

BMW

320i
528i
633CSi
733i

DESCRIPTION

Clutch is dry single disc type using a diaphragm spring pressure plate. System is hydraulically operated by a clutch housing mounted slave cylinder and a firewall mounted master cylinder. Slave cylinder automatically adjusts for disc wear.

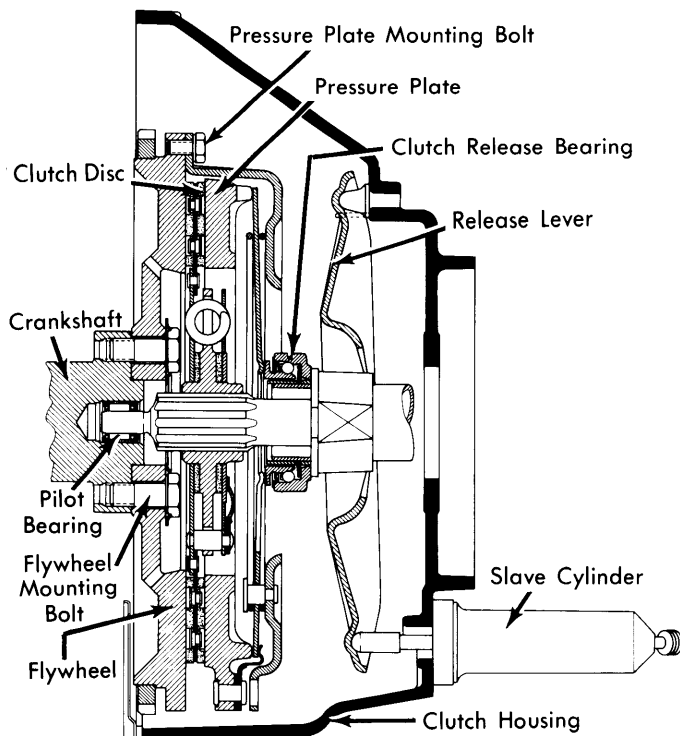


Fig. 1 Typical BMW Clutch Assembly

REMOVAL & INSTALLATION

CLUTCH ASSEMBLY

Removal (320i) – 1 Remove console and lift off circlip and washer from selector with transmission in reverse gear. Lift off selector rod, leaving gearshift lever attached to vehicle. Disconnect speedometer cable and housing from rear of transmission. Disconnect back-up light switch wires.

2 Remove exhaust pipe support bracket and disconnect exhaust pipe from manifold. Fit clamp tool (26 1 012) to propeller shaft coupling and remove bolts mounting propeller shaft to transmission. Remove heat shield and detach center support bearing. Bend propeller shaft down and pull it from centering journal. Place shaft out of way.

3 Detach clutch slave cylinder and hydraulic line bracket from clutch housing. Remove flywheel inspection cover and bolts securing transmission to engine. Support transmission with jack and remove crossmember-to-body bolts. Slide transmission

rearward and lower clear of engine. Loosen pressure plate bolts one turn at a time and remove clutch assembly.

Removal (Except 320i) – 1 Detach selector rod from gearshift lever. From inside vehicle, lift shift lever dust boot and remove circlip holding lever in position. Remove shift lever. Detach any exhaust system components which may interfere with transmission removal.

2 Fit clamp tool (26 1 011) to propeller shaft coupling and remove bolts holding coupling to transmission shaft coupler. Remove heat shield and detach bearing center bracket. On 733i, remove web under propeller shaft tunnel. On all models, remove center support bearing and bend propeller shaft so it can be removed from front coupling and placed out of way.

3 Support transmission and detach crossmember from body. Disconnect speedometer cable and housing from transmission. Detach clutch slave cylinder from clutch housing, leaving hydraulic line attached. Disconnect any electrical connections from transmission and remove transmission mounting nuts. Remove transmission.

4 Remove flywheel inspection cover and bolts securing clutch housing to engine. Loosen pressure plate bolts one turn at a time and remove clutch assembly.

Installation (All Models) – 1 Using alignment tool (21 2 100), install clutch disc and pressure plate. Tighten mounting bolts one turn at a time to 16-17 ft. lbs. (2.2-2.4 mkg). On all except 320i, install clutch housing. On all models, apply light film of grease to all friction surfaces and install transmission.

