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ACURA VIGOR MPWA

ACURA 2.5TL M1WA

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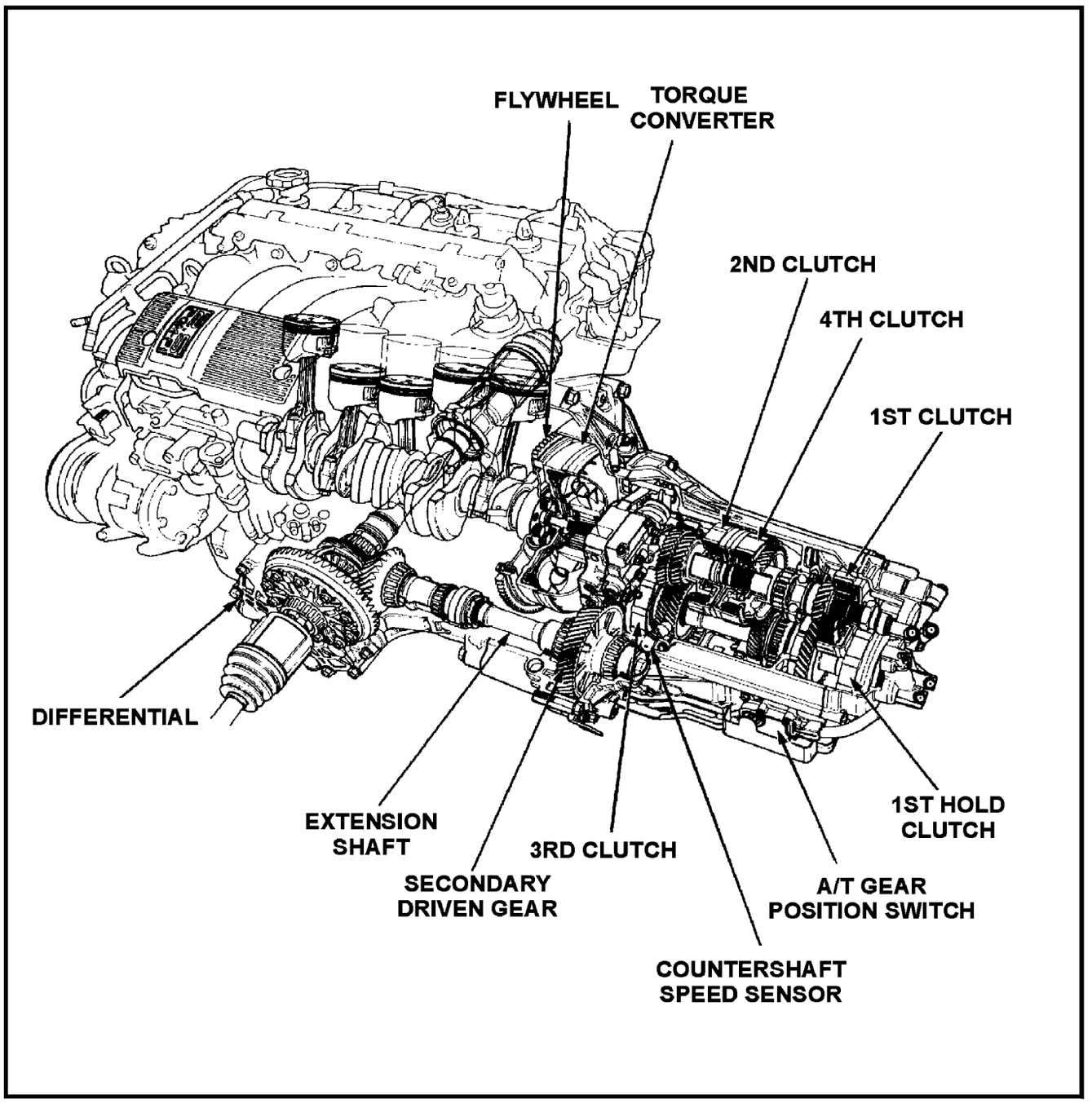
MPWA/M1WA


FLYWHEEL
TORQUE CONVERTER
2ND CLUTCH
4TH CLUTCH
1ST CLUTCH
DIFFERENTIAL
EXTENSION SHAFT
SECONDARY DRIVEN GEAR
3RD CLUTCH
1ST HOLD CLUTCH
A/T GEAR POSITION SWITCH
COUNTERSHAFT SPEED SENSOR

