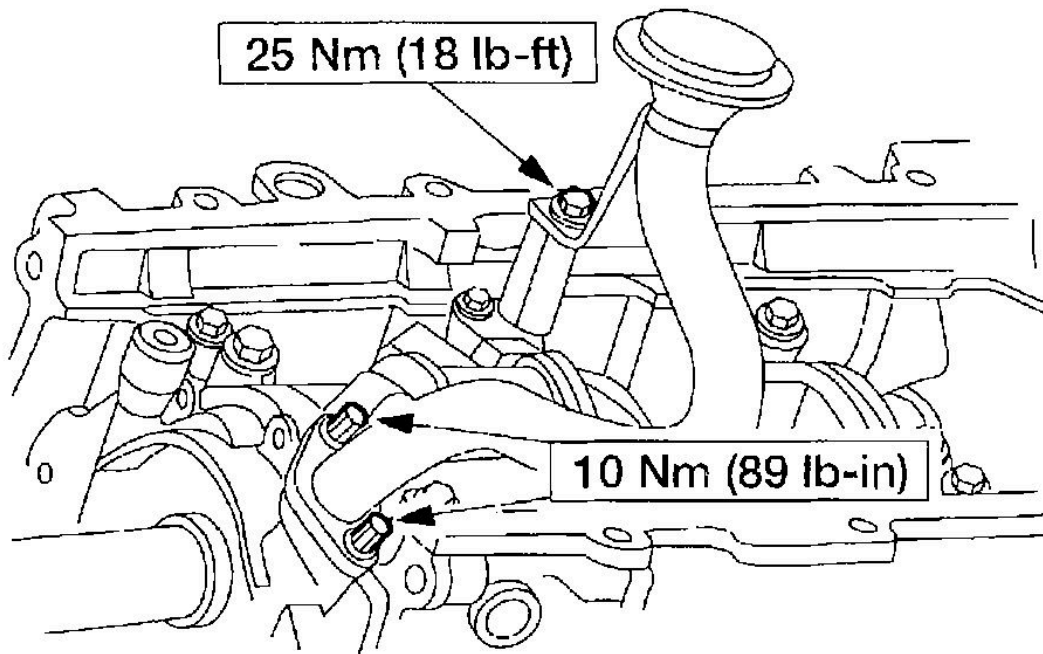


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Fig. 461: Installing Oil Pump Bolts
Courtesy of FORD MOTOR CO.

CAUTION: Make sure the oil pump screen cover and tube O-ring is in place and not damaged. A missing or damaged O-ring can cause foam in the lubrication system, low oil pressure and severe engine damage.

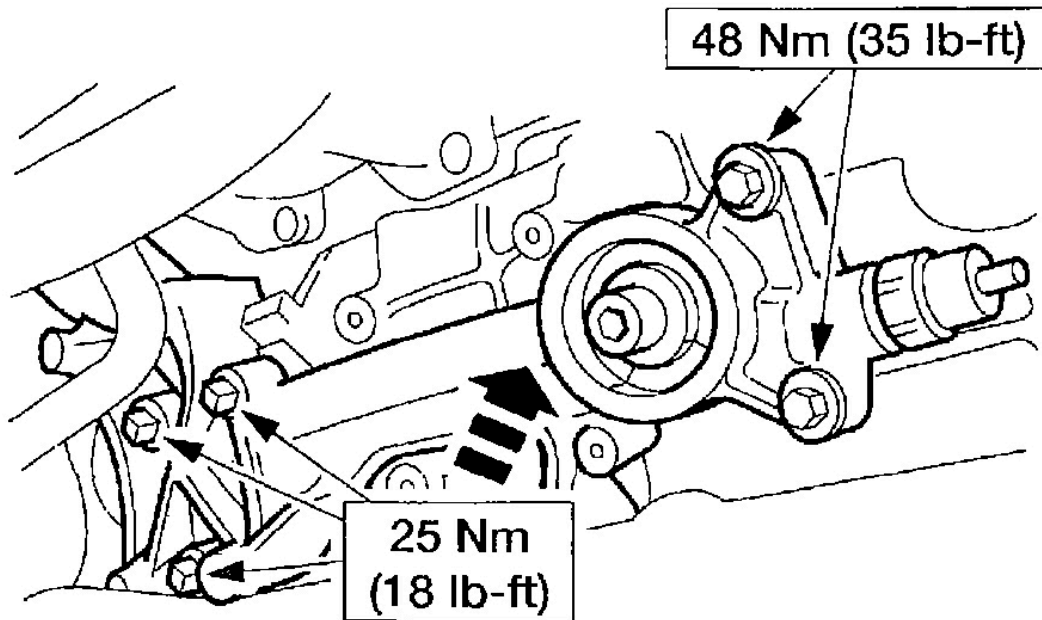
NOTE: Clean and inspect the mating surfaces and install a new O-ring. Lubricate with Ford Super Premium SAE 5W-20 Motor Oil XO-5W20-QSP or equivalent meeting Ford specification WSS-M2C153-H.



