# 6 Clutch components - removal, inspection and installation

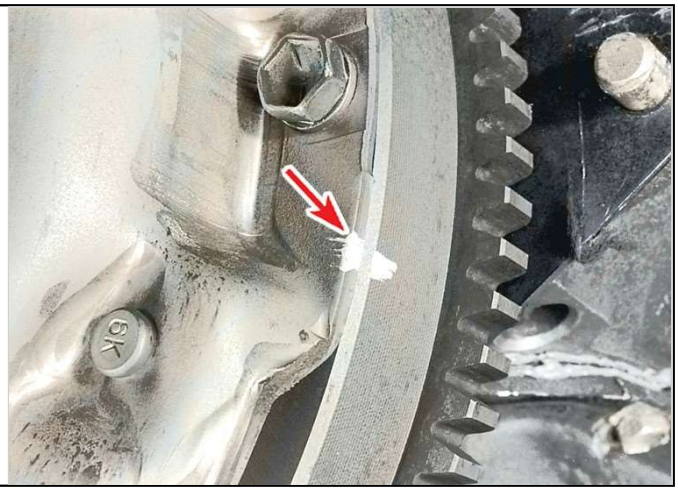
**Warning:**
Dust produced by clutch wear is hazardous to your health. DO NOT blow it out with compressed air and DO NOT inhale it. DO NOT use gasoline or petroleum-based solvents to remove the dust. Brake system cleaner should be used to flush the dust into a drain pan. After the clutch components are wiped clean with a rag, dispose of the contaminated rags and cleaner in a covered, marked container.

## Removal

1 Remove the transmission (see Chapter 7A ).

2 If the original clutch is to be reinstalled, make alignment marks between the clutch pressure plate and the flywheel, so that the clutch can be installed in its original position **(see illustration)** .

**6.2 Mark the relationship of the pressure plate to the flywheel if you are planning to reuse the pressure plate**



3 Progressively and evenly loosen the clutch cover/pressure plate assembly-to-flywheel bolts in a criss-cross pattern, then remove the bolts and washers, if equipped.

4 Withdraw the clutch pressure plate from the flywheel. Be prepared to catch the clutch friction disc (which may drop out of the pressure plate as it is withdrawn), and note which way the friction disc is installed - the two sides

of the disc are normally marked “Engine side” and “Transmission side.” The greater projecting side of the hub faces away from the flywheel.

## Inspection

5 With the clutch assembly removed, clean off all traces of dust using a dry cloth.

6 Inspect the lining on the clutch disc. BMW specifies a minimum friction material thickness of 1.0 mm above the heads of the rivets. Check for loose rivets, distortion, cracks, broken springs and other obvious damage **(see illustration)** . Ordinarily the clutch disc is replaced as a matter of course, so if in doubt about the condition, replace it with a new one. The disc must also be replaced if the lining thickness has worn down to, or just above, the level of the rivet heads. Check the machined surface and the diaphragm spring fingers of the pressure plate **(see illustration)** .

