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087 3-speed Automatic

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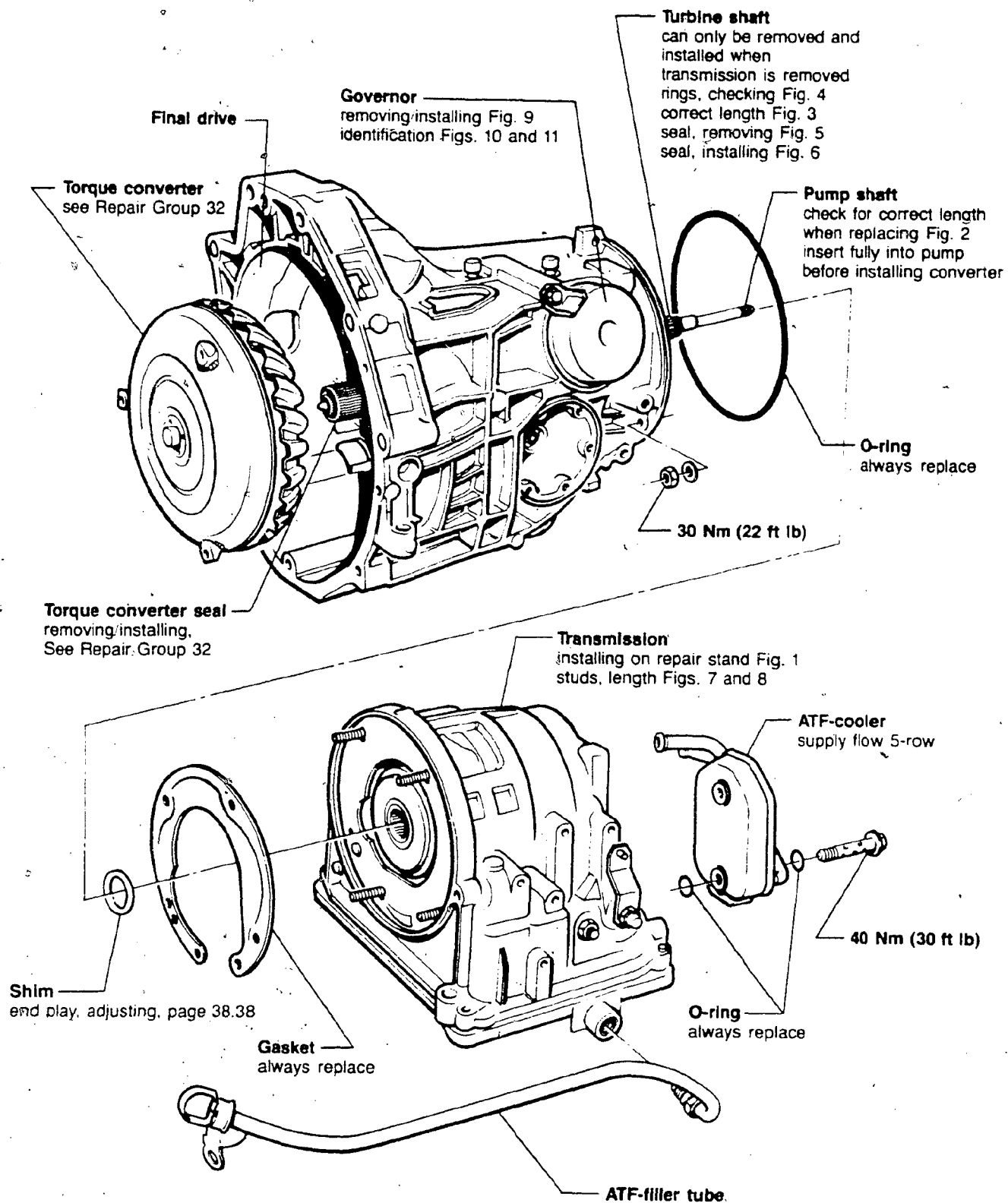
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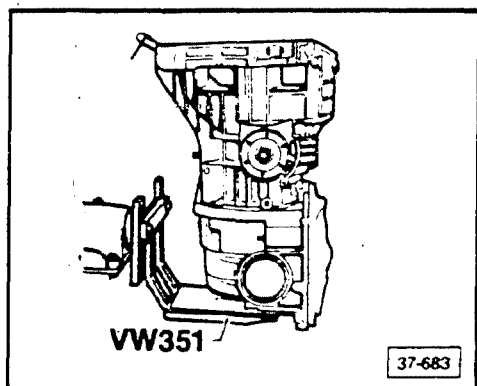
Automatic Transmission – Case, Gears, Shaft



