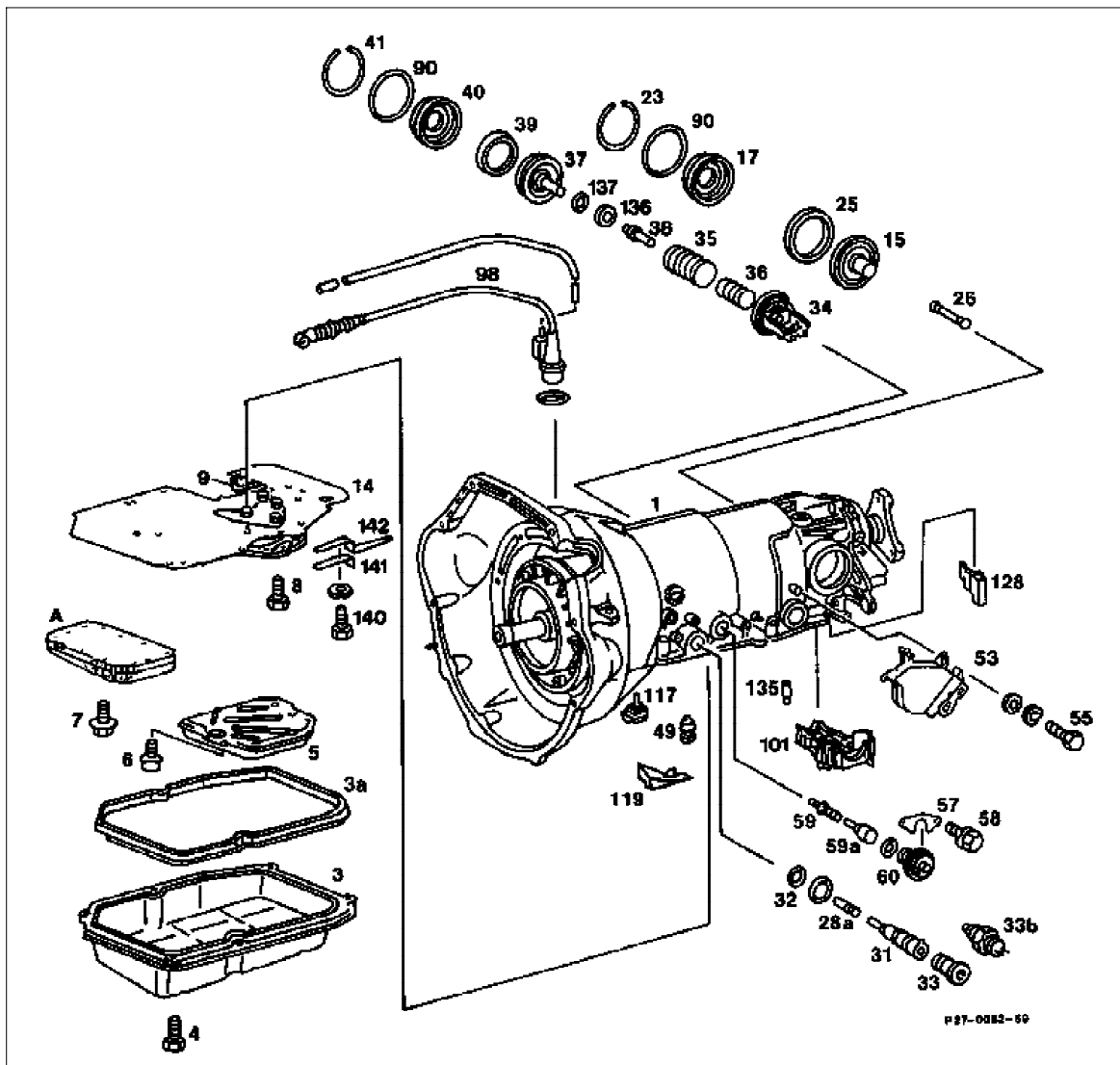


27-640 Disassembling and assembling transmission

Preceding work:
Removing and installing transmission with torque converter (27-600).

Operation number of operation texts and operation values or
standard texts and flat rates 27-4010



Control pressure cable (98)

Transmission (1)

Oil sump (3)

Oil filter (5)

Control valve body (2)

Detent spring (142) and bracket (141)

Bottom cover (13) with intermediate plate (14)
and oil pipe (9)

slacken lock with screwdriver, detach, attach (step 141).

clamp on assembly pedestal 116 589 06 59 00 and
mounting plate 126 589 10 63 00.

remove, install. Bolts 8 Nm.

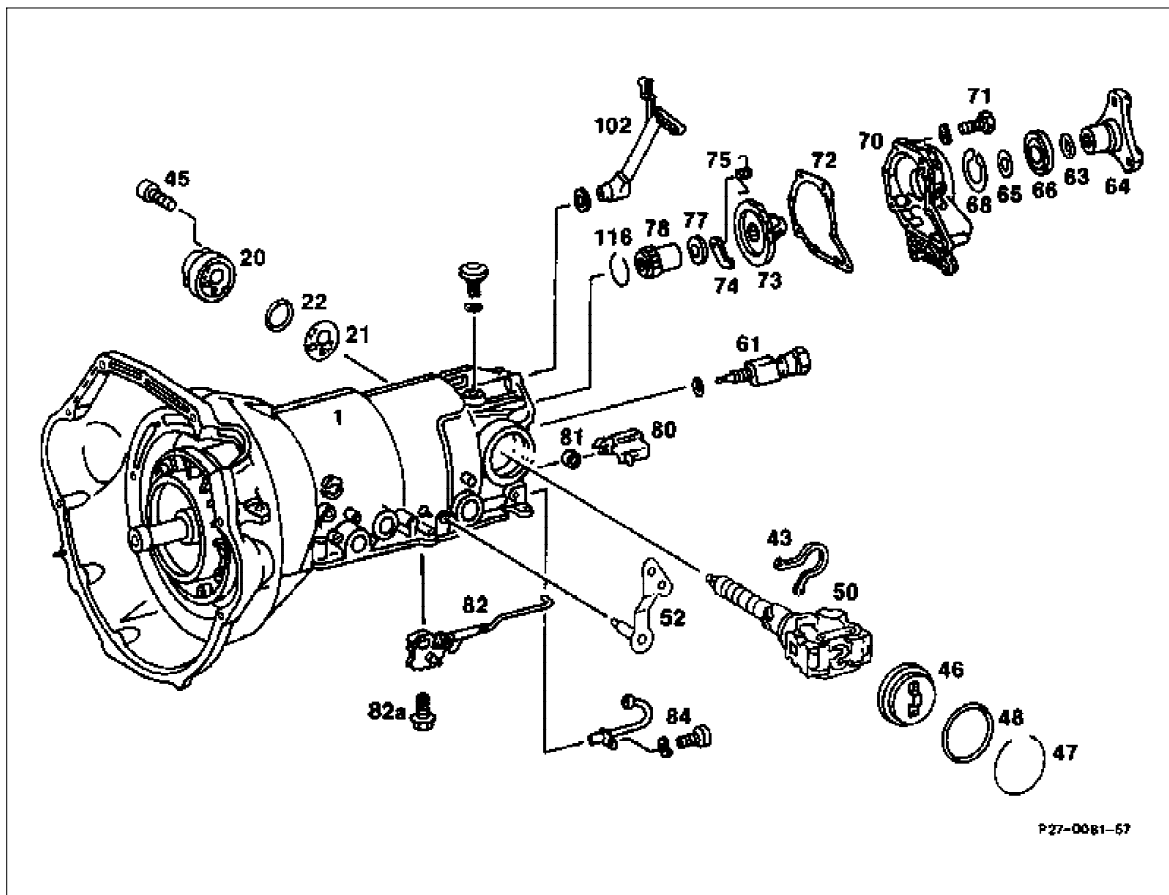
remove, install. Bolts 4 Nm.