SOLENOID ON/OFF AND RESISTANCE CHARTS

SHIFT SOLENOIDS

RANGE	GEAR	SHIFT SOLENOID A	SHIFT SOLENOID B	RESISTANCE
D4 & D3	FIRST	OFF	ON	12-24 OHMS
	SECOND	ON	ON	
	THIRD	ON	OFF	
D4	FOURTH	OFF	OFF	
2	SECOND	ON	ON	
1	LOW	ON	OFF	
R	REVERSE	OFF	OFF	

LOCK-UP SOLENOIDS

LOCK-UP CONDITION	LOCK-UP SOLENOID A	LOCK-UP SOLENOID B	RESISTANCE
LOCK-UP.....OFF	OFF	OFF	12-24 OHMS
LOCK-UP...PARTIAL	ON	OFF	
LOCK-UP...HALF	ON	ON	
LOCK-UP.....FULL	ON	ON	
LOCK-UP DURING DECELERATION	ON	DUTY OPERATION OFF<>ON	

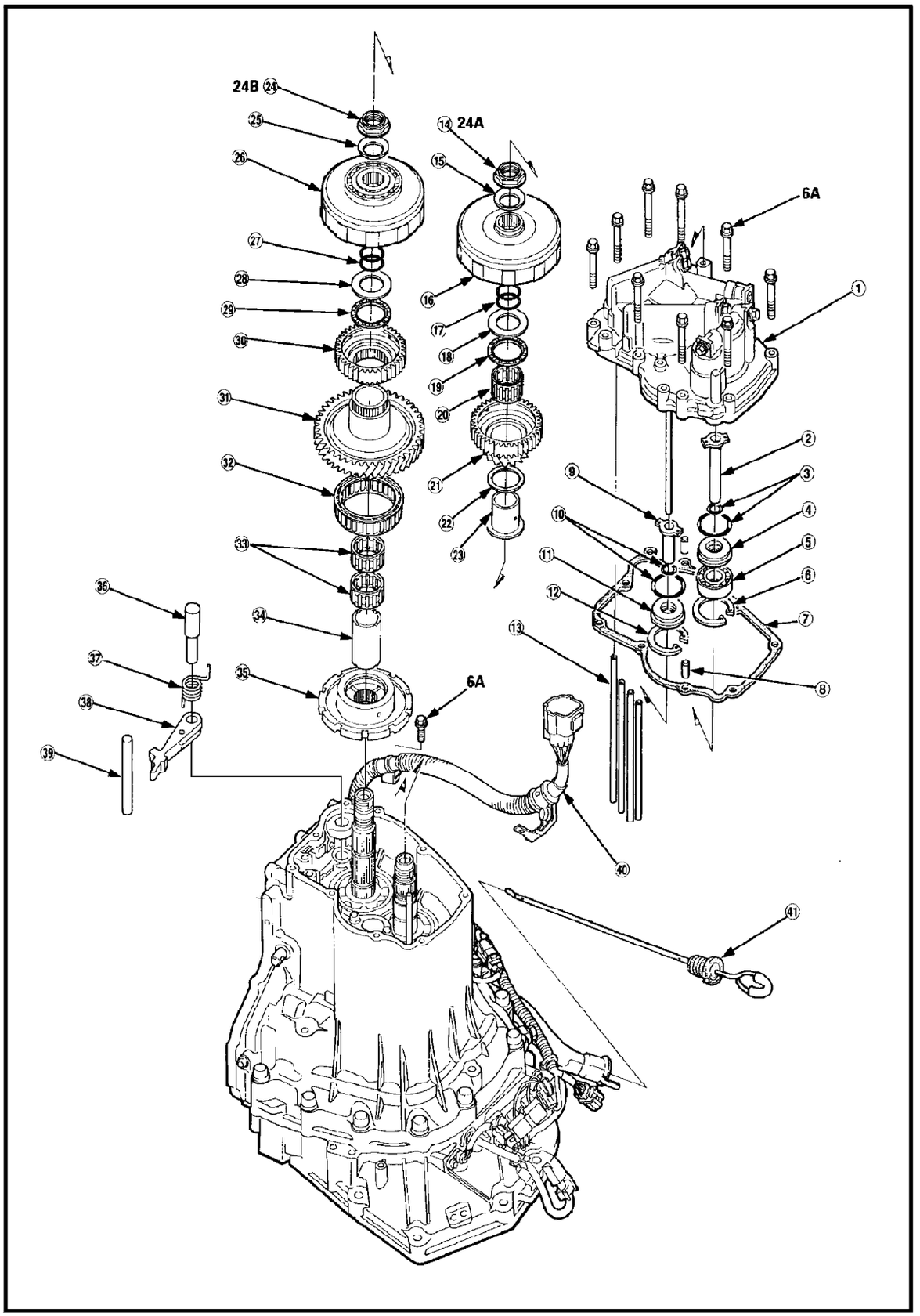
LINEAR SOLENOID

LINEAR SOLENOID CONDITION	RESISTANCE
The Transmission Control Module varies the duty cycle of the linear solenoid based on torque demand.	5.0-5.6 OHMS

