

**Haynes**
shows you how

BMW 3-Series and Z4 (99-05) Includes 2006 325ci/330ci Coupe and Convertible models Haynes Online Manual.

6 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:

Take instant photos or sketch the locations of components and brackets to help with reassembly

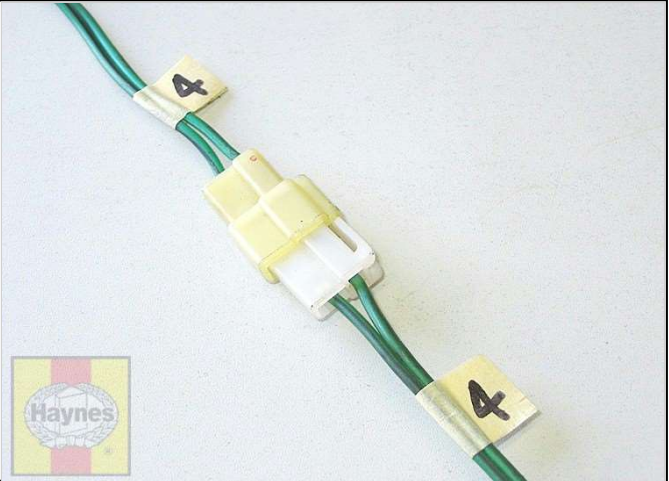
Removal

- 1 Relieve the fuel system pressure (see [Chapter 4](#)).
- 2 Disconnect the cable from the negative terminal of the battery (see [Chapter 5, Section 1](#)).
- 3 Remove the air filter housing and air intake duct (see [Chapter 4](#)).
- 4 Remove the engine cover (see [Chapter 2A](#)).
- 5 Remove the hood (see [Chapter 11](#)) or open it up all the way into the service position.
- 6 Remove the intake manifold (see [Chapter 4](#)).

7 Working at the engine compartment fuse/ relay center, disconnect the engine harness connectors and position the harness over the engine. If necessary, tape the harness looms together to prevent them from interfering with other components during engine removal.

8 Label and disconnect all vacuum hoses and any other wires from the engine (that aren't connected to the main harnesses that were disconnected in the previous Step) (see illustration) . Masking tape and/or a touch-up paint applicator work well for marking items .

6.8 Label both ends of each wire or vacuum connection before disconnecting them



9 Disconnect the accelerator cable, if equipped, from the throttle body (see [Chapter 4](#)).

10 Remove the secondary air injection (AIR) pump (see [Chapter 6](#)).

11 Disconnect the fuel lines at the engine (see [Chapter 4](#)) and plug the lines to prevent fuel loss.

12 Raise the vehicle and support it securely on jackstands.

13 Drain the cooling system and remove the drivebelt(s) (see [Chapter 1](#)).

14 Remove the power steering reservoir and power steering pump, without disconnecting the hoses, and tie it out of the way (see [Chapter 10](#)).

15 Remove the air conditioning compressor, without disconnecting the refrigerant lines, and tie it out of the way (see [Chapter 3](#)).

16 Remove the engine reinforcement plate/bar (see [Chapter 2A, Section 12](#)).

17 Remove the starter (see [Chapter 5](#)).

18 Support the rear of the engine from above with an engine support fixture, then remove the transmission (see [Chapter 7](#)).

19 Drain the engine oil (see [Chapter 1](#)).

20 Remove the transmission cooler lines and brackets from the engine (see [Chapter 7](#)).

21 Lower the vehicle.

22 Remove the radiator hoses and the recirculation hoses in the engine compartment (see [Chapter 3](#)).

23 Remove the fan shrouds and the engine cooling fan, the coolant reservoir and the radiator (see [Chapter 3](#)).

24 Support the engine from below with a floor jack and block of wood placed under the oil pan. Remove the engine support fixture, then support the engine from above with a hoist (see illustration) . Attach the hoist chain to the engine lifting bracket at the front of the engine and to the bracket or hole in the casting at the rear of the engine block. If no brackets are present, you will have to obtain some, or fasten the chains to some substantial part of the engine - one that is strong enough to take the weight, but in a location that will provide good balance. If you're attaching a chain to a stud on the engine, or are using a bolt passing through the chain and into a threaded hole, place a washer between the nut or bolt head and the chain and tighten the nut or bolt securely.

6.24 Attach the engine hoist cable or chain to the lifting brackets at the front and rear of the engine



25 Use the hoist to take the weight off the engine mounts, and remove the engine mount through-bolts or mount-to-mount bracket bolts (see [Chapter 2A](#)).

26 Check to make sure everything is disconnected, then slowly lift the engine out of the vehicle. The engine will probably need to be tilted and/or maneuvered as it's lifted out, so have an assistant handy. **Warning:** *Do not place any part of your body under the engine when it is supported only by a hoist or other lifting device.*

27 Remove the flywheel/driveplate and mount the engine on an engine stand or set the engine on the floor and support it so it doesn't tip over. Then disconnect the engine hoist.

Installation

28 Installation is the reverse of the removal procedure, noting the following points:

A. Check the engine mounts. If they're worn or damaged, replace them.

B. Change the engine oil filter and fill the crankcase with engine oil (see [Chapter 1](#)).

C. Refill the cooling system (see [Chapter 1](#)).

D. Add transmission fluid as needed (see [Chapter 1](#)).

E. Connect the cable to the negative terminal of the battery (see [Chapter 5, Section 1](#))

F. Run the engine and check for proper operation and leaks. Shut off the engine and recheck the fluid levels.

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