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SAFETY RECALL RVXX0602
AUGUST 2006
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SAFETY RECALL BULLETIN

ATTENTION: SERVICE MANAGERS
PARTS MANAGERS

SUBJECT: Dana Steering Shaft

SAFETY RECALL INFORMATION:

On certain Volvo model vehicles manufactured with a Dana Spicer Steering Shaft, there exists the potential that the steering shaft pinch bolt hole may be incorrectly located (not according to design specifications), thus making the shaft suspect to possible separation in the event that the pinch bolt comes loose.

VEHICLES AFFECTED:

VN, VHD, and VT model vehicles manufactured with suspect steering shafts from January 21, 2006 through March 17, 2006.

There are 2,757 vehicles (2,137 US and 620 Canada) affected by this recall.

NOTE: To verify or determine if a particular vehicle is affected by this recall (or any other recall), you should consult the DCS, Service/Warranty or the eWarranty Vehicle Details screen. By entering the Vehicle Identification Number into the VEHINQ segment or into the VIN search field in eWarranty, the screen will display any outstanding recall.

If a "Dealer Listing" is enclosed it identifies the vehicles that were sold or shipped to your dealership. Be sure to check the VEHINQ or the eWarranty Vehicle Detail screen before performing the recall to verify that the recall is still open.

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REPAIR:

The recall repair will consist of confirming the steering shaft bolt hole placement by using a gauge pin provided in the recall repair kit. If the steering shaft can be pulled off with the gauge pin inserted at either the steering gear or at the steering column, then the steering shaft must be replaced. Also, some of the vehicles will require additional steps to calibrate the steering angle sensor on vehicles with the Volvo Enhanced Stability Technology system (i.e. roll stability).

IMPORTANT NOTE: There are five steering shafts used and there are vehicles that are equipped with and without Volvo Enhanced Stability Technology. To help the Dealer determine what steering shaft is used and whether the vehicle has Volvo Enhanced Stability Technology, we have identified the vehicles with seven unique recall numbers that explicitly identify the steering shaft used along with whether the vehicle has Volvo Enhanced Stability Technology system. The following table defines each recall number.

Recall Number	Steering Shaft Part Number(s)	Equipped with Electronic Stability Control?
RVXX0602A	20785692	No
RVXX0602B	20785692	Yes
RVXX0602C	20785689	No
RVXX0602D	20785689	Yes
RVXX0602E**	20785694 and 20458572	No
RVXX0602F	20785693	No
RVXX0602G	20785693	Yes

** A vehicle with RVXX0602E has a two-piece steering shaft system with a lower and intermediate steering shaft. Both steering shafts will require inspection and replacement if they pull-off when using the gauge pin. You will need two of the 85110526 repair kits for vehicles requiring RVXX0602E.

Vehicles that have Volvo Enhanced Stability Technology (RVXX0602B, RVXX0602D, and RVXX0602G) require additional repair steps **if the steering shaft is removed. For recalls RVXX0602B, RVXX0602D, and RVXX0602G, the repairing technician should take extra precautions to ensure that the steering shaft is not removed (separated from the input shaft) at either end during the inspection process.** Please refer to the instructions on page 11 of this bulletin for the details on how to calibrate the steering angle sensor if the steering shaft is removed.

TIME ALLOWANCE:

Inspection including take charge time: 0.8 hour per vehicle for inspection using gauge pin to confirm whether steering shaft(s) needs replaced.

Repair including take-charge time and inspection: 1.8 hours for inspection using the gauge pin and removal and replacement of the steering shaft.

Note: For recalls RVXX0602B, RVXX0602D, and RVXX0602G the repair time allowance is 2.2. hours, which considers the calibration of the steering angle sensor.

PART ORDERING PROCEDURES:

Parts for this recall should be ordered through Volvo Trucks North America Dealer Communication System. The following information is required to place an order:

1. Your dealer account number, and
2. Volvo kit number - **85110526 and/or steering shaft part number if shaft needs replaced,** and
3. Number of recall kits needed

Recall Kit 85110526 includes 2 pinch bolts with lock nuts and a gauge pin.

NOTE IMPORTANT CHANGE:

Parts should be ordered CLASS THREE (3)! On class three orders, Volvo Trucks North America pays for all shipping costs; therefore, Dealer Claims MUST NOT include shipping costs.

In the event where a dealer does not have the part in stock and has a vehicle that requires the recall, the dealer should order the part CLASS ONE (1) to ensure the quickest possible delivery. Since dealers are responsible for the shipping cost on class one orders, **the dealer should include the expense of shipping in the claim.**

The cost of the part plus 30% dealer mark-up will have to be claimed according to the guidelines identified under the heading "*Claims for Credit*".

