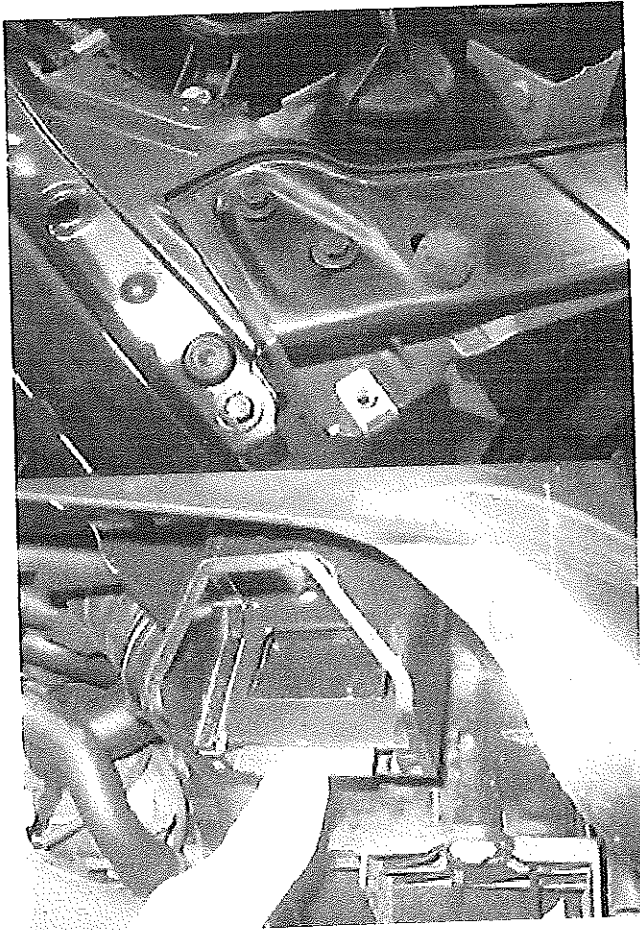
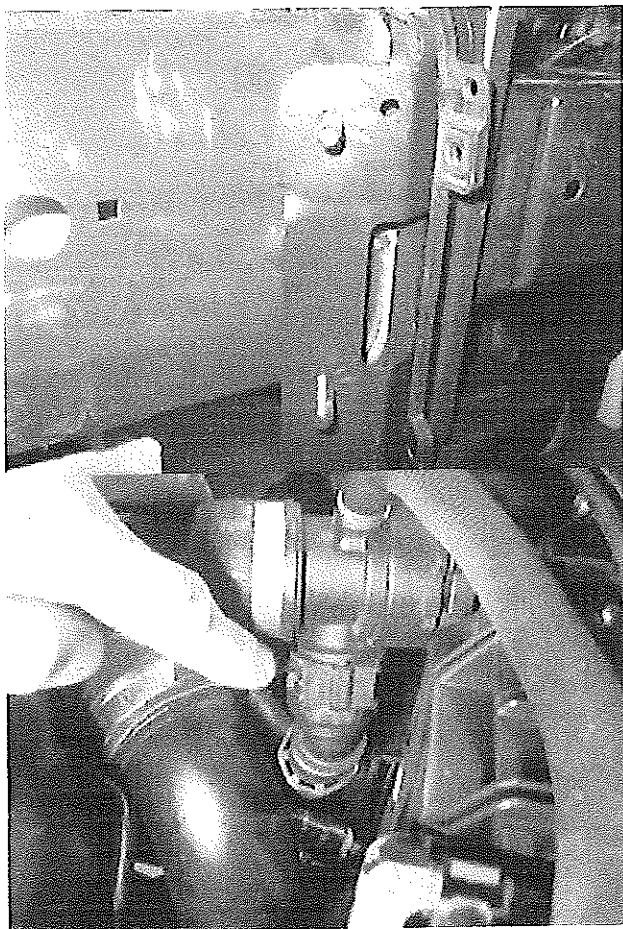


1. Remove both front wheels.
2. Remove front section of wheel arch covers on the left and the right side (right side front arch cover should be discarded).
3. Remove front bumper cover trim (RA 51 11 156).
4. Remove body undercover.
5. Remove both headlights (RA 63 12 001/002).
6. Remove eight M10 hex nuts securing bumper support to the body frame.
7. In engine compartment, remove an air intake hose between air box and the radiator housing.