remove, install, 8 Nm. Pay attention to different bolt
length.

detach with bolt (140), fit on, 8 Nm.

remove, install. Bolts (18), 8 Nm. Lift off
complete. When assembling, check stop of
resilient linkage (0.4 - 1.0 mm) (step 137).

One-way valve (49), brake band guide B2 (101), locating pin (135), oil deflector piece (119), temperature inductor (117)	remove, insert (step 131).
Brake band piston B2 (15)	remove by taking off locking ring (23). When installing, adjust play "L" of 5.5 - 6 mm with thrust pin (26) (step 130).
Brake band piston B1 (37)	remove with assembly device 201 589 03 59 00, install. Take off locking ring (41), cover (40) and return springs (35, 36). When installing, adjust play "L" 1.8 - 2.4 mm (steps 119 through 124). Measuring device 126 589 06 21 00, check lip sealing ring (39).
Brake band guide B1 (34)	remove, insert (step 81).
Thrust body of thrust bearing B1 (31)	remove, install by unscrewing screw plug (33) or transmission overload protection switch (33b), screwing on, 70 Nm. Check O-rings (32).
Starter lockout switch (53)	Take off by unscrewing bolts (55), 8 Nm. When installing, fix in place (step 146).
Vacuum unit (60)	detach with retaining plate, fit on, 8 Nm. Remove modulating pressure control valve (59) and thermal expansion pin (59a) and insert.



Kickdown solenoid valve (61)	unscrew, screw on, 20 Nm.
Joint flange (64)	remove, install by slackening twelve-side nut (62), 120 Nm, and locking (steps 113, 114). Wrench socket 126 589 02 09 00.
Washer (65)	remove.
Rear transmission cover (70)	unscrew bolts (71), screw on, 13 Nm. After this, detach cover by light hammer blows, lift off and disassemble (27-440).
Oil pipe (102) for mechanical speedometer drive	take off, fit on.

Parking lock gear (73), parking lock ratchet (74) and

spreader spring (75)

Shim (77)

take off, fit on.

calculate thickness by measuring end play of output shaft (step 107).

base 126 589 04 31 00

measuring sleeve 126 589 06 14 00

Plastic guide (80) and roller (81)

remove, fit on.

Resilient linkage with detent plate (82)

unscrew hexagon socket bolt (82a), screw in, then withdraw range selector lever (52) and withdraw detent plate (82) (step 31).

Locking ring (123), helical gear (78) and locking ring (116)

detach, attach (steps 87 - 89).

Secondary pump (20)

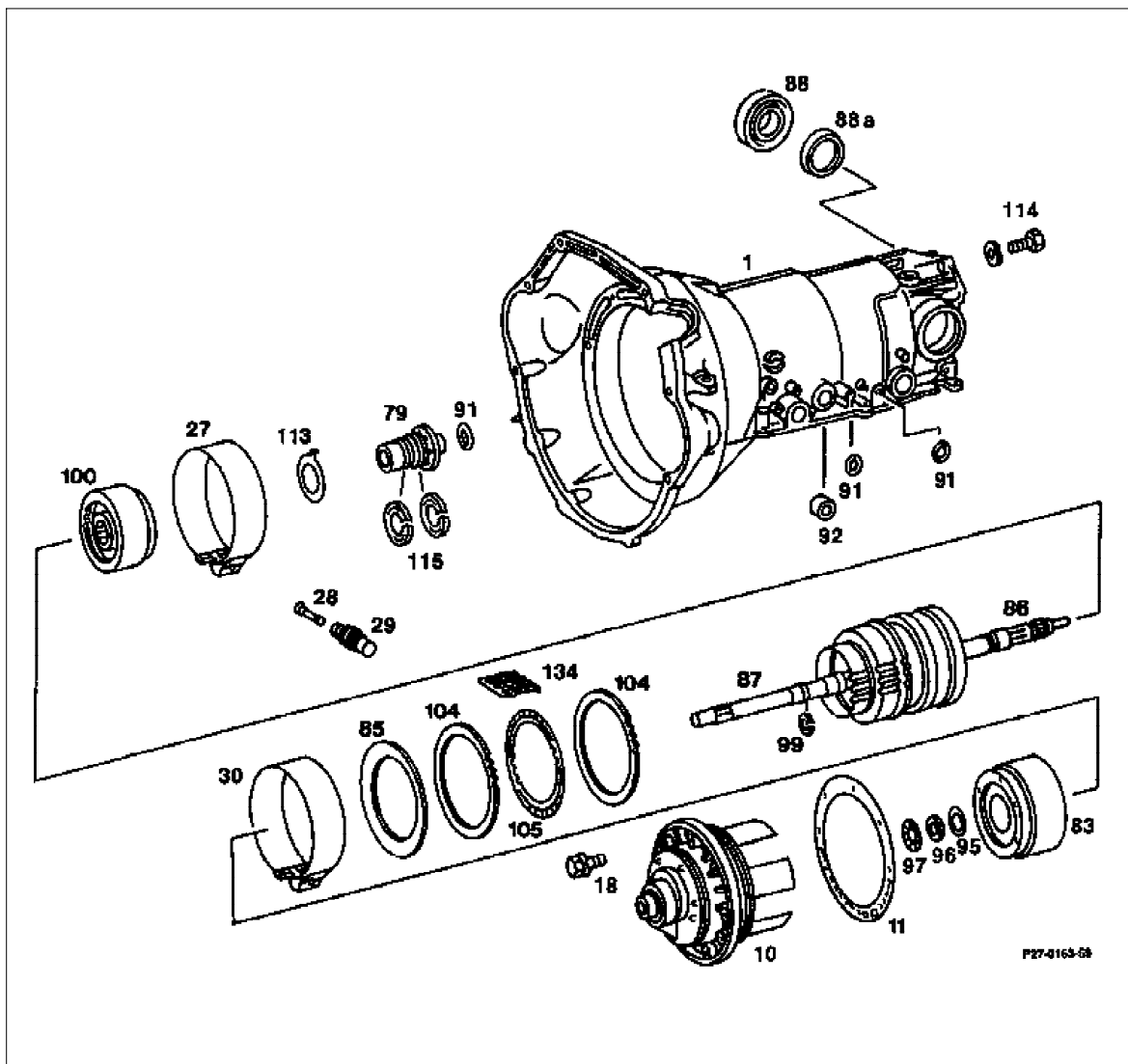
remove, install. Bolts (45) 8 Nm. Take off O-ring (18) and intermediate plate (19).