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Fig. 462: Installing Oil Pump Screen Cover And Tube Bolts
Courtesy of FORD MOTOR CO.

27. Install oil pump screen cover and tube and install the bolts for the oil pump screen and cover.
28. Install the oil filter adapter and new O-rings, and install the bolts.

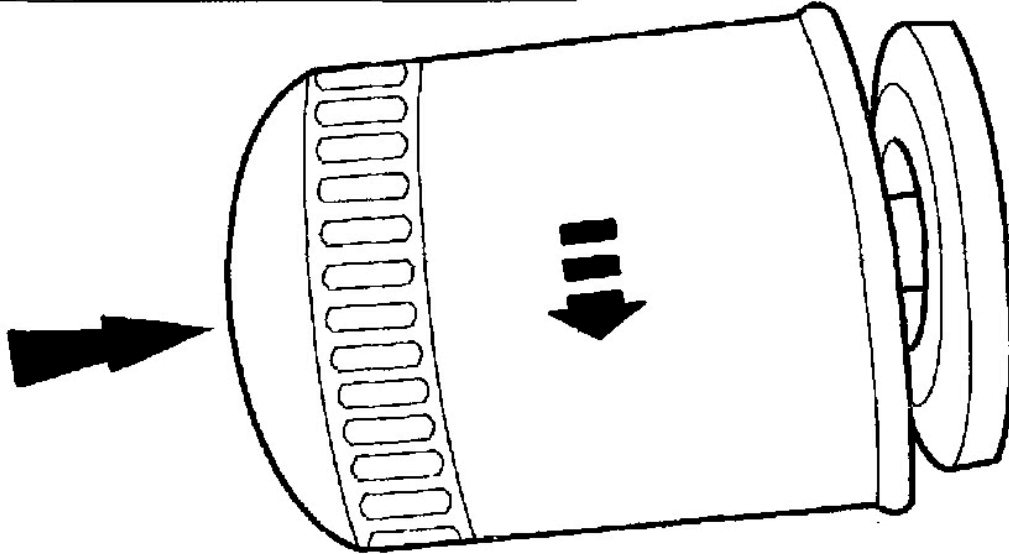


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Fig. 463: Installing Oil Filter Adapter
Courtesy of FORD MOTOR CO.

