Front Driveshaft Reassembly (cont'd)

6. Pack the inboard joint with the joint grease included in the new inboard boot set.

Grease quantity

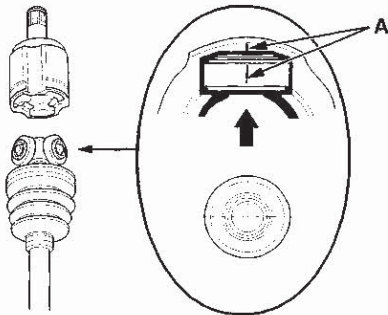
Left Inboard joint: 190–210 g (6.7–7.4 oz)

Right Inboard joint: 205–225 g (7.2–7.9 oz)

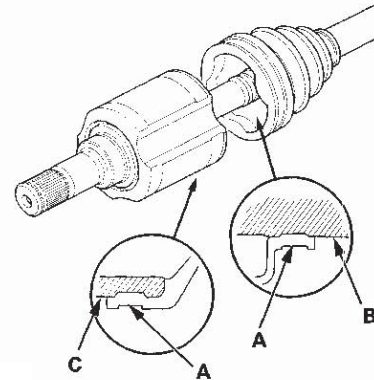


7. Fit the inboard joint onto the driveshaft, and note these items:

- Reinstall the inboard joint onto the driveshaft by aligning the marks (A) you made on the inboard joint and the rollers.
- Hold the driveshaft so the inboard joint is pointing up to prevent it from falling off.

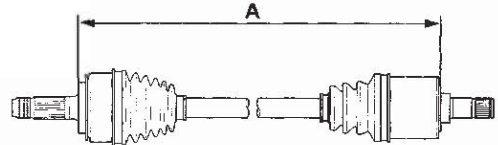


8. Fit the boot ends (A) onto the driveshaft (B) and the inboard joint (C).

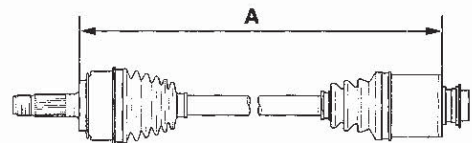


9. Adjust the length (A) of the driveshafts to the figure as shown, then adjust the boots to halfway between full compression and full extension. Bleed excess air from the boots by inserting a flat-tipped screwdriver between the boot and the joint.

Left driveshaft: 571.2–576.2 mm (22.49–22.68 in)



Right driveshaft: 569.5–574.5 mm (22.42–22.62 in)



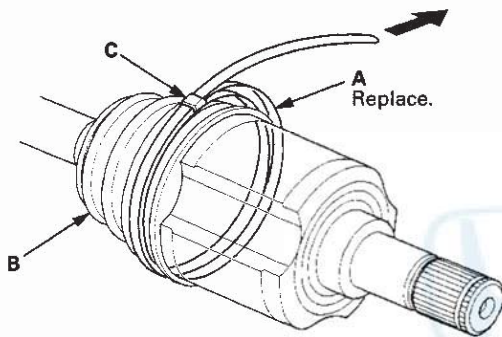


10. Install new boot bands.

- For the double loop type, go to step 11.
- For the low profile type, go to step 20.

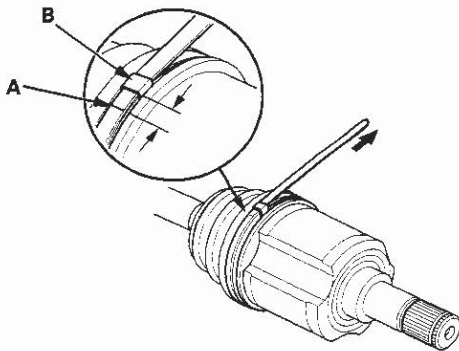
11. Fit the boot ends onto the driveshaft and the inboard joint, then install a new double loop band (A) onto the boot (B).

NOTE: Pass the end of the new double loop band through the clip (C) twice in the direction of the forward rotation of the driveshaft.

