Technical Service Bulletin

NUMBER: 03-001-01 REV. A

GROUP: Axle & Propeller Shaft

DATE: Sep. 14, 2001

THIS BULLETIN SUPERSEDES TECHNICAL SERVICE BULLETIN 03-001-01, DATED FEB. 02, 2001, WHICH SHOULD BE REMOVED FROM YOUR FILES. ALL REVISIONS ARE HIGHLIGHTED WITH **ASTERISKS. THIS REVISION INVOLVES A CHANGE TO THE LABOR OPERATION NUMBER.**

SUBJECT:

Front Axle Whine-Like Sound On 4.0L Equipped Grand Cherokee Vehicles

OVERVIEW:

This bulletin involves the replacement of the front propeller shaft and front axle yoke.

MODELS:

1999 - 2001	(WJ)	Grand Cherokee (Domestic & International Markets)
2001	(WG)	Grand Cherokee (International Markets)

NOTE: THIS BULLETIN APPLIES TO VEHICLES EQUIPPED WITH A 4.0L ENGINE, A FOUR WHEEL DRIVE SYSTEM (4WD), AND BUILT PRIOR TO DECEMBER 15, 2000 (MDH 1215XX).

SYMPTOM/CONDITION:

The customer may experience a powertrain related sound which may be described as front axle whine. The axle whine-like sound may occur during any vehicle speed and during any of the following driving modes: acceleration, coast, or float.

DIAGNOSIS

If the above condition has been experienced on the vehicle in question, perform the Repair Procedure.

NOTE: REFER TO TECHNICAL SERVICE BULLETIN 03-05-99 IF ADDITIONAL AXLE DIAGNOSIS IS REQUIRED.

PARTS REQUIRED:

Qty.	Part No.	Description
1	52105884AA	Propshaft, Front
1	05019624AA	Yoke, Front axle pinion
1	05017755AA	Nut, Front axle pinion
2	J3240553	Strap, Front axle yoke
4	J4006928	Bolt, Front axle yoke strap

EQUIPMENT REQUIRED:

6958	Yoke Holder
NPN	Dial Torque Wrench (inch pounds)
NPN	Dial Torque Wrench (foot pounds)

REPAIR PROCEDURE:

NOTE: DO NOT EXECUTE THIS REPAIR PROCEDURE UNLESS THE CORRECT EQUIPMENT IS USED. PAY CLOSE ATTENTION TO REPAIR PROCEDURES.

NOTE: NEVER USE AN IMPACT WRENCH TO TIGHTEN THE PINION NUT.

1. Make sure the steering wheel is centered. Partially raise and support the vehicle.
2. Shift the transmission and transfer case into their Neutral position. Raise the vehicle.
3. Remove both front wheel and tire assemblies.
4. Remove both front brake calipers from their anchors. Support the brake calipers in a correct manner so that the caliper will not interfere with the rotation of the axle shafts. The brake hose must not be used to support the weight of the brake caliper.
5. Make a mark on the brake rotor and axle hub so that the rotor can be installed back to its original position on the axle hub during reassembly.
6. Remove both brake rotors only after the rotors and hubs have been marked.

NOTE: THE WHEEL/TIRE ASSEMBLY, BRAKE CALIPER, AND BRAKE ROTOR MUST BE REMOVED FROM BOTH SIDES OF THE FRONT AXLE BEFORE THE ORIGINAL TOTAL TORQUE TO ROTATE (TTR) MEASUREMENT IS TAKEN IN STEP 9. IT IS IMPORTANT THAT AN ACCURATE READING BE OBTAINED.

7. Remove the front propeller shaft and attaching bolts.
8. At the front axle, rotate the pinion gear a minimum of 10 turns.
9. With a dial torque wrench (inch pound) attached to the front axle pinion nut, measure the Total Torque to Rotate (TTR) of the front axle. This specific TTR measurement will be the torque that is required to rotate the pinion and differential gears (with both axle shafts in place). Record this original TTR measurement for later use in steps 14, 15, and 16.

