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MERCEDES 722.3 AND 722.4

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Technical Service Information

MERCEDES 722.3 722.4

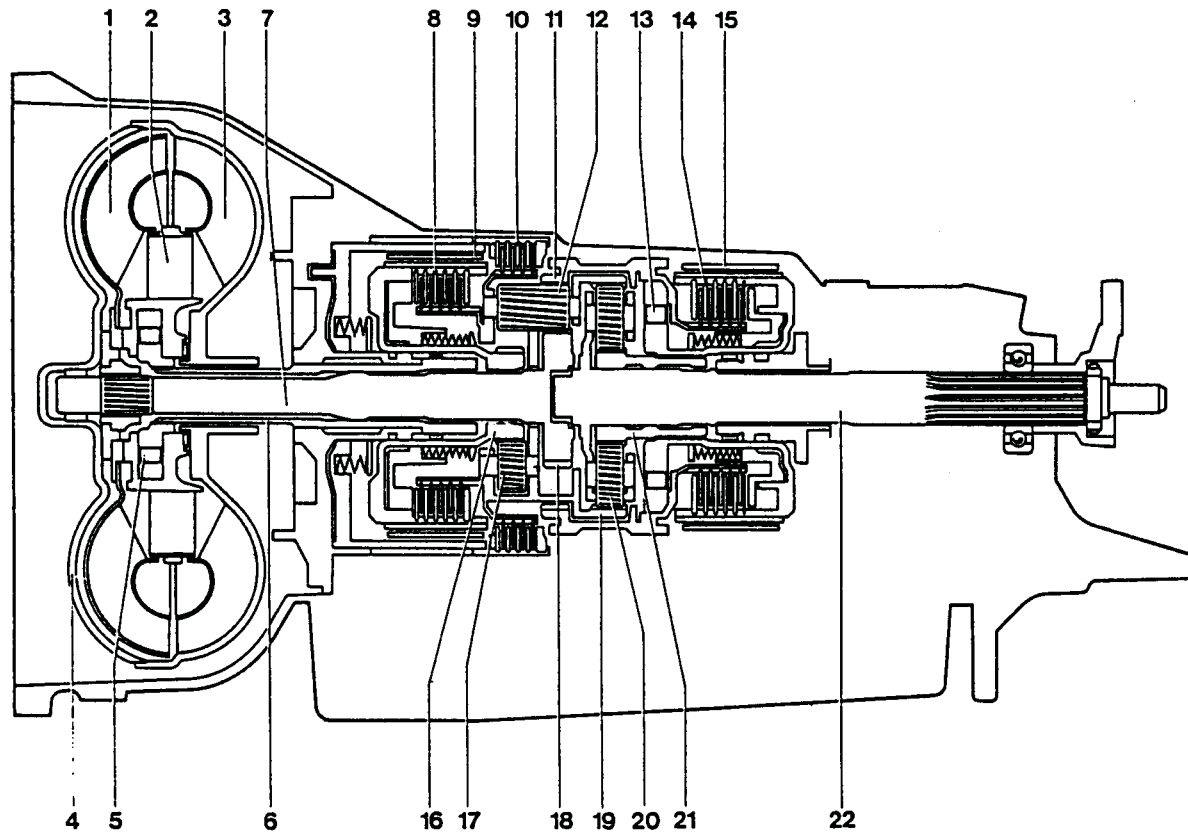


Fig. 368

- | | |
|------------------------------------------|-----------------------------------------------------|
| 1 Turbine wheel | 12 Wide planet pinion (Ravigneaux planetary unit) |
| 2 Impeller | 13 One-way clutch F |
| 3 Pump wheel | 14 Clutch K 2 |
| 4 Converter cover | 15 Brake band B 2 |
| 5 Converter one-way clutch | 16 Small sun gear (Ravigneaux planetary unit) |
| 6 Stator shaft | 17 Narrow planet pinion (Ravigneaux planetary unit) |
| 7 Input shaft | 18 Large sun gear (Ravigneaux planetary unit) |
| 8 Clutch K 1 | 19 Ring gear behing planetary unit |
| 9 Brake band B 1 | 20 Planet pinion rear planetary unit |
| 10 Disc brake B 3 | 21 Sun gear rear planetary unit |
| 11 Ring gear (Ravigneaux planetary unit) | 22 Output shaft |

Speed	B 1	B 2	B 3	K 1	K 2	F	Reduction
1		X			(X)	X	3.68
2	X	X					2.41
3		X		X			1.44
4				X	X		1
R			X		(X)	X	5.14

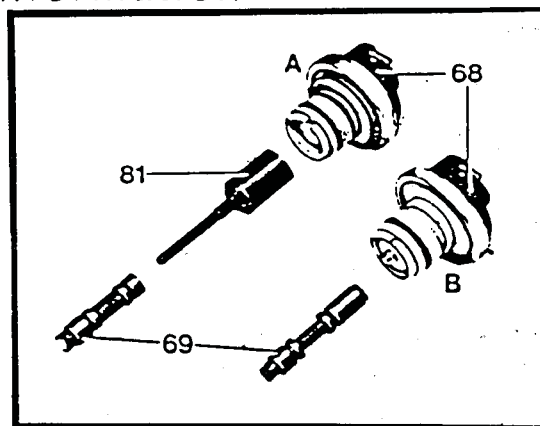
(X) K 2 bridges the one-way clutch during deceleration (coasting).

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Technical Service Information

Vacuum control unit version "B" has been installed up to February 1981. Starting February 1981 the vacuum control unit with the thrust pin for heat expansion compensation version "A" is installed.

