VOLVO

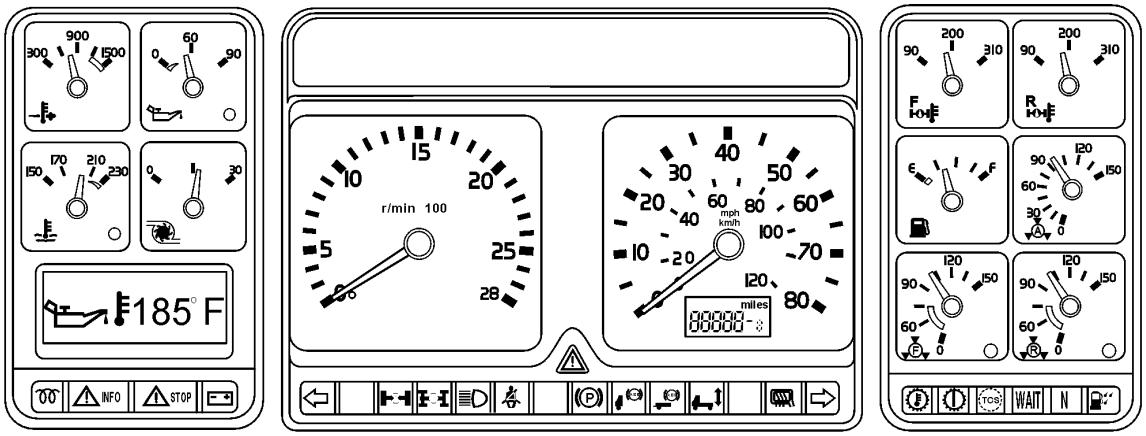
Volvo Trucks North America, Inc.
Greensboro, NC USA

Service Manual Supplement
Trucks

This Service Bulletin is a supplement to Service Manual, Group 381–500, “Instrumentation, VN (from 3/99) and VHD.”

Instrumentation
VN (from 3/99)
VHD

Instrumentation Illumination Problems



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This supplement includes a procedure for diagnosing illumination problems in the VN and VHD instrument clusters.

In cases where there is no illumination of gauges on the right side of the instrument cluster, dealers should first check the bulbs. If the bulbs are functional, the dealers are authorized to break the right side warranty seals to inspect for damaged traces on the printed circuit board. If the illumination problem is being caused by an open or damaged trace, the circuit board may be replaced, even if the unit is under warranty.

Damage to the circuit board can be caused by using the incorrect tool for replacing bulbs. Only the bulb replacement tool 1089953 (or equivalent) is to be used for replacing bulbs.

For more information, see

- “Illumination Problems” page 2
- “Checking for a Damaged Trace” page 3

Design and Function

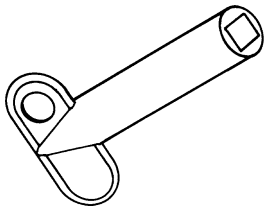
Illumination Problems

Using needle nose pliers or similar tools to replace bulbs in the instrument cluster can damage the circuit boards inside. If power has not been completely removed from the cluster, the tool can contact the metal terminals in the bulb housing and cause a short-circuit.

In cases where there is no illumination of gauges on the right side, and the bulbs are functional, the cluster can be opened and checked following the procedure, “Checking for a Damaged Trace” page 3.

If a damaged or open trace is present, warranty will not cover the replacement cost of the instrument cluster or board. But the individual board can be replaced, even if the vehicle is still under warranty. Refer to service information in group 381 for “Right Module Replacement” instructions.

Only the bulb replacement tool, P/N 1089953 or equivalent, is to be used for replacing bulbs.



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Bulb Replacement Tool, 1089953

Troubleshooting

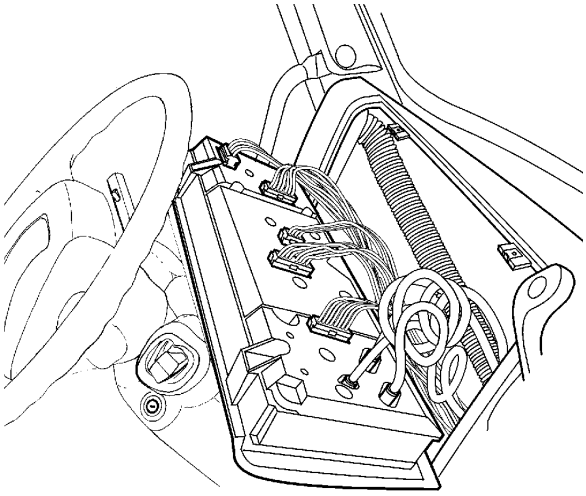
Checking for a Damaged Trace

DANGER

Before working on the vehicle, set the parking brakes, place the transmission in neutral, and block the wheels. Failure to do so can result in unexpected vehicle movement and cause serious personal injury or death.