8. Remove four M6 hex bolts between front fenders and the upper radiator carrier.
9. Release left & right lower radiator support brackets by pressing the locking tabs (as shown on the illustration).
10. Remove and discard the right side brake air duct (which is attached to the bumper frame).
11. With the help of another technician, pull the complete cooling unit forward (approximately 1 inch), until you can clear four M10 frame studs on the right side.
12. Remove and discard the original lower radiator bracket located between the frame and the bumper support.



13. In its place, install a new bracket P/N 51 64 7 154 546, which has an oil cooler mounting plate with studs (as shown on the illustration).

14. Reinstall eight M10 bumper support hex nuts, four upper radiator carrier M6 hex bolts, and both lower radiator bushings/supports.

15. From the engine compartment, remove the microfilter housings (RA 64 31 081/092), and the air filter housing (RA 13 71 000).

16. Release a quick T-connector at the upper radiator hose (pointed at the illustration). Drain and collect coolant from the upper hose.

17. Release seven M7 hex nuts/bolts securing intake manifold to the cylinder head (when reinstalling, tightening torque: 15 Nm).

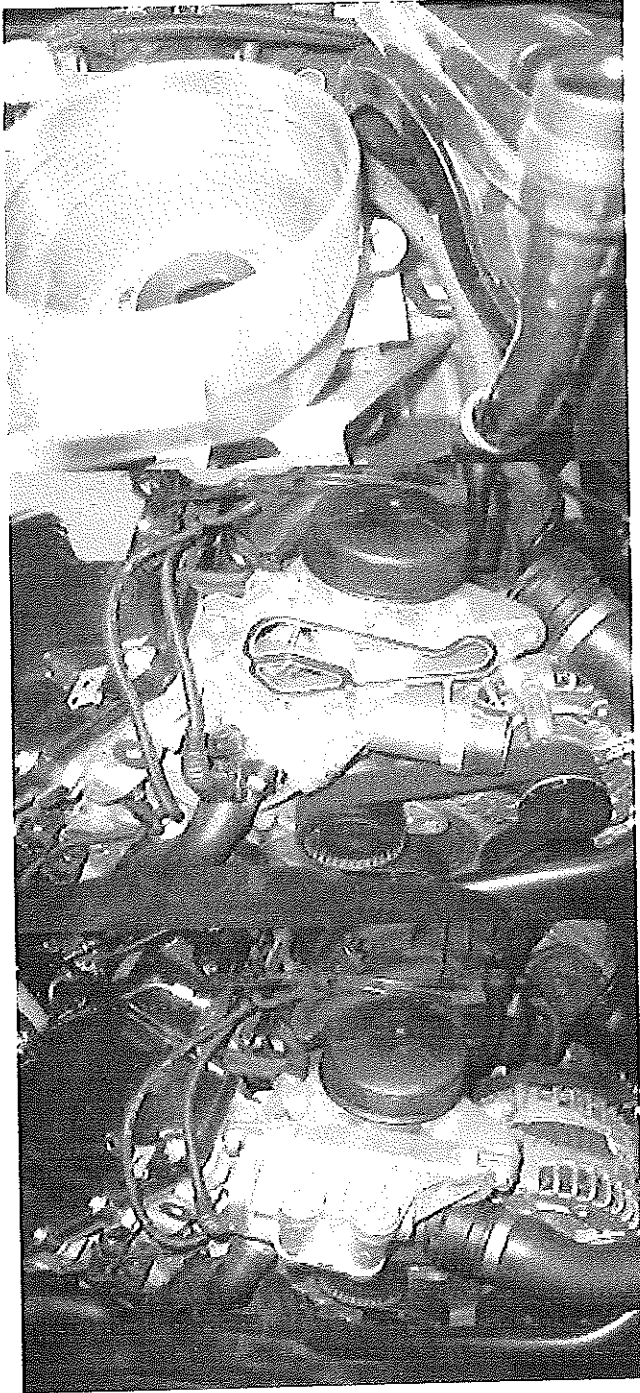


18. Release a clip and remove an air intake pipe from EDK throttle.

19. Using a clean shop rag cover and protect alternator belt from any possible oil spill.

20. Remove plastic oil filter cover and oil filter from the oil housing. Carefully clean any remaining oil from the bottom of oil filter housing.