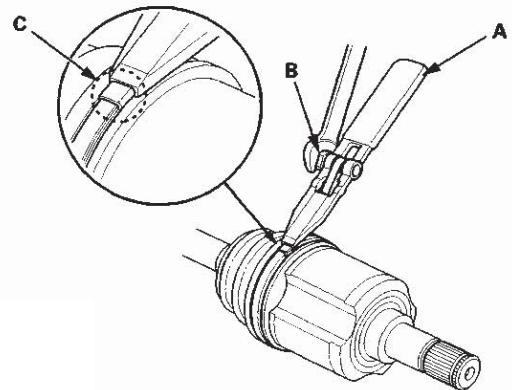


12. Pull up the slack in the band by hand.

13. Mark position (A) on the band 10–14 mm (0.4–0.6 in) from the clip (B).

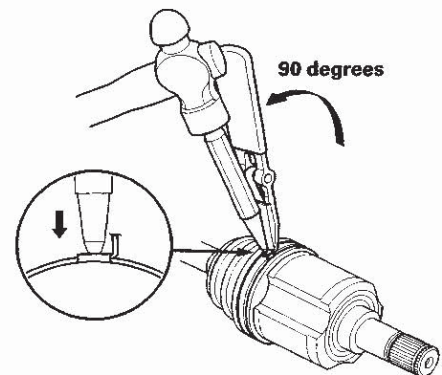


14. Thread the free end of the band through the nose section of the commercially available boot band tool KD-3191 or equivalent (A), and into the slot on the winding mandrel (B).



15. Using a wrench on the winding mandrel of the boot band tool, tighten the band until the marked spot (C) on the band meets the edge of the clip.

16. Lift up the boot band tool to bend the free end of the band 90 degrees to the clip. Center-punch the clip, then fold over the remaining tail onto the clip.

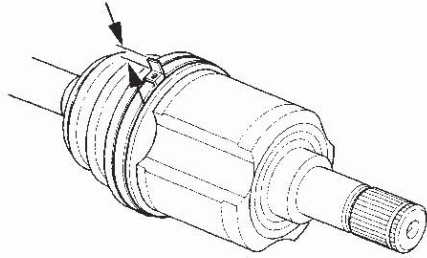


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Driveline/Axle

Front Driveshaft Reassembly (cont'd)

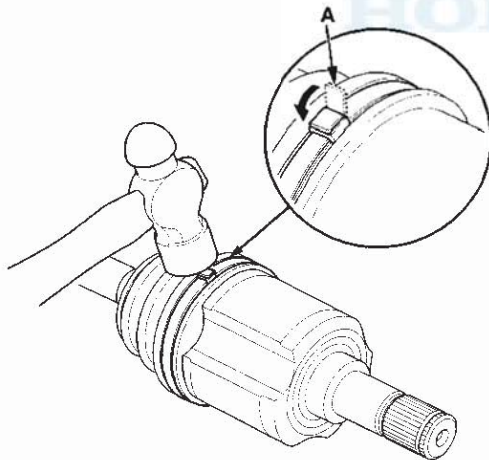
17. Unwind the boot band tool, and cut off the excess free end of the band to leave a 5–10 mm (0.2–0.4 in) tail protruding from the clip.



18. Bend the band end (A) by tapping it down using a hammer.

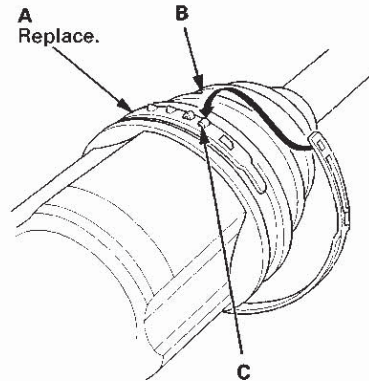
NOTE:

- Make sure the band and clip do not interfere with anything on the vehicle, and the band does not move.
- Clean any grease remaining on the surrounding surfaces.

