

1968-73 MERCEDES-BENZ

All Models (1968-73)

DESCRIPTION

All models use a single dry disc type clutch and a diaphragm spring type pressure plate. A pre-lubricated clutch release bearing is also used. Clutch actuation is hydraulic through a master cylinder and a slave cylinder. Configuration and size of components varies with vehicle model, however, operation is basically the same.

REMOVAL & INSTALLATION

TRANSMISSION REMOVAL

NOTE — Several Transmissions are used in Mercedes-Benz vehicles. Type G 76/27 or G 76/27-5 transmissions are used in all 280 Series (exc. 3.5 Models), after May, 2969. Previous Models of 280 utilize Type G 72 or ZF Type S5-20. The 3.5 280 Models use Type G 76/27A or G 78/27A-5 transmissions. All models of 200, 220, 230 and 250 utilize transmission Type G 76/18.

Transmission Type G 72 & ZF, Transmission Type S5-20 — 1) Disconnect battery and drain transmission, if necessary. Disconnect transmission shift rods. Remove clutch slave cylinder from clutch housing. Loosen clamp screw and remove speedometer drive shaft from transmission. Disconnect back-up light switch wiring at plug connector on splash wall.

2) Loosen and remove exhaust pipe support bracket and mark position of rear support on frame floor. Loosen rear support. Loosen and remove hand brake cables and remove from guides.

3) Raise engine slightly at rear section of oil pan until rubber mount is relieved from weight. Remove hex nuts and bolts and remove crossmember.

NOTE — To protect oil pan, place a piece of wood between jack and oil pan.

4) On 280 SL/8, remove tunnel closing plate by removing 16 screws. Do not remove support on this model.

5) Remove nuts holding engine carrier and rubber mount at rear transmission cover and remove carrier together with fastening plate.

6) Loosen clamp connection of propeller shaft. Disconnect shaft on transmission so that universal plate remains on transmission. Remove propeller shaft from rear axle. Unscrew propeller shaft intermediate bearing and slide shaft toward rear as far as possible. Remove sealing ring from transmission main shaft.

7) Remove bolts holding clutch housing to intermediate flange and pull transmission back until drive shaft is clear of hub of clutch disc. Remove transmission from vehicle. Remove clutch. See *Clutch Removal*.

NOTE — Turn transmission about 90 degrees to the right so bulge on clutch housing (starter neck) will clear tunnel.

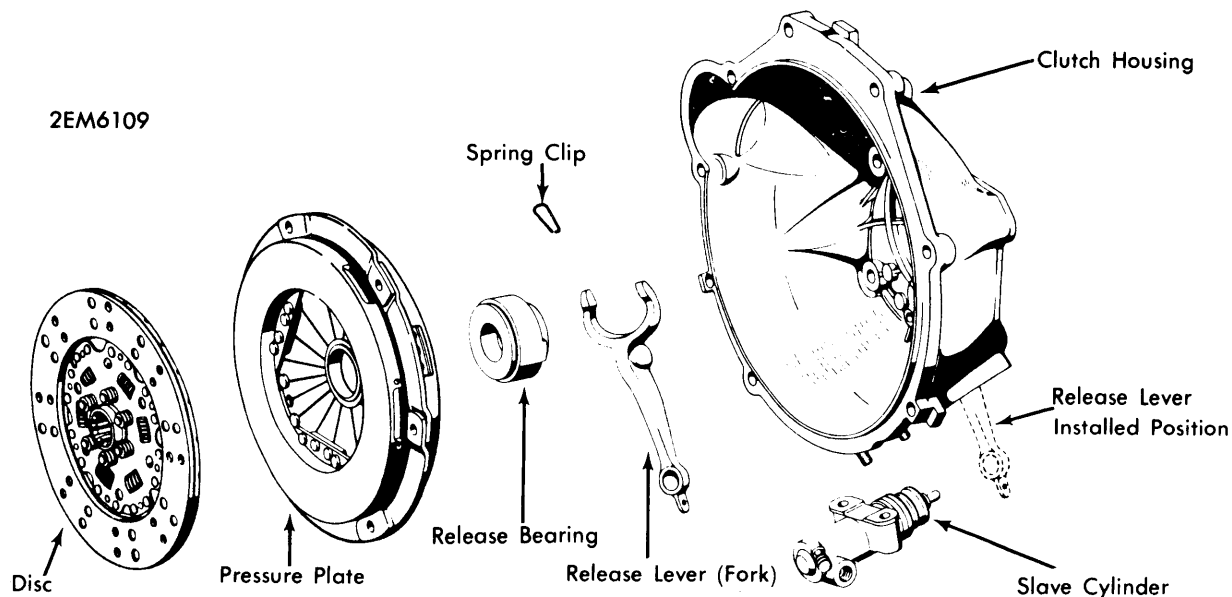
8) To install transmission, grease journal and splines of drive shaft and make sure that selector rods and shift rods are facing toward front and are secured close to clutch housing.