NOTES	
A.	Flush or replace cooler and install inline filter
B.	Set idle rpm in gear to specified idle speed. If still no good, adjust motor mounts as outlined in engine section of service manual.
C.	If the large clutch piston O-ring is broken, inspect the piston groove for rough machining.
D.	If the clutch pack is seized or is excessively worn, inspect the other clutches for wear, and check the orifice control valves and throttle valve for free movement.
E.	If the throttle valve is stuck inspect the clutches for wear.
G.	If the 1-2 shift valve is stuck closed, the transmission will not upshift. If stuck open the transmission has no 1st gear.
H.	If the 2-3 orifice control valve is stuck, inspect the 2nd and 3rd clutch packs for wear.
I.	If the 3-4 orifice control valve is stuck, inspect the 3rd and 4th clutch packs for wear.
K.	Improper alignment of ATF pump body and torque converter housing may cause ATF pump seizure. The symptoms are mostly an rpm-related ticking noise or a high pitched squeak.
L.	If the ATF strainer is clogged with particles of steel or aluminum, inspect the ATF pump. If OK and no cause for the contamination is found, replace the torque converter.
M.	If the 1st clutch feed pipe guide in the rear cover is scored by the mainshaft, inspect the ball bearing for excessive movement in the transmission housing. If OK, replace the rear cover as it is dented. The O-ring under the guide is probably worn.
N.	Replace the mainshaft if the bushings for the 1st and 4th feed pipe are loose or damaged. If the 1st feed pipe is damaged or out of round, replace it. If the 4th feed pipe is damaged or out of round, replace the rear cover.
O.	A worn or damaged sprag clutch is mostly a result of shifting the transmission in D3 or D4 position while the wheels rotate in reverse, such as rocking the car in snow.
P.	Inspect the frame for collision damage.
Q.	Inspect for damage or wear: 1. Reverse selector gear teeth chamfers. 2. Engagement teeth chamfers of countershaft 4th and reverse gear. 3. Shift fork for scuff marks in center. 4. Splines of extension shaft and secondary driven gear for wear. 5. Differential pinion shaft for wear under pinion gears. 6. Bottom of 3rd clutch for swirl marks. Replace items 1, 2, 3, 4 and 5 if worn or damaged. If transmission makes clicking, grinding or whirring noise, also replace mainshaft 4th gear and reverse idler gear and countershaft 4th gear in addition to 1, 2, 3, 4 or 5. If extension shaft, secondary driven gear and/or differential pinion shaft are worn, overhaul extension shaft, secondary driven gear and/or differential assembly and replace ATF strainer and thoroughly clean transmission, flush torque converter, cooler and lines. If bottom of 3rd clutch is swirled and transmission makes gear noise, replace the countershaft and secondary driven gear shaft.
R.	Be very careful not to damage the torque converter housing when replacing the main ball bearing. You may also damage the ATF pump when you torque down the ATF pump body. This will result in ATF pump seizure if not detected. Use proper tools.
S.	Install the main seal flush with the torque converter housing. If you push it into the torque converter housing until it bottoms out, it will block the fluid return passage and result in damage.
T.	Harsh downshifts when coasting to a stop with zero throttle may be caused by the linear solenoid not working.
U.	Check if servo valve cover is installed with snap ring. If they are not installed, the check valve may have been pushed out by hydraulic pressure causing a leak (internal), affecting all forward gears.
V.	Adjusting the throttle valve body, throttle valve, and linear solenoid are essential for proper operation of the transmission. Not only does it affect the shift quality if misadjusted, but also the lock-up clutch operation.

