

Steering - Vehicle Pull On Acceleration/Cruise

NO.: 60-10

DATE: 10-25-2007

MODEL & M. YEAR:

MY99-06 S80  
MY01-07 V70, V70XC, & XC70  
MY01-S60  
MY03-XC90

SUBJECT:  
Repair of pulling condition during driving or acceleration

REFERENCE:  
Service Bulletin 60-5500, TNN 60-09, VIDA

Description

| STEP NO. | ACTIVITY   | RESULTS OK                      | RESULTS NOT OK  |
|----------|--|---------------------------------|---|
| 1.       | Check/adjust tire pressures in accordance with the specifications on the tire pressure label. Ensure there is minimal difference between left and right side.  | Go to #2 a.                     | Adjust tire pressures, go to #2 a.  |
| 2 a.     | Test drive on a level, smooth road. <b>See "TEST DRIVE NOTES" on page 2.</b> Check for pulling under: <ul style="list-style-type: none"><li>• Acceleration</li><li>• Steady driving</li><li>• Freewheeling</li></ul> | Completed.                      | NOK during acceleration, go to #2 c. NOK during other conditions, go to #2 b. |
| 2 b.     | Check the position of the steering wheel when driving straight ahead. If it is not centered, could this be the root cause for the complaint?   | Completed.                      | Adjust steering wheel. If still NOK, go to #3.                                |
| 2 c.     | Does the fault occur <b>only</b> during acceleration?  |                                 | Go to #7.   |
| 3.       | Remove and mark the car's wheels (LF, RF, LR, RR) and rotate from front to rear on each side. <b>Then test drive as in #2 a.</b>   | Correct tire pull as necessary. | Go to #4.   |

| STEP NO. | ACTIVITY  | RESULTS OK | RESULTS NOT OK  |
|----------|---|------------|---|
| 4.       | <p>Check the wheel alignment. Adjust the camber angles to the maximum tolerances described below by using the play of the holes in the knuckles and strut.</p> <ul style="list-style-type: none"> <li>• When pulling LEFT: adjust left side camber to maximum negative and right side camber to maximum positive.</li> <li>• When pulling RIGHT: adjust right side camber to maximum negative and left side camber to maximum positive.</li> </ul> <p><b>Then test drive as in #2 a.</b></p>  | Completed. | Go to #5.   |
| 5.       | <p>Check that the original springs are correct as per specifications. If incorrect or non-original springs are installed, correct as per VIDA.</p> <p><b>Then test drive as in #2 a.</b></p>  | Completed. | Go to #6.   |
| 6.       | <p>Change the front springs according to the "<b>LIFT HEIGHT TABLE</b>" on page 4. First determine the springs assembled on the car based on color and number of dots. Find that spring in the table on page 4.</p> <ul style="list-style-type: none"> <li>• If the car is pulling to the <i>right</i>: <ul style="list-style-type: none"> <li>○ Go <u>up</u> one step in lifting force on the RIGHT side, and <u>down</u> one step on the LEFT side.</li> </ul> </li> <li>• If the car is pulling to the <i>left</i>: <ul style="list-style-type: none"> <li>○ Go <u>up</u> one step in lifting force on the LEFT side, and <u>down</u> one step on the RIGHT side.</li> </ul> </li> </ul> <p>If you cannot go up in lifting forces on that side which the car pulls to, you go down on the other side. Start with one step, and go to two steps if necessary.</p> <p><b>Then test drive as in #2 a.</b></p> | Completed. | Problem is beyond scope of this TNN, and may likely be worn or damaged suspension components. |
| 7.       | <p>If the fault ONLY occurs under acceleration and if the car pulls to the right:</p> <ul style="list-style-type: none"> <li>• Fit spacer plate P/N 9485617 between the engine mount and the subframe on the right hand side. Start with one spacer. (Max. 2 spacers, or 4 mm in total.)</li> <li>• Check/adjust the alignment as described in step #4.</li> </ul> <p><b>Then test drive as in #2 a.</b></p>  | Completed. | Problem is beyond scope of this TNN, and may likely be worn or damaged suspension components. |