9) Bolt clutch housing with transmission to intermediate flange while at the same time bolting grounding cable from engine to body to upper left transmission attaching bolt.

10) Place sealing ring on main shaft and slide propeller shaft forward. Bolt propeller shaft intermediate bearing loosely to frame floor. Bolt propeller shaft to universal plate on transmission. Bolt propeller shaft to rear axle and lock the nuts with sheet metal lock.

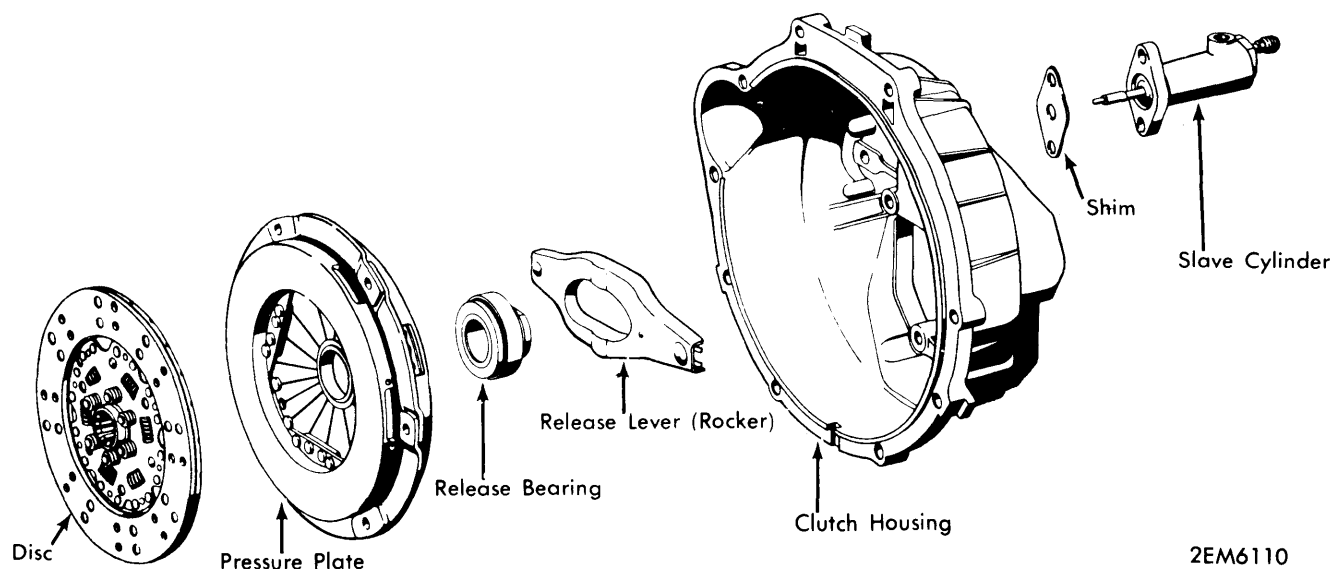
11) Attach crossmember or tunnel closing plate to rubber mount, and bolt to frame floor. Do not tighten bolts at this point. Lower vehicle and tighten bolts. Tighten propeller shaft intermediate bearing. Jounce vehicle several times and then tighten clamping connection of propeller shaft to 21.7 ft. lbs. (3.0 mkg).