PARTS IDENTIFICATION

REAR COVER



DISASSEMBLY

CONVERTER HOUSING/LOWER VALVE BODY

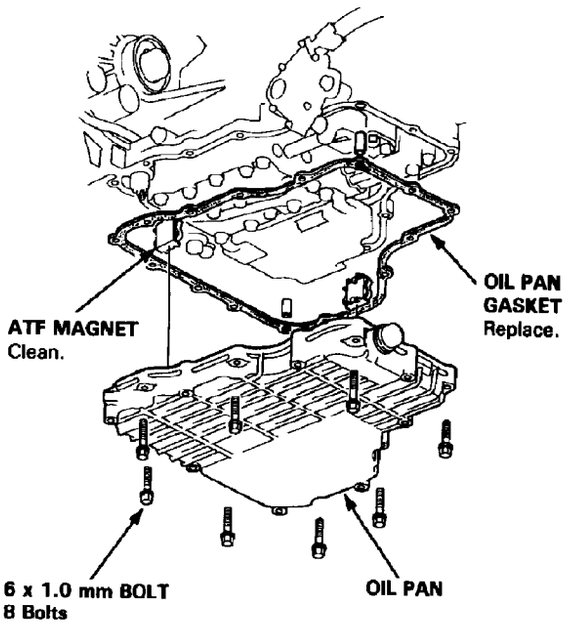
NOTE:
- Clean all parts thoroughly in solvent or carburetor cleaner and dry with compressed air.
- Blow out all passages.
- When removing the lower valve body assembly, replace the following:
  - O-rings
  - Oil pan gasket
  - Sealing washer

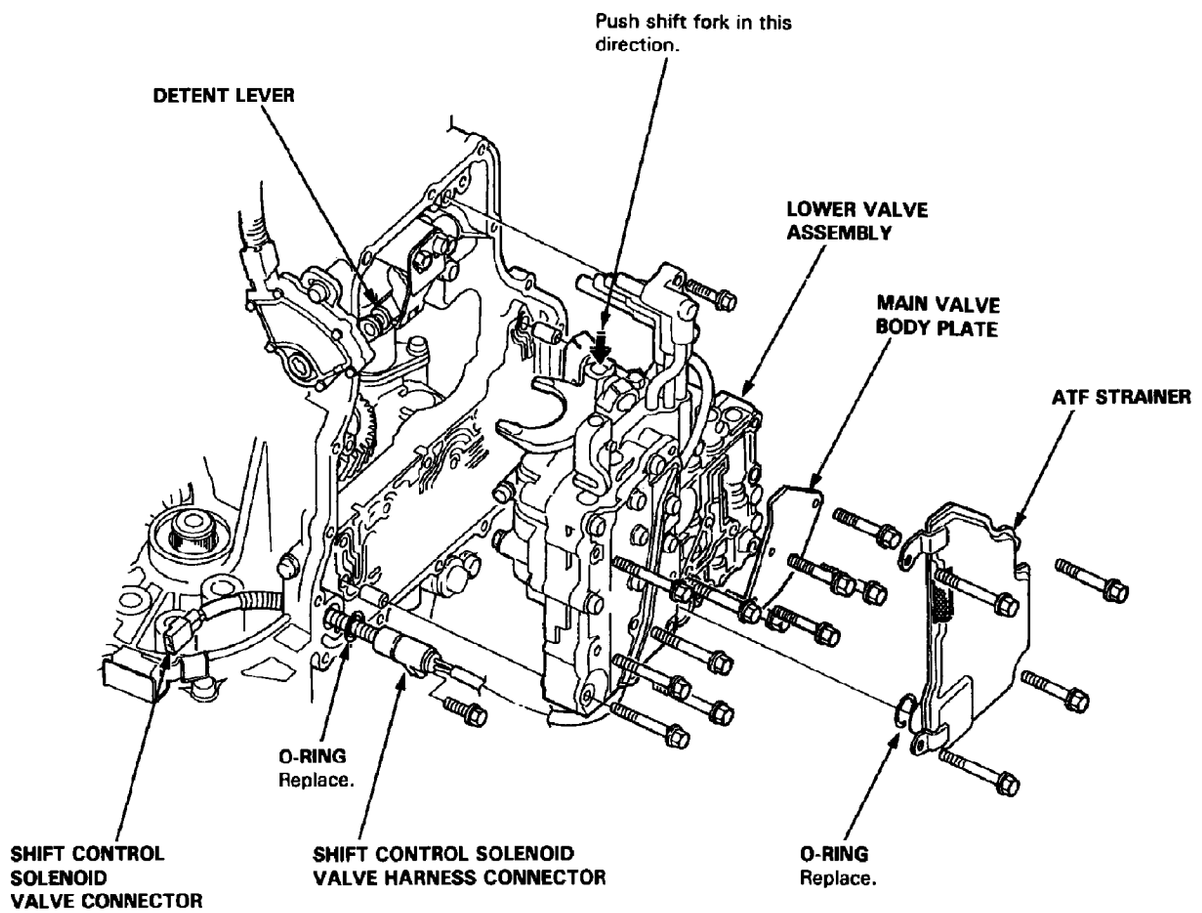
CAUTION: Do not turn over the transmission before removing the oil pan.

