

**Haynes**
shows you how

BMW 3-Series 320i & 320xi (12-14), 325i, 325xi, 330i & 330xi (06) & 328i & 328xi (07-14) Haynes Online Manual

7 Engine - removal and installation

Warning:

Gasoline is extremely flammable, so take extra precautions when you work on any part of the fuel system. Don't smoke or allow open flames or bare light bulbs near the work area, and don't work in a garage where a gas-type appliance (such as a water heater or clothes dryer) is present. Since gasoline is carcinogenic, wear fuel-resistant gloves when there's a possibility of being exposed to fuel, and, if you spill any fuel on your skin, rinse it off immediately with soap and water. Mop up any spills immediately and do not store fuel-soaked rags where they could ignite. The fuel system is under constant pressure, so, if any fuel lines are to be disconnected, the fuel pressure in the system must be relieved first (see Chapter 4 for more information). When you perform any kind of work on the fuel system, wear safety glasses and have a Class B type fire extinguisher on hand.

Warning:

The engine must be completely cool before beginning this procedure.

Note:

This is an involved operation. Read through the procedure thoroughly before starting work, and ensure that adequate lifting tackle and jacking/support equipment is available. Make notes during disassembly to ensure that all wiring/hoses and brackets are correctly repositioned and routed during reassembly.

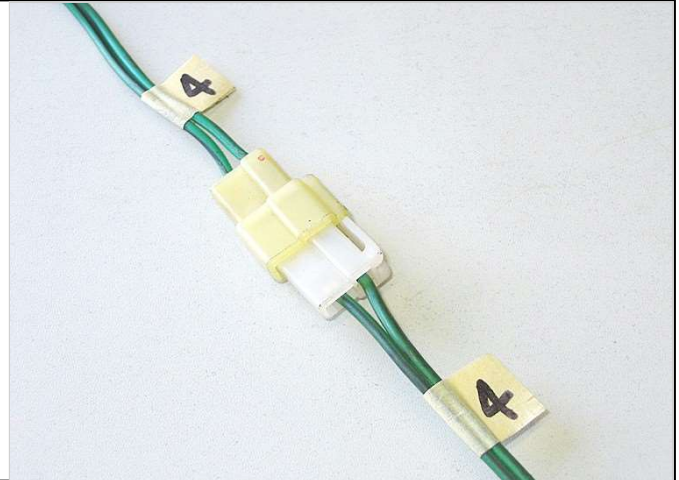
Removal

- 1 Remove the hood (see [Chapter 11](#)).
- 2 Depressurize the fuel system (see [Chapter 4](#)), then disconnect the battery negative cable (see [Chapter 5](#)).
- 3 Drain the cooling system (see [Chapter 1](#)).
- 4 Drain the engine oil (see [Chapter 1](#)).
- 5 Remove the transmission (see Chapter [7A](#) or [7B](#)).

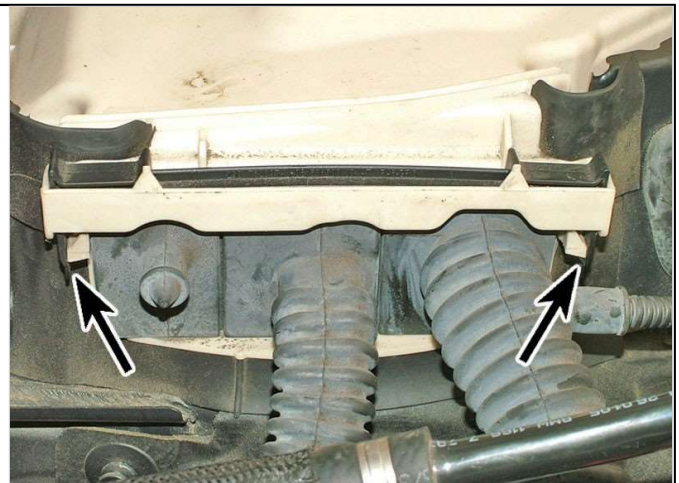
6 Remove the drivebelt (see [Chapter 1](#)), then unbolt the air conditioning compressor from the engine, release the pipes from the retaining clips, and support the compressor clear of the working area (see [Chapter 3](#)). **Warning:** *Do not disconnect the refrigerant lines refer to [Chapter 3](#) for precautions to be taken.*

7 Make a note of their locations, then disconnect the engine wiring harness connectors from the electric box (see illustrations) .