Note

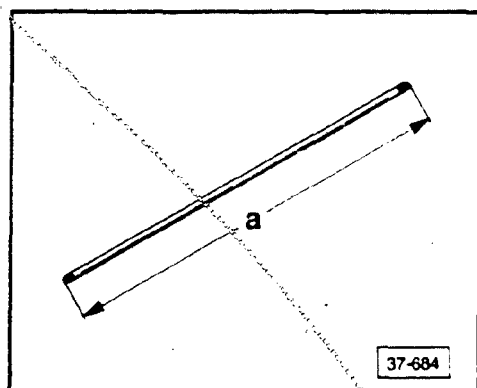
After repair work on final drive or transmission, check end play and adjust if necessary (page 38.38).

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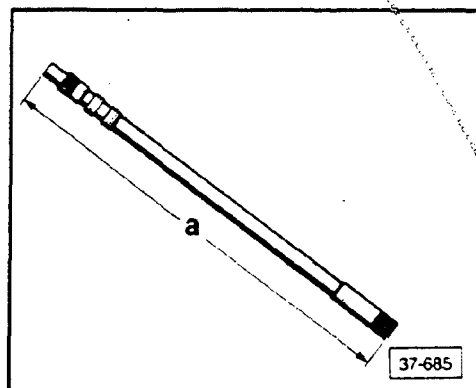
► Fig. 1 Transmission, installing on repair stand

- drain ATF and remove ATF-cooler
- mount transmission as shown



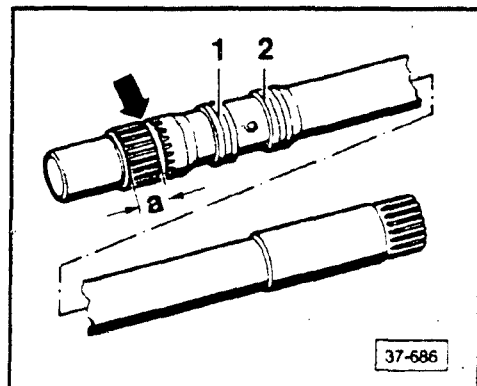
► Fig. 2 Pump shaft, length

- $a = 513 \text{ mm (20.2 in.)}$



► Fig. 3 Turbine shaft, length

- turbine shafts are available in different lengths; measure before installation
- $a = 424.5 \text{ mm (16.7 in.)}$

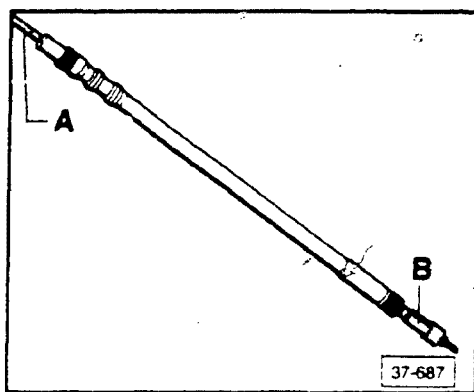


► Fig. 4 Turbine shaft rings, checking

- the length of the spline a in the forward coupling is limited by a circlip (arrow). Check rings 1 and 2 for correct seating

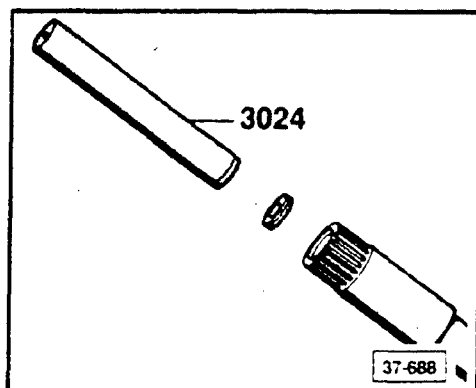
CAUTION

Never install shaft without circlip.