1. Remove the eight bolts securing the oil pan then remove the oil pan and oil pan gasket.

2. Disconnect the shift control solenoid valve connector from the tansmission sub-harness connector.

3. Shift the control shaft to [P] position by turning the detent lever.





DISASSEMBLY

TRANSMISSION HOUSING

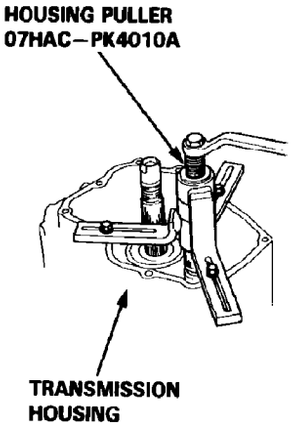
1. Remove the bolts securing the shift control solenoid vavle harness stay, mainshaft speed sensor connector stay and countershaft speed sensor connector stay.

2. Remove the countershaft speed sensor and mainshaft speed sensor with mainshaft speed sensor washer from the transmission housing.

3. Remove the ten bolts securing the transmission housing, and remove the 10 mm bolt and three 8 mm bolts securing the transmission housing from the torque converter housing side.

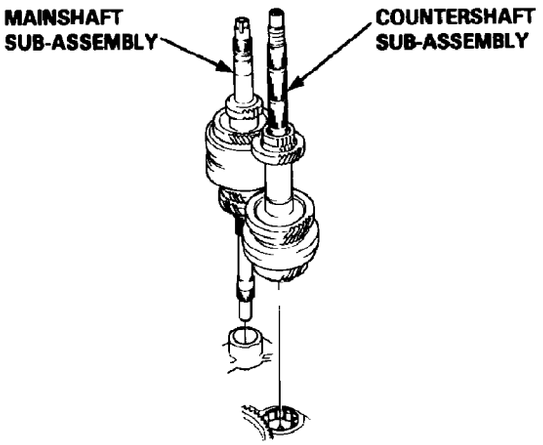
4. Install the special tool on the transmission housing, then remove the transmission housing as shown.

   CAUTION: Make sure that the mainshaft and countershaft speed sensors have been removed from the transmission housing before removing the transmission housing from the torque converter housing.



5. Remove the mainshaft sub-assembly and countershaft sub-assembly together.

   NOTE: When removing the shafts, take care to prevent damage to the regulator valve body.

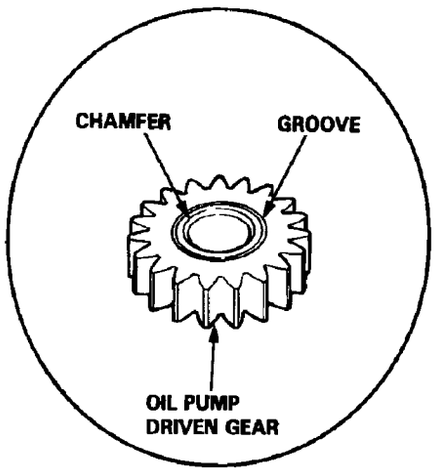


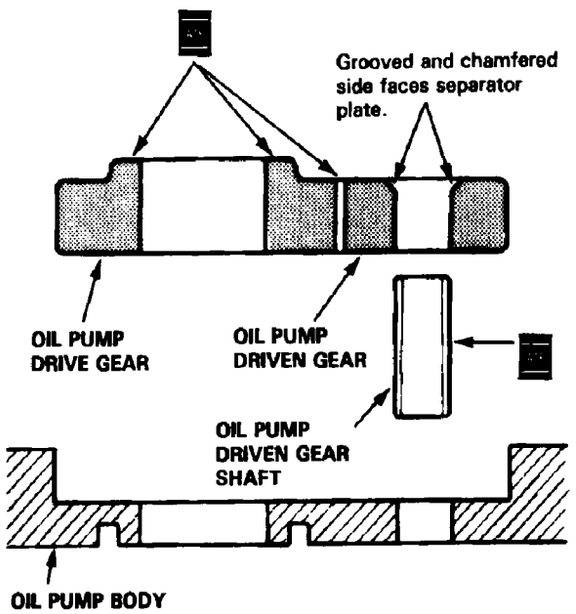
6. Remove the secondary driven gear shaft from the torque converter housing.

