PORSCHE

911SC
924
928
Turbo

DESCRIPTION

The 928 model uses a dry, dual disc, diaphragm spring type of clutch system. All other models use a dry, single disc, diaphragm spring type of clutch system. Clutch is hydraulically operated on 928 models and mechanically operated on all other models. Pedal is connected to release lever by cable on all models except 928, which is connected by a hydraulic line. All models have similar clutch disc design. Turbo models have thicker clutch lining, stronger springs and larger diameter hubs. Turbo models also have release lever mounted so shorter and thicker cable can be used.

REMOVAL & INSTALLATION

CLUTCH ASSEMBLY

Removal (911SC & Turbo) – Remove engine and transaxle as described in *Engine Section*. Mark pressure plate and flywheel for reassembly. Insert alignment tool, then loosen clutch mounting bolts evenly and alternately until spring pressure is released.

Removal (924) – 1) Support front of engine with hoist. Disconnect ground cable from battery. Loosen and remove clutch cable at holder, then remove holder nut. Remove bottom engine cover. Disconnect wire at oil temperature sensor (at rear of oil pan). Remove clutch bell housing inspection cover.

2) Loosen clutch pressure plate mounting bolts evenly, about 2 turns at a time until all are removed. Turn engine with crankshaft pulley bolt. Place a block of wood between drive shaft tube and crossmember, then remove engine to bell housing bolts.

3) Remove exhaust system from primary muffler to rear of vehicle. Disconnect plug for backup light switch and remove wires from clip on transmission. Remove backup light switch. Working inside vehicle, pull up shift lever boot and remove circlip, selector rod and wave washer from shift lever pin.

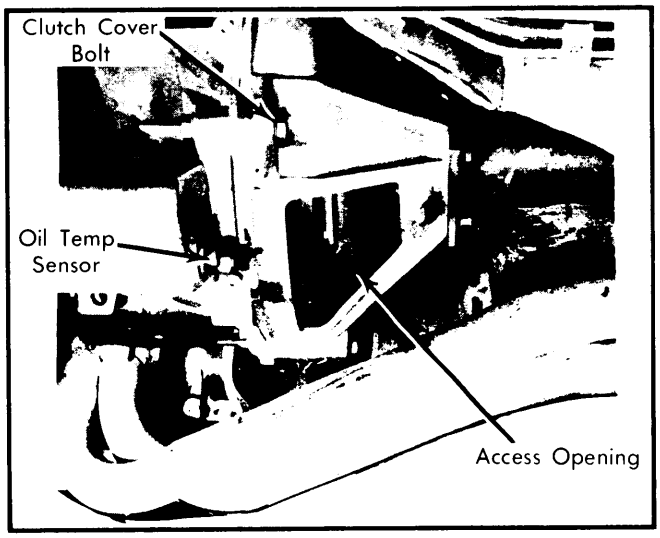

Fig. 1 924 Clutch Housing Access

4) Remove axle shafts from transmission. Suspend with wire in a horizontal position to prevent damage to axle shaft boots. Carefully lift transmission slightly, and remove mounts. Move transmission and central tube back about 3.35" (85 mm). Remove clutch disc, pressure plate and release bearing.

Removal (928) 1) – Remove lower body brace and slave cylinder with line connected. Remove clutch housing cover with starter and suspend from stabilizer bar. Remove coupling screws and push coupling back onto drive shaft.

2) Remove release bearing bolts and push bearing sleeve toward flywheel. Mark position of pressure plate, intermediate ring and flywheel as they are a balanced unit. Loosen mounting bolts evenly and alternately until pressure is off clutch. Remove bolts, disconnect release lever and push clutch assembly back and remove downward. Release bearing is removed with clutch assembly.

Inspection – 1) Check pressure plate and disc for wear, cracks, burning or loose rivets. Replace any part found defective. Check ends of diaphragm spring for wear marks from release bearing.

2) Lay a straightedge across pressure plate face and check for distortion; up to .011" (.3 mm) is permissible. Place clutch disc on input shaft and see that it moves freely on splines. Check disc for maximum allowable runout of .24" (.6 mm).

3) Check clutch release bearing for noise or rough operation. Do not wash bearing in any cleaning solution; clean with a lint free cloth only. Replace bearing if contaminated or loud. Check pilot bearing in crankshaft for rough operation, replace as necessary.

Installation – 1) Place graphite grease or molybdenum disulphide grease in crankshaft pilot bearing, and moisten felt seal with engine oil. Install clutch disc on flywheel using a suitable aligning tool to center disc. Coat diaphragm spring of pressure plate with a thin coat of molybdenum disulphide grease.

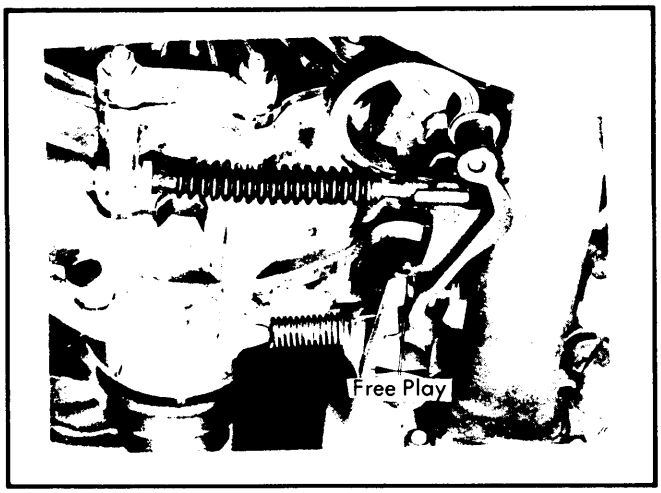

Fig. 2 View of Clutch Adjusting Mechanism (911SC & Turbo)

PORSCHE (Cont.)