## LIFT HEIGHT TABLE FOR FRONT SPRINGS

| <b>Color marking of Springs S60, S80, V70</b> |           |          |            |        |            |
|---|-----------|----------|------------|--------|------------|
| Pos   | Stiffness | P/N      | Lift force | Color  | No of dots |
|   | N/mm      |          | N          |        |            |
| F   | 17        | 9492226  | 3750       | white  | I          |
| F   | 17        | 9492227  | 3890       | white  | II         |
| F   | 18        | 30639212 | 3850       | purple | III        |
| F   | 18        | 9465464  | 4000       | brown  | I          |
| F   | 18        | 8624883  | 4150       | brown  | II         |
| F   | 18        | 9465472  | 4300       | brown  | III        |
| F   | 18        | 8634328  | 4450       | purple | I          |
| F   | 18        | 8634329  | 4600       | purple | II         |

|          |             |
|----------|-------------|
| S60, V70 | All engines |
| S80      | 5 Cyl       |
| S80      | 6 Cyl 2.9   |

|   |    |          |      |       |     |
|---|----|----------|------|-------|-----|
| F | 20 | 30639016 | 4000 | green | III |
| F | 20 | 9492228  | 4150 | blue  | I   |
| F | 20 | 9492178  | 4300 | blue  | II  |
| F | 20 | 9492179  | 4450 | blue  | III |

|     |          |
|-----|----------|
| S80 | 6 Cyl T6 |
|-----|----------|

| <b>Color marking of Springs V70XC/XC70 only</b> |           |          |            |        |            |
|---|-----------|----------|------------|--------|------------|
| Pos   | Stiffness | P/N      | Lift force | Color  | No of dots |
|   | N/mm      |          | N          |        |            |
| F   | 18        | 8634378  | 4400       | orange | I          |
| F   | 18        | 8634377  | 4550       | orange | II         |
| F   | 18        | 8634376  | 4700       | orange | III        |
| F   | 18        | 30639173 | 4850       | orange | I          |

| <b>Color marking of Springs XC 90 only</b> |           |          |            |       |            |
|--|-----------|----------|------------|-------|------------|
| Pos  | Stiffness | P/N      | Lift force | Color | No of dots |
|  | N/mm      |          | N          |       |            |
| F  | 31        | 30648138 | 5307       | White | I          |
|  |           |          |            | Blue  | I          |
| F  | 32.5      | 30648139 | 5568       | White | I          |
|  |           |          |            | Green | I          |
| F  | 34        | 30648140 | 5829       | White | I          |
|  |           |          |            | Red   | I          |

There may be complaints about vehicles which pull during steady driving or during acceleration. If an alignment is performed as per VIDA, using the specifications in Service Bulletin 60-5500, and this does not resolve the complaint, you may use the diagnosis & repair flow chart shown above to try to remedy the condition.

This flow chart presumes that the front and rear suspension are in good condition, without worn bushings, connections, etc. [Tires](#) must be checked to verify that they have tread life remaining,

and are not worn unevenly which can cause pulling. There must be no existing accident damage, and any previous accident damage must have been properly repaired to Volvo standards.

**Note!** The use of any alignment equipment, whether retailer-owned or sublet, presumes that the equipment is in good working order and has been calibrated to the alignment equipment manufacturer's specifications within the last 12 months. Volvo Cars of North America ("Volvo") reserves the right to request evidence of such calibration. Repeat repairs due to use of non-calibrated equipment, or failure to provide calibration documentation upon request, may result in warranty claim denial by Volvo.

Service

**TEST DRIVE NOTES:**

The test drive should be done as follows: Accelerate rapidly up to 50 mph, noting how the car behaves during acceleration. Then hold the car at 50 mph long enough to note how it behaves during steady driving.

Then place the transmission in neutral and let the car freewheel, carefully noting how the car behaves the instant you put the gear in neutral: do the side forces reduce or disappear, or are they the same?

Vehicles always have a tendency to veer towards the edge of a crowned road. This tendency will make the car pull towards the side when driving in the "normal" traffic lane. To verify if there is a fault in the car, drive it on a perfectly flat road, or on a road which is crowned in the other direction. This might best be accomplished on a multi-lane road which has road crowns in both the left lane (to the left) and right lane (to the right).

| <b>WARRANTY CLAIM INFORMATION</b> |                                     |                   |
|-----------------------------------|-------------------------------------|-------------------|
| <b>LABOR OP</b>                   | <b>LABOR DESCRIPTION</b>            | <b>LABOR TIME</b> |
| 72308-2                           | Coil spring front 2 sides, replace: |                   |
|                                   | S60, S80, V70, XC70, XC90           | 1.7 hr.           |
|                                   | S60/S80/V70/XCX70 with 4-C chassis  | 1.9 hr.           |

Alignment claims may be submitted during the adjustment period when there is a documented customer complaint using claim type: 01.  
Spring replacements may be submitted during the new car warranty when there is a documented customer complaint using claim type: 01.

Warranty Claim Information