

**Haynes**
shows you how

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

10 Master cylinder - removal and installation

Warning:

Dust created by the brake system is harmful to your health. Never blow it out with compressed air and don't inhale any of it. An approved filtering mask should be worn when working on the brakes. Do not, under any circumstances, use petroleum-based solvents to clean brake parts. Use brake system cleaner only.

Caution:

Don't allow brake fluid to come into contact with the paint as it will damage the finish.

Removal

Warning:

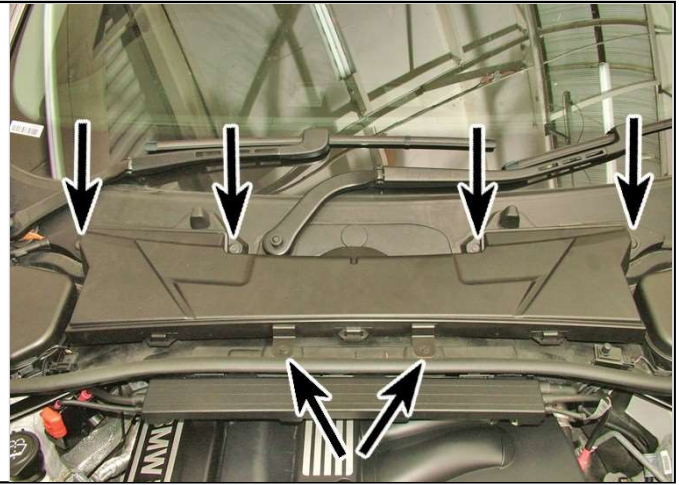
Although it is possible for the home mechanic to remove the master cylinder, if the brake lines are disconnected from the master cylinder, air will enter the high-pressure hydraulic system linking the master cylinder and (DSC) hydraulic unit. Bleeding of the high pressure system can only be safely carried out by a BMW dealer or specialist who has access to the service tester (see Section 2). Once the master cylinder has been installed, the vehicle must be towed to a suitably-equipped BMW dealer or specialist.

Note:

New master cylinder retaining nuts will be required on installation.

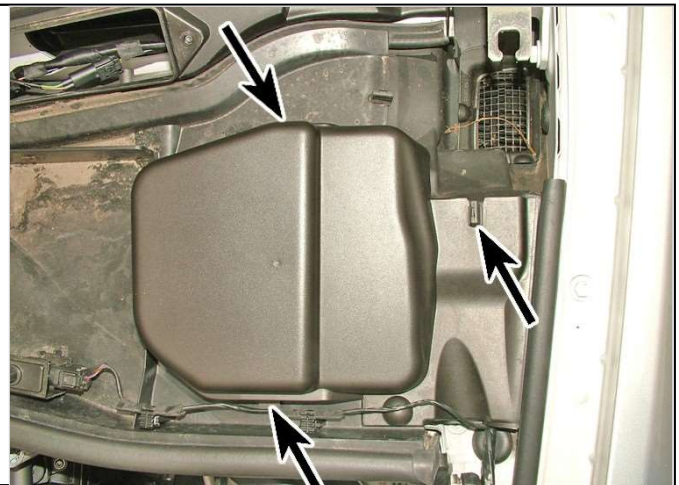
1 Working at the rear of the engine compartment, remove the cabin air filter cover mounting bolts and cover (see illustration) . Slide the filter from the housing. If necessary, refer to [Chapter 1](#) .

10.1 Remove the cabin air filter cover mounting bolts and cover



2 Release the catches and remove the left- and right-hand plastic covers from behind the strut tower on each side of the engine compartment. Unclip the wiring where applicable (see illustration) .

10.2 Release the clips and remove the plastic cover from each side behind the strut towers



3 Depress the clips and pull the cable guide forwards from the cabin air filter lower housing (see illustration) .

10.3 Depress the clips and slide the cable guide(s) forwards



4 Release the catch and remove the bolt on each side, then slide the cabin air filter lower housing forwards and maneuver it out (see illustrations) .

10.4a Rotate the temperature sensor counterclockwise and pull it from the bracket on the lower cabin air filter cover



10.4b Release the catch and remove the bolt on each side . . .



10.4c . . . then pull the lower cabin air filter cover forwards



5 Remove the master cylinder reservoir cap, and siphon the brake fluid from the reservoir. **Warning:** *Do not start the siphoning action by mouth! Use a siphoning kit available at most auto parts stores.* To empty the reservoir without siphoning the fluid, open any convenient bleeder screw in the system, and gently pump the brake pedal to expel the fluid through a plastic tube connected to the screw until the level of fluid drops below that of the reservoir (see [Section 2](#)). Disconnect the wiring connector(s) from the brake fluid reservoir (see illustration) .

10.5 Disconnect the wiring plug from the fluid level sensor



6 Disconnect the fluid hose(s) from the side of the reservoir, and plug the hoses to keep contaminants out of the brake system and to prevent losing any more brake fluid than is necessary.

7 Unclip and pull out the master cylinder reservoir locking pin.

8 Carefully ease the fluid reservoir out from the top of the master cylinder. Remove the reservoir seals, and plug the cylinder ports to prevent the entry of dirt or moisture.

9 Release the mounting fasteners and remove the driver's side trim panel above the pedals. Disconnect any electrical connectors as the panel is withdrawn.

10 Pry off the clip and remove the pin securing the pushrod to the brake pedal (see illustration 11.8) . The brake booster must be loosened so the master cylinder can be removed and installed.

11 Remove the brake booster retaining nuts; new ones must be installed during installation.

12 Clean the area around the brake line fittings on the lines from the master cylinder to the ABS modulator/hydraulic unit, and place rags beneath the line fittings to catch any spilled fluid. Make a note of the correct installed positions of the fittings, then unscrew the mounting nuts and carefully withdraw the lines. The brake lines must not be bent. Plug or tape over the line ends and master cylinder openings to keep contaminants out of the brake system and to prevent losing any more brake fluid than is necessary. Wash off any spilled fluid immediately with cold water.

13 Loosen and remove the nuts and washers securing the master cylinder to the brake booster, then withdraw the unit from the engine compartment. Remove the O-ring from the rear of the master cylinder. Discard the retaining nuts; new ones should be used on installation.

14 If the master cylinder is faulty, it must be replaced. Repair kits are not available from dealers, so the cylinder must be treated as a sealed unit. Replace the master cylinder O-ring seal and reservoir seals regardless of their apparent condition.

Installation

15 Remove all traces of dirt from the master cylinder and brake booster mating surfaces, and install a new O-ring in the groove on the master cylinder body.

16 Install the master cylinder to the brake booster, ensuring that the booster pushrod is centered as it enters the master cylinder bore. Install new master cylinder retaining nuts and washers, and tighten them to the specified torque.

17 Wipe clean the brake line fittings, then install them to the master cylinder/hydraulic unit ports and tighten them securely.

18 Press the new reservoir seals firmly into the master cylinder ports, then ease the reservoir into position. Install the reservoir locking pin securely. Reconnect the fluid hose(s) to the reservoir, and reconnect the electrical connector(s).

19 The remainder of installation is the reverse of removal, noting the following points:

- A. Tighten all fasteners to their specified torque where given.
- B. Have the vehicle towed to a dealer service department or other qualified repair shop to have the master cylinder and the remainder of the hydraulic system bled with the aid of a scan tool.
- C. Test the operation of the brake system carefully before placing the vehicle into normal service.

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