2) Install pressure plate to flywheel, aligning marks made at disassembly. NOTE – *If a new clutch is installed, balancing marks on clutch and flywheel should be offset 180°.* Install and tighten clutch attaching bolts one turn at a time in a diagonal sequence to prevent distorting pressure plate.

3) On 911SC models, when transmission is installed on engine, pull release lever in a direction opposite engine. There must be a distance of at least .787" (20 mm) between release lever and transmission housing.

CLUTCH RELEASE BEARING

Removal (911SC & Turbo) – Bearing is removed with pressure plate and must be removed by laying pressure plate on bearing. Remove snap ring and take out bearing together with washers.

Removal (924) – With clutch removed, detach bearing spring clips from release lever. Move lever forward and take release bearing off of guide tube.

Installation – Apply thin coat of suitable lubricant to guide tube and reverse removal procedures.

NOTE – *Do not wash clutch release bearing in cleaning solvent. Bearing is pre-packed and requires no lubrication.*

ADJUSTMENT

CLUTCH ADJUSTMENT

911SC & Turbo – Clutch free play must be checked at transmission adjusting lever due to auxiliary clutch spring. With cable snug, adjust play at lever to .040" (1.0 mm). Clutch pedal travel may be adjusted at stop on floor plate. Release travel for 911SC should be .965-1.004" (24.5-25.5 mm), and for Turbo should be 1.043-1.083" (26.5-27.5 mm) when measured at cable end.

924 – Lower end of clutch cable should measure 5.36-5.52" (136-140 mm) when measured from lower edge of cable holder to pin at release lever with release bearing against diaphragm spring. To adjust, turn outboard release lever on shaft and tighten in position. Adjust cable with counternuts on holder to give .8-1" (20-25 mm) free play at clutch pedal.

Clutch Pedal Free Play

Application	Free Play
911SC & 924	.8-1.0" (20-25.4 mm)
928	①.118" (3 mm)
Turbo	.9" (23 mm)

① – Measurement is approximate.

928 – No adjustment is necessary because of automatic adjustment of slave cylinder. There must, however, be .020" (.5 mm) play between the push rod and master cylinder piston. This cannot be measured directly, but can be felt at the pedal. Pedal should have approximately .118" (3 mm) free play. Free play can be corrected by adjusting the push rod (See *Fig. 3*).

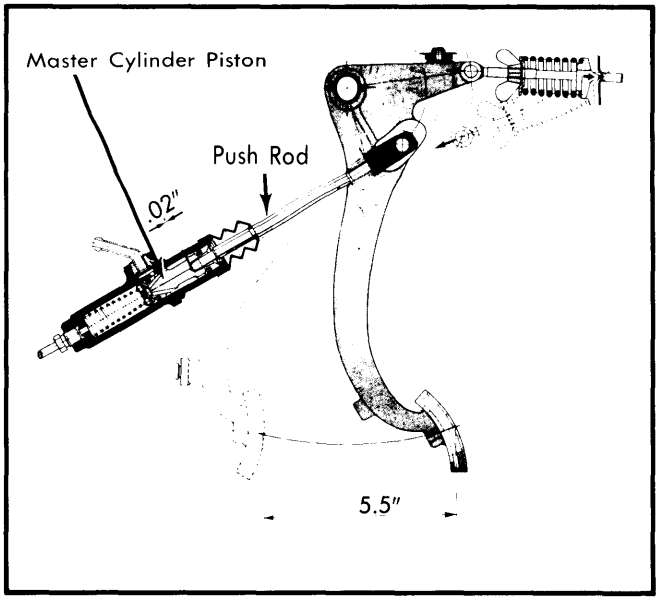

Fig. 3 928 Clutch Push Rod Adjustment

PEDAL ADJUSTMENT

All Models – 1) With engine and transmission warm, depress clutch pedal to stop. In this position reverse gear must just be able to be engaged silently.

2) When clutch pedal is fully depressed, clutch release lever should move .6" (15mm) to completely disengage clutch. If cable housing rests on bottom of guide clamp when pedal is fully depressed, inner cable must be adjusted at yoke end.

3) Measure from threaded cable end of yoke to outer edge of lock nut. Measurement should be .7-.9" (17-22 mm), adjust if necessary. If cable housing rests on bottom of guide clamp when clutch pedal is fully depressed, inner cable must be lengthened at yoke end.

4) If arc of cable is too large, allowing cable to come out of guide clamp when pedal is released, inner cable must be shortened at yoke end.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Flywheel-to-Crankshaft	
911SC & 924	65 (9.0)
928	70 (9.7)
Turbo	108 (15.0)
Clutch-to-Flywheel	
911SC	25 (3.5)
924	23 (3.2)
928	14-17 (1.9-2.3)
Turbo	14-18 (1.9-2.5)