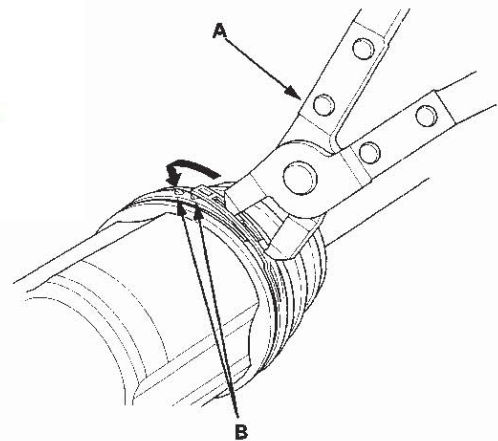


19. Repeat steps 11 through 18 for the band on the other end of the boot.

20. Install a new low profile band (A) onto the boot (B), then hook the tab (C) of the band.



21. Close the hook portion of the band using commercially available boot band pliers (A), then hook the tabs (B) of the band.

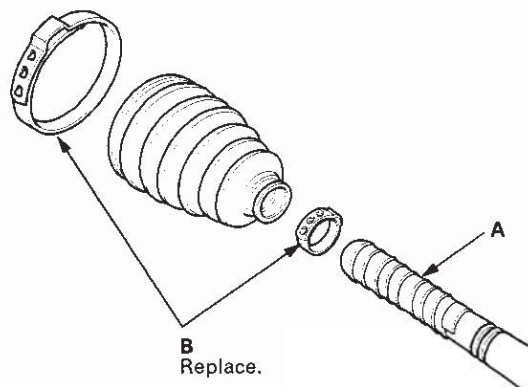


22. Install the boot band on the other end of the boot, and repeat 20 and 21.



Outboard Joint Side

1. Wrap the splines with vinyl tape (A) to prevent damaging the outboard boot.



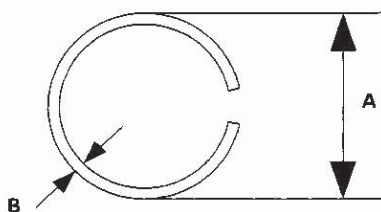
2. Install new ear clamp bands (B) and the outboard boot, then remove the vinyl tape. Be careful not to damage the outboard boot.
3. Make sure to check the size of a new stop ring.

NOTICE

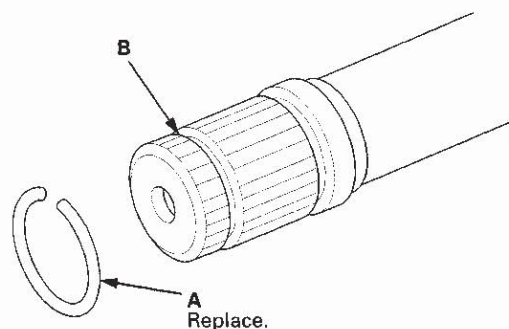
To avoid driveshaft and vehicle damage, make sure you install a new stop ring.

Stop Ring Specifications

Overall diameter (A): 31.2 mm (1.23 in)
Wire diameter (B): 2.0 mm (0.08 in)



4. Install the stop ring (A) into the driveshaft groove (B).



5. Pack about 35 g (1.2 oz) grease included in the new outboard boot set into the driveshaft hole in the outboard joint.

NOTE: If you are installing a new outboard joint, the grease is already installed.