NOTE: A MEASUREMENT OF THE FRONT AXLE TOTAL TORQUE TO ROTATE MUST BE TAKEN BEFORE THE ORIGINAL PINION NUT AND PINION YOKE ARE REMOVED FROM THE AXLE. THE ORIGINAL TTR MEASUREMENT MUST BE KNOWN IN ORDER TO PREVENT POSSIBLE PINION BEARING FAILURE DURING ASSEMBLY OF THE NEW PINION YOKE TO THE FRONT AXLE PINION.

10. Remove the front axle pinion nut and companion flange.
11. Install the new front axle pinion yoke, p/n 05019624AA, and attaching pinion nut p/n 05017755AA.
12. Tighten the pinion nut until there is zero bearing end-play.

NOTE: NEVER USE AN IMPACT WRENCH TO TIGHTEN AN AXLE PINION NUT.

13. Measure the current Total Torque to Rotate value with the same dial torque wrench (inch pound) used to obtain the original TTR measurement.
14. Slowly tighten the pinion nut in 6.8 Nm (5 ft. lbs.) increments until the original TTR value (obtained in Step 9) is reestablished.

NOTE: MEASURE THE ROTATING TORQUE FREQUENTLY TO AVOID OVER CRUSHING THE COLLAPSIBLE SPACER BETWEEN THE TWO PINION BEARINGS.

15. Increase the torque on the pinion nut in 6.8 Nm (5 ft. lbs.) increments until the TTR has increased by 0.22 to 0.56 Nm (2 to 5 in. lbs.) above the original TTR value.
16. Once this new TTR value (the original TTR value plus 2 to 5 in. lbs.) has been obtained, rotate the pinion gear by hand a minimum of ten times. Verify that the pinion rotates smoothly.
17. Using the dial indicator, verify that the new TTR value has not changed. Adjust if necessary.
18. Note the paint marks on the CV joint end of the new propeller shaft, p/n 52105884AA, and on the transfer case flange. The paint marks must be aligned (positioned next to each other) to minimize propeller shaft runout and out-of-balance.
19. Install the new propeller shaft CV joint to the transfer case companion flange.
20. Tighten the CV joint attaching bolts to 27 Nm (20 ft. lbs.).
21. Note the paint marks on the single cardan joint end of the new propeller shaft and on the axle pinion yoke. The paint marks must be aligned (positioned next to each other) to minimize propeller shaft runout and out-of-balance.
22. Install the single cardan joint to the front axle pinion yoke.

NOTE: MAKE SURE THE PAINT MARKS AT EACH JOINT ARE ALIGNED WITH THEIR RESPECTIVE FLANGE OR YOKE PAINT MARK.

23. Install the two front axle yoke straps, p/n J3240553, and four attaching bolts, p/n J4006928.
24. Tighten the axle yoke strap bolts to 19 Nm (14 ft. lbs.).
25. Verify proper front axle fluid level.
26. Install each front brake rotor to its original position/orientation on its respective axle hub. Make sure each rotor is aligned with the mark made previously.
27. Install the front brake calipers. Tighten the caliper slide pins to between 29 and 41 Nm (21 to 30 ft. lbs.).
28. Install both wheel and tire assemblies. Tighten the front wheel lug nuts to between 115 and 150 Nm (85 to 115 ft. lbs.).
29. Partially lower the vehicle. If necessary, shift the transmission into the Park position. Shift the NV247 transfer case into the 4 All-Time position (NV247) or the NV242HD transfer case into the 4 Full-Time or 2 WD position.

30. Lower the vehicle.

POLICY:

Reimbursable within the provisions of the warranty.

TIME ALLOWANCE:

Labor Operation No:		
16-30-03-91	Replace front propeller shaft	1.1 Hrs.

FAILURE CODE:

P8	New Part