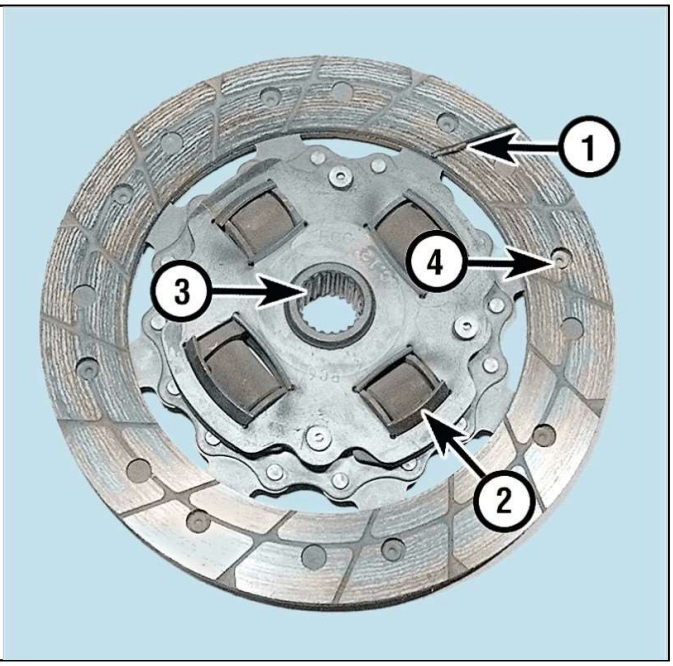
### 6.6a The clutch disc

1 Lining - this will wear down in use

2 Springs or dampers - check for cracking and deformation

3 Splined hub - the splines must not be worn and should slide smoothly on the transmission input shaft splines

4 Rivets - these secure the lining and will damage the flywheel or pressure plate if allowed to contact the surfaces




### 6.6b Replace the pressure plate if any of these conditions are noted


7 Inspect the flywheel for cracks, heat checking, score marks and other damage. If the imperfections are slight, a machine shop can resurface it to make it flat and smooth. Refer to Chapter 2A for the flywheel removal procedure. If the surface of the pressure plate is grooved or otherwise damaged, replace the pressure plate assembly. Also check for obvious damage, distortion, cracking, etc. **(see illustration)** . Light glazing can be removed with emery cloth or sandpaper. If a new pressure plate is indicated, new or factory rebuilt units are available.

**6.7 Examine the pressure plate friction surface for score marks, cracks and evidence of overheating (blue spots)**

8 The release bearing should be replaced along with the clutch disc (see Section 7 ).

9 Check the bearing in the end of the crankshaft. Make sure that it turns smoothly and quietly. If the transmission input shaft contact face on the bearing is worn or damaged, install a new bearing (see Chapter 2A ).

## Installation

10 If new clutch components are to be installed, ensure that all the anti-corrosion preservative coating is cleaned from the friction material on the disc and the contact surfaces of the pressure plate.

11 Carefully wipe the flywheel and pressure plate machined surfaces clean. It's important that no oil or grease is on these surfaces or the lining of the clutch disc. Handle these parts only with clean hands.

12 Position the disc on the flywheel, with the greater projecting side of the hub facing away from the flywheel (most friction discs will have an "Engine side" or "Transmission side" marking which should face the flywheel or transmission as applicable) **(see illustration)** . Using the proper BMW tool, or a suitable alternative tool available at your auto parts store, center the friction disc in the flywheel **(see illustration)** .

**6.12a The friction disc may be marked "Getriebeseite," meaning "transmission side"**

**6.12b Use a suitable tool to center the friction disc**


13 If the original pressure plate and cover is to be reinstalled, engage the legs of BMW tool 21 2 170 with the cover in the area of the adjusting springs. Screw down the knurled collar to lock the legs in place, then tighten down the spindle to compress the diaphragm spring. Using a screwdriver, reset the self-adjusting mechanism by pushing the adjustment ring thrust pieces fully counterclockwise, while loosening the special tool spindle only enough to allow the adjustment ring to move. With the adjustment ring reset, tighten down the special tool spindle to compress the spring fingers, while preventing the adjustment ring thrust pieces from moving by inserting metal spacers in the gap between the thrust pieces and the cover. Note that a special tool is available from BMW to reset the adjustment ring **(see illustrations).**

**6.13a Use factory tool 21 2 170 to compress the diaphragm spring**

**6.13b Push the adjustment ring thrust pieces fully counterclockwise . . .**

**6.13c . . . and insert metal spacers between the thrust pieces and the cover**

**6.13d A special factory tool is available to reset the adjustment ring thrust pieces**

14 Install the clutch cover assembly, aligning the marks on the flywheel and clutch pressure plate if reinstalling the old clutch. Ensure that the clutch pressure plate locates over the dowels on the flywheel **(see illustration)** . Insert the mounting bolts and washers, and tighten them to the specified torque.

**6.14 Ensure the cover locates over the flywheel dowel pins**

15 If a new pressure plate cover was installed, insert a 14 mm Allen key into the center of the diaphragm spring locking piece, turn it clockwise and remove it to release the spring.

16 If the original pressure plate cover was reinstalled, remove the spindle and knurled collar, then remove the compression tool from the cover. Pry out the metal spacers holding the adjustment ring thrust-pieces in place **(see illustration)** . **Caution:** *As the last spacer is withdrawn, the adjustment ring may spring into place. Make sure all fingers are clear of the area.*

**6.16 Keep your fingers away when removing the metal spacers**

17 If the BMW centering tool was used, remove the tool by screwing a 10 mm bolt into its end and pulling using a pair of pliers **(see illustration)** .

**6.17 Thread the bolt into the end of the centering tool and pull it out**

18 Install the transmission (see Chapter 7A ).