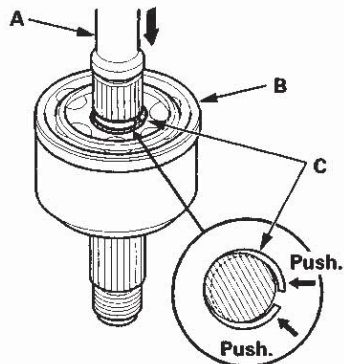


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Driveline/Axle

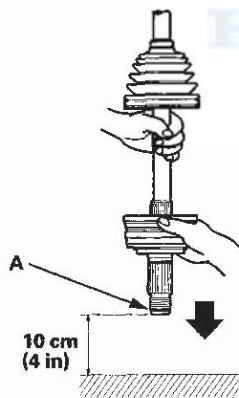
Front Driveshaft Reassembly (cont'd)

6. Insert the driveshaft (A) into the outboard joint (B) until the stop ring (C) is close to the joint.



7. To completely seat the outboard joint, pick up the driveshaft and the joint, and tap or hit the assembly onto a hard surface from a height of about 10 cm (4 in).

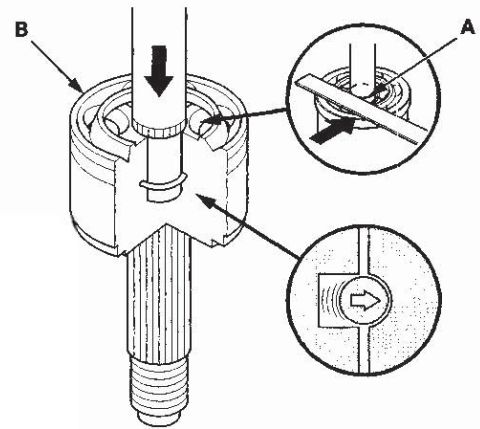
NOTE: Do not use a hammer, as excessive force may damage the driveshaft. Be careful not to damage the threaded section (A) of the outboard joint.



8. Check the alignment of the paint mark (A) you made with the outboard joint end (B).

NOTICE

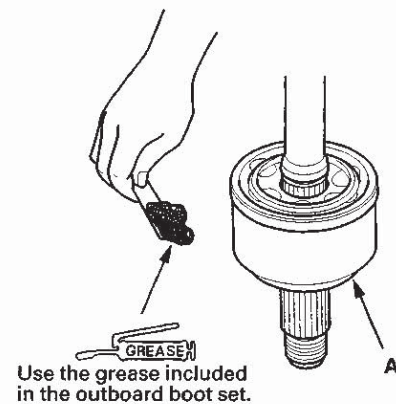
To avoid driveshaft and vehicle damage, the shaft must be all the way into the outboard joint to ensure the stop ring is properly seated.

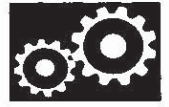


9. Pack the outboard joint (A) with the remaining joint grease included in the new joint boot set.

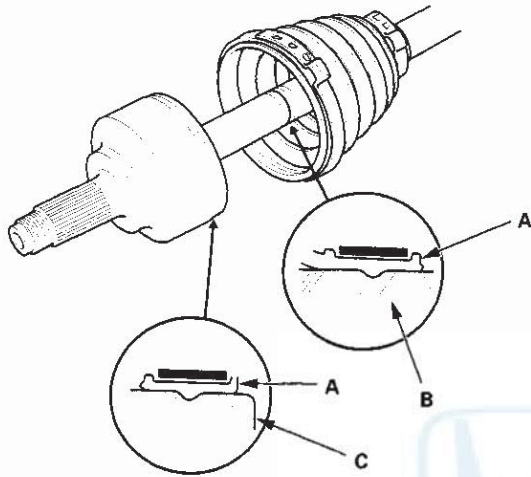
Total grease quantity

outboard joint: 115–135 g (4.1–4.8 oz)



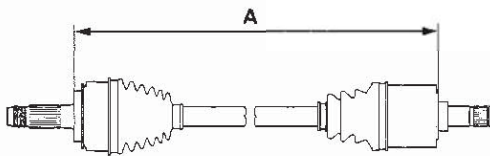


10. Fit the boot ends (A) onto the driveshaft (B) and the outboard joint (C). Bleed any excess air from the boot by inserting a flat-tipped screwdriver between the boot and the joint.