DEALER PARTS INVENTORY:

Dealer Parts inventory is not affected by this recall.

REMOVED PARTS:

All removed (i.e. replaced) steering shafts **must be returned** to the Technical Material Analysis Center in Pulaski, VA.

The removed pinch bolts and nuts **MUST NOT BE REUSED** and should be scrapped locally by the dealer.

CLAIMS FOR CREDIT:

Expenses associated with the performance of this recall will be reimbursed based on the guidelines identified in this bulletin, and section 2-41 of the Warranty Manual, Policies and Procedures and chapter 20 of the Parts Operations Manual.

CLAIM CODING INFORMATION:

<u>Type</u>	<u>Authorization Number</u>	<u>Causal Part Number (eWarranty)</u>
P (WINS); or, Recall (eWarranty)	RVXX0602A	20785692
P (WINS); or, Recall (eWarranty)	RVXX0602B	20785692
P (WINS); or, Recall (eWarranty)	RVXX0602C	20785689
P (WINS); or, Recall (eWarranty)	RVXX0602D	20785689
P (WINS); or, Recall (eWarranty)	RVXX0602E	20785694 or 20458572
P (WINS); or, Recall (eWarranty)	RVXX0602F	20785693
P (WINS); or, Recall (eWarranty)	RVXX0602G	20785693

Standard repair codes and times:

Inspection including take-charge time: - 64139-0-01 (0.8 hour per vehicle)

Steering Shaft replacement RVXX0602A, C, E, and F: 64139-0-02, 1.8 hours per vehicle (includes take charge time)

Steering Shaft replacement RVXX0602B, D, and G: 64139-0-07, 2.2 hours per vehicle (includes take charge time)

IMPORTANT NOTE:

- Claims for a recall repair **MUST** be submitted within 2 working days from the repair date.
- Claims that involve replacement of steering shafts will be paid **after the steering shaft is received by TMAC.**
- All removed (i.e. replaced) steering shafts **MUST be returned to TMAC.**

OWNER RECALL RESPONSE CARD:

The "Owner Recall Response Card" is to provide the vehicle owner with a convenient way to notify Volvo Trucks North America of changes affecting the ownership of the subject vehicle. The owner recall response card is not intended for dealer usage other than to assist you in the preparation of the repair orders necessary to perform the applicable recall on the subject vehicle. Please do not use the card as a way to inform Volvo Trucks North America that the vehicle has been inspected or modified. Your DCS claim on line is the appropriate means of informing Volvo Trucks North America that the vehicle has been inspected or modified.



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DEALER RECALL RESPONSIBILITY:

Dealers are to perform the recall on all vehicles subject to the recall at no charge to the owner regardless of mileage, age of vehicle, or ownership from this time forward. Whenever a vehicle subject to this recall is taken into or is in your vehicle inventory or dealership for service, we strongly recommend you make every effort to perform the recall correction before the vehicle is sold or released to the owner.

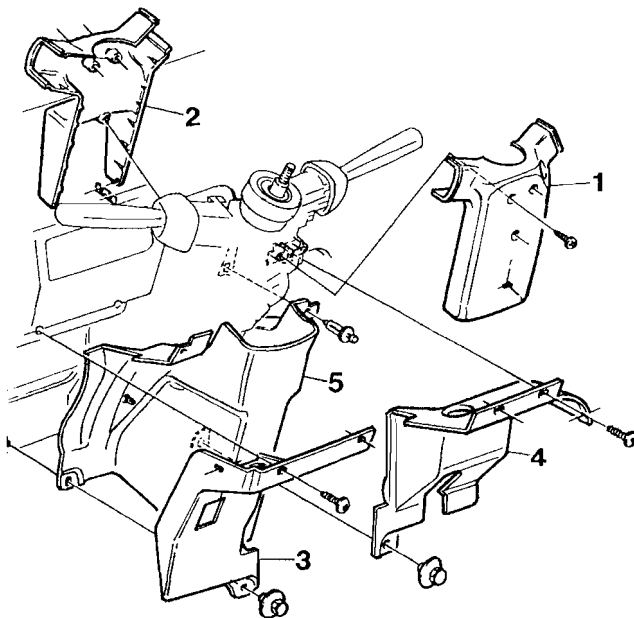
IMPORTANT NOTICE:

Please note that the National Traffic and Motor Vehicle Safety Act requires that the owner's vehicle(s) be corrected at no charge and within a reasonable time after parts are available to you. The law states that failure to repair a vehicle within sixty (60) days after tender for repair shall be a prima facia evidence of unreasonable time. However, circumstances of a particular situation may reduce the sixty-day period. If an owner's vehicle is not repaired within a reasonable time, he or she may be entitled, without charge, to a reasonable equivalent vehicle or refund of the purchase price, less reasonable allowance for depreciation.