Update to the late version on overhaul



TRANSMISSION

722.300, 722.302, 722.305
722.306, 722.307, 722.308
722.309, 722.311, 722.313
722.301, 722.304,
722.310, 722.312

VACUUM CONTROL UNIT COLOR CODE

red 722.400

722.301, 722.304, 722.310
722.312, 722.315
722.300, 722.301, 722.304
722.312, 722.303

green

722.310
722.300

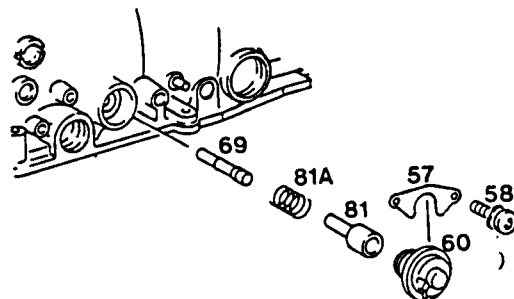
white 722.402

722.310
722.312

blue

722.310
722.312

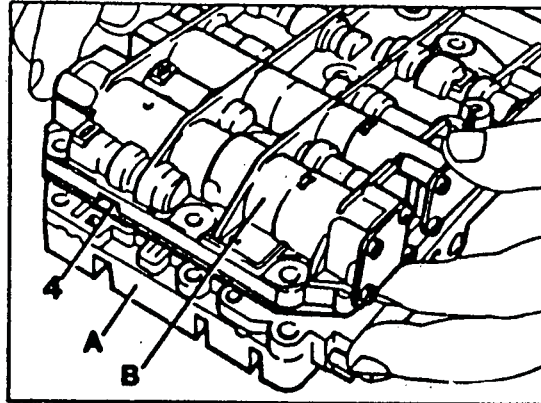
brown



- 57-Holding plate (two sizes)
- 58-Hex screws
- 60-Vacuum control unit
- 69-Modulating pressure control valve
- 81-Thermal thrust pin

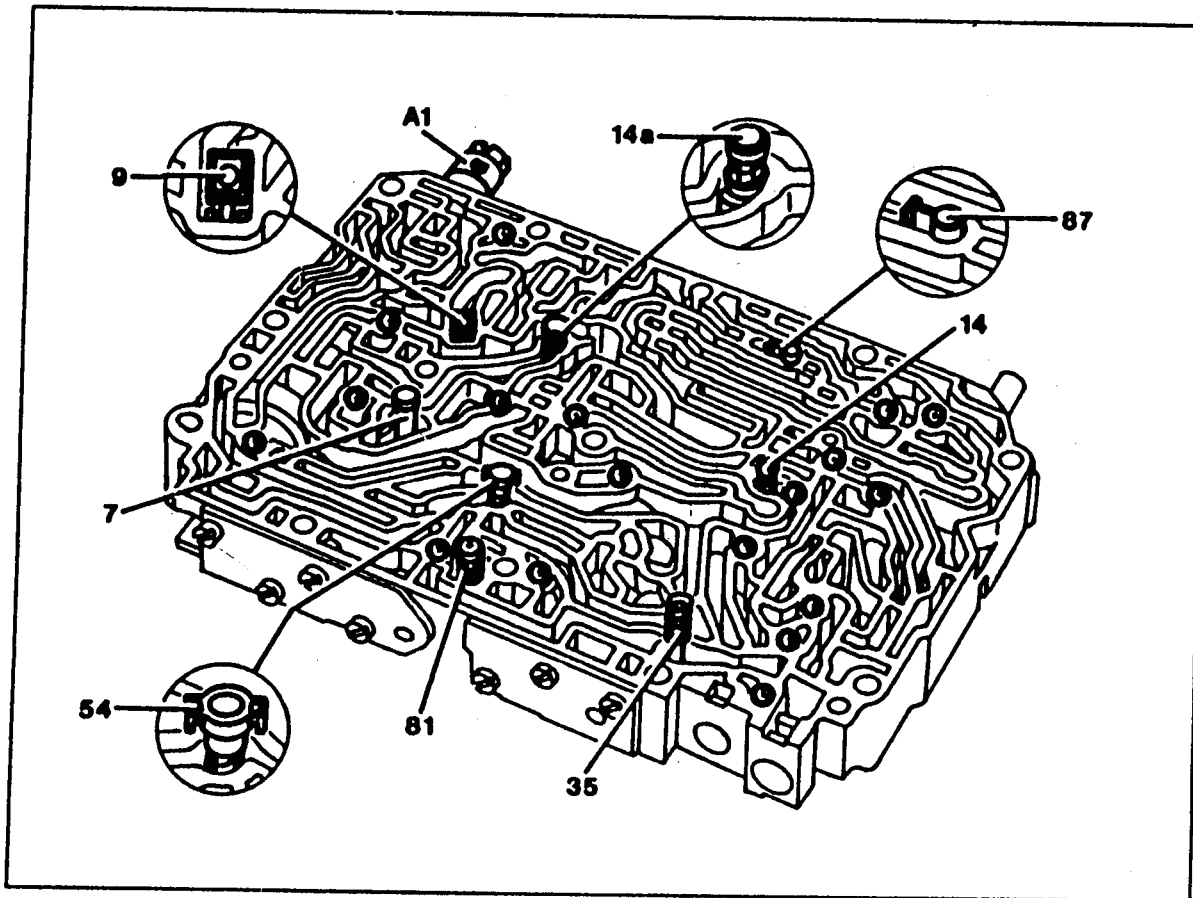
Technical Service Information

Carefully lift damper housing (B) together with separator plate (4).



Remove all 19 check balls (14), The valve ball marked with 14 is positioned on a conical spring.

Remove valves, filter and shift pin.