VALVE BODY

OIL PUMP INSPECTION

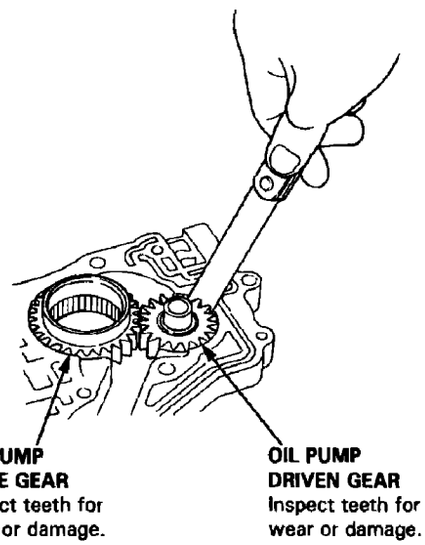
1. Install the oil pump gears and oil pump driven gear shaft in the oil pump body.





2. Measure the side clearance of the oil pump drive and driven gears.

Oil Pump Gears Side (Radial) Clearance:
Standard (New): Drive gear
0.210—0.265 mm
(0.0083—0.0104 in)
Driven gear
0.070-0.125 mm
(0.0028—0.0049 in)



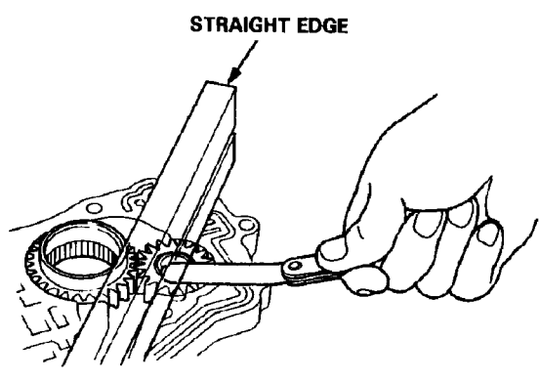
OIL PUMP DRIVE GEAR
Inspect teeth for wear or damage.

OIL PUMP DRIVEN GEAR
Inspect teeth for wear or damage.

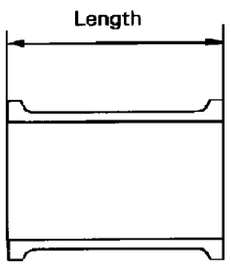
3. Remove the oil pump driven gear shaft.

4. Measure the thrust clearance of the oil pump driven gears-to-oil pump body.

Oil Pump Drive/Driven Gears thrust (Axial) Clearance:
Standard (New): 0.03—0.05 mm
(0.001—0.002 in)
Service Limit: 0.07 mm (0.003 in)



If the clearance is out of tolerance, remove the distance collar and measure the length.



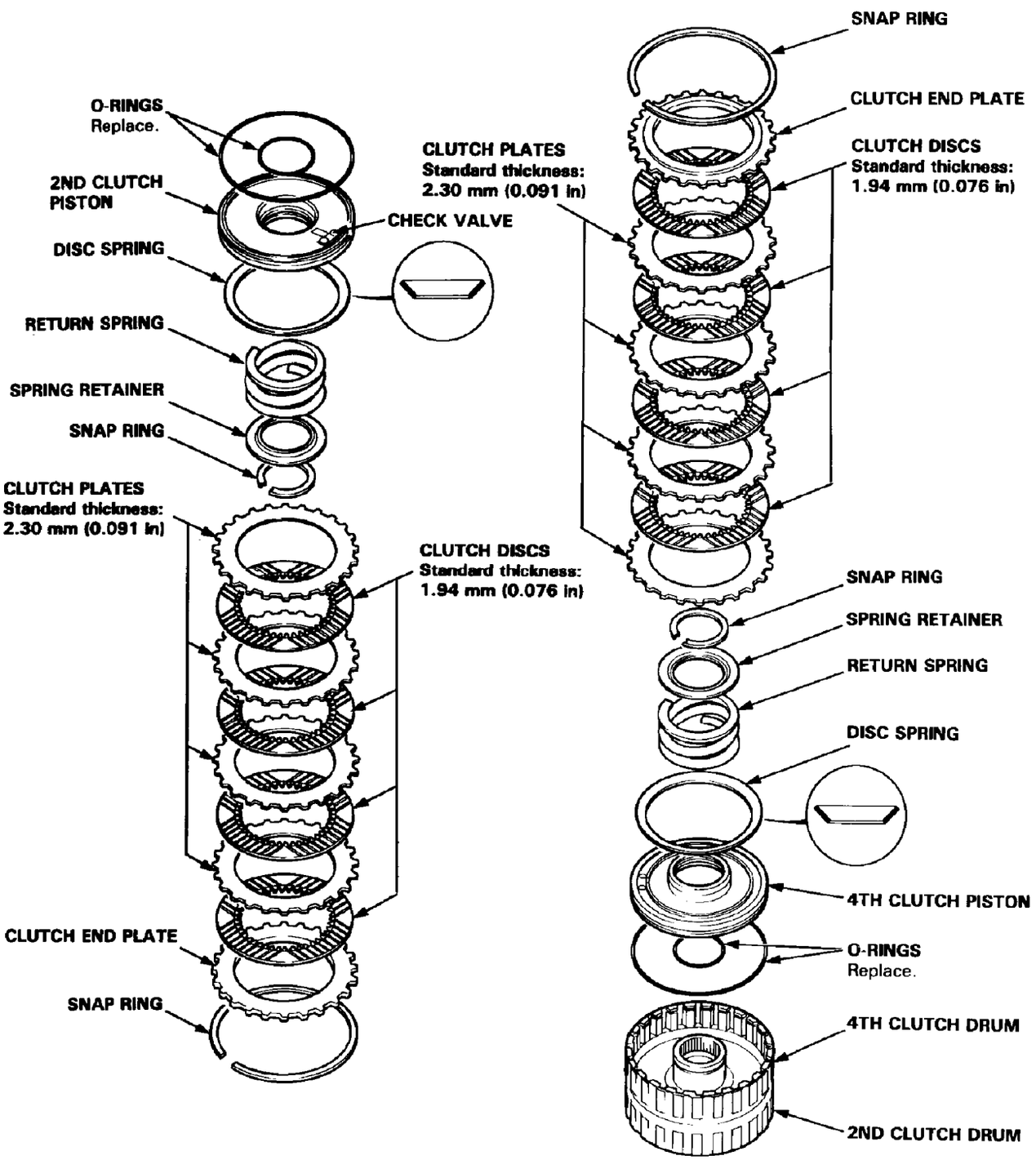
Select and install a new distance collar then recheck.