Locking ring (47), cover (46)

take off.

Locking ring (43)

compress with pliers 201 589 00 37 00 and withdraw centrifugal governor, insert (step 91).



Front transmission cover (10)

remove, install complete. Bolts (18) 13 Nm, disassemble (27-630), pay attention to Teflon rings. Before installing, measure end play "B" for clutch K1 and adjust. 0.6 - 1.0 mm (see step 82). Then, insert shim (95), thrust washer (96) and axial bearing into clutch K1.

Gear set (86 - 87)	remove complete. When installing, adjust play "L"=1.5 - 2.0 mm of multi-disc brake B3 (step 75) by inserting discs (104, 105) and Belleville spring washer (85) (step 75).
Brake band B1 (30) and clutch K1 (83)	remove with gear set, install (see steps 76 - 79).
Damping spring (134)	remove, insert (step 72).
Thrust pin (28)	remove, install (step 126).
Clutch K2 (100)	withdraw, when installing fit onto gear set and push in together with gear set (steps 67, 68).
Brake band B2 (27)	remove, install by compressing brake band as far as possible (step 66).
Thrust washer (113)	remove, insert (step 64).
Thrust body B2 (29)	withdraw, check and insert with strap facing up (step 63).
Supporting flange (79)	remove, install. Bolts (114), 11 Nm. Stick Teflon rings (115) into the groove with grease (steps 59 - 61).
Guide ring (88a) and lip sealing ring (88)	check, renew if necessary. Make insertion mandrel in shop (step 54).
O-rings (91, 92), sealing rings (92) and aluminium sealing rings (90)	check, renew if necessary (steps 55 - 58).

Adjusting data

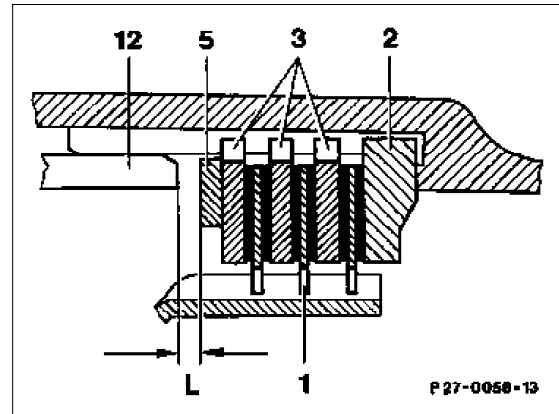
		mm
End play clutch K1	rear housing not fitted	0.6 - 1.0
	rear housing fitted	0.3 - 0.5
End play clutch K2		0.3 - 0.5
Play of multi-disc brake B3		1.5 - 2.0
Play of brake band B1		1.8 - 2.4
Play of brake band B2		55.5 - 6
Play between linkage stop and locking piston		0.4 - 1.0

Dimensions

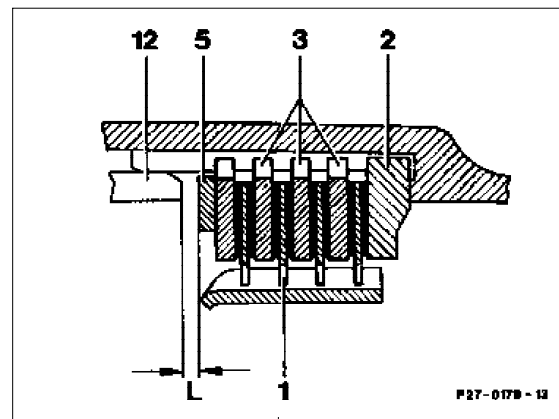
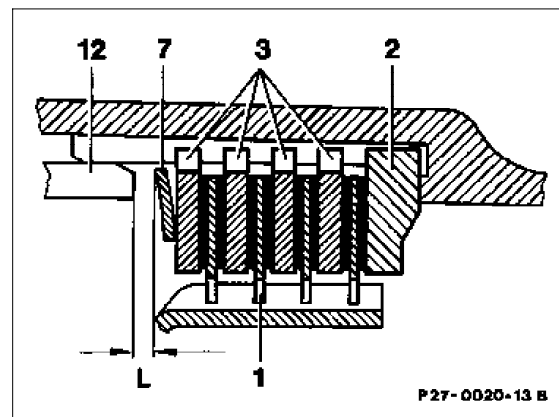
Plastic clip of resilient linkage	0.6 - 1.0 - 1.7	
Shims of axial bearing K1	0.1 - 0.2 - 0.5	
Shims of helical gear/parking lock gear	0.1 - 0.2 - 0.5	
Thrust pin of brake band piston B1	68 - 74	0.5 mm steps
Shims of thrust pin brake band piston B1	0.5, 1.0 and 1.5	

Sequence of discs LB3 08/88

Transmission 722.400
722.402
722.403
722.404
722.406
722.407
722.411
722.414



Transmission 722.401
722.405
722.408
722.409
722.410
722.412
722.413
722.415
722.416

**Disc order effective 09/88****Disc versions**

Designation	Item No.	Thickness in mm
Internally toothed discs	1	2.1
Externally toothed discs	2	6.5
	3 optionally for compensating play	2.5 1) - 3.0 1) 2) - 3.5 1) 2) - 4.0 1)
Compensating discs	5 optionally for compensating play	2.5 - 3.0 - 3.5
Belleville spring washer	7	