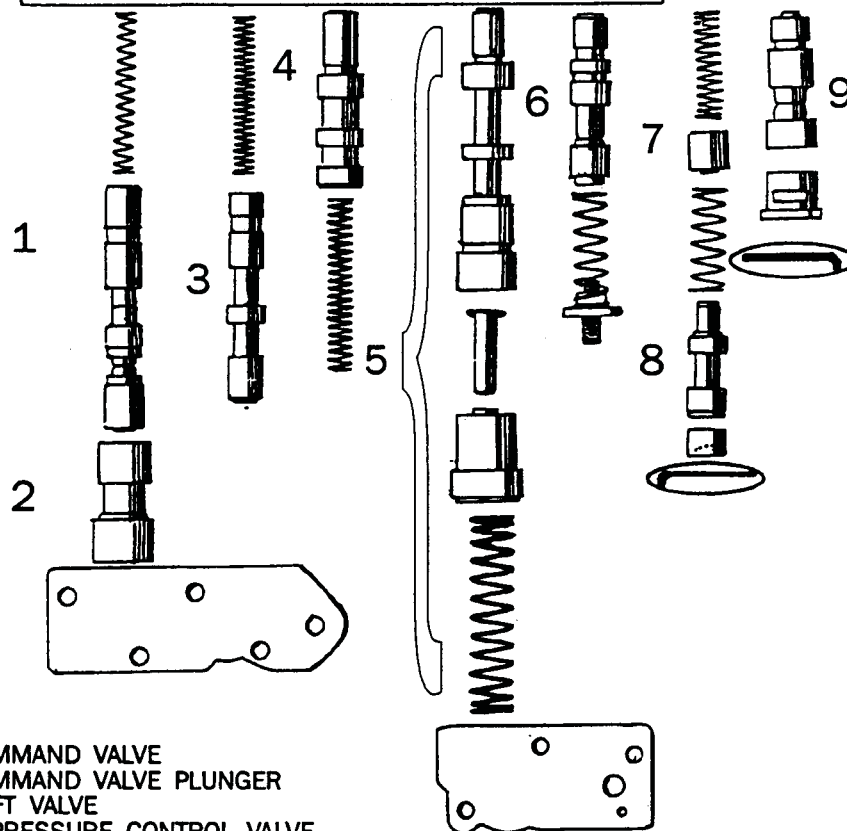
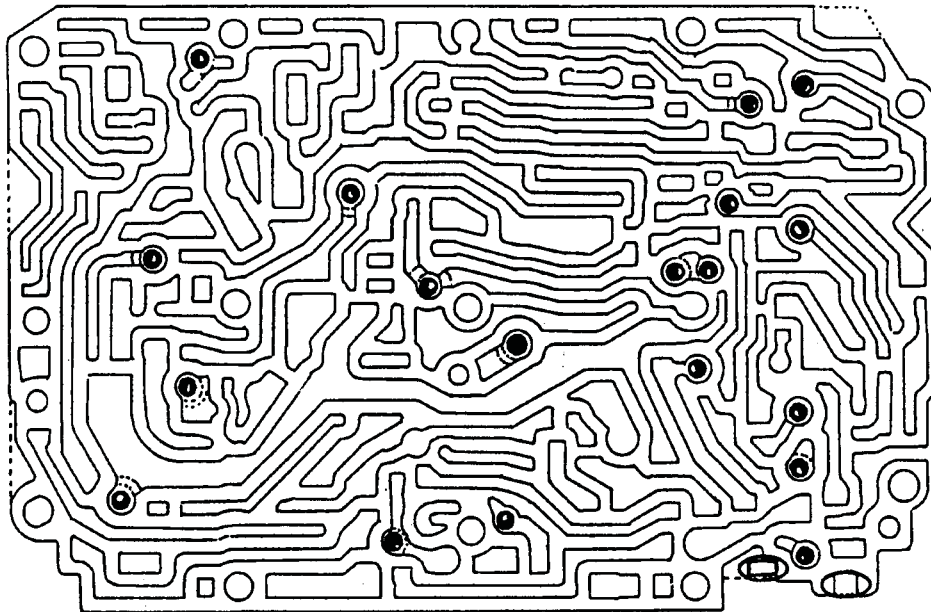


A1 Manual Valve
7 Shift valve K1
9 Check valve (white)
14 check balls (19)
14a Pressure valve

35 Shift pin lube pressure
54 Check valve
81 Sieve filter
87 Throttle Valve

Technical Service Information

UPPER VALVE BODY
(BOTTOM VIEW)



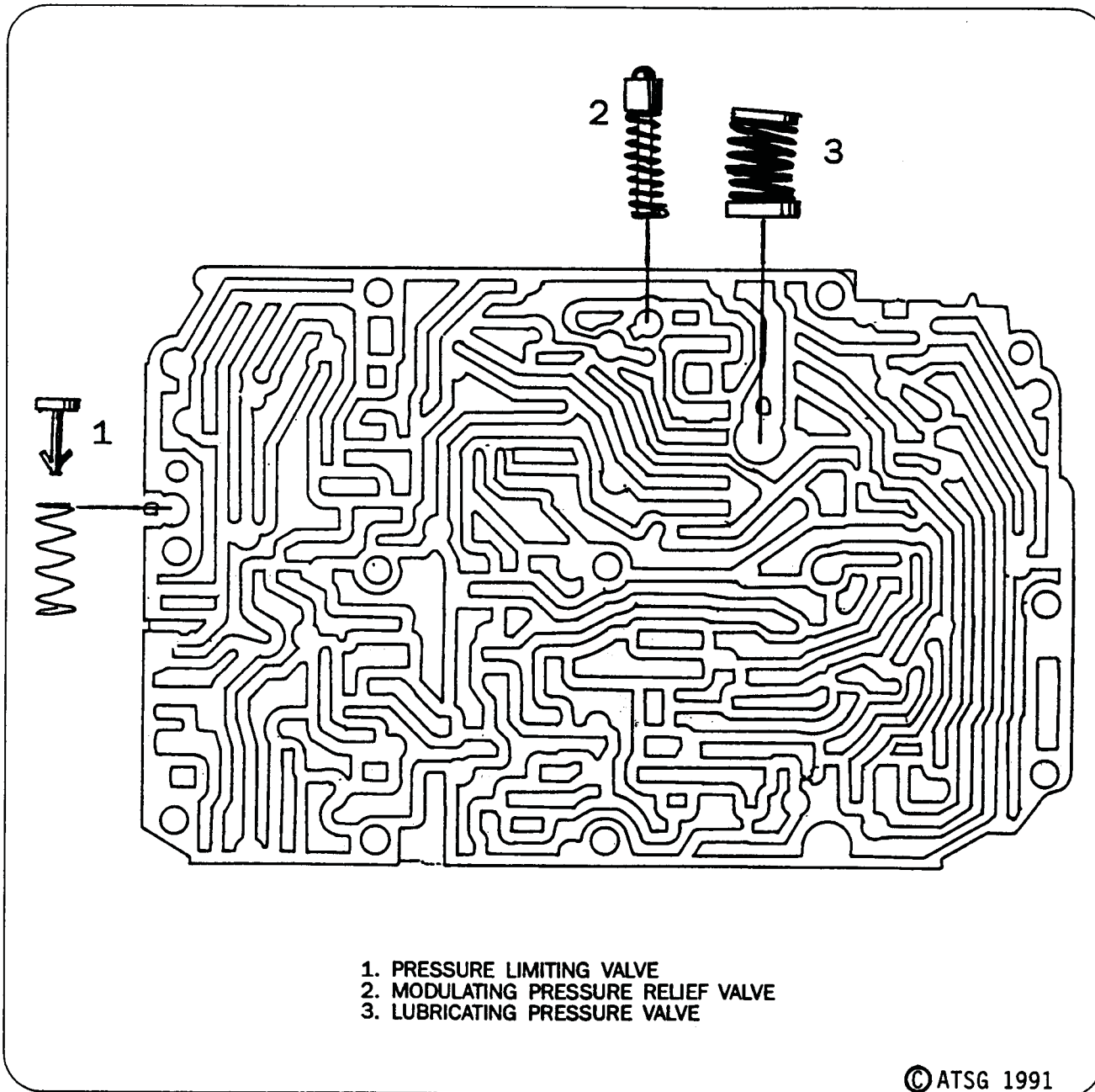
1. 2-3 COMMAND VALVE
2. 2-3 COMMAND VALVE PLUNGER
3. B1 SHIFT VALVE
4. BASIC PRESSURE CONTROL VALVE
5. WORKING PRESSURE CONTROL VALVE
6. FULL THROTTLE CONTROL VALVE
7. B1 PLUNGER CONTROL VALVE
8. B1 CONTROL VALVE
9. GOV. PRESSURE BOOST VALVE

