



Haynes
shows you how

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

5 Clutch hydraulic system - bleeding

Warning:

Brake fluid is poisonous; wash off immediately and thoroughly in the case of skin contact, and seek immediate medical advice if any fluid is swallowed or gets into the eyes.

Caution:

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

Note:

Pressure-bleeding equipment is recommended for bleeding the clutch hydraulic system.

General information

1 The hydraulic system should be bled of all air whenever any part of the system has been removed or if the fluid level has been allowed to fall so low that air has been drawn into the master cylinder. The procedure is similar to bleeding a brake system.

2 Only refill the system with new brake fluid (see *Recommended lubricants and fluids* in [Chapter 1](#)). **Caution:** *Do not re-use any of the fluid coming from the system during the bleeding operation or use fluid which has been inside an open container for an extended period of time.*

3 If the system has been filled with the incorrect fluid, the brake and clutch systems must be flushed completely with uncontaminated, correct fluid and new seals should be installed on the various components.

4 If fluid has been lost from the system, or air has entered because of a leak, ensure that the problem is corrected before proceeding.

5 To improve access, apply the parking brake, then raise the front of the vehicle, and support it securely on jackstands.

6 Remove the bolts and the splash shield (where equipped) for access to the transmission bellhousing.

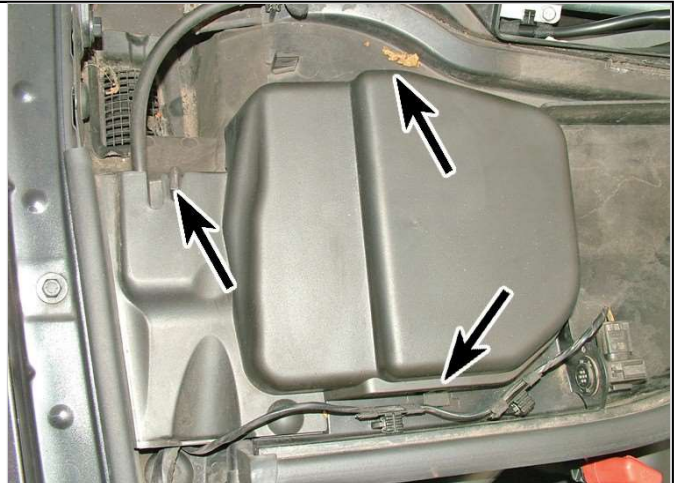
7 Check that the clutch system hoses and lines are secure, that the fittings are tight, and that the bleeder screw on the rear of the clutch release cylinder (mounted under the vehicle on the lower left-hand side of the transmission bellhousing) is closed. Clean any dirt from around the bleeder screw (see illustration) .

5.7 Clutch release cylinder bleeder screw location



8 Release the clips and remove the plastic cover over the reservoir (see illustration) . Unscrew the brake fluid reservoir cap, and top the fluid up to the MAX level line; loosely reinstall the cap - remember to maintain the fluid level at least above the MIN level line throughout the procedure, or there is a risk of further air entering the system. Note that the brake fluid reservoir feeds both the brake and clutch hydraulic systems.

5.8 Release the clips and remove the plastic cover from the left side of the engine compartment



9 It is recommended that pressure- bleeding equipment is used to bleed the system. Alternatively, there is a number of one-man, do-it-yourself brake bleeding kits currently available at auto parts stores. These kits greatly simplify the bleeding operation, and also reduce the risk of expelled air and fluid being drawn back into the system. If such a kit is not available, the basic (two-person) method must be used.

10 If pressure- bleeding equipment or a one-man kit is to be used, prepare the vehicle as described previously, and follow the equipment/kit manufacturer's instructions, as the procedure may vary slightly according to the type being used.

11 Whichever method is used, the same basic process must be followed to ensure the removal of all air from the system.

Bleeding

Basic (two-person) method

12 You will need a clean glass jar, a length of plastic or rubber tubing which is a tight fit over the bleeder screw, and a box-end wrench to fit the screw. The help of an assistant will also be required.