29. Lubricate the threads and gasket with oil and install the oil bypass filter.

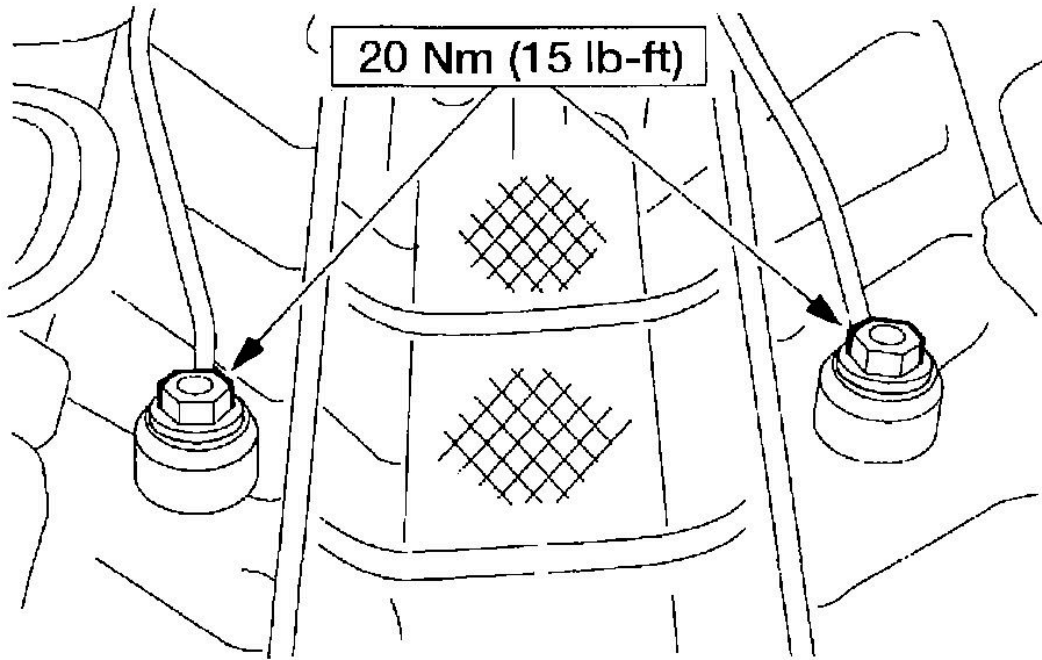
14-17 Nm (11-12 lb/ft)



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Fig. 464: Installing Oil Bypass Filter
Courtesy of FORD MOTOR CO.

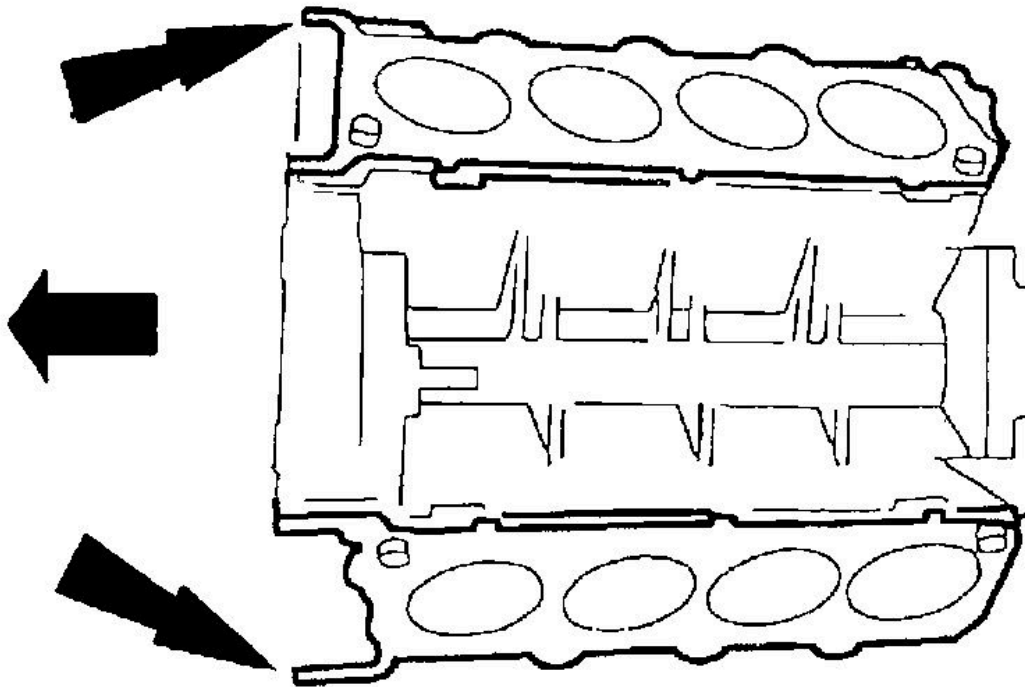
30. Install the knock sensors and tighten the bolts.