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Technical Service Information

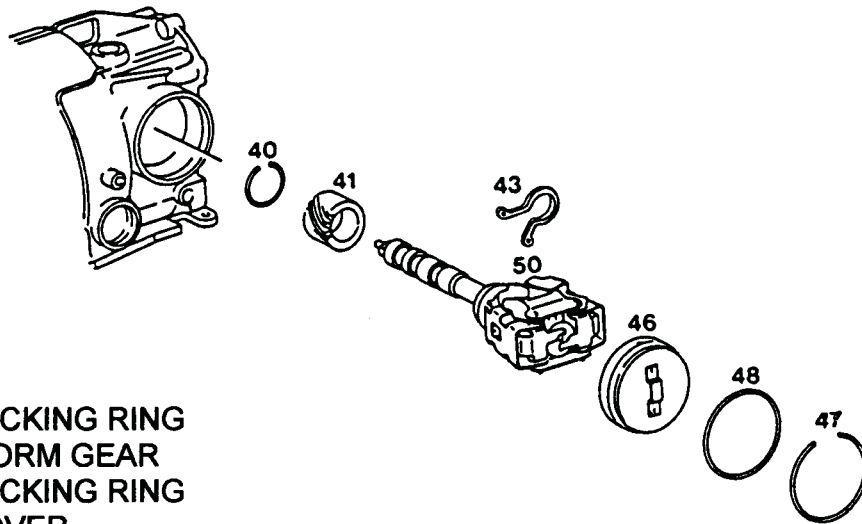
LOWER VALVE BODY



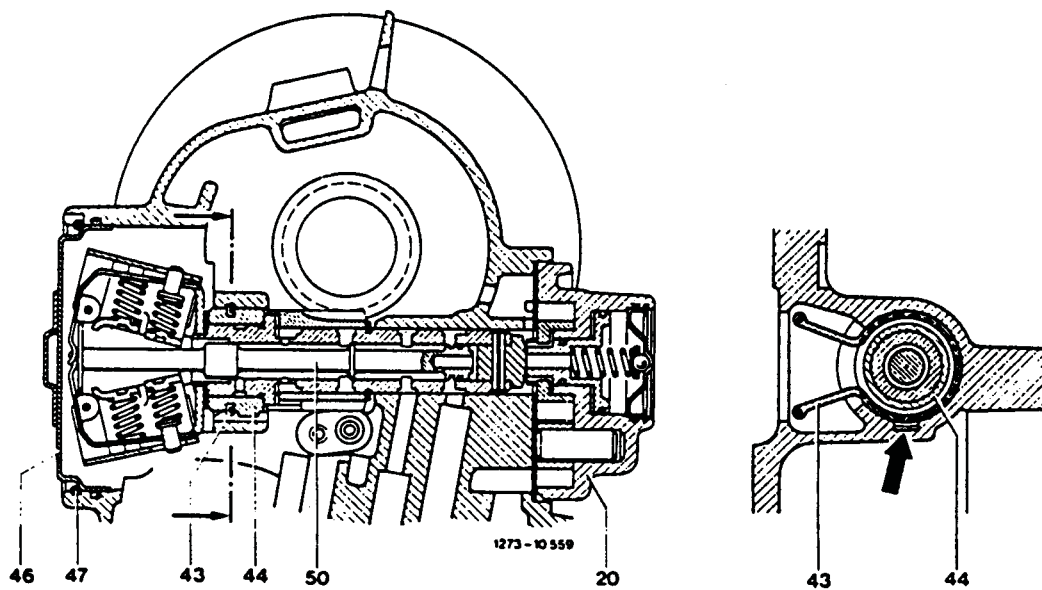
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Technical Service Information

GOVERNOR ASSEMBLY



- 40-LOCKING RING
- 41-WORM GEAR
- 43-LOCKING RING
- 46-COVER
- 47-CIRCLIP
- 48-O-RING



- 20-SECONDARY PUMP
- 43-LOCKING RING
- 44-BEARING RING
- 46-COVER
- 47-CIRCLIP

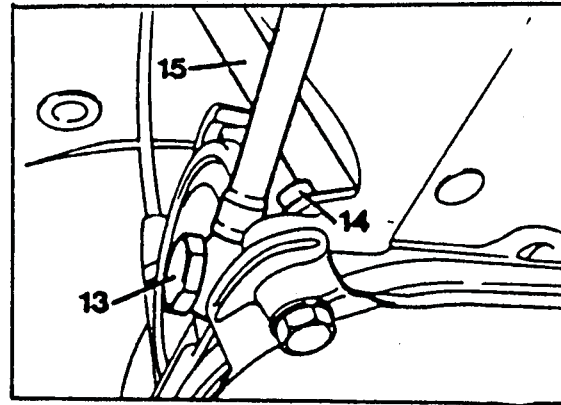
Technical Service Information

26-Disconnect oil cooler feed line and oil cooler return line (13).