21. Remove and discard three M8 torx bolts securing oil filter housing to the



cylinder head.

Note:

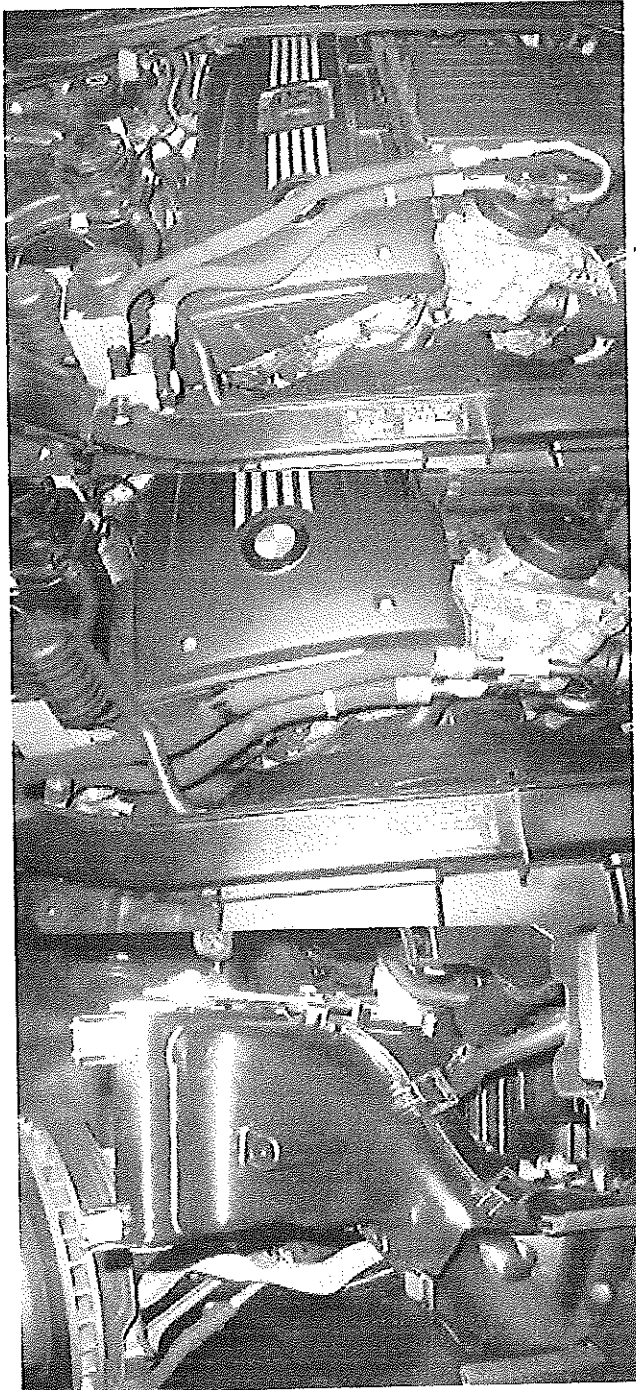
Slightly lift (do not completely remove) an intake manifold in order to remove the M8x42 hex bolt behind the filter housing.

22. Install new oil filter housing P/N 11 42 7 548 032 using new M8 torx bolts: P/N 11 42 7 540 759; P/N 11 42 7 540 763; P/N 11 42 7 540 758 (tightening torque 22 Nm).

23. Install oil cooler thermostat housing P/N 11 42 7 564 892, attached to the oil filter housing, using three M8x25 torx bolts P/N 11 42 7 542 983 (tightening torque 22 Nm).

24. Place 4 O-rings P/N 17 22 2 245 358 on inlet and outlet oil cooler houses P/N 17 22 7 567 207 and P/N 17 22 7 567 208.

25. Install hoses (assembled as shown) into the oil filter/thermostat housing using hex bolt M8x28 P/N 17 22 7 555 715 (tightening torque 20 Nm). The other end of hose assembly position downwards



(close to oil cooler bracket support).

