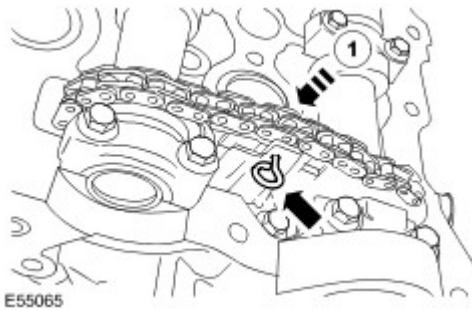




## Camshaft RH (12.13.03)

### Removal

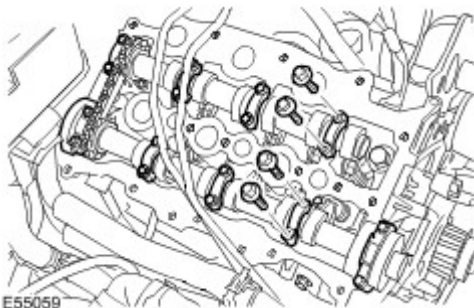
1. Disconnect the battery ground cable. For additional information, refer to [Specifications](#) (Section 414-00)
2. Remove the camshaft front seal. For additional information, refer to [Camshaft Front Seal \(12.13.44\)](#) (Section 303-01)
3. Remove the brake vacuum pump. For additional information, refer to [Brake Vacuum Pump - 2.7L Diesel \(70.50.19\)](#) (Section 206-07)
4. Remove the RH valve cover. For additional information, refer to [Valve Cover RH \(12.29.44\)](#) (Section 303-01)
5. Retain the secondary timing chain tensioner piston.
  - Reposition the secondary timing chain tensioner.
  - Install a 1.5 mm (0.060 in.) diameter pin into the secondary timing chain tensioner piston.



6.  **CAUTION: Evenly and progressively, release the camshaft bearing caps.**

Remove the camshaft bearing caps.

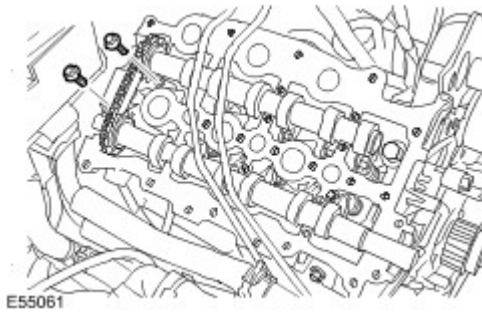
- Remove the 18 retaining bolts.



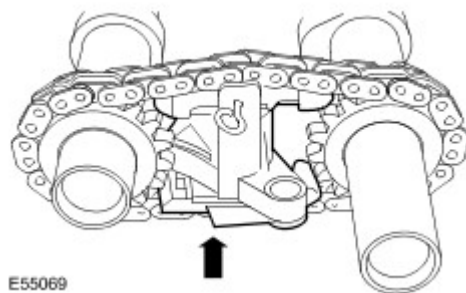
7. Remove the camshafts and secondary timing chain tensioner assembly.
  - Remove the two retaining bolts.



Release the RH secondary timing chain tensioner.



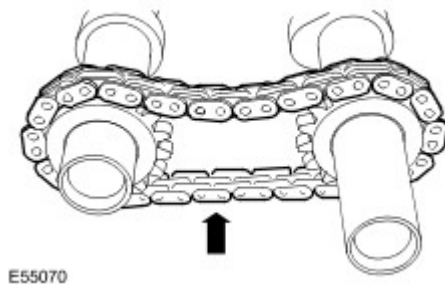
8. Remove the secondary timing chain tensioner.



9. Remove the RH camshafts.



Release the secondary timing chain from the RH camshafts.



## Installation

1. Install the secondary timing chain onto the camshafts.

2.