INSTALLATION NOTE:

Replace gaskets for feed and return lines.

27-Screw our mounting screw (14) for oil filler neck (15) and push oil filler tube up.



28-Screw out all mounting screws (21) except for the two screws on the side (35).

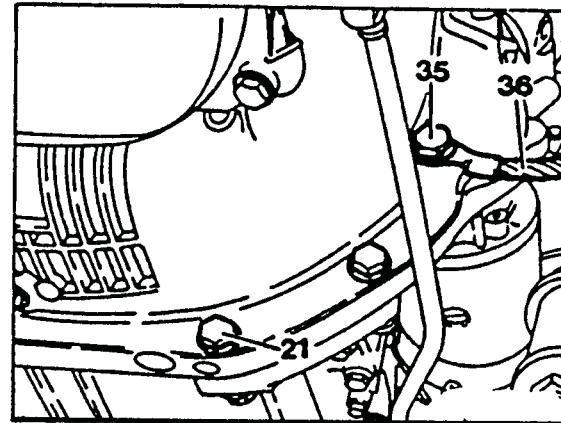
INSTALLATION NOTE:

Tightening torque is 55 Nm.

29-Slightly jack up transmission.

30-unscrew remaining bolts.

31-Slide transmission to rear as far as drive shift permits and lower jack carefully.



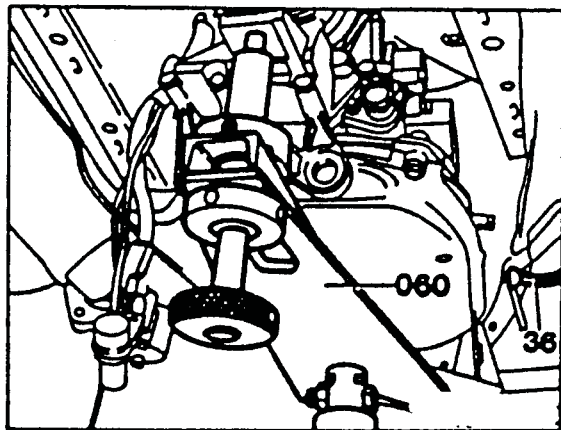
INSTALLATION NOTE:

Lift transmission to engine height and slide forward until torque converter housing is against engine. Reconnect ground strap (36)

32-Lift transmission off of Jack.

INSTALLATION NOTE:

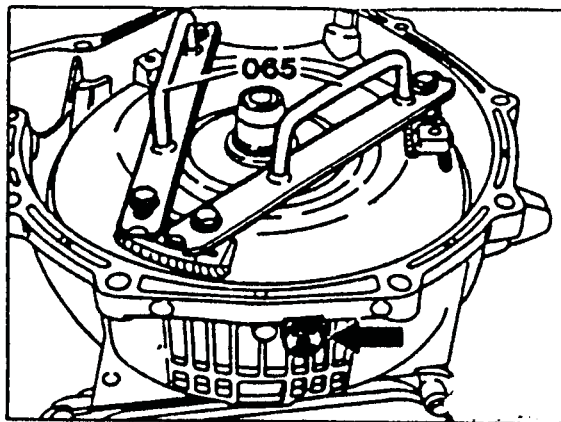
Turn torque converter so that one of the three threaded plates points straight down. Slightly grease centering pin on converter.



33-Set Transmission in vertical position.

34-Turn plastic retaining pin (arrow) for converter 1/4 turn counter-clockwise with 8mm allen wrench and remove.

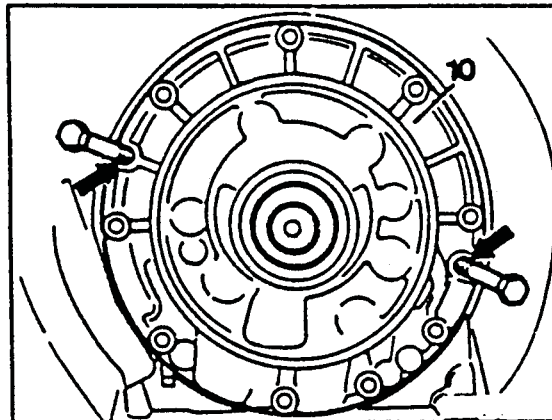
35-Screw bracket onto converter as illustrated.



Technical Service Information

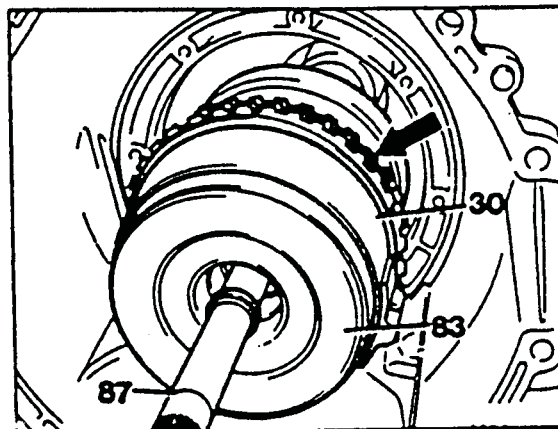
40-Remove combination screws out of front cover.

41-Screw two bolts into threaded holes (arrows) and use to pull out front pump assembly. refer to **teardown section on pump assembly.**



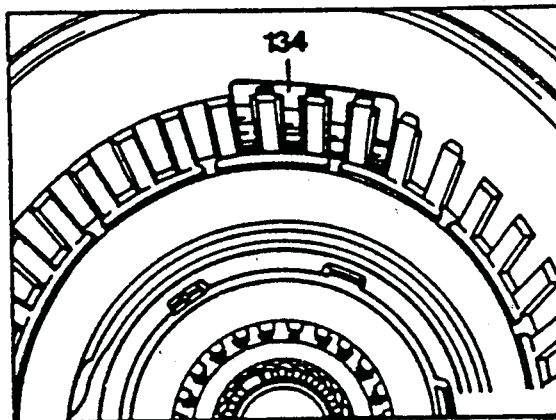
42-Grip planetary gear set on input shaft (87) and carefully pull out toward front.

