

**Haynes**  
shows you how**BMW 3-Series (92-98) & Z3 (96-98) Haynes Online Manual**

## 2 Clutch assembly - removal, inspection and installation

### Warning:

Dust created by clutch wear and deposited on the clutch components may contain asbestos, which is a health hazard. DO NOT blow it out with compressed air, or inhale any of it. DO NOT use gasoline (or petroleum-based solvents) to clean off the dust. Brake system cleaner should be used to flush the dust into a suitable receptacle. After the clutch components are wiped clean with rags, dispose of the contaminated rags and cleaner in a sealed, 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 cover and the flywheel, so that the clutch can be reinstalled in its original position.

3 Progressively unscrew the bolts securing the clutch cover to the flywheel, and where applicable recover the washers.

4 Withdraw the clutch cover from the flywheel (see illustration) . Be prepared to catch the clutch friction disc, which may drop out of the cover as it is withdrawn, and note which way the friction disc is installed - the two sides of the disc are normally marked "Engine side" and "Transmission side".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.

### 2.4 Removing the clutch assembly



## Inspection

5 With the clutch assembly removed, clean off all traces of dust using brake system cleaner. Although most friction discs now have asbestos-free linings, some do not; *asbestos dust is harmful, and must not be inhaled*.

6 Examine the linings of the friction disc for wear and loose rivets, and the disc for distortion, cracks, broken damping springs (where applicable) and worn splines. The surface of the friction linings may be highly glazed, but, as long as the friction material pattern can be clearly seen, this is satisfactory. If there is any sign of oil contamination, indicated by a continuous, or patchy, shiny black discoloration, the disc must be replaced. The source of the contamination must be traced and rectified before installing new clutch components; typically, a leaking crankshaft rear oil seal or transmission input shaft oil seal - or both - will be to blame (replacement procedures are given in the relevant Part of [Chapter 2](#), and [Chapter 7](#) Part A respectively). The disc must also be replaced if the lining thickness has worn down to, or just above, the level of the rivet heads. The manufacturer specifies a minimum friction material thickness (see Specifications) - on models with a conventional flywheel (and a friction disc with damping springs, see [Section 1](#)), the measurement should be made with the edge of the friction disc at the measurement point compressed in a vise.

7 Check the machined faces of the flywheel and pressure plate. If either is grooved, or heavily scored, replacement is necessary. The pressure plate must also be replaced if any cracks are apparent, or if the diaphragm spring is damaged or its pressure suspect.

8 With the clutch removed, it is advisable to check the condition of the release bearing (see [Section 3](#)).

9 Check the pilot 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 2C](#)).

## Installation

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

11 It is important to ensure that no oil or grease gets onto the friction disc linings, or the pressure plate and flywheel faces. It is advisable to install the clutch assembly with clean hands, and to wipe down the pressure plate and flywheel faces with a clean rag before assembly begins.

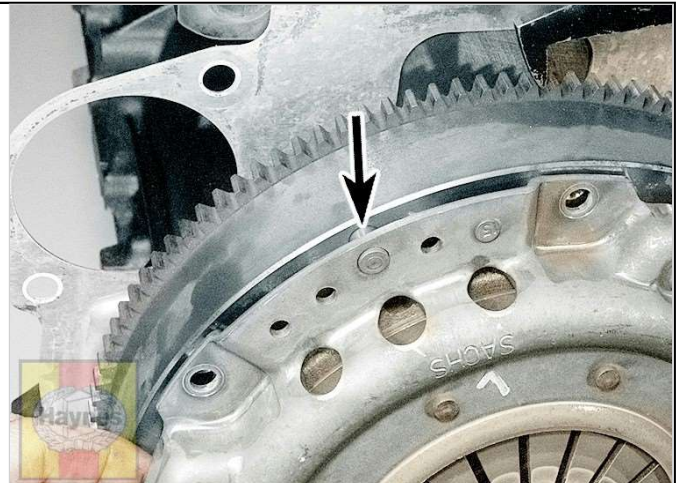
12 Apply a smear of moly-based grease to the splines of the friction disc hub, then position the disc on the flywheel, with the greater projecting side of the hub facing away from the flywheel (most friction discs will have an "Engine side" marking which should face the flywheel) (see [illustration](#)). Hold the friction disc against the flywheel while the cover/pressure plate assembly is guided into position.

**2.12 Install the clutch disc with the damper springs (or the greater projection) facing away from the flywheel**



13 Install the clutch cover assembly, where applicable aligning the marks on the flywheel and clutch cover. Ensure that the clutch cover locates over the dowels on the flywheel (see illustration) . Insert the securing bolts and washers, and tighten them finger-tight, so that the friction disc is gripped, but can still be moved.

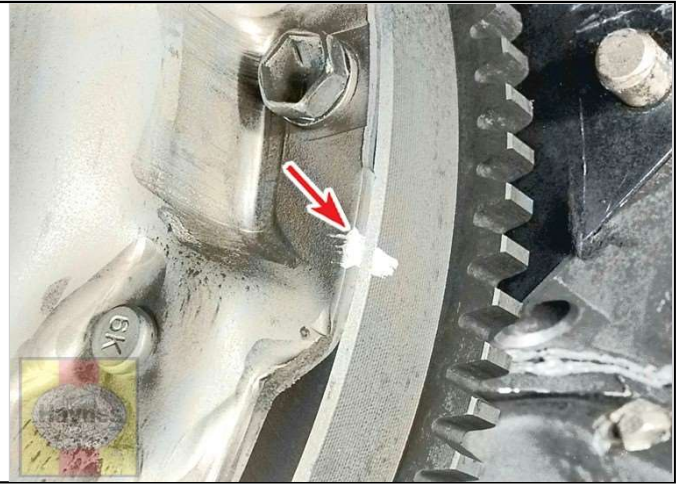
**2.13 Ensure that the clutch cover locates over the dowels (arrow) on the flywheel**



14 The friction disc must now be centralized, so that when the engine and transmission are mated, the transmission input shaft splines will pass through the splines in the friction disc hub.

15 Center the clutch disc by inserting a clutch alignment tool through the splined hub and into the pilot bearing in the crankshaft (see illustration) . Wiggle the tool up, down or side-to-side as needed to bottom the tool in the pilot bearing. Tighten the pressure plate-to-flywheel bolts a little at a time, working in a criss-cross pattern to prevent distorting the cover. After all of the bolts are snug, tighten them to the torque listed in [this Chapter's Specifications](#) . Remove the alignment tool.

### 2.15 Using a clutch alignment tool to center the friction disc



16 Install the transmission (see [Chapter 7A](#) ).

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