► Fig. 5 Turbine shaft seal, removing

- pull out sealing ring with puller B (e.g. **US 1010** or **Kukko 21-1**)
- use an old oil pump shaft or suitable round rod **A** as a drift

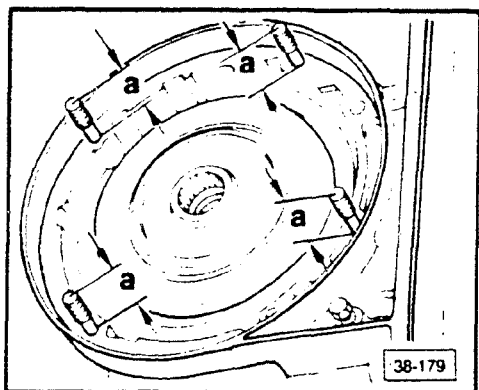


► Fig. 6 Turbine shaft sealing ring, installing

- insert seal so that the open side faces outward
- push seal in to stop

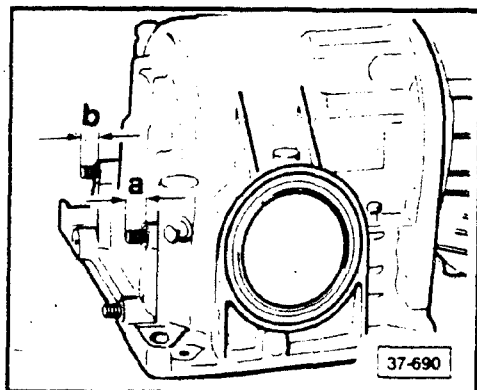
Note

In turbine shafts with seal only use pump shaft with tapered spline ends.



► Fig. 7 Front studs, length

$a = 31.5 \text{ mm (1 1/4 in.)}$

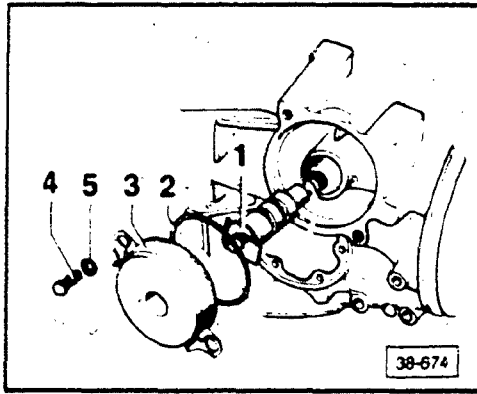


► Fig. 8 Rear stud bolts, length

$a \text{ and } b = 22 \text{ mm (0.866 in.)}$

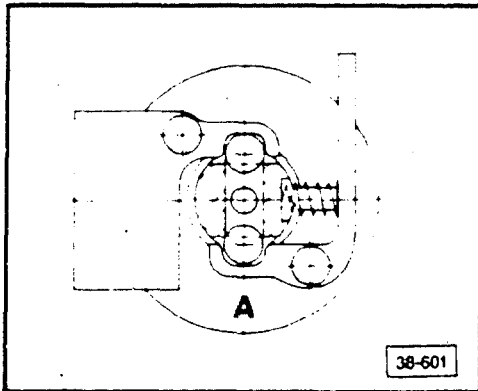
Note

Housings are shipped as replacement parts without studs. Tighten studs to the indicated lengths during assembly.