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Fig. 465: Installing Knock Sensors
Courtesy of FORD MOTOR CO.

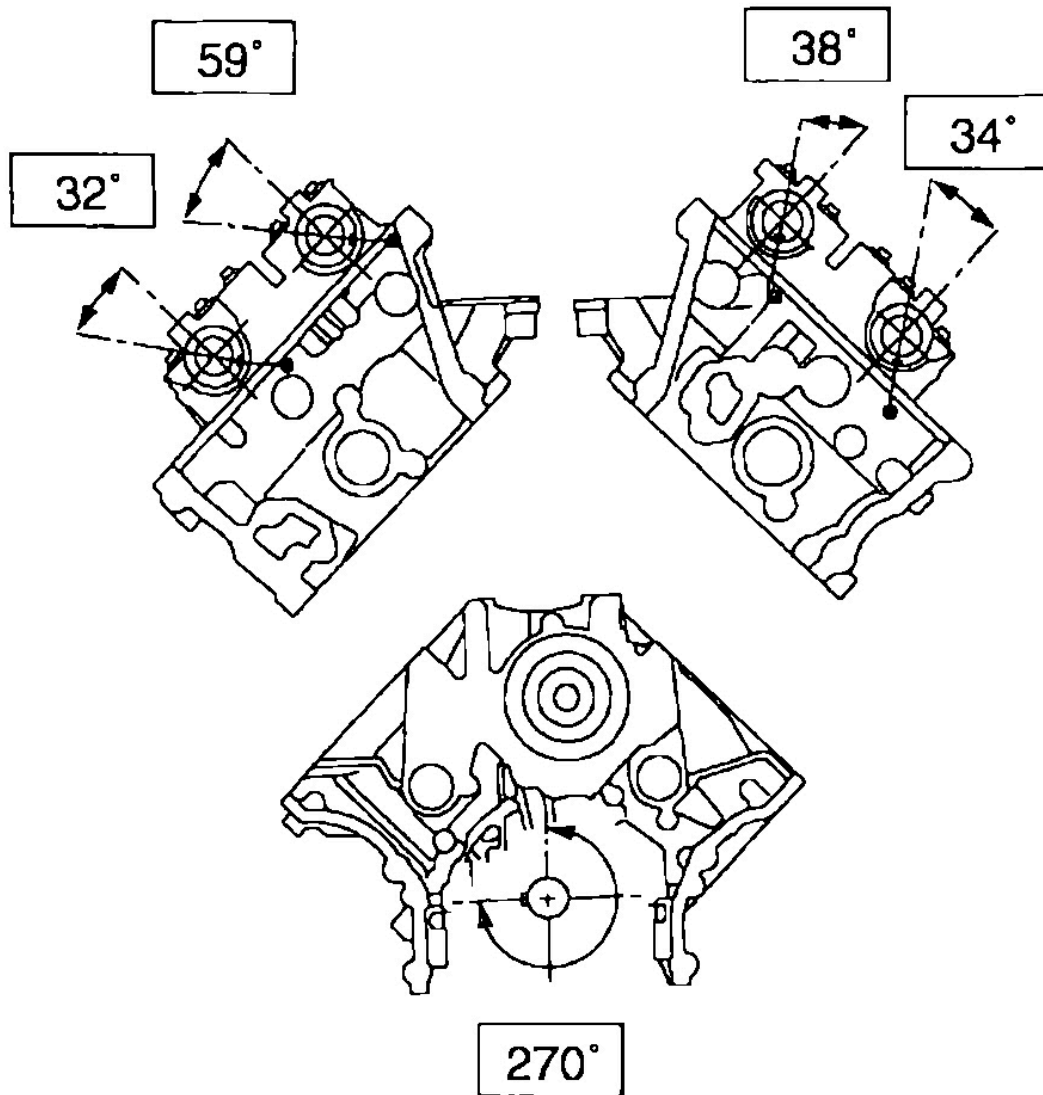
31. Install the cylinder head gaskets.