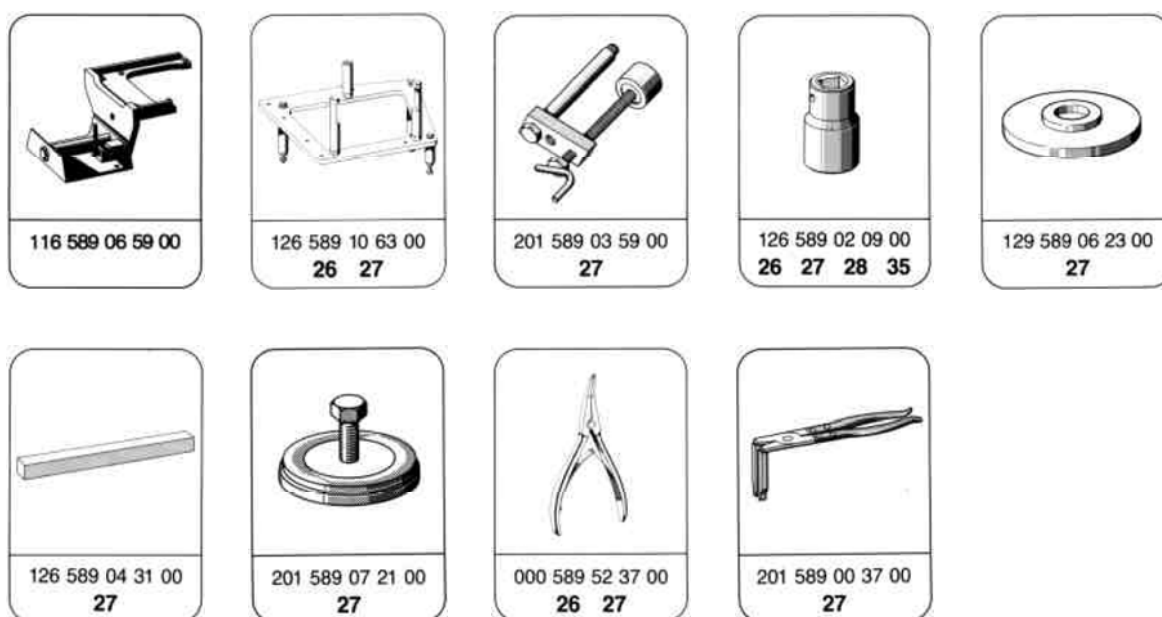
Tightening torques

		Nm
Bolts of supporting flange K2	M 6B22	11

Hexagon socket bolt of detent plate	M 6B20	8
Bolt of leaf spring	M 6B18	8
Bolts of starter lockout switch	M 6B15	8
Hexagon socket bolts of secondary pump	M 6B40	8
Hexagon socket bolt of oil pipe	M 6B15	8
Bolts of rear housing	M 8B35	13
	M 8B80	
Bolts of front cover	M 8B40	13
Screw plug of thrust bearing B1		70
Twelve-side collar nut for joint flange		120
Kickdown solenoid valve		20
Hexagon socket bolts of vacuum unit	M 6B15	8
Screw-and-washer assy. of bottom cover	M 6B30	8
Bolts for strengthening plate of bottom cover		4
Bolts of control valve body	M 6B50	8
	M 6B55	
Bolts of oil filter	M 5B12	4
Bolts of oil sump	M 8B30	7
Screw plug of test connection		13

- 1) Disc version effective 09/88.
2) Disc version up to 09/88.

Special tools



Lubricants

For Teflon rings	Universal grease (refer to Service Product Specifications Sheet 267)
For sliding surfaces and bearing points	Automatic Transmission Fluid (ATF) (refer to Service Product Specifications Sheets 236.4, 236.6, 236.7)

Shop-made tool

Impact mandrel	see ill. step 54, note
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Note

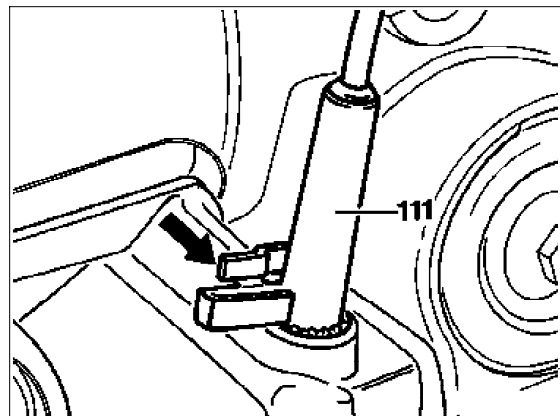
When performing assembly work, the sealing surface of the cast oil distributor plate in the transmission housing must be treated with care. In addition, ensure scrupulous cleanliness. Proper operation of the transmission depends on there not being any dirt on the transmission parts and in the oil circuit. For this reason, after disassembling, remove the gasket residues, wash all parts thoroughly, flush through oil passages and blow out with compressed air.

Rubber gaskets must not come into contact with washing petroleum as this may attack the rubber. Use methylated spirits as a cleaner for rubber parts.

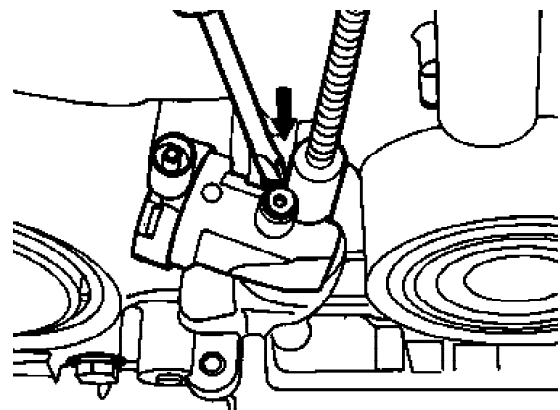
Ensure also that the parts do not come into contact with fluffing rags for fluffs sticking to the parts can cause operating faults.

Disassembly

1 Remove control pressure cable by pressing strap (arrow) toward the sleeve (111), turning 90° counter-clockwise and withdrawing up the way. Detach connecting rod.



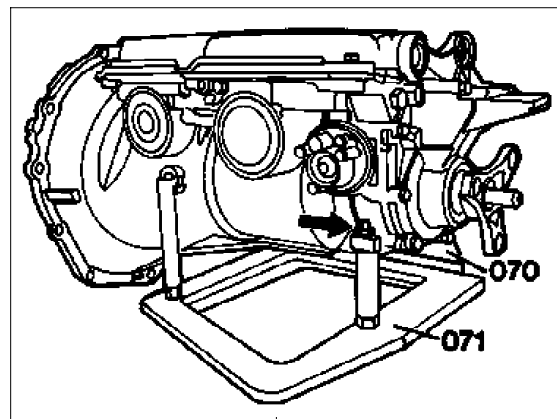
2 Transmission with selector programme:
Use a screwdriver to release lock (arrow).



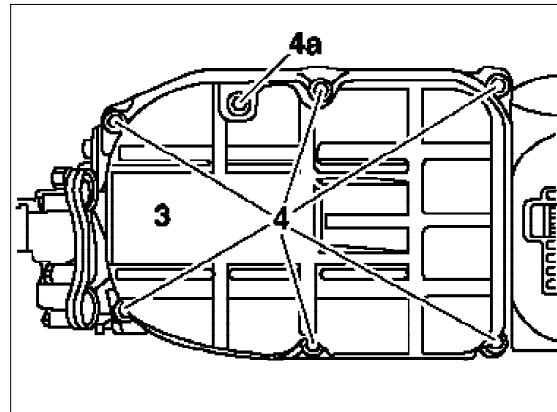
3 Bolt mounting plate (071) 126 589 10 63 00 to the assembly pedestal (070) 116 589 06 59 00. Insert transmission into mounting plate and fix with the bolt (arrow).