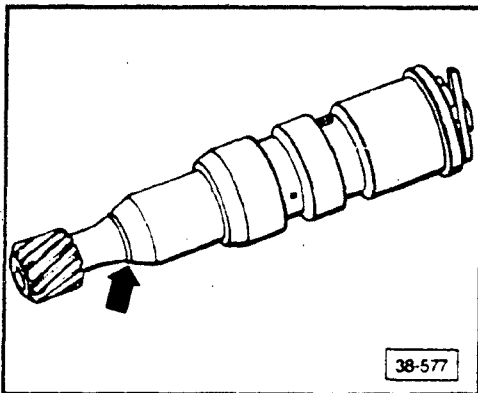
► Fig. 9 Governor, removing/installing

- 1 — Governor
- 2 — O-ring
 - always replace
- 3 — Governor cover
- 4 — Bolt
- 5 — Lock washer



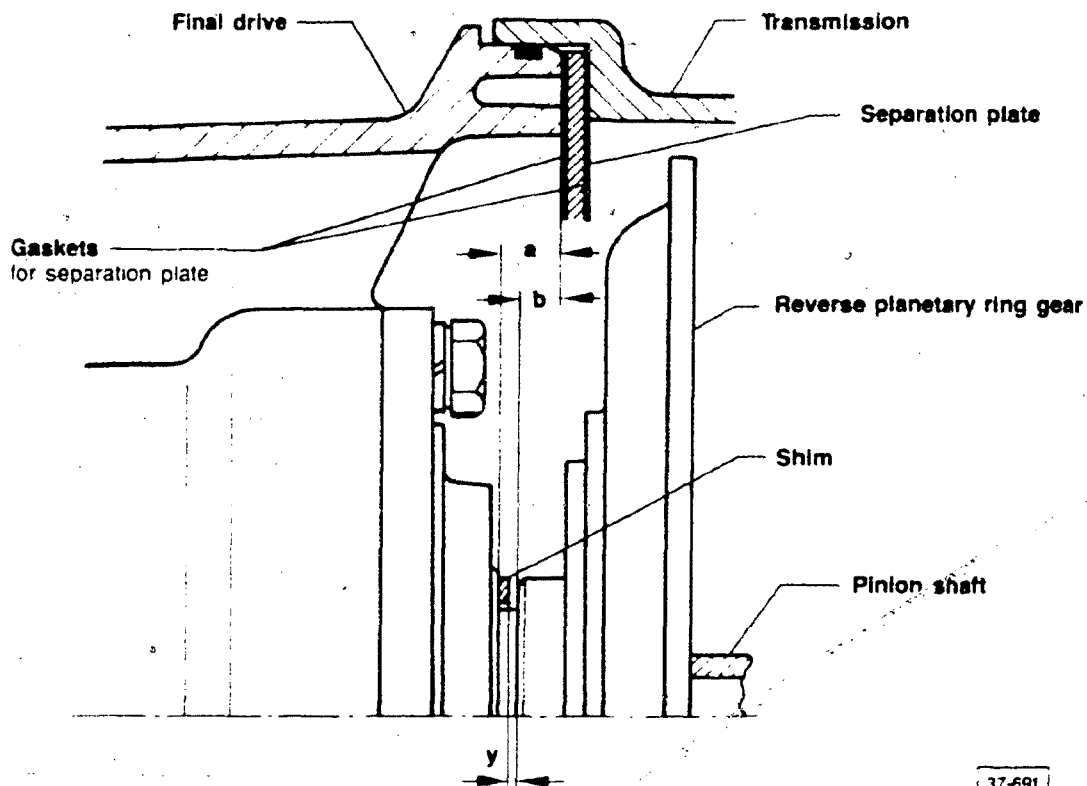
► Fig. 10 Governor, identification

- an identification letter is stamped on the governor head
- governor identification letter A



► Fig. 11 Governor, identification

- groove on governor shaft (arrow)



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Note

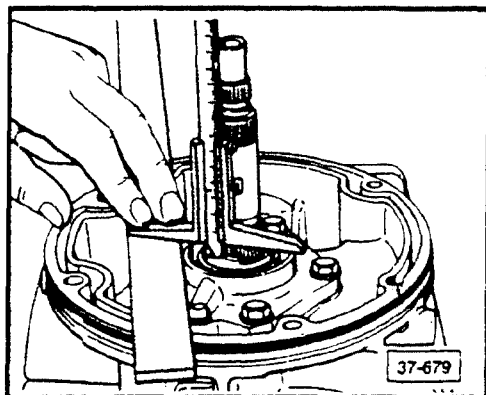
The end play y between transmission and final drive must be adjusted to limit the end play of the reverse planetary ring gear.