43-Pull clutch K1 (83) off of planetary gear set together with brake band B1 (30).



44-Remove plates for B3 assembly (arrow).

45-Remove damping spring (134).

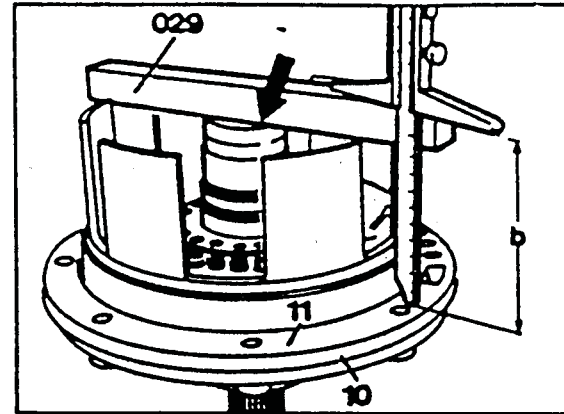




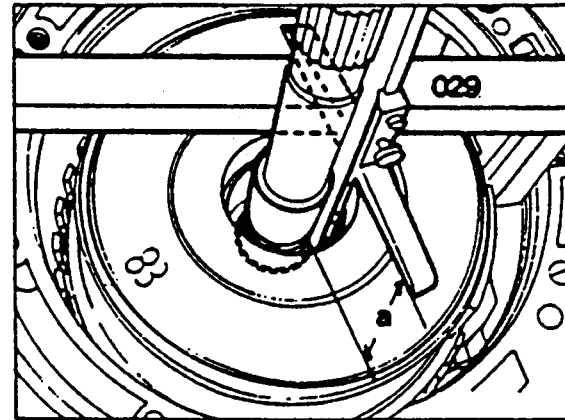
Place gasket (19) on front cover (10).

Position parallel support (029) (Mercedes tool 126 589 04 31 00) on flange (arrow)

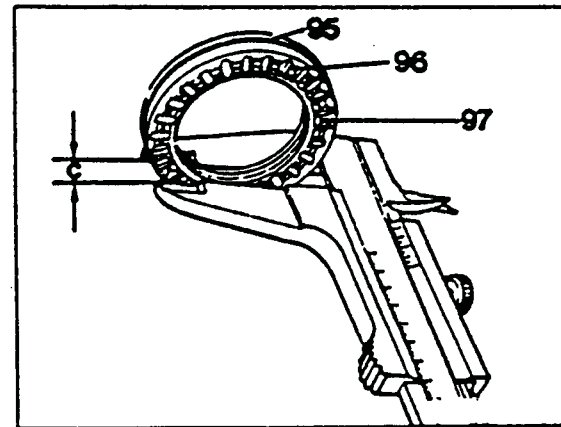
Measure distance from parallel support to gasket (11) with depth gauge (dimension "b").



Position parallel support (029) on machined surface of transmission housing. Measure distance between parallel support to contact surface in clutch K1 (83) with depth gauge (dimension "a").



Hold shim (95), thrust washer (96) and thrust bearing (97) together and measure dimension "c" with vernier calipers. The end play "B" for clutch K1 is equal to dimension "a" minus dimensions "b" and "c" ($B=a-b-c$). The end play can be adjusted by inserting appropriate shims (95) (thickness 0.1;0.2;0.5mm)

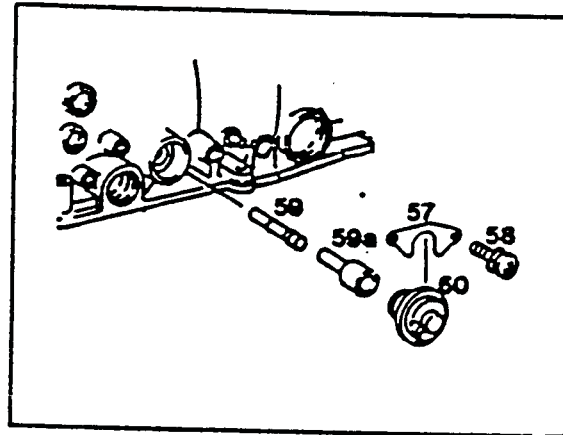


85-Insert measured shims, thrust washer and thrust bearing into K1 one after the other.

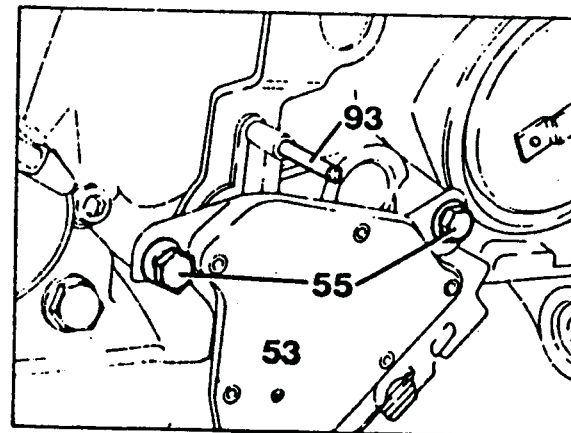
Technical Service Information

112-Insert modulator pressure control valve (59) and thrust pin (59a).

113-Attach vacuum control unit (60) with retaining plate (57), tighten allen screws (58) M6x15 to 8 Nm.



113a-Insert a 4 mm split pin or drill bit as a locating pin (93) through the locating hole into the driver of the starter lock-out switch (53). Tighten bolts (55) to 8 Nm and withdraw locating pin.

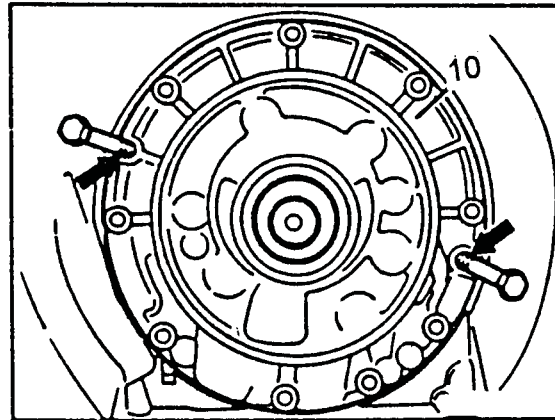


Technical Service Information

TRANSMISSION TEARDOWN AND ASSEMBLY

1-Remove pump bolts.

