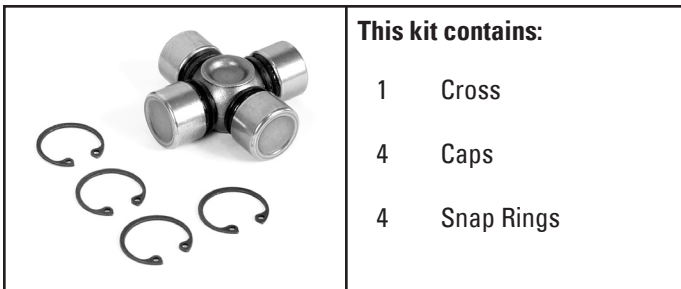


TRW Automotive Commercial Steering Systems

Service Procedure #COL-151

Cross-Kit Replacement

Revised February 2008



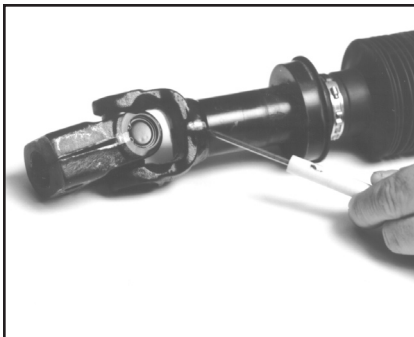
CAUTION: The bearing caps on these u-joints are thin due to their compact size, take care not to deform them. Do not strike the cap directly with a hammer. Use soft-jaws when pressing on the cap. Do not press in the center of the cap. If any cap is damaged or deformed in any way, a new cross member kit must be used.

This TRW Commercial Steering Systems service procedure has been written to help you repair commercial vehicles more efficiently. This procedure should not replace your manuals; you should use them together. These materials are intended for use by properly trained, professional mechanics, NOT "Do-it-yourselfers". You should not try to diagnose or repair steering problems unless you have been trained, and have the right equipment, tools and know-how to perform the work correctly and safely.

NOTE: The bearing caps for these u-joints are a pressed-fit in the bearing bores to help remove some of the lash inherent in most joints. They will not pop out as do the caps in many joints, they must be pressed out.

NOTE: These instructions are written using a bench vice as a press. If you have an Arbor press, it can also be used.

Disassembly



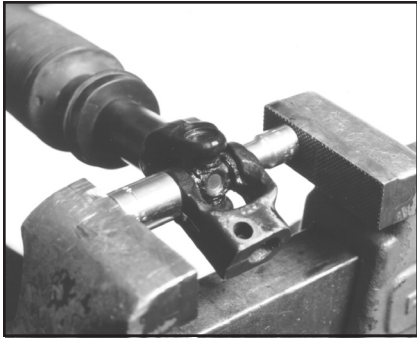
Mark parts

1. Mark both yokes for orientation.



Remove snap rings

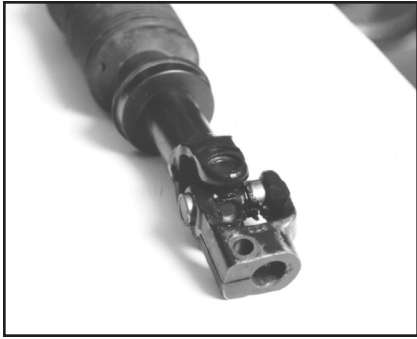
2. Remove all four snap rings. If they aren't easily removed because the cap is wedged against them, tap sharply on the snap ring using a 1/2" socket, then try again to remove.



Press out one cap

- Put the u-joint in a vice with a 13/16" socket over one cap, and a 1/2" socket on the opposite cap. Press until the effort increases.

CAUTION: Pressing too far will cause burring on the bearing bore.



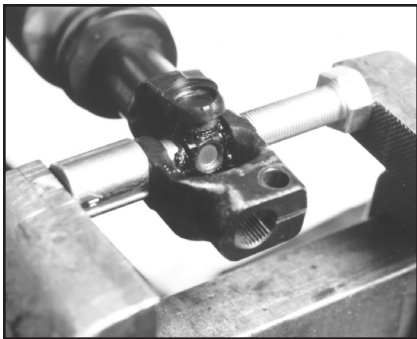
Remove from vice

- Remove the assembly and sockets from the vice.



Remove one cap

- One cap should now be extended from the yoke. Use the vice to clamp tightly on the extended part of the cap. Strike the yoke with a hammer until the cap is removed from the yoke.