DISTANCE COLLAR 35 mm

No.	Part Number	Thickness
1	90501-PW7-000	65.65 mm (2.585 in)
2	90502-PW7-000	65.70 mm (2.587 in)
3	90503-PW7-000	65.75 mm (2.589 in)
4	90504-PW7-000	65.80 mm (2.591 in)
5	90505-PW7-000	65.85 mm (2.593 in)
6	90506-PW7-000	65.90 mm (2.594 in)
7	90507-PW7-000	65.95 mm (2.596 in)
8	90508-PW7-000	66.00 mm (2.598 in)
9	90509-PW7-000	66.05 mm (2.600 in)
10	90510-PW7-000	66.10 mm (2.602 in)

After replacing the distance collar, make sure that the clearance is within tolerance.

4TH/2ND CLUTCH



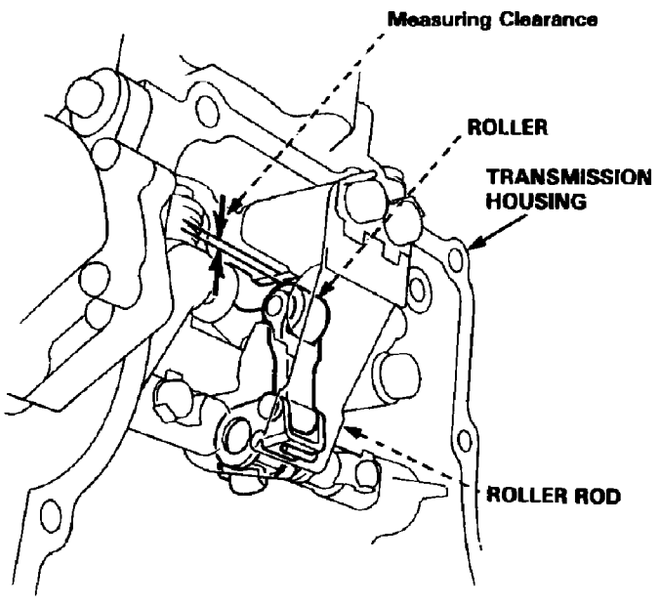
PARKING BRAKE ROLLER ROD

ADJUSTMENT

VIGOR

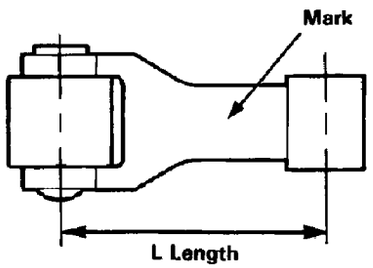
1. Move the detent lever to the [P] position.
2. Measure the clearance between the parking brake roller rod and the transmission housing as shown.