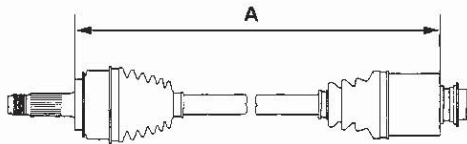


11. Inspect the length (A) of the driveshafts to the figure as shown, then adjust the boots to halfway between full compression and full extension.

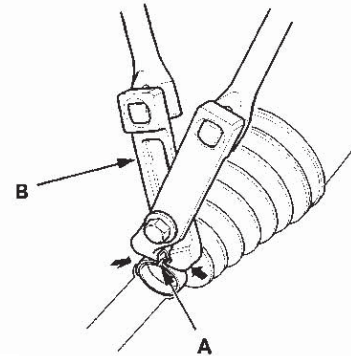
Left driveshaft: 571.2 – 576.2 mm (22.49 – 22.68 in)



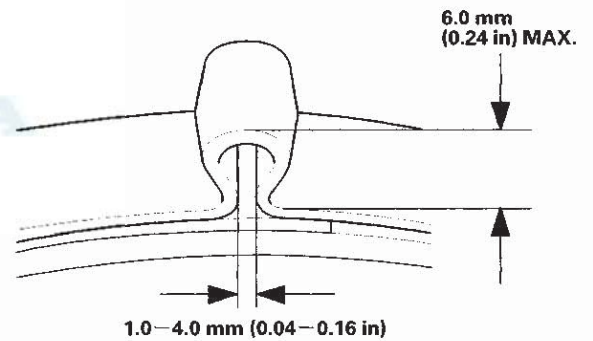
Right driveshaft: 569.5 – 574.5 mm (22.42 – 22.62 in)



12. Close the ear portion (A) of the band using a commercially available seal clamp tool (Kent-Moore J-35910 or equivalent) (B).



13. Check the clearance between the closed ear portion of the band. If the clearance is not within the standard, close the ear portion of the band tighter.



14. Repeat steps 12 and 13 for the band on the other end of the boot.

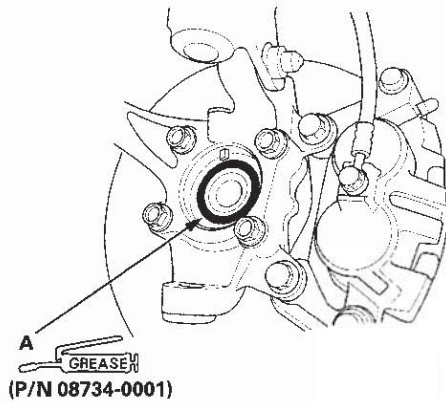
Driveline/Axle

Front Driveshaft Installation

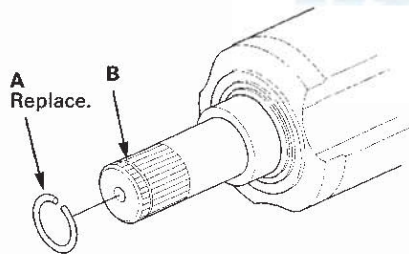
NOTE: Before starting installation, make sure the mating surfaces of the joint and the splined section are clean.

1. Apply about 5 g (0.18 oz) of moly 60 paste (P/N 08734-0001) to the contact area (A) of the outboard joint and the front wheel bearing.

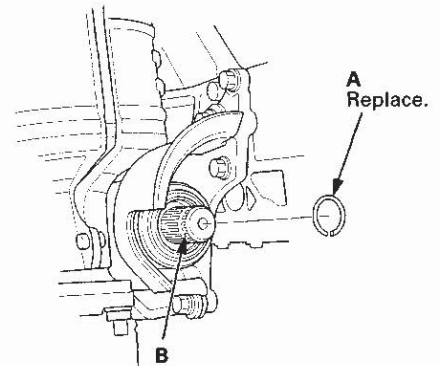
NOTE: The paste helps prevent noise and vibration.