Press out second cap

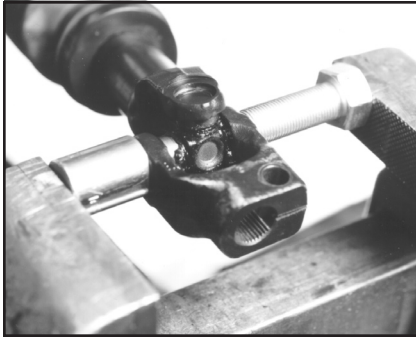
- Press out the opposite cap using a 13/16" socket and a 3/4" bolt. Place the bolt end against the one exposed cross end. Press until the effort increases.

CAUTION: Pressing too far will cause burring on the bearing bore.



Loosen cross member

- Strike the u-joint with a hammer. The cross-member should be jarred loose while the cap remains in the yoke.



Press out second cap

8. Press the cap out using a 3/4" bolt which is 2 1/2" long, and a 13/16" socket.

Remove any burrs

9. Inspect the bearing bores of the yoke for burrs. Lightly file the edges to remove any burrs.

CAUTION: Don't file across the bore changing the roundness or the inside diameter of the bore, file only on the edge.

Remove remaining caps

10. Repeat steps 3-7 for the remaining yoke.

Remove cross member

11. Remove the cross member.

Press out last cap and remove any burrs

12. Repeat steps 8-9.

Disassembly complete

Assembly



Position two caps

1. Align the new cross member, yoke, and two caps in a SOFT-JAWED vice.

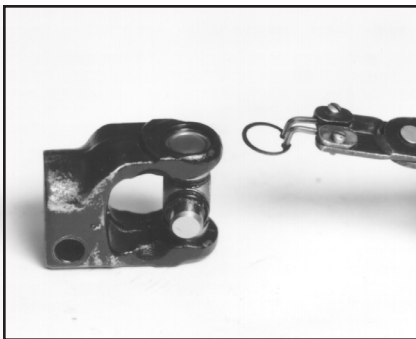
Important: Be careful not to lose any needle bearings. They will be pre-lubricated and the lubricant should provide proper retention.

Press the components together until the caps are almost flush with the yoke. Make sure the cross slides back and forth as you press.



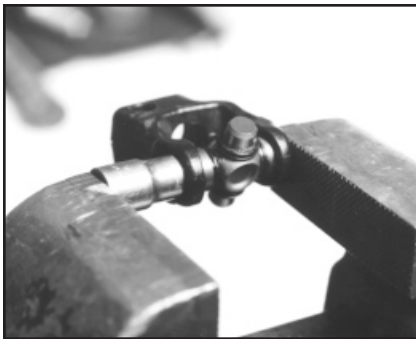
Press in one cap

2. Press one cap in using a 1/2" socket, until it clears the snap ring groove.



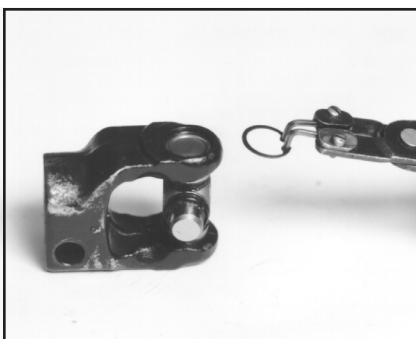
Install snap ring

3. Install the snap ring with the sharp edge out.



Press in second cap

4. Press the opposite cap in using a 1/2" socket, until it clears the snap ring groove.



Install snap ring

5. Install the second snap ring with the sharp edge out.



Align yokes

6. Align the yokes using the marks you made earlier.

Install remaining caps

7. Repeat assembly steps 1-5 for the second yoke.



Seat all four bearing caps

8. Seat the bearing caps as follows:
 - A. Support the assembly with one hand on the end yoke .
 - B. Position the u-joint so that one bearing cap in the other yoke is up.
 - C. Strike below the bearing cap on the yoke that you're not holding.
 - D. Rotate the assembly 180° and repeat for the opposite bearing cap.
 - E. Rotate the assembly 90° and change your hand position to support the lower yoke. Let all the weight of the component rest on this lower yoke. Position the remaining yoke with your fingers underneath.
 - F. Strike above the bearing cap on the yoke you're not holding.
 - G. Rotate the assembly 180° and repeat for the opposite bearing cap.

Check movement

9. Make sure the u-joint moves freely.

Assembly complete

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