Measurement points:

- a** — Final drive housing: joint to oil seal sleeve
- b** — transmission housing: shim contact shoulder to separation plate with gasket

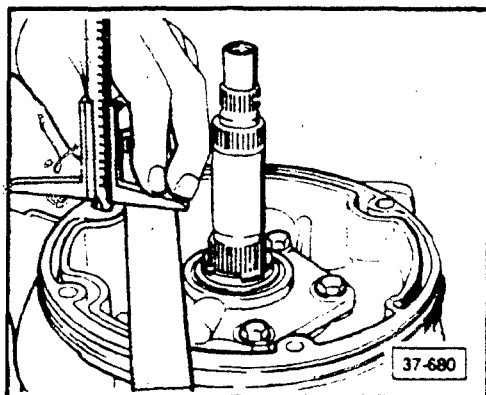
Note

Sequence for determining the shim for the transmission/final drive, see next page.



Shim for transmission/final drive, determining

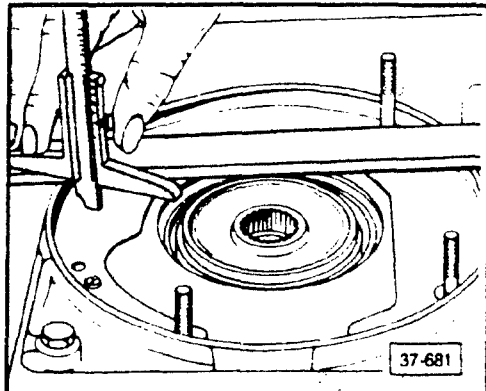
- measure dimension **a** on final drive
- put straightedge on case and measure to seal sleeve



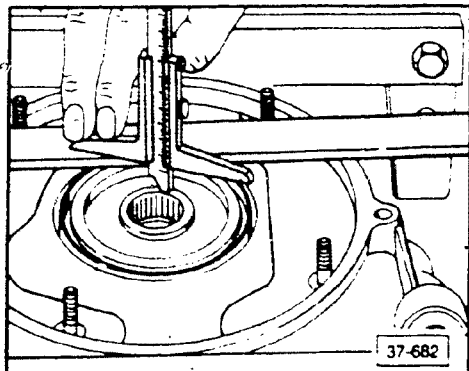
- measure from straightedge to final drive housing joint

Example

from straightedge to sleeve	18.7 mm
from straightedge to housing joint	- 8.0
dimension a	= 10.7 mm



- measure dimension **b** on transmission
- put straightedge on case (housing) and measure to gasket



- measure from straightedge to shim shoulders

Example:

from straightedge to gasket 19.2 mm
 from straightedge to shoulder 10.0 mm
 dimension **b** = 9.2 mm

- determine dimension **x**

• $x = a - b$

Example:

dimension **a** 10.7 mm
 dimension **b** 9.2 mm
 dimension **x** = 1.5 mm

- select shims from the following table:

Dimension x (mm)	Shims (mm)
0.23 . . . 0.84	none
0.85 . . . 1.24	1 x 0.4
1.25 . . . 1.64	2 x 0.4
1.65 . . . 2.04	1 x 1.2
2.05 . . . 2.44	1 x 0.4 1 x 1.2
2.45 . . . 2.84	2 x 0.4 1 x 1.2
0.85 . . . 3.24	2 x 1.2
3.25 . . . 3.64	1 x 0.4 2 x 1.2
3.65 . . . 3.88	2 x 0.4 2 x 1.2

Available shims

0.4 mm — part number 010 323 345 A

1.2 mm — part number 010 323 346 A

CAUTION

Part numbers are for reference only.
 Always check with your Parts
 Department for latest information.