Note

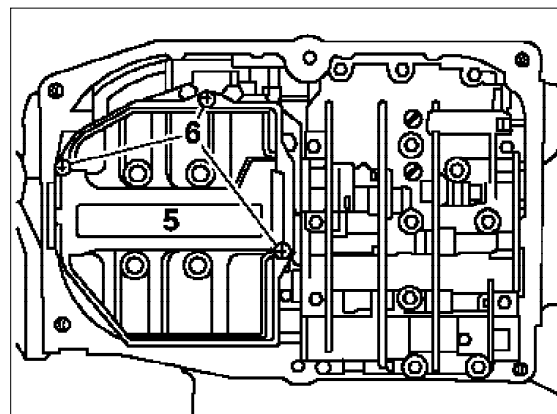
If a stiffener rib is touching the recess of the retaining pin, rework retaining pin slightly.



4 Unscrew bolts (4) and take off oil sump (3).

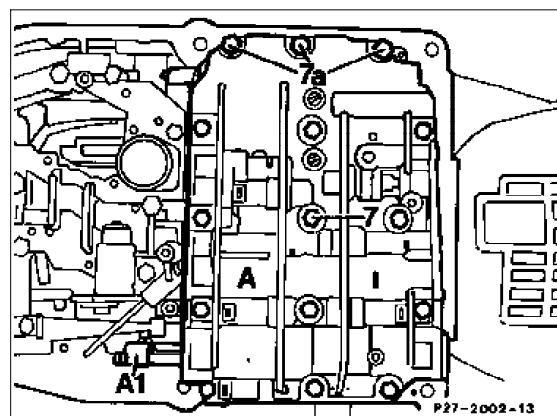


5 Remove screws (6) and take off oil filter (5).



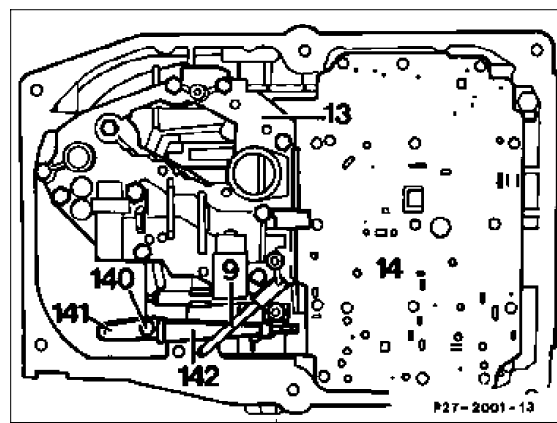
6 Unscrew bolts (7) and take off control valve body (A).

Disassemble and assemble control valve body (27-400).



7 Unscrew bolts (140). Take off bracket (141) together with detent spring (142).

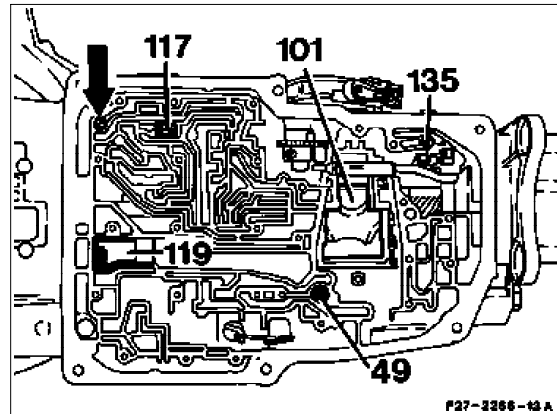
8 Unscrew bolts, lift off bottom cover (13) together with intermediate plate (14) and oil pipe (9). Disassemble bottom cover (27-430).



9 Remove one-way valve (49), brake band guide B2 (101), locating pin (135), temperature inductor (117) and oil deflector piece (119).

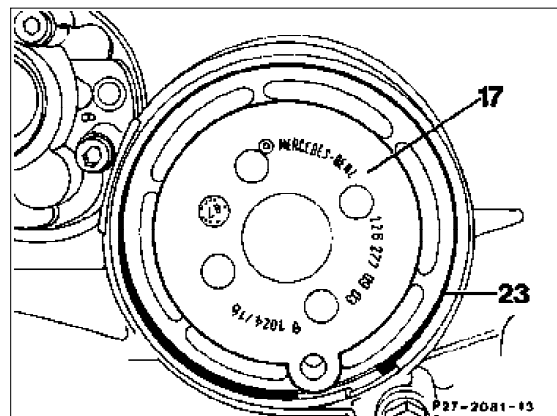
Note

The additional inductor (arrow) was only installed in the case of repairs.

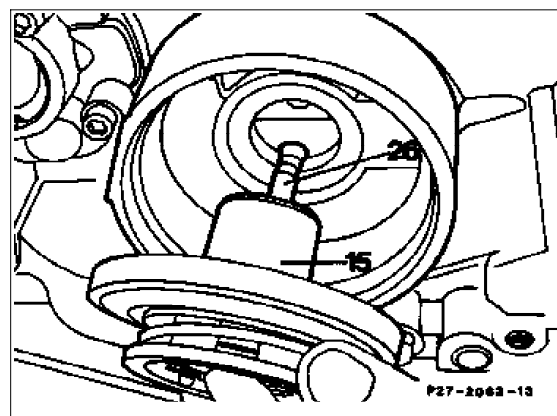


10 Press in brake band piston cover B2 (17) and remove locking ring (23).

11 Take off brake band piston cover.

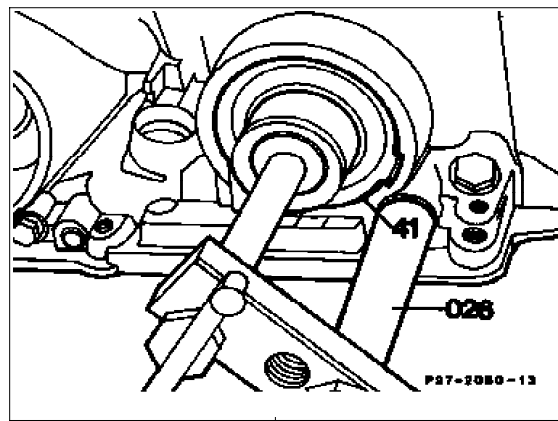


12 Withdraw brake band piston B2 (15) with thrust pin (26) clipped in place.



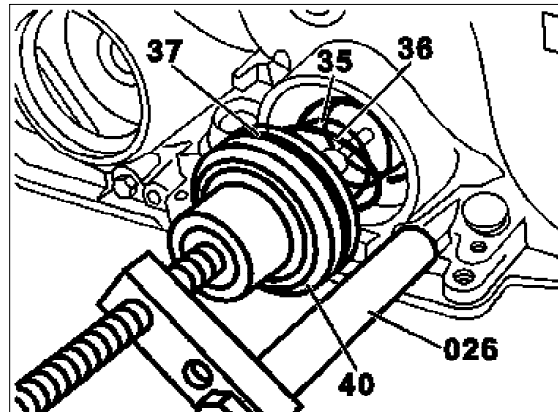
13 Fit on assembly device (026)
201 589 03 59 00, bolt to the transmission housing
and tension.