1
Make certain the vehicle ignition is ***OFF*** before beginning this procedure.

2



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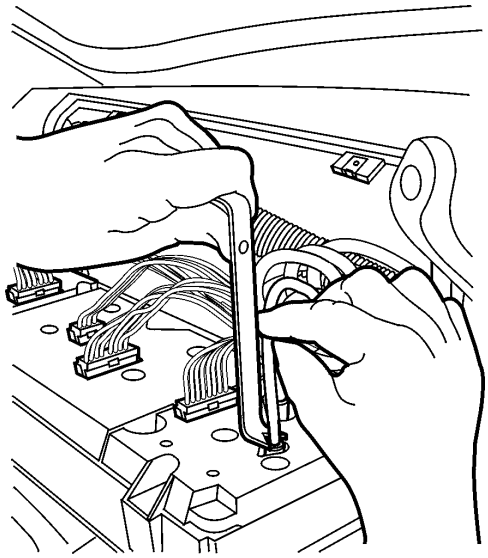
CAUTION

When servicing or troubleshooting, do not leave the cluster face-down for more than 15 minutes, or damage to the gauges may occur. Gauge oil can run out the front of the gauge faces and make the gauges inaccurate.

Adjust the steering column back where possible. Remove the two screws at the top of the instrument cluster and lay the cluster face-down on the steering column.

3
Cut the tie straps fastening the wiring harness to the back of the cluster for stress relief on the connectors. Disconnect the electrical connectors from the back of the cluster.

4



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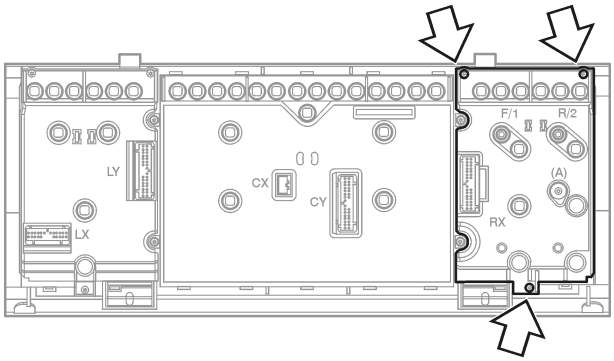
WARNING

Never disconnect an air system component unless all system pressure has been depleted. Failure to deplete system pressure before disconnecting hoses or components may result in them separating violently and causing serious eye and/or bodily injury.

Bleed all pressure from the vehicle air system. Using tool J-42189 push in on the air tubing collars on the back of the cluster while pulling back on the air tubing to disconnect.

5
Remove the cluster from the vehicle. Place it on an anti-static mat. A static bracelet must be worn for all bench repairs.

6



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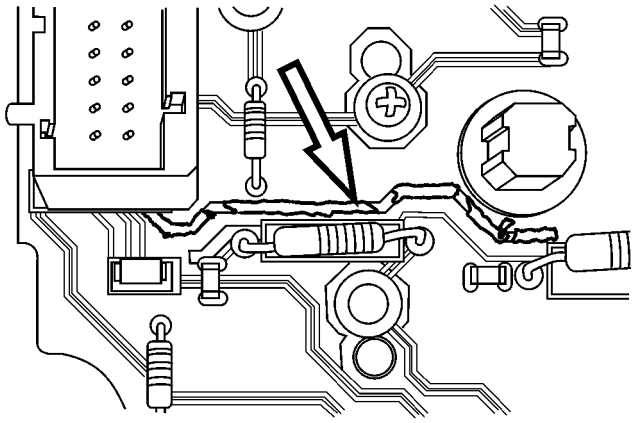
Remove the 3 right module mounting screws. Remove the right module cover.

7



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Perform a visual check for open or damaged traces on the printed circuit board. A trace damaged by over-current from a short circuit may appear as follows:

- raised or de-laminated from the board
- has a “bubbled” or darkened, dis-colored look
- is broken or separated in one or more places

8

If there are damaged traces, replace the right module per the instructions in the “Instrumentation, VN from 3/99 and VHD” in group 381.

9

Place the instrument cluster face down on the steering column in the mounting position. Connect the air tubing, noting color codes for proper installation.

10

Connect all electrical connectors, not-ing color codes to aid in installation. For stress relief on the connectors, tie strap the wiring to the back of the in-strument cluster.

11

Position the instrument cluster in the dash and tighten the 2 screws at the top of the cluster.
Torque to 2 ± 0.3 Nm (17.5 ± 2.5 in-lb).

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