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Fig. 466: Installing Cylinder Head Gaskets
Courtesy of FORD MOTOR CO.

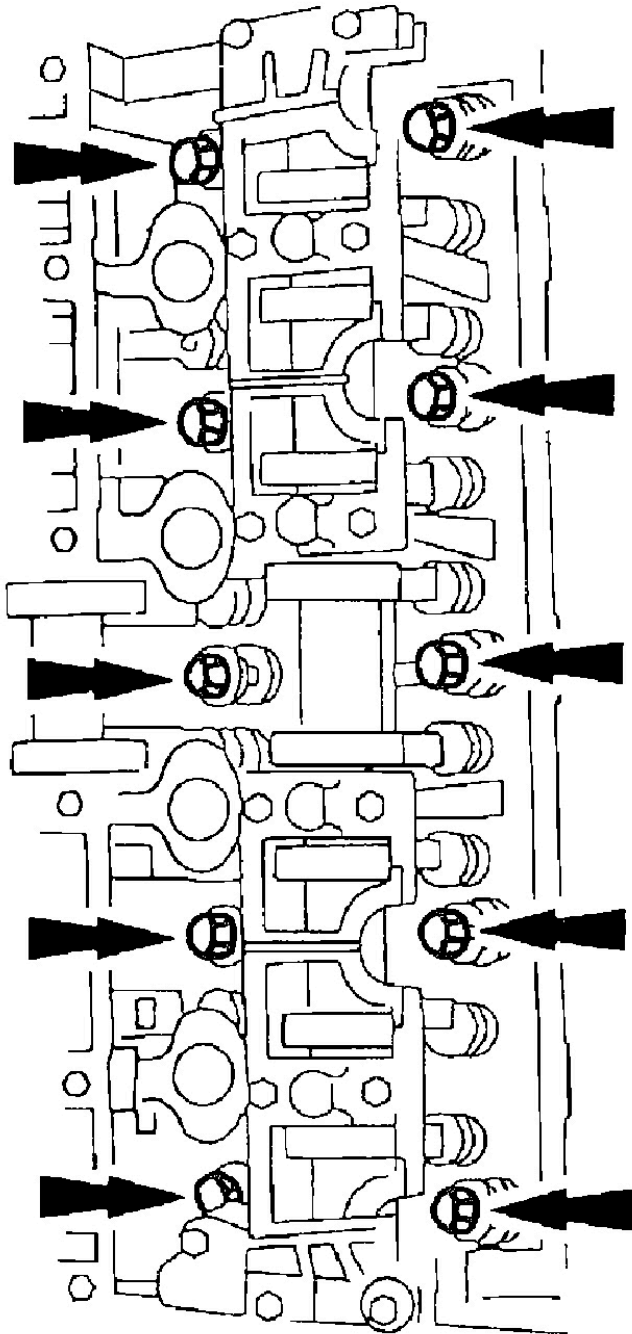
CAUTION: Make sure the crankshaft and the camshafts are positioned correctly to prevent piston crown and valve damage.



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Fig. 467: Positioning Crankshaft And Camshafts
Courtesy of FORD MOTOR CO.

32. Position the crankshaft and the camshafts as shown.
33. Install the LH and the RH cylinder head. Loosely install new bolts.