14 Take out locking ring (41).

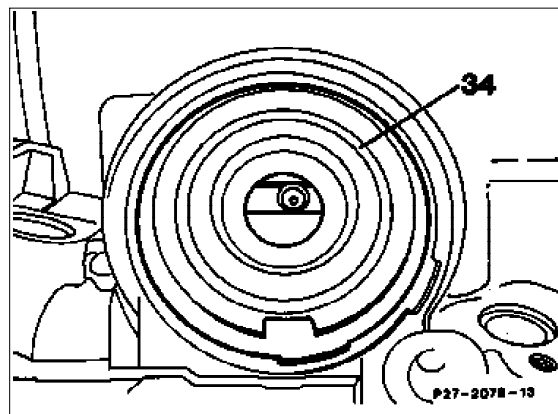


15 Release tension on assembly device (026), take
off brake band piston B1 (37) and also cover (4) and
return springs (35, 36).

16 Unscrew assembly device (026).



17 Withdraw brake band guide B1 (34).



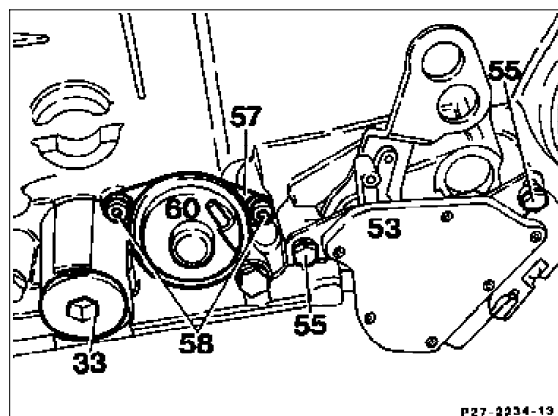
18 Remove screw plug (33) for pressure body B1.

Note

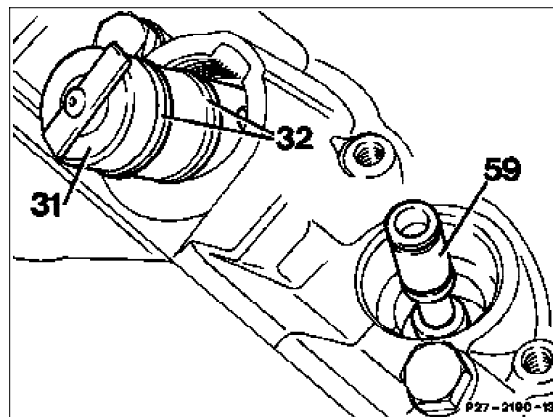
On transmission 722.410 first of all remove the
transmission protection switch with oil pipe.

19 Unscrew hexagon socket bolts (58), take off
retaining plate (57) and vacuum unit (16) together
with thrust pin.

20 Unscrew bolt (55) and take off starter lockout
switch.



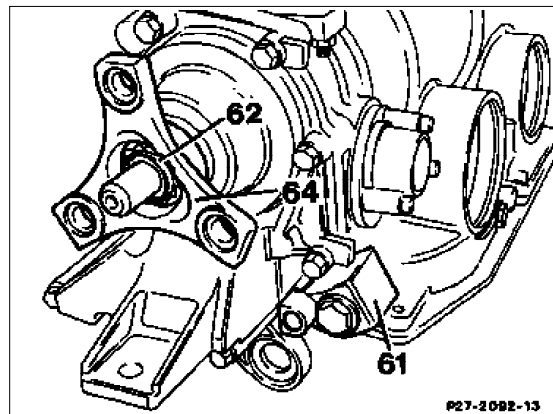
21 Take out pressure body B1 (31) and modulating pressure control valve (59).



22 Unscrew kickdown solenoid valve (61).

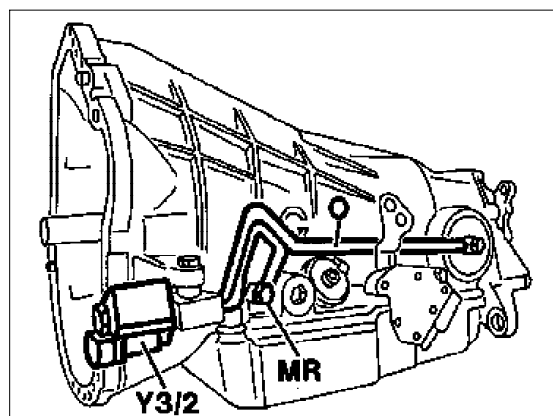
23 Engage parking lock. Unscrew twelve-side collar nut (62) and pull off joint flange (64).

Wrench socket 126 589 02 09 00



Note

On vehicles with transmission shift point retard, unscrew shift point retard 2 ! 3 switchover valve (Y3/2), oil sump drain (O) and test connection (MR).

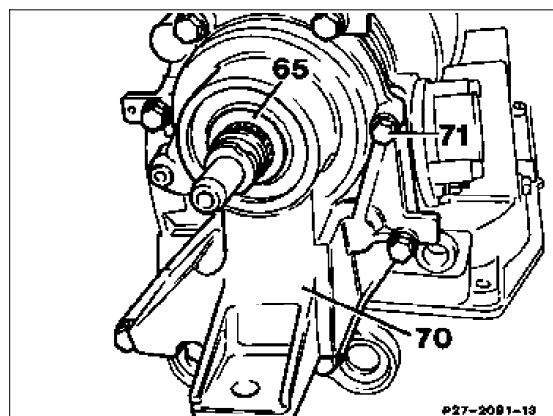


24 Take off washer (65).

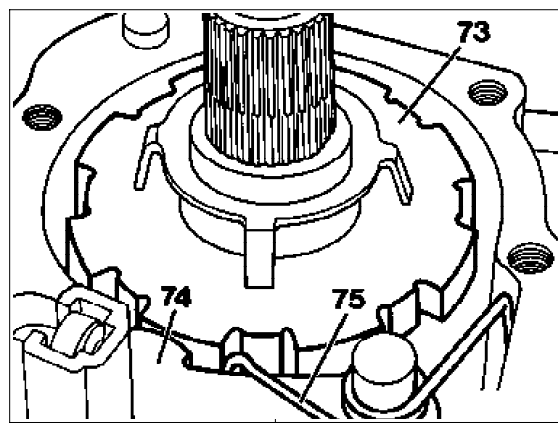
25 Unscrew bolts (71).