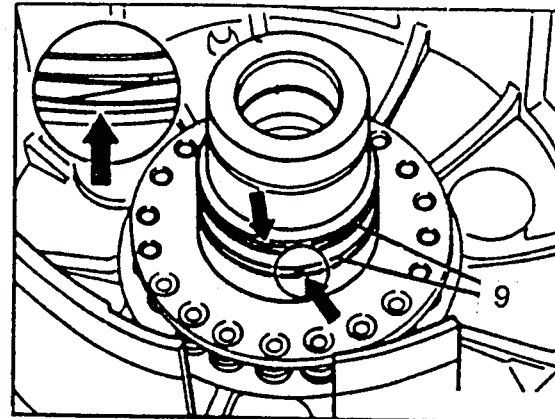
2-Screw two bolts into threaded holes (arrows) and use these to pull out front pump (10)



INSTALLATION NOTE:

Clean surfaces replace pump gasket do not use any sealant on the gasket. The bolts should have a non-hardening sealant torque bolts to 13 Nm.

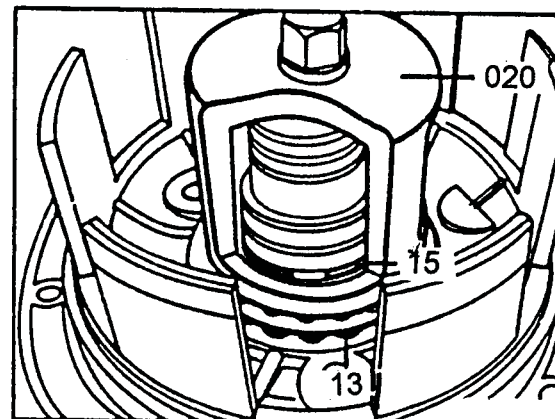
3-Remove the two teflon rings (9).



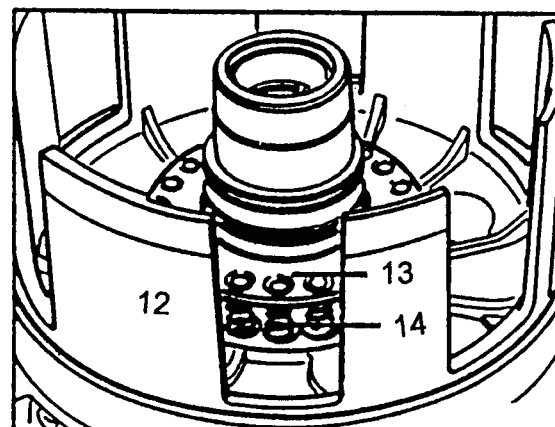
INSTALLATION NOTE:

Insert teflon rings (9) with grease. Assure that the ring gaps (arrows) remain together. If necessary remove rings again and reform to smaller diameter.

4-Position installation fixture (020) on spring plate (13) and clamp until snap ring (15) is exposed. Remove snap ring (15). Release installation fixture and remove.



5-Remove spring plate (13) and return springs (14) for piston B3.

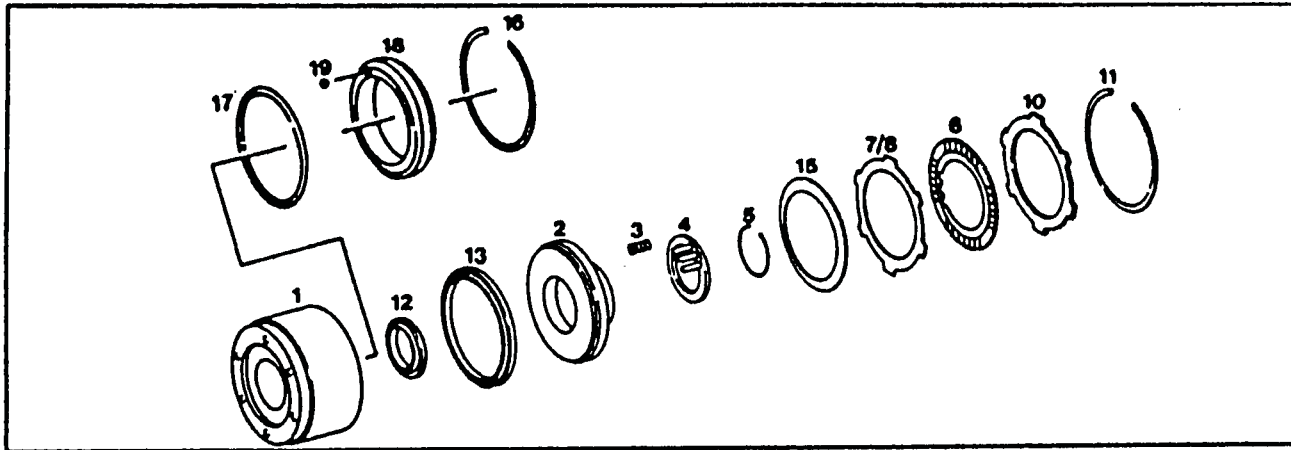


INSTALLATION NOTE:

Number of return springs = 20.

Technical Service Information

DISASSEMBLY, ASSEMBLY AND MEASUREMENT OF K1 CLUTCH



Retaining ring (11).....
Plate assembly (6,7,8 and 10 plate
spring (15)).....

remove with screw driver .Install

Remove completely from hub (1). Install.
Position in sequence according to
transmission type. Position plate spring
with crown toward piston .Check and
adjust release clearance.

retaining ring (5).....

remove, install. For this purpose
compress spring plate until retaining ring
is exposed.

Spring plate (4) and pressure
springs (3).....

remove and check number of springs.

piston (2).....

Pull out, To install piston use installation
tool.

O-ring (17).....

Test for leakage.

Piston guide ring (18)....

Remove after removing retaining ring.

Technical Service Information

Complaint:

No kickdown downshifts.