7.7a Label both ends of each wire and hose before disconnecting them



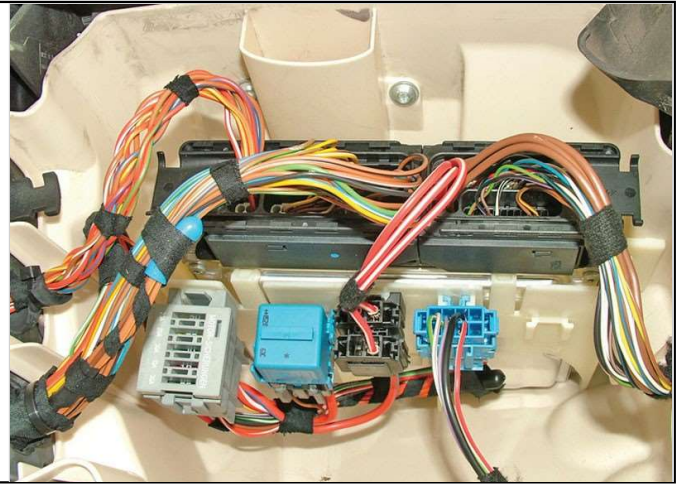
7.7b Press out the retaining clips and pull up the black plastic locking catch at each end . . .



7.7c . . . then slide the front and rear locking clip to the unlock position



7.7d Disconnect the engine wiring harness plugs



8 Remove the fuel rail and injectors (see [Chapter 4](#)).

9 Remove the air filter housing and intake manifold.

10 Remove the radiator, cooling fan and shroud (see [Chapter 3](#)).

11 Disconnect the various coolant hoses from the engine and remove the coolant pump (see [Chapter 3](#)).

12 Disconnect the exhaust system and, on F-series chassis models, remove the catalytic converter (see [Chapter 6](#)).

13 Unbolt the power steering pump and move it to one side - there's no need to disconnect the fluid hoses (see [Chapter 10](#)).

14 Unless a hoist is available which is capable of lifting the engine out over the front of the vehicle with the vehicle raised, it will now be necessary to remove the jackstands and lower the vehicle to the ground. Ensure that the engine is adequately supported during the lowering procedure.

Note:

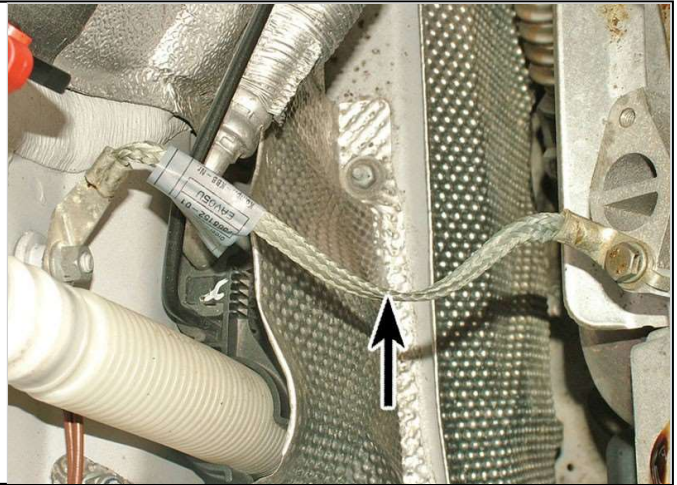
On the F-series chassis, the manufacturer recommends removing the transmission to allow for easier removal and installation of the engine (see Chapter [7A](#) or [7B](#)).

15 Unbolt the ground strap(s) from the engine mounting bracket(s), and from the cylinder head to the right-hand inner fender (where applicable) (see [illustrations](#)) .