26 Detach rear cover (70) by slight blows with a plastic-headed hammer and take off.

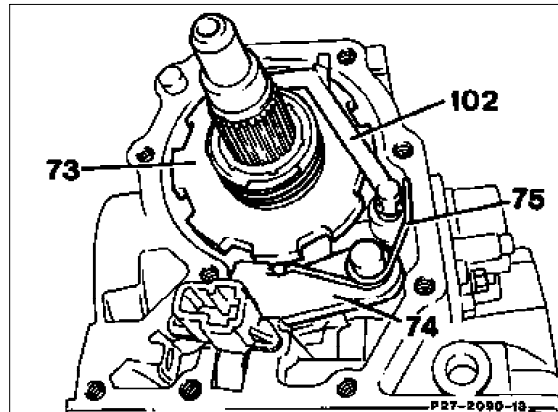
27 Disassemble rear cover (27-450).



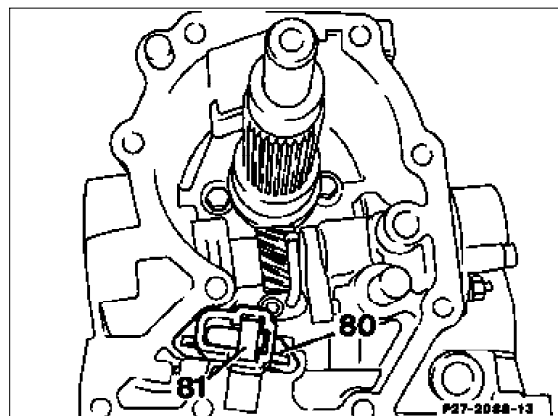
28 On vehicles with electronic speedometer, take off parking lock gear (73) with rotor, parking lock ratchet (74) and spreader spring (75).



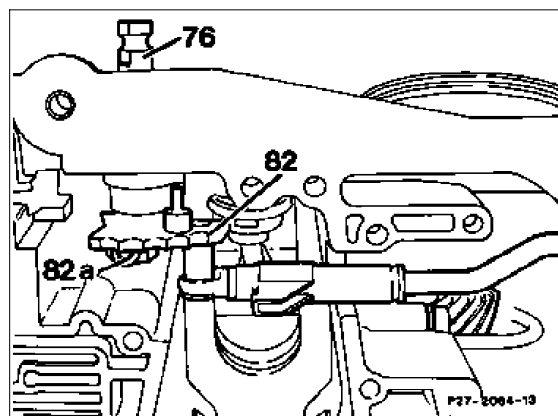
29 On vehicles with mechanical speedometer, take off oil pipe (102), parking lock gear (73) with helical gear, parking lock ratchet (74) and spreader spring (75).



30 Pull off plastic guide (80) up the way, then take off roller (81).

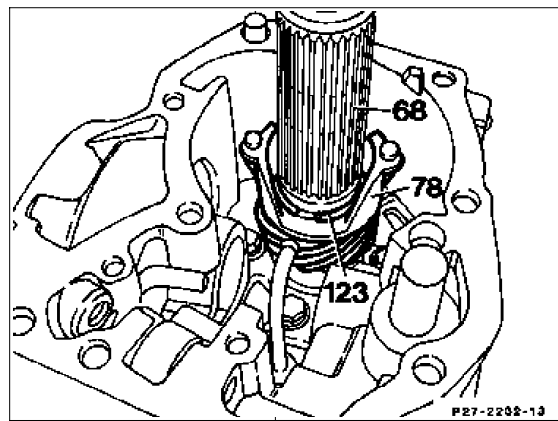


31 Unscrew hexagon socket bolt (82a), withdraw shaft (76) and take out detent plate (82) together with resilient linkage.



32 Take snap ring (123) off the input shaft (68) and take out helical gear.

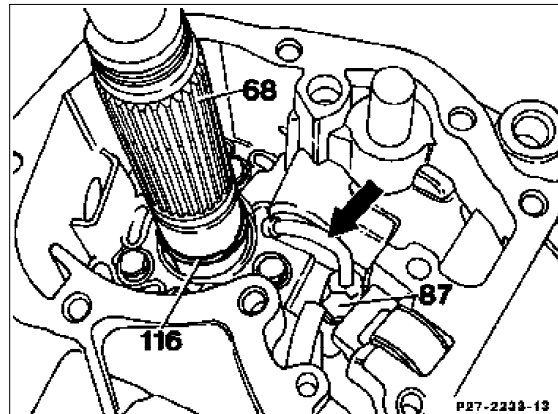
Locking pliers 000 52 37 00.



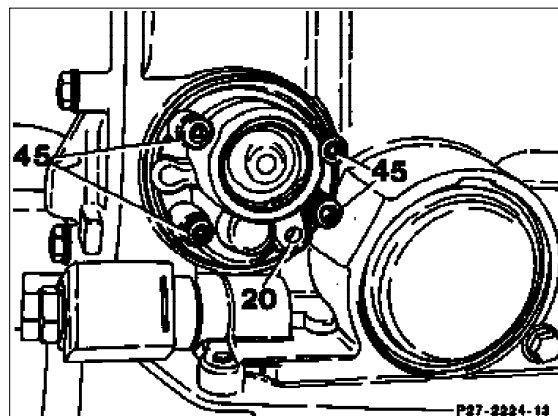
33 Take locking ring (116) off the input shaft (68). Unscrew bolt (87) and take out oil pipe (arrow).

Note

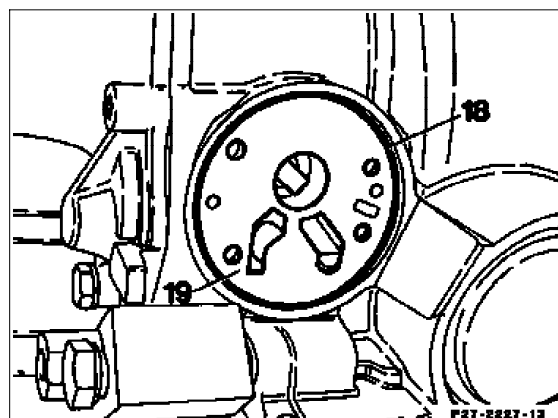
Oil pipe (arrow) is no longer fitted effective July 1986.