12) Check adjustment of rear rubber mount and adjust, if necessary. Attach exhaust pipe mounting bracket to fastening plate and tighten clamp screw. Connect speedometer drive shaft to rear transmission housing and tighten with clamping screw. Reinstall brake cables, shift rods, and battery cable. Check oil level in transmission.



CLUTCH COMPONENTS (FORK TYPE RELEASE LEVER)

1968-73 MERCEDES-BENZ (Cont.)



CLUTCH COMPONENTS (ROCKER TYPE RELEASE LEVER)

Transmission Type G 76/18, G 76/27 & G 76/27-5 – 1) Disconnect battery ground cable. Disconnect speedometer drive shaft at rear of transmission housing. Separate clutch fluid pressure hose from line.

NOTE – Plug pressure hose to avoid loss of brake fluid.

2) Loosen clamp connection of propeller shaft and remove crossmember-to-frame floor bolts while lifting crossmember slightly by hand. Remove crossmember-to-transmission nut (rubber mount on transmission), and remove crossmember complete with rubber mount.

3) Remove three propeller shaft-to-universal plate bolts at transmission end. Universal plate should remain on transmission flange. Unscrew center bearing of universal shaft.

4) Remove nuts for exhaust pipe support on transmission. Loosen attaching nut of clip and force support from bolts at rear of transmission and turn in downward position. Remove screw for crossmember from chassis base panel.

5) Remove starter bolts. Move propeller shaft to upper left and prop in position. Remove transmission-to-intermediate flange bolts. Guide transmission back until drive shaft has cleared hub of clutch disc. Lower and remove transmission. Remove clutch. See *Clutch Removal*.

NOTE – Turn transmission about 90 degrees to the right so bulge on clutch housing (starter neck) will clear tunnel.

6) To install transmission, grease journal and splines of drive shaft and make sure selector rods and shift rods are facing toward front and are secured close to clutch housing.

7) Bolt clutch housing with transmission to intermediate flange. Tighten starter bolts at the same time. Tighten nut holding rubber mount with crossmember to transmission. Bolt crossmember to chassis base panel.

8) Turn exhaust pipe support upward and install on two bolts at transmission rear cover. Install nuts and tighten. Tighten clamping bracket. Join propeller shaft to shaft plate mounted on transmission flange. Install propeller shaft center bearing

and lower car. Roll car forward and backward several times and then tighten propeller shaft clamp.

9) Reinstall speedometer drive shaft, shift rods, and attach pressure hose to pressure line. Bleed Hydraulic system. See *Hydraulic System Bleeding*. Check transmission oil level and correct if necessary. Connect battery ground cable.

Transmission Type G 76/27 A & G 76/27 A-5 – Except for the following items, removal and installation is completed in the same sequence as for Transmission Type G 76/27 & G 76/27-5. See *Transmission Type G 76/18, G 76/27 & G 76/27-5*.

1) Unbolt heat shield above intermediate sound absorber. Loosen front and rear clamp connection for propeller shaft. Loosen both propeller shaft intermediate bearings.

2) Separate flange of propeller shaft on rear axle and push toward rear of vehicle. When installing, tighten front clamp piece of propeller shaft to 21.7 ft. lbs. (3.0 mkg) and rear clamping piece to 144.6 ft. lbs. (20 mkg).

NOTE – Due to heavy ribbing of clutch housing, most of the bolts are accessible only by using a 17 mm adaptor and several extensions.

CLUTCH REMOVAL

1) With transmission removed, loosen attaching bolts of clutch in a criss-cross pattern, 1 or 1 1/2 turns at a time. Remove bolts and remove clutch complete with disc.

2) To install, center disc with suitable tool, position clutch and tighten attaching bolts in a criss-cross pattern, 1 or 1 1/2 turns at a time.

NOTE – During assembly, make sure that clutch is pulled into recess on flywheel.