Steering Shaft Inspection

You must read and understand the precautions and guidelines in Service Information, group 60, "General Safety Practices Wheel Suspension and Steering" before performing this procedure. If you are not properly trained and certified in this procedure, ask your supervisor for training before you perform it.

1. Ensure the vehicle front wheels are pointing straight ahead.
- 2.



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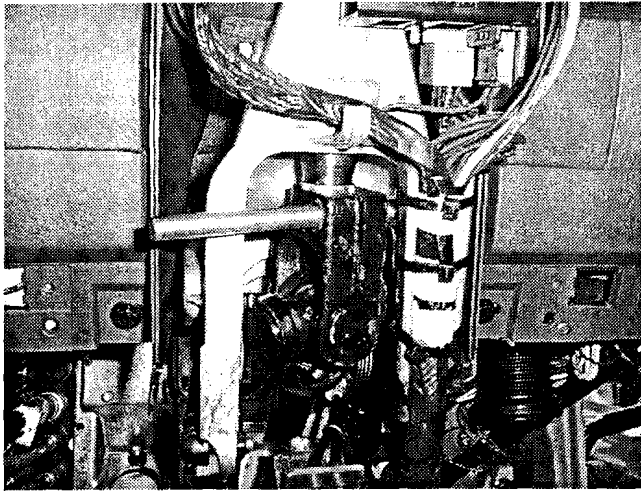
Remove the covers from around the steering column in order shown.

Note: Disconnect the hood latch release cables at the cup latches to aid in disconnection of the cables at the release handle.

Note: Tilt the steering column to the vertical position

3. Remove the pinch bolt on the steering shaft upper U-joint.
4. Free the yoke from the column but do not remove it.

5.



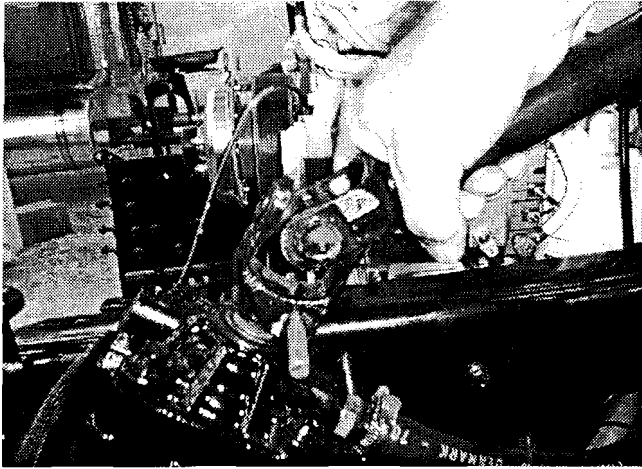
Insert the gauge pin provided in recall kit P/N 85110526 through the pinch bolt hole and pull down on the steering shaft just below the yoke.

If the yoke separates from the column the steering shaft must be replaced.
Proceed to Steering Shaft Replacement.

If the yoke remains attached to the column. Proceed to step 6

6. Install new pinch bolt (20924949) and nut (971086) provided in the kit. Do Not Tighten until after step 10 is performed.
Note: The pinch bolt is perpendicular to the steering column shaft.
7. Remove the pinch bolt from the gear end of the steering shaft.
8. Free the yoke from the gear but do not remove it.

9.



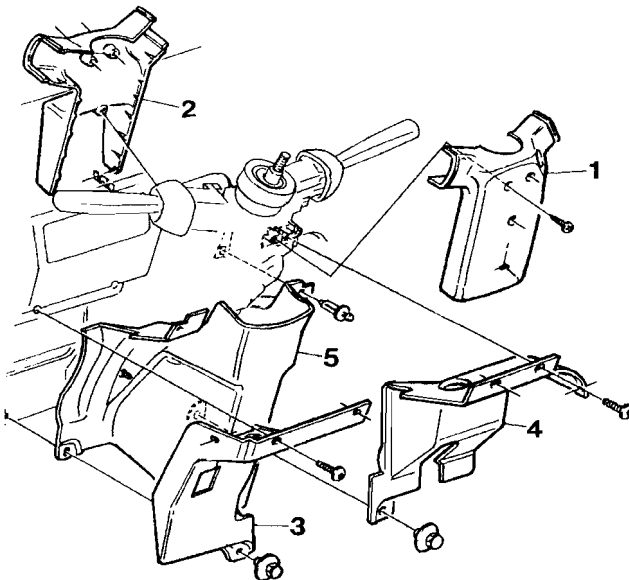
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Insert the gauge pin used in step 5 through the pinch bolt hole and pull up on the steering shaft just above the yoke.