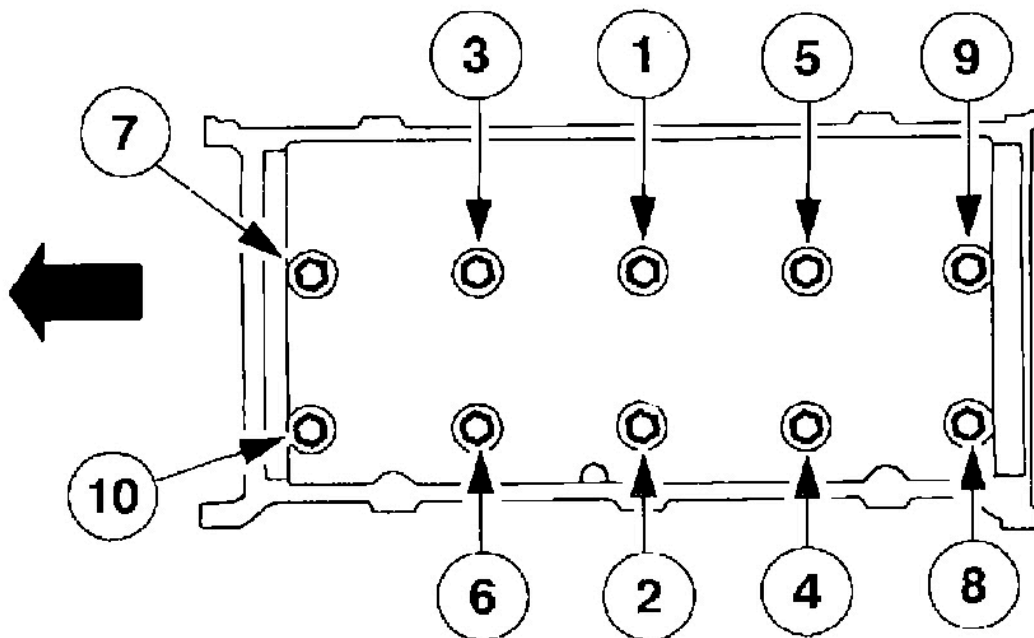


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Fig. 468: Installing Cylinder Head Bolts
Courtesy of FORD MOTOR CO.

34. Tighten the RH bolts in six stages in the sequence shown.

- Stage 1: Tighten to 40 Nm (30 lb-ft).
 - Stage 2: Tighten an additional 85-95 degrees.
 - Stage 3: Loosen the bolts a minimum of one full turn.
 - Stage 4: Tighten to 40 Nm (30 lb-ft).
 - Stage 5: Tighten an additional 85-95 degrees.
 - Stage 6: Tighten an additional 85-95 degrees.
35. Tighten the LH bolts in six stages in the sequence shown.
- Stage 1: Tighten to 40 Nm (30 lb-ft).
 - Stage 2: Tighten an additional 85-95 degrees.
 - Stage 3: Loosen the bolts a minimum of one full turn.
 - Stage 4: Tighten to 40 Nm (30 lb-ft).
 - Stage 5: Tighten an additional 85-95 degrees.
 - Stage 6: Tighten an additional 85-95 degrees.