CLUTCH RELEASE BEARING & LEVER

NOTE – Two types of clutch release levers are used. On vehicles equipped with Type 72 (before May, 1969), or with ZF Type S5-20, a fork type release lever is used. On all other models, the release lever is of the "swinging fork" or "rocker" type. The levers are not interchangeable.

1968-73 MERCEDES-BENZ (Cont.)

Fork Type Release Lever & Release Bearing – 1) Push spring clips out of fork toward rear and remove bearing in upward direction. Pull off of shaft.

2) Pull fork away from ball pin and turn 90°. Pull fork out of sleeve and slot in clutch housing.

3) To install, lubricate ball pin in front transmission housing cover with hot bearing grease. Reinstall fork and push on ball pin. Coat annular groove in bearing and shaft, and thrust points of fork with hot bearing grease.

4) Slide bearing on shaft and locate with two spring clips on fork.

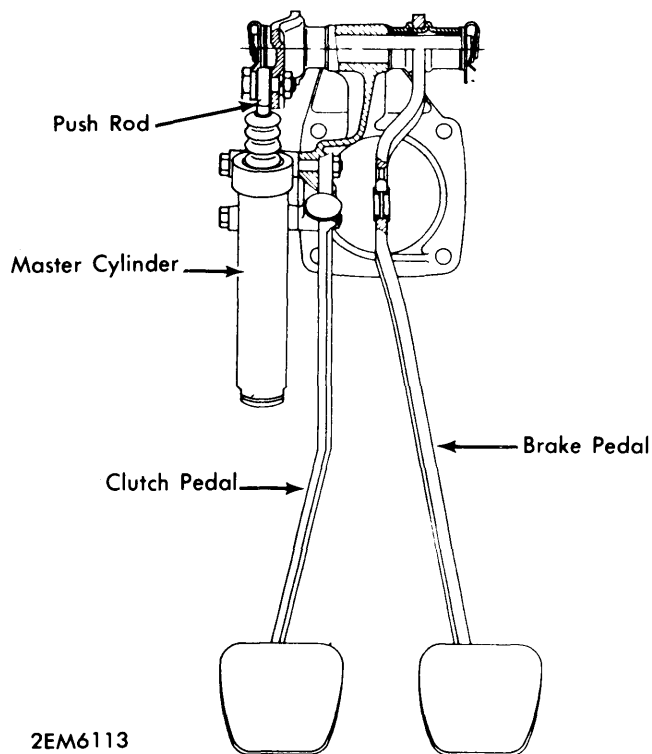
Rocker Type Release Lever & Release Bearing – 1) Remove bearing from bearing tube on front of transmission cover. Move rocker downward and to the left and pull from ball pin on clutch housing.

2) To install, carefully grease bearing tube, ball pin and all points on rocker which contact bearing. *NOTE* – Do not use Molybdenum Disulfide (Molykote Z) type lubricants. Install rocker in opposite direction of removal until spring clip of rocker engages ball pin, then pull up slightly.

3) Grease bearing inside and on both lateral cutouts on rear sleeve portion. Slide bearing on guide tube on front transmission cover and turn until it engages with lateral cutout in rocker.

MASTER CYLINDER REMOVAL

1) Remove fluid from reservoir (rear chamber) until level is below minimum mark. Remove lines from reservoir to supply cylinder and from supply cylinder to master cylinder.

**MASTER CYLINDER & PEDAL ASSEMBLY**

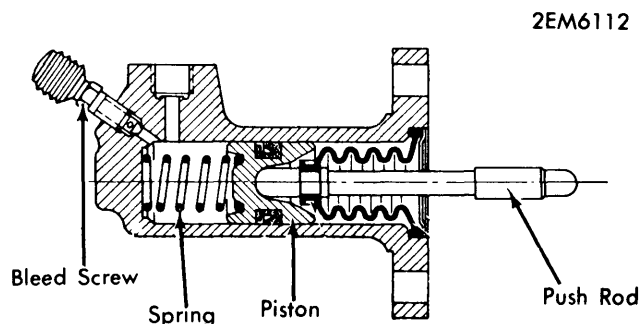
2) Remove bolts and mounting screws and remove cylinder. Push rod should remain on clutch pedal on 1971 and later models.