Automatic Transmission – Case, Gears, Shaft

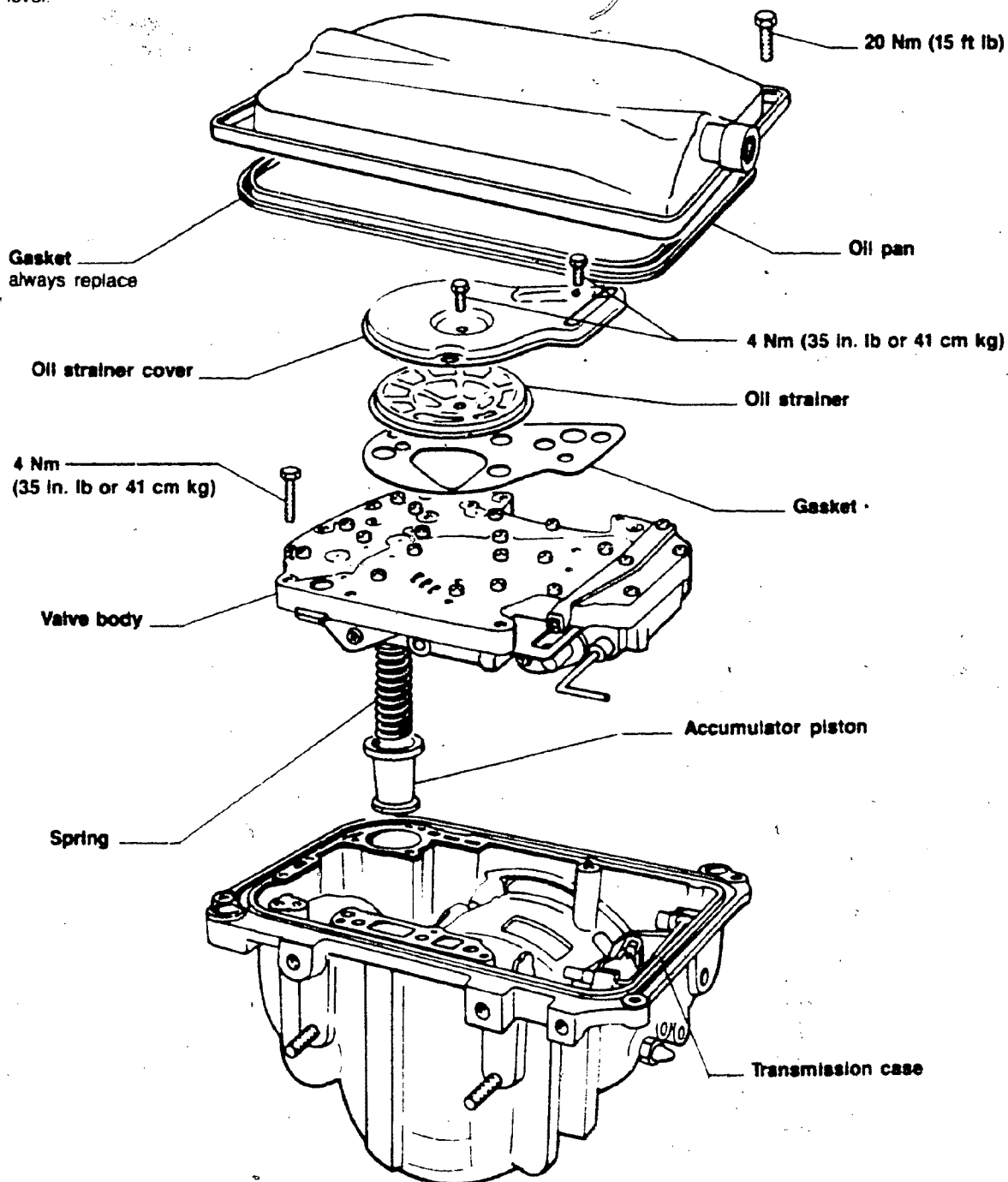
Note

The valve body can be removed with transmission in vehicle.

After installing oil pan: refill with ATF and check ATF fluid level.

CAUTION

Do not run engine or tow vehicle when oil pan is off or with no oil in transmission.



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