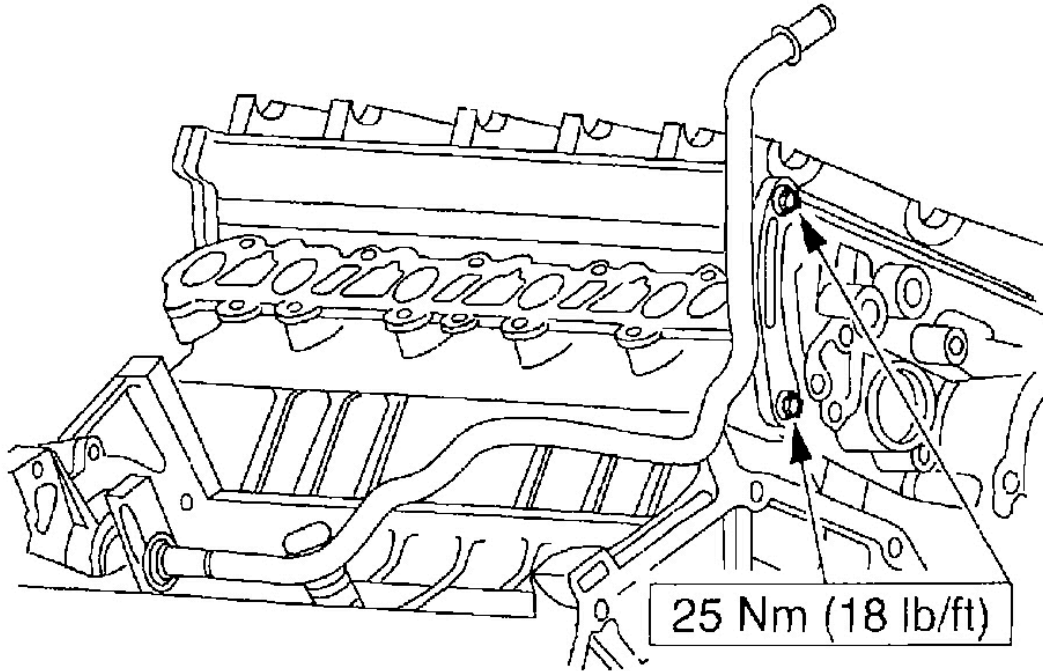


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Fig. 469: Head Bolts Tightening sequence
 Courtesy of FORD MOTOR CO.

36. Install the water bypass tube.
- Install the water bypass tube.

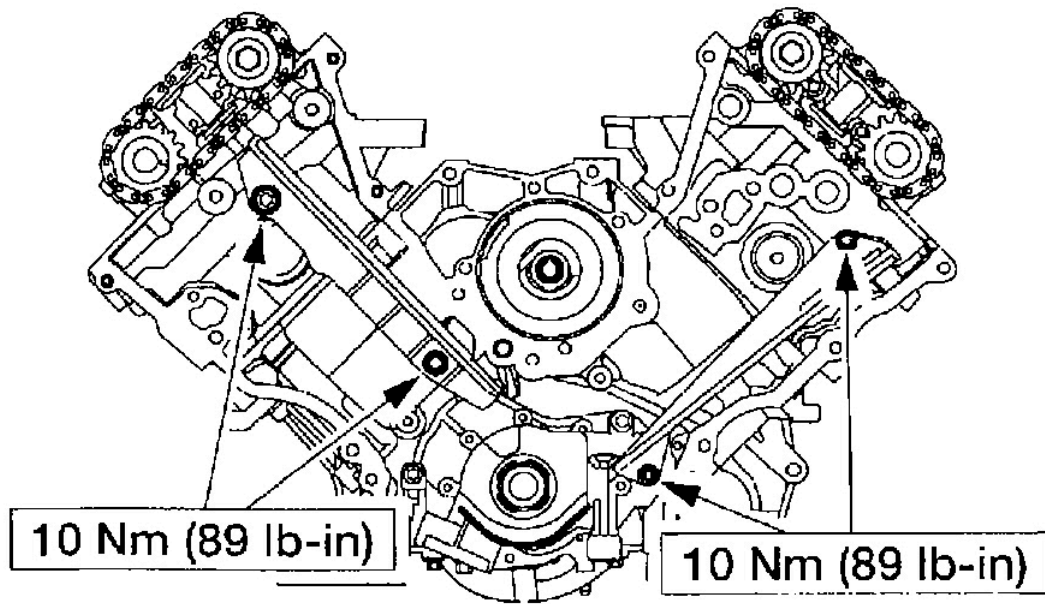
- Install the bolts.



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Fig. 470: Installing Water Bypass Tube
Courtesy of FORD MOTOR CO.

37. Install the RH and the LH timing chain guide.



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Fig. 471: Installing Right & Left Timing Chain Guide
Courtesy of FORD MOTOR CO.

CAUTION: Timing chain procedures must be followed exactly or damage to valves and pistons will result.