2 Install slave cylinder so that bleeder screw is at bottom. Install propeller shaft and preload center bearing by moving bracket .078" (2.0 mm) forward in slots provided. Install and tighten NEW nuts to 72 ft. lbs. (10.3 mkg) while holding bolts in front propeller shaft coupling.

RELEASE BEARING & LEVER

Removal & Installation – With transmission and clutch housing removed from engine, remove spring from pivot end of release arm and slide off arm and bearing assembly. Separate release bearing from arm and measure for overall length of $1.95 \pm .02$ " (49.5 \pm .4 mm). Replace as required. To install, pack lubricating groove with suitable lubricant and reverse removal procedure.

CLUTCH MASTER CYLINDER

Removal – Remove trim under left side of instrument panel and remove bolt attaching master cylinder push rod to clutch pedal. Siphon off most of fluid from master cylinder reservoir and detach hydraulic lines from cylinder. On 733i only, remove windshield washer tank. On all models, remove mounting bolts at firewall and remove cylinder from vehicle.

Installation – To install, reverse removal procedures and bleed hydraulic system. On 633CSi and 733i, ensure that pedal over center spring is engaged in pedal guide before attaching push rod.

BMW (Cont.)

CLUTCH SLAVE CYLINDER

Removal & Installation – Siphon fluid from reservoir and detach slave cylinder from housing. Disconnect hydraulic line and remove cylinder. To install, reverse removal procedure ensuring that cylinder is mounted with bleeder screw at bottom. Fill reservoir and bleed system.

OVERHAUL

CLUTCH MASTER CYLINDER

Slide dust boot off and remove circlip holding push rod. Remove piston assembly and clean master cylinder and parts with alcohol. Inspect cylinder bore for corrosion or scoring; replace if required. Lubricate internal parts with brake fluid and reassemble. Adjust push rod length to approximately 5.5" (140 mm). See Fig. 2.

NOTE – Coat friction surfaces of external controls lightly with Molykote 2 (or equivalent) prior to assembly.

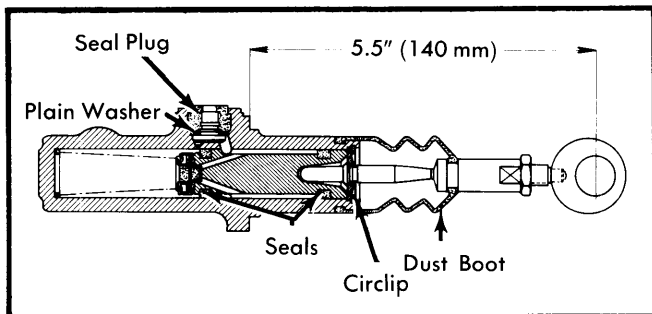


Fig. 2 Sectional View of Clutch Master Cylinder

CLUTCH SLAVE CYLINDER

Remove retaining ring and take out push rod and boot. Remove piston and clean all internal parts with alcohol. Inspect bore for scoring and corrosion; replace if necessary. Lubricate all internal parts with brake fluid and reassemble.

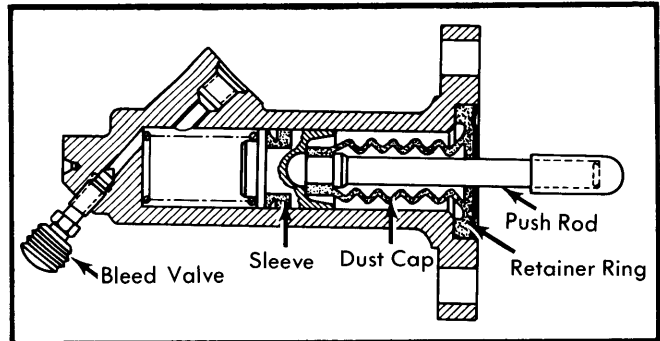


Fig. 3 Sectional View of Clutch Slave Cylinder

ADJUSTMENT

NOTE – Clutch free play is automatically adjusted for disc wear.

HYDRAULIC BLEEDING

Ensure that fluid reservoir is full and attach bleeder hose to bleed screw on slave cylinder. Submerge end of hose in partly filled container of brake fluid and pump clutch pedal about 10 times. Hold pedal down on last stroke and loosen bleeder screw to allow air to escape. Close bleeder screw and repeat until air is bled from system.

NOTE – Coat friction surfaces of bearing points lightly with Molykote 2 (or equivalent) prior to assembly.