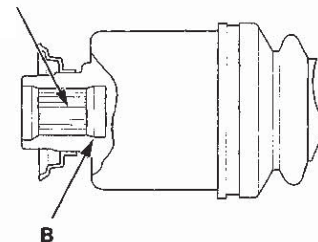
2. Install a new set ring (A) into the set ring groove (B) of the left driveshaft inboard joint.



3. Install a new set ring (A) into the set ring groove (B) of the intermediate shaft.



4. Apply 2.0–3.0 g (0.07–0.10 oz) of super high temp urea grease (P/N 08798-9002) to the whole splined surface (A) of the right driveshaft. After applying grease, remove the grease from the splined grooves at intervals of 2–3 splines and from the set ring groove (B) so that air can bleed from the intermediate shaft.



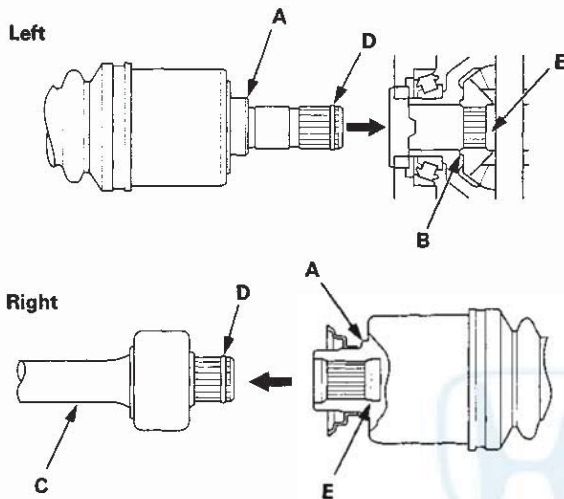
5. Clean the areas where the driveshaft contacts the differential thoroughly with solvent, and dry them with compressed air.

NOTE: Do not wash the rubber parts with solvent.

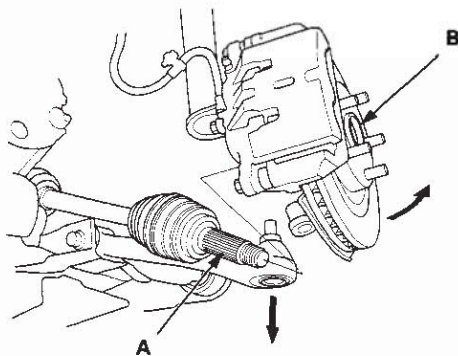


6. Insert the inboard end (A) of the driveshaft into the differential (B) or the intermediate shaft (C) until the set ring (D) locks in the groove (E).

NOTE: Insert the driveshaft horizontally to prevent damaging the oil seal.



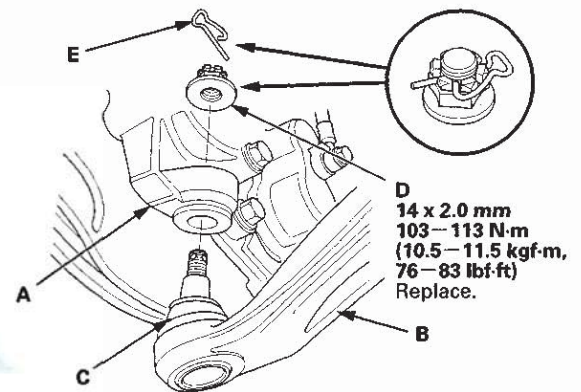
7. Install the outboard joint (A) into the front hub (B) on the knuckle.



8. Wipe off any grease contamination from the ball joint tapered section and threads, then install the knuckle (A) onto the lower arm (B). Be careful not to damage the ball joint boot (C). Wipe off the grease before tightening the nut at the ball joint. Torque a new castle nut (D) to the lower torque specification, then tighten it only far enough to align the slot with the ball joint pin hole.