34 Unscrew hexagon socket bolts (45) and take off secondary pump (20).

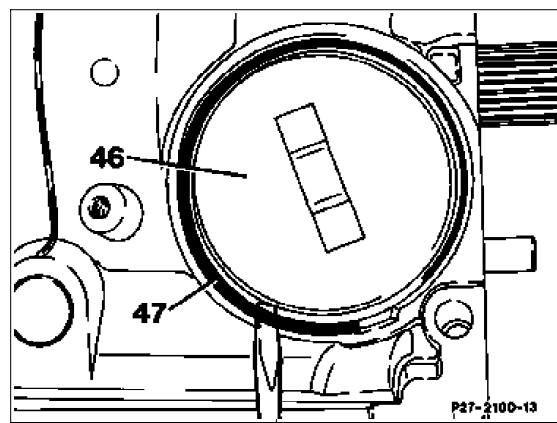


35 Take off O-ring (18) and intermediate plate (19) of the secondary pump.

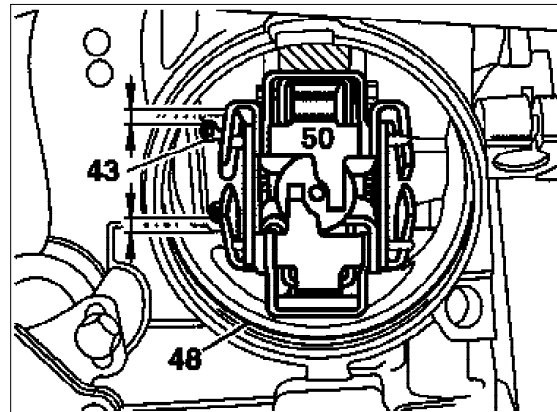


36 Press in locking ring (46) and take out locking ring (47).

37 Withdraw cover (46).



38 Compress locking ring (43) and take out centrifugal governor (50).

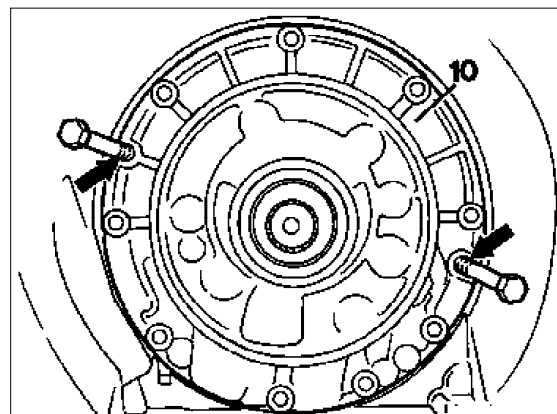


39 Unscrew bolts.

40 Screw two bolts into the tapped holes (arrows) and withdraw the front cover (10) on them.



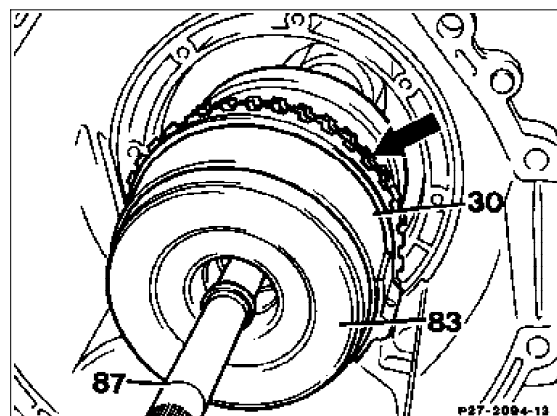
Do not press off the cover with the two bolts. If necessary, detach cover with a screwdriver.



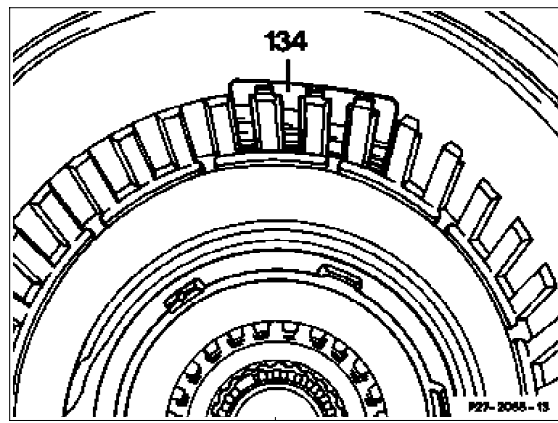
41 Grip gear set at the input shaft (87) and carefully withdraw to the front.

42 Pull clutch K1 (83) with brake band B1 (30) off the gear set.

43 Take off discs of B3 (arrow).

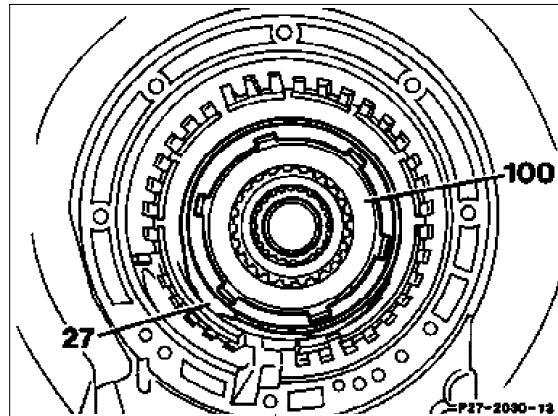


44 Take out damping spring (134).

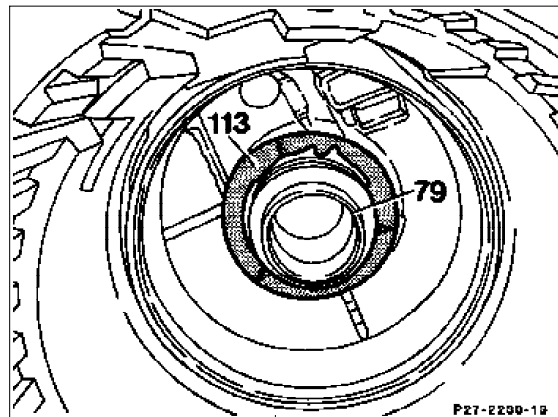


45 Take thrust pin out of the brake band (27).

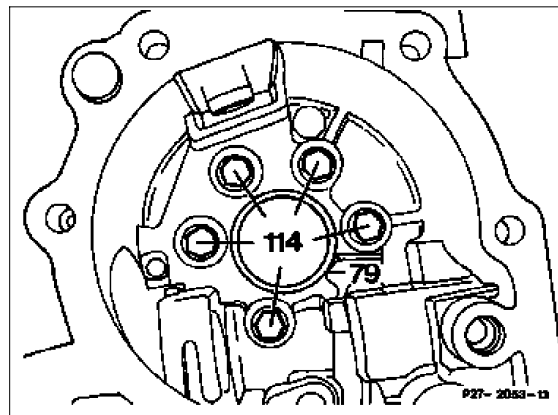
46 Take out clutch K2 (100). Disassemble clutch K2, assemble and measure (27-690).



47 Take off thrust washer (113).



48 Unscrew bolts (114). Screw in opposite two bolts approx. 80 mm long. Detach supporting flange (79) from the housing by hammer blows on the two bolts.



49 Position brake band B2 (27) at an angle, compress and take out.

Note

Transverse cracks in the brake band lining B2 are not a cause for concern.

50 Withdraw pressure body B2 (29).

51 Remove the sealing rings, test connection plugs etc. still remaining in the housing.