If the yoke separates from the gear the steering shaft must be replaced.
Proceed to Steering Shaft Replacement.

If the yoke remains attached to the gear the steering shaft is okay. Proceed to step 10.

10. Install new pinch bolt (20924949) and nut (971086).
Tighten the pinch bolt to 60 ± 10 Nm (45 ± 7 ft-lb).
11. Tighten the pinch bolts mentioned in step 6.
- 12.



Reinstall the covers around the steering column in order shown and reconnect the hood release cables.

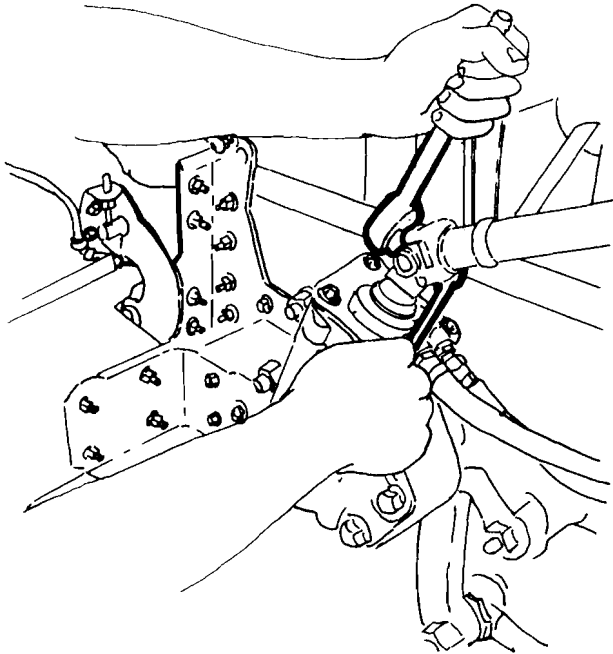
Steering Shaft Replacement Removal

1. Remove the bolts from the shaft boot in the engine compartment.
2. Pull the shaft and boot out of the cab from the engine compartment side.
3. Cut the tie strap off the end of the shaft boot. Slide the plastic shroud out of the boot.
4. Cut the tie straps off the plastic shroud.

Installation

1. Install the pinch bolts on each end of the steering shaft provided with the recall kit.
2. Holding the sleeve halves together on the new shaft and install the boot. Secure the boot with a tie strap.
3. Install the shaft and boot in from the engine compartment side.
4. Line up the color-coded alignment mark on the steering column shaft with the center mark on the casting.
5. Connect the shaft upper U-joint to the steering column using a new pinch bolt and nut. Tighten the pinch bolt to 60 ± 10 Nm (45 ± 7 ft-lb).
Note: The pinch bolt is perpendicular to the steering column shaft.
6. Ensure the steering wheel is centered.
7. Visually align the front-end tires.

8.



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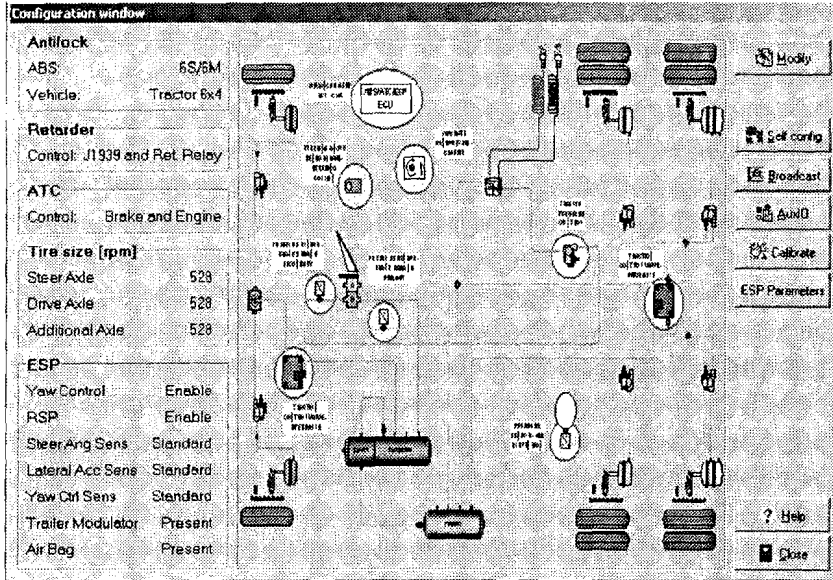
Connect the shaft lower U-joint to the steering gear input shaft using a new pinch bolt and nut. Tighten the pinch bolt to 60 ± 10 Nm (45 ± 7 ft-lb).