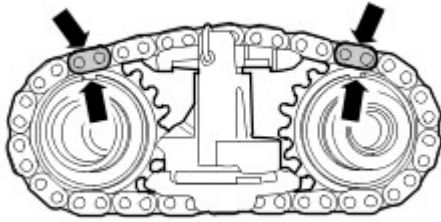


**CAUTION: Do not release the secondary timing chain tensioner locking pin until all of the camshaft bearing caps have been installed.**

Install the secondary timing chain tensioner.

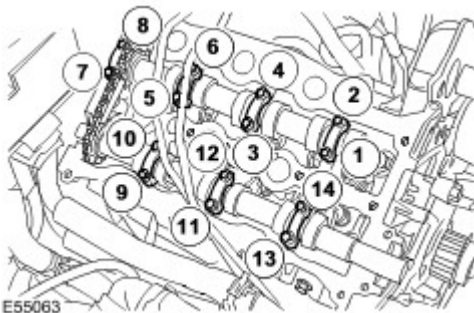


Align the marks on the camshafts with the marks on the secondary timing chain.



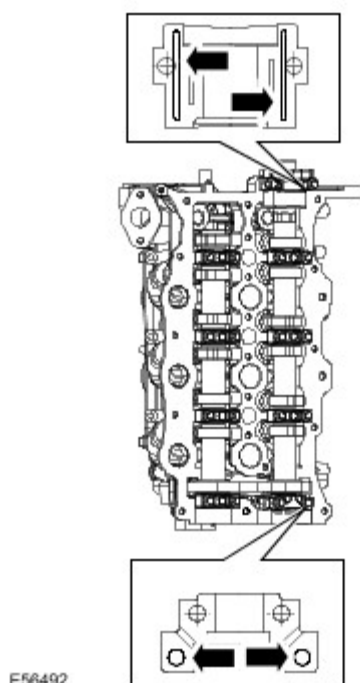
E55062

3. Install the camshafts and secondary timing chain tensioner assembly.
  - ▶ Lubricate the journals and camshaft lobes.
4. Attach the RH secondary timing chain tensioner.
  - ▶ Tighten the two retaining bolts to 10 Nm (7 lb.ft).
5. Install the camshaft bearing caps.
  - ▶ Do not install the two exhaust camshaft end bearing caps at this stage.
  - ▶ Tighten the bolts evenly in three stages in the sequence shown.
  - ▶ Stage one: Tighten to 1 Nm (1 lb.ft).
  - ▶ Stage two: Tighten to 5 Nm (4 lb.ft).
  - ▶ Stage three: Tighten to 10 Nm (7 lb.ft).

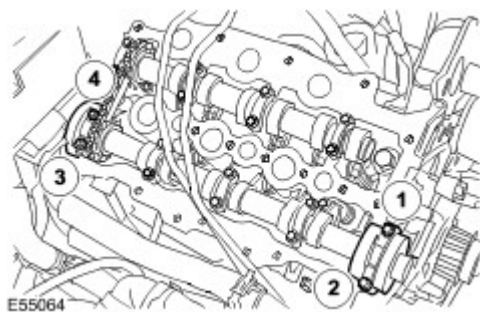


E55063

6. Apply sealant to the two exhaust camshaft end bearing caps at the positions shown. For additional information, refer to [Specifications](#) (Section 303-01)



- 7 . Install the camshaft bearing caps.
- Tighten the bolts evenly in three stages in the sequence shown.
  - Stage one: Tighten to 1 Nm (1 lb.ft).
  - Stage two: Tighten to 5 Nm (4 lb.ft).
  - Stage three: Tighten to 10 Nm (7 lb.ft).



- 8 . Release the secondary timing chain tensioner piston.
- Remove the locking pin.
- 9 . Install the RH valve cover. For additional information, refer to [Valve Cover RH \(12.29.44\)](#) (Section 303-01)
- 10 . Install the brake vacuum pump. For additional information, refer to [Brake Vacuum Pump - 2.7L Diesel \(70.50.19\)](#) (Section 206-07)
- 11 . Install the camshaft front seal. For additional information, refer to [Camshaft Front Seal \(12.13.44\)](#) (Section 303-01)

- 12 . Connect the battery ground cable. For additional information, refer to [Specifications](#) (Section 414-00)