NOTE – The travel limit stop for clutch pedal is attached with screws and spaced with washers. Note number of washers for installation.

3) To install, reverse removal procedure, connect fluid lines, and bleed system. See *Hydraulic System Bleeding*.

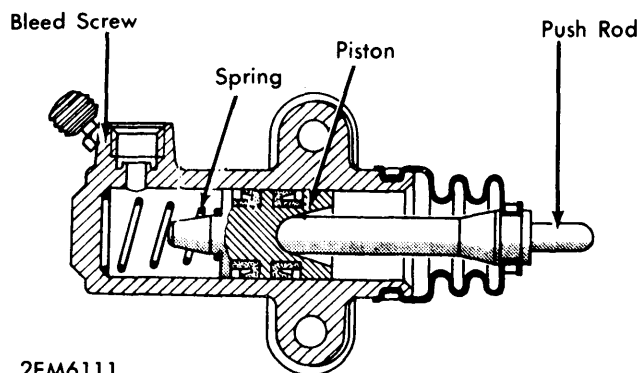
SLAVE CYLINDER REMOVAL

1) Remove pressure line on slave cylinder and plug line with rubber cap to prevent loss of brake fluid. Remove mounting screws and remove slave cylinder.

**SLAVE CYLINDER (AFTER MAY, 1969)**

NOTE – Plastic shim spacers are used on some models. Note number of shims for installation.

2) To install, place shim with grooved end against clutch housing and hold in position. Install slave cylinder and tighten mounting screws. Connect pressure line and bleed system. See *Hydraulic System Bleeding*.

**SLAVE CYLINDER (BEFORE MAY, 1969)****ADJUSTMENT****MASTER CYLINDER
PUSH ROD-TO-PISTON ADJUSTMENT**

Adjust play between push rod and piston in master cylinder so that play is .008" (.20 mm). This play cannot be measured and must be determined by feel on pedal plate. Loosen hex nut of adjusting screw and turn screw so that push rod has proper clearance.

1968-73 MERCEDES-BENZ (Cont.)

NOTE — When checking or adjusting play, make sure that line marking (arrow) on head adjusting screw points toward rear.

HYDRAULIC SYSTEM BLEEDING

With Pressure Bleeder — 1) Connect pressure line of bleeder to opened bleed screw of slave cylinder. Tank should be almost empty so that brake fluid can flow from bottom up through system and air can escape in upward direction.

2) Make sure bleeder is set to lowest possible pressure and watch tank to prevent any overflow of fluid. If fluid approaches maximum level in tank, remove bleeder and close vent screw. Replenish brake fluid, if necessary, up to maximum level.

With Assistance of Brake System — 1) Check fluid level in tank and make sure it is to maximum level. Place hose on bleed screw of right front brake caliper and open bleed screw.

2) Press down on brake pedal until hose is filled with brake fluid and no more air bubbles are showing. Place other end of hose on bleed screw of slave cylinder and open slave cylinder bleed screw. Keep pressure on brake pedal. Close bleed screw of caliper and release brake pedal. Open bleed screw and repeat until no more bubbles are showing up at mouth of inlet line on fluid tank.

NOTE — Keep fluid level in tank replenished during operations.

3) Close bleed screws on caliper and slave cylinder and pull off hose. Check clutch operation and fill fluid tank as necessary.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
All Transmissions	
Grooved Three-Arm Flange Nut.....	ⓐ108 (14.9)
Propeller Shaft	
Self-Locking Nut on Joint Disc.....	31 (4.3)
Hex-Head Double Joint Bolts.....	47 (6.5)
Hex-Head Intermediate Bearing Bolts.....	14.5 (2.0)
Front Clamp Nut.....	22-29 (3.0-4.0)
Rear Clamp Nut.....	144 (20)
Pressure Plate-to-Flywheel Bolts.....	36-43 (5.0-6.0)
ⓐ — G 72 transmission is 100-108 ft. lbs. (13.8-14.9 mkg).	