9. Install and tighten the bolts in the steering shaft boot.
10. Install the steering column covers in the reverse order from removal and tighten the torx screws.
11. If the vehicle is equipped with a Volvo Enhanced Stability Technology system the steering angle sensor will require recalibration. Proceed to Steering Angle Sensor Calibration on page 6.

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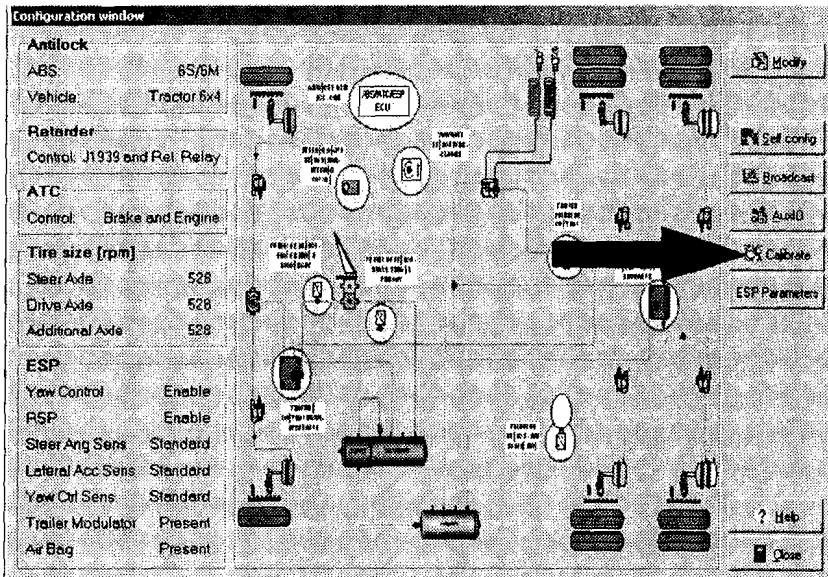
Steering Angle Sensor Calibration

1. Connect your computer containing the BENDIX ACOM program to the diagnostic connector using an RP1210a compliant device.
2. From the programs menu or the desktop launch ACOM.
- 3.



From the tool bar select the "Controller Configuration" button

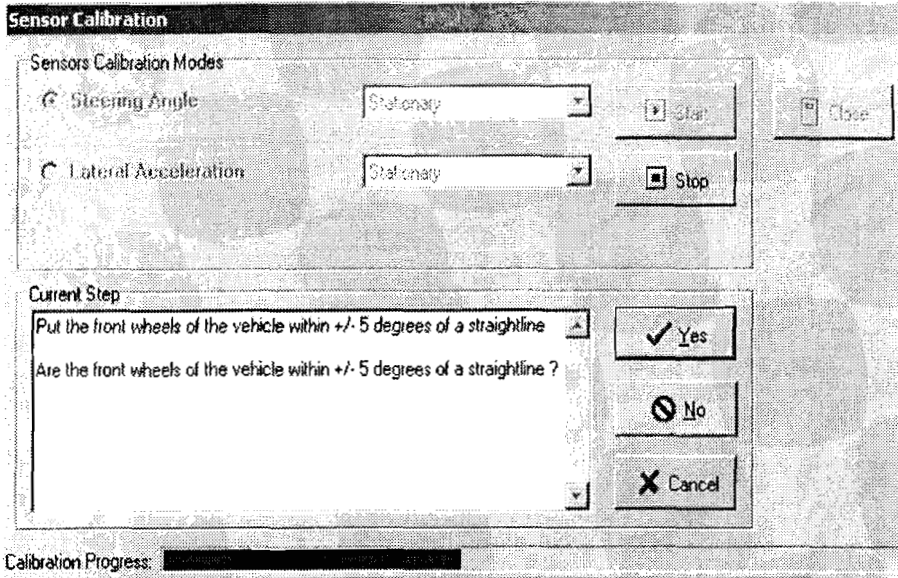
- 4.



From the configuration window select the "Calibrate" button

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5.



From the "Sensor Calibration" window select "steering angle sensor" and press the start button. Follow the instruction in the window to complete calibration.