7.15a Disconnect the ground strap from the mounting to the body . . .



7.15b . . . and from the cylinder head



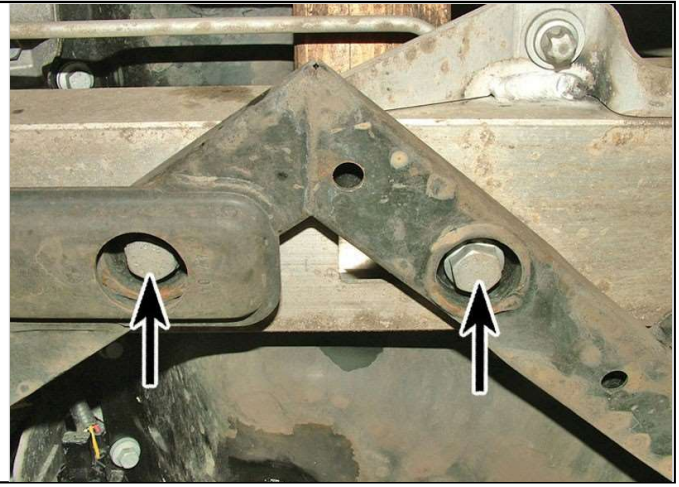
16 Make a final check to ensure that all relevant hoses, pipes and wiring have been disconnected from the engine and moved clear to allow the engine to be lifted out.

17 Position the lifting tackle and hoist to support the engine from the lifting eye at the rear left-hand corner of the cylinder block. At the front left of the engine, just inboard of the oil filter, there is a threaded hole; install the towing hook (located in the tool kit in the trunk) into this hole and connect the other hoist chain to it.

18 Raise the hoist just enough to take the weight of the engine.

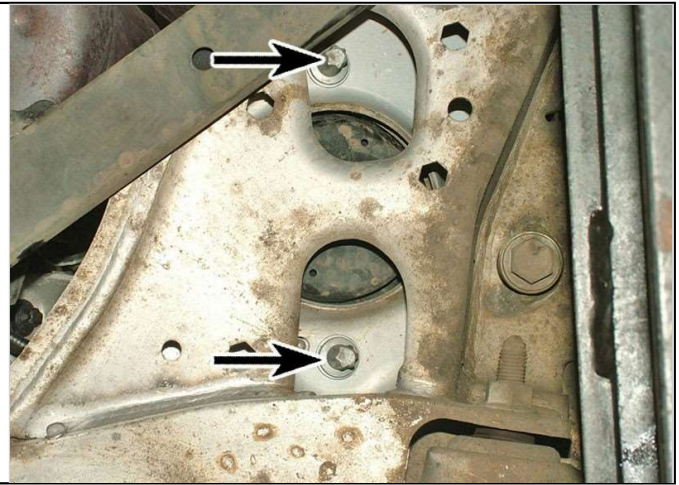
19 Remove the underbody protection panels to access the reinforcement frame bolts on each side. Unscrew the bolts and remove the frame (see illustration) . Discard the bolts; new ones must be installed.

7.19 Remove the reinforcement bolts (center bolts shown)



20 Unscrew the nuts securing the left-hand engine mounting bracket to the mounting rubber/block, unbolt the mounting bracket from the cylinder block, then the mounting from the subframe, and remove the mounting bracket. Remove the bolts securing the right-hand mounting/block to the subframe (see illustration) . Unclip any hoses/pipes from the support brackets.

7.20 Remove the bolts securing the mount to the subframe



21 With the aid of an assistant, raise the hoist, and maneuver the engine from the engine compartment. Access is limited – take care not to damage any wiring, hoses, etc, as the engine is removed.

Installation

22 Installation is the reverse of removal, noting the following points:

- A. Tighten all fasteners to the specified torque where given.
- B. Ensure that all wiring, hoses and brackets are positioned and routed as noted before removal.
- C. Install the transmission as described in [Chapter 7A](#) or [7B](#) .
- D. On completion, refill the engine with oil, and refill the cooling system as described in [Chapter 1](#) .