Cause/Remedy:

1. Check fuse for current supply to magnetic valve.
2. Remove magnetic valve. Connect to current supply in a removed condition and check for function. Renew, if required.
3. Check cable control for control pressure whether disengaged, torn or wrongly adjusted.
4. Check kickdown regulating slide in shift valve housing for easy operation and exchange shift valve housing, if required.

Complaint:

No brake shifts (4-3 and 3-2).

Cause/Remedy:

1. Adjust cable control for control pressure.
2. Check vacuum lines and connections for leaks.
3. Make B1 shift piston operable and exchange shift valve housing, if required.

Complaint:

Automatic, unwanted downshifts outside partial throttle downshift range without actuating kickdown switch.

Cause/Remedy:

1. Remove kickdown magnetic valve. Check O-ring on magnetic valve for damage.
 2. Check whether kickdown switch sticks in pushed position and renew, if required.
 3. Check whether magnetic valve stick in opened position and renew magnetic valve, if required.
-

Complaint:

No upshifts

Cause/Remedy

1. Check regulating pressure (if no regulating pressure is indicated, continue with item 2. If regulator is in order, perform item 3.
2. Clean centrifugal governor and make operable.
3. Disassemble, clean shift valve housing and exchange, if required.

Complaint:

Upshifts in upper speed range of gears only.

Cause/Remedy:

1. Check cable control for control pressure and adjust.
2. Check regulator pressure, if regulator pressure is too low, exchange centrifugal governor.
3. Make control pressure regulating valve operable.

Complaint:

Upshifts in lower speed range of gears only.

Cause/Remedy:

1. Check cable control for control pressure whether disengaged or torn and make accurate adjustments.
 2. Check full throttle stop. (Accelerate by means of accelerator lever and check whether throttle valve rest against full throttle stop, readjust, if required).
 3. Check regulator pressure, if regulator pressure is too high, exchange centrifugal governor.
-

Technical Service Information

MERCEDES 722.4 HARSH REVERSE AFTER REBUILD CHECK VALVE IN PUMP OK

COMPLAINT: Some 190 series transmissions may experience a harsh reverse engagement into reverse after an overhaul. All forward ranges are ok and modulating pressure is within specifications.

CAUSE: The reverse feed passage is unrestricted, allowing too much oil volume to the reverse clutches.

CORRECTION: Install the Mercedes tapered oil restrictor Part no. 123 277 0319. into the transmission case as shown in Figure 1. Note that the restrictor goes in tapered end first and fits snug in the case.

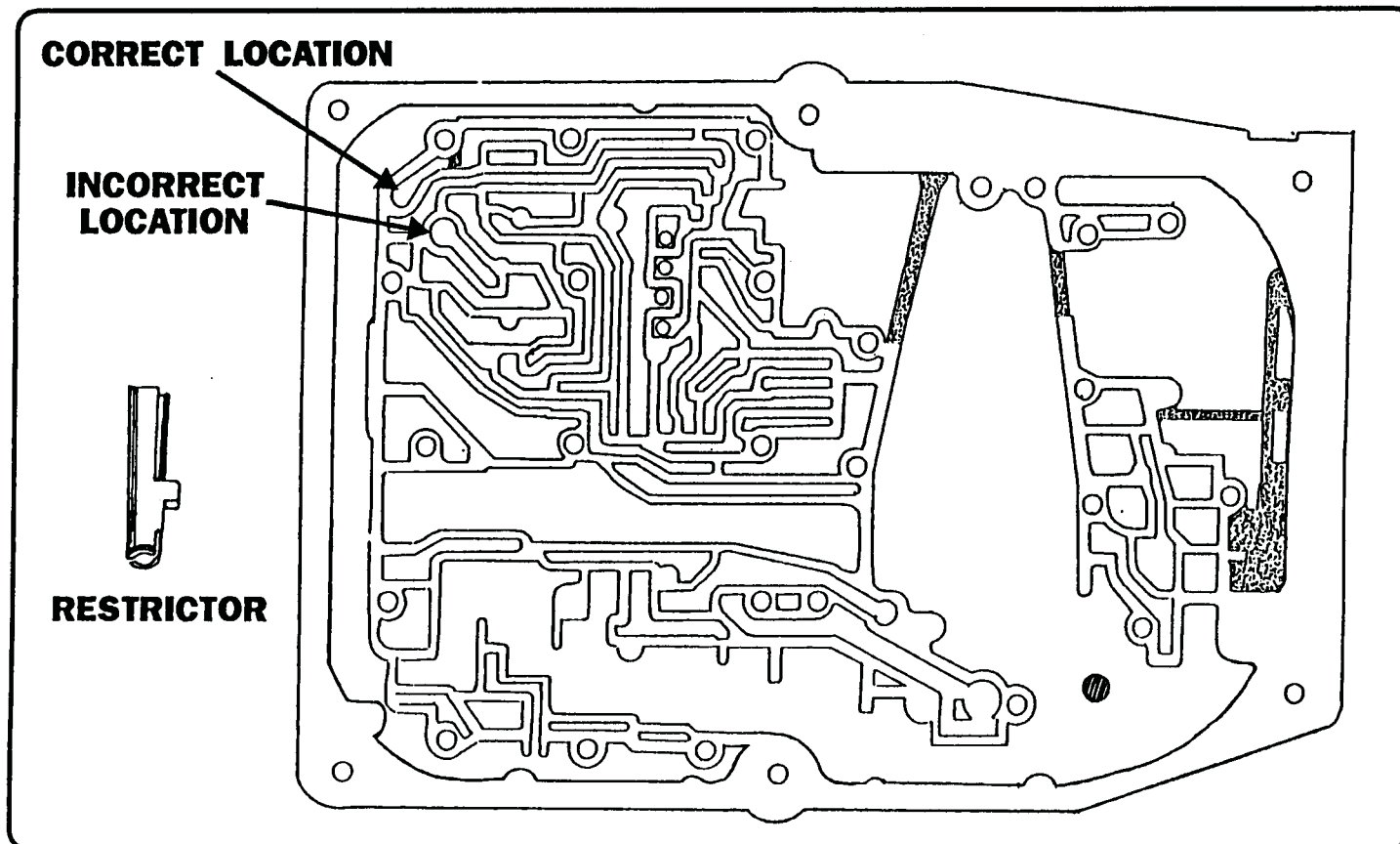


Figure 1