13 Where applicable, remove the dust cap from the bleeder screw. Fit the wrench and tubing to the bleeder screw, place the other end of the tube in the jar, and pour in enough fluid to cover the end of the tube.

14 Ensure that the reservoir fluid level is maintained at least above the MIN level line throughout the procedure.

15 Have an assistant fully depress the clutch pedal and hold it in the depressed position.

16 While pedal pressure is maintained, loosen the bleeder screw (approximately one turn) and allow the compressed fluid and air to flow into the jar. Have your assistant maintain pedal pressure. When the flow stops, tighten the bleeder screw again, have your assistant release the pedal slowly, and recheck the reservoir fluid level.

17 Repeat Steps 15 and 16 until the fluid emerging from the bleeder screw is free from air bubbles.

18 When no more air bubbles appear, tighten the bleeder screw securely. Do not overtighten the bleeder screw.

19 Temporarily disconnect the bleed tube from the bleeder screw, and set the container of fluid aside.

20 Unscrew the two mounting nuts, and withdraw the release cylinder from the bellhousing, taking care not to strain the fluid hose.

21 Reconnect the bleed tube to the bleeder screw, and submerge the end of the tube in the container of fluid.

22 With the bleeder screw pointing vertically upwards, loosen the bleeder screw (approximately one turn), and slowly push the release cylinder pushrod into the cylinder until no more air bubbles appear in the fluid.

23 Hold the pushrod in position, then tighten the bleeder screw.

24 Slowly allow the pushrod to return to its rest position. Do not allow the pushrod to return quickly, as this will cause air to enter the release cylinder.

25 Remove the tube and wrench, and install the dust cap over the bleeder screw.

26 Install the release cylinder to the bellhousing, and tighten the securing nuts to the specified torque.

Using a one-way valve kit

27 These kits consist of a length of tubing, with a one-way valve attached to prevent expelled air and fluid being drawn back into the system; some kits include a translucent container, which can be positioned so that the air

bubbles can be more easily seen flowing from the end of the tube.

28 Connect the kit to the bleeder screw, then open the bleeder screw. Depress the clutch pedal with a smooth, steady stroke, and slowly release it; repeat this step until the expelled fluid is clear of air bubbles.

29 Remember to check the reservoir fluid level during the bleeding procedure; ensure that it is maintained at least above the MIN level mark at all times.

Using a pressure-bleeding kit

30 These kits are usually operated by the reservoir of pressurized air contained in a small chamber that can be metered. However, it will probably be necessary to reduce the pressure to a lower level than normal; refer to the instructions supplied with the pressure bleeder.

31 By connecting a pressurized, fluid-filled container to the fluid reservoir, bleeding can be carried out simply by opening the bleeder screw, and allowing the fluid to flow out until no more air bubbles can be seen in the expelled fluid.

32 This method provides an additional safeguard against air being drawn into the system during bleeding.

All methods

33 After bleeding, if it is suspected that air is still present in hydraulic system, remove the release cylinder (see [Section 4](#)). Without disconnecting the hydraulic lines, push the cylinder piston all the way in, and holding the cylinder so the bleeder screw is the highest point, bleed the system again. **Note:** *Make sure that the release cylinder piston does not extend during the bleeding procedure. If necessary, use a metal strip and two threaded bars to fabricate a tool to hold the piston in .*

34 When bleeding is complete and firm pedal feel is restored, wash off any spilled fluid. Check that the bleeder screw is tightened securely, and install the dust cap.

35 Check the fluid level in the reservoir, and top-off if necessary (see [Chapter 1](#)). Reinstall the plastic cover over the reservoir.

36 Discard any fluid that has been bled from the system; it can not be reused.

37 If the clutch feels at all spongy, air must still be present in the system, and further bleeding is required. If the system cannot be bled of all air after several attempts, it may be a sign of worn master or release cylinder seals.

38 Install the splash shield (where equipped) and lower the vehicle to the ground.