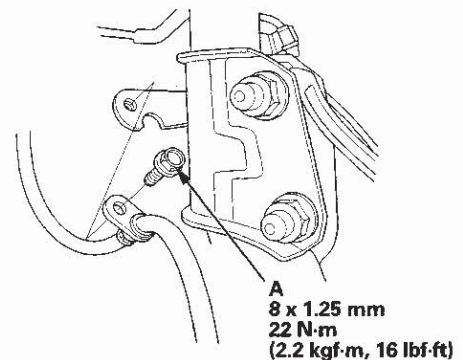
NOTE:

- Make sure the ball joint boot is not damaged or cracked.
- Do not align the nut by loosening it.



9. Install the lock pin (E) into the ball joint pin hole as shown.

10. Install the brake hose mounting bolt (A).

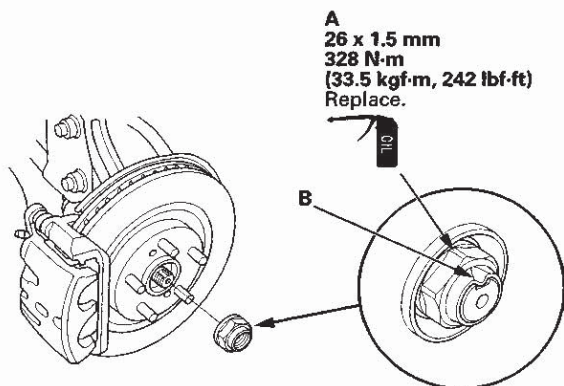


(cont'd)

Driveline/Axle

Front Driveshaft Installation (cont'd)

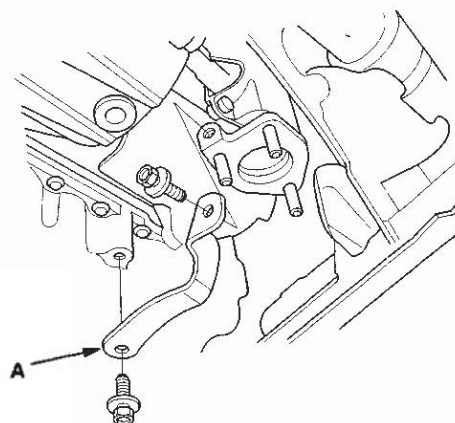
11. Apply a small amount of engine oil to the seating surface of a new spindle nut (A).



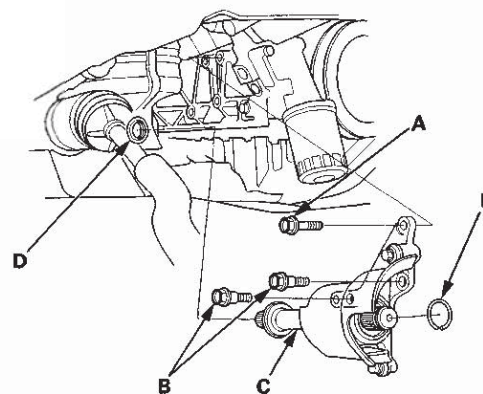
12. Install the spindle nut, then tighten it. After tightening, use a drift to stake the spindle nut shoulder (B) against the driveshaft.
13. Clean the mating surfaces of the brake discs and the wheels, then install the front wheels.
14. Turn the front wheel by hand, and make sure there is no interference between the driveshaft and the surrounding parts.
15. Lower the vehicle on the lift.
16. Refill the transmission with the recommended transmission fluid (see page 14-209).
17. Check the wheel alignment, and adjust it if necessary (see page 18-5).
18. Test-drive the vehicle.

Intermediate Shaft Removal

1. Drain the transmission fluid, then reinstall the drain plug with a new sealing washer (see page 14-209).
2. Remove the right front driveshaft (see page 16-4).
3. Remove exhaust pipe A (see step 37 on page 14-223).
4. Remove the exhaust pipe bracket (A).



5. Remove the flange bolt (A), and two dowel bolts (B).



6. Remove the intermediate shaft (C) from the differential. Hold the intermediate shaft horizontal until it is clear of the differential to prevent damaging the oil seal (D), then remove the set ring (E) from the intermediate shaft.