26. Place two clips P/N 17 12 7 563 858 on the hoses to protect them from rubbing against each other.

27. Attach cooler air duct P/N 51 71 7 162 272 (P/N 51 71 7 161 434 for E92 vehicles) to the engine oil cooler P/N 17 22 7 521 376 using three sheet metal screws P/N 07 11 9 901 299.

28. Install oil cooler holder P/N 17 21 7 540 030 into the appropriate openings of the body frame.

29. Place oil cooler assembly (as shown on the illustration) on the frame bracket studs. Secure it with two M8 hex nuts P/N 07 14 7 144 953.

30. Secure oil cooler bracket (on the left side of the cooler) to the frame holder with

M6x18 hex bolt P/N 07 11 9 903 995.

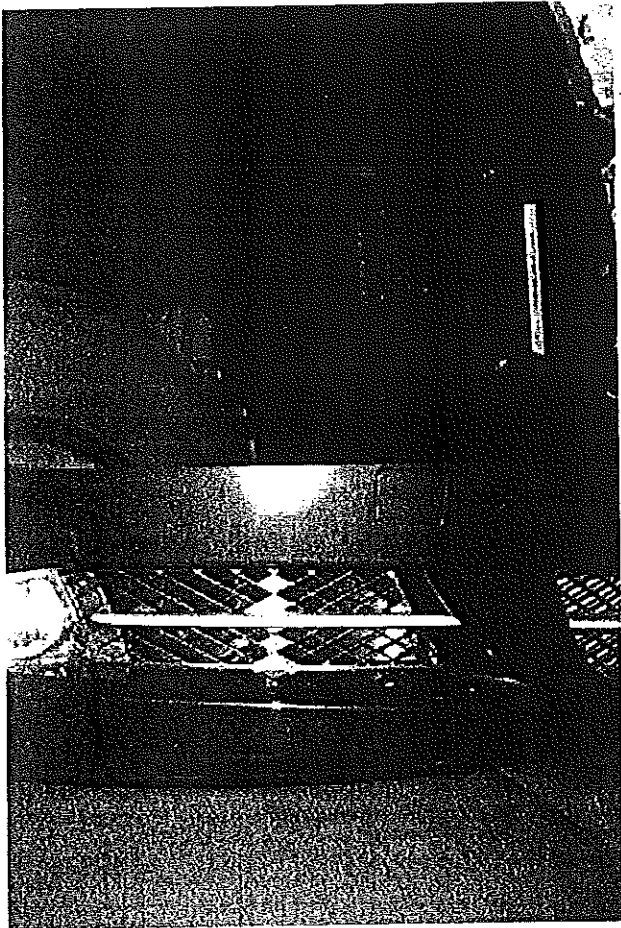


31. Install inlet and outlet hoses to the cooler assembly using hex bolt M8x28 P/N 17 22 7 555 715 (tightening torque 20 Nm).

32. Install new brake air duct P/N 51 74 7 160 610 (P/N 51 71 7 161 438 for E92 vehicle) between bumper support frame and air cooler air duct (as shown on the illustration, on the right side).

33. Install new front right wheel arch panel P/N 51 71 7 162 276.

34. Install front oil cooler air duct cover P/N 51 71 7 161 436 to a wheel arch



housing using three metal sheet screws
P/N 07 11 9 901 299.

35. From the bumper cover remove and discard right side partially closed grid with its trim.

36. Install fully open right grid P/N 51 11 7 134 080 with trim P/N 51 11 7 181 358. On the E92 vehicle use open grid P/N 51 11 7 187 338.

37. Reinstall all previously removed components.

38. Top-off coolant level with previously drained fluid.

39. Add one quart of BMW 5W-30 engine oil P/N 07 51 0 017 866.

40. Warm-up engine on idle and perform a visual inspection to detect any possible coolant/oil leaks. Test drive vehicle and perform a dynamic oil level measurement. Top-off oil level if needed.

WARRANTY INFORMATION

NOT covered under the terms of the BMW New Vehicle Limited Warranty.

Labor Allowance:

N54 engine oil cooler retrofit

40 FRU