   STANDARD: 4.0—4.5 mm (0.157—0.177 in)



3. If the clearance is out of tolerance, select and install a new parking brake roller rod.

PARKING BRAKE ROLLER ROD



PARKING BRAKE ROLLER ROD

Mark	Part Number	Length "L"
1 or None	24550-PW7-010	36.0 mm (1.42 in)
2	24560-PW7-010	35.6 mm (1.40 in)
3	24580-PW7-010	36.4 mm (1.43 in)

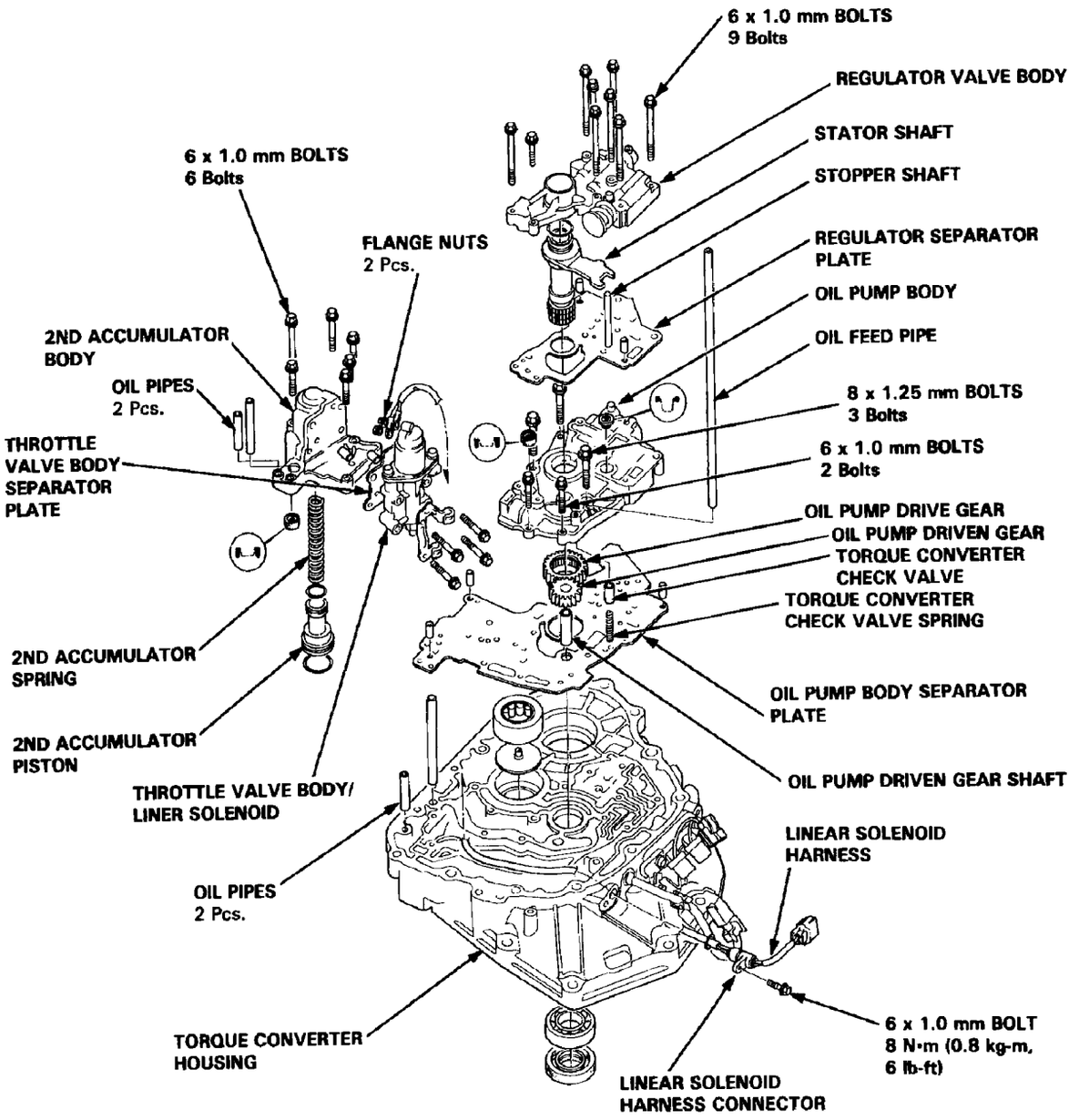
4. After replacing the parking brake roller rod, make sure that the clearance is within tolerance.

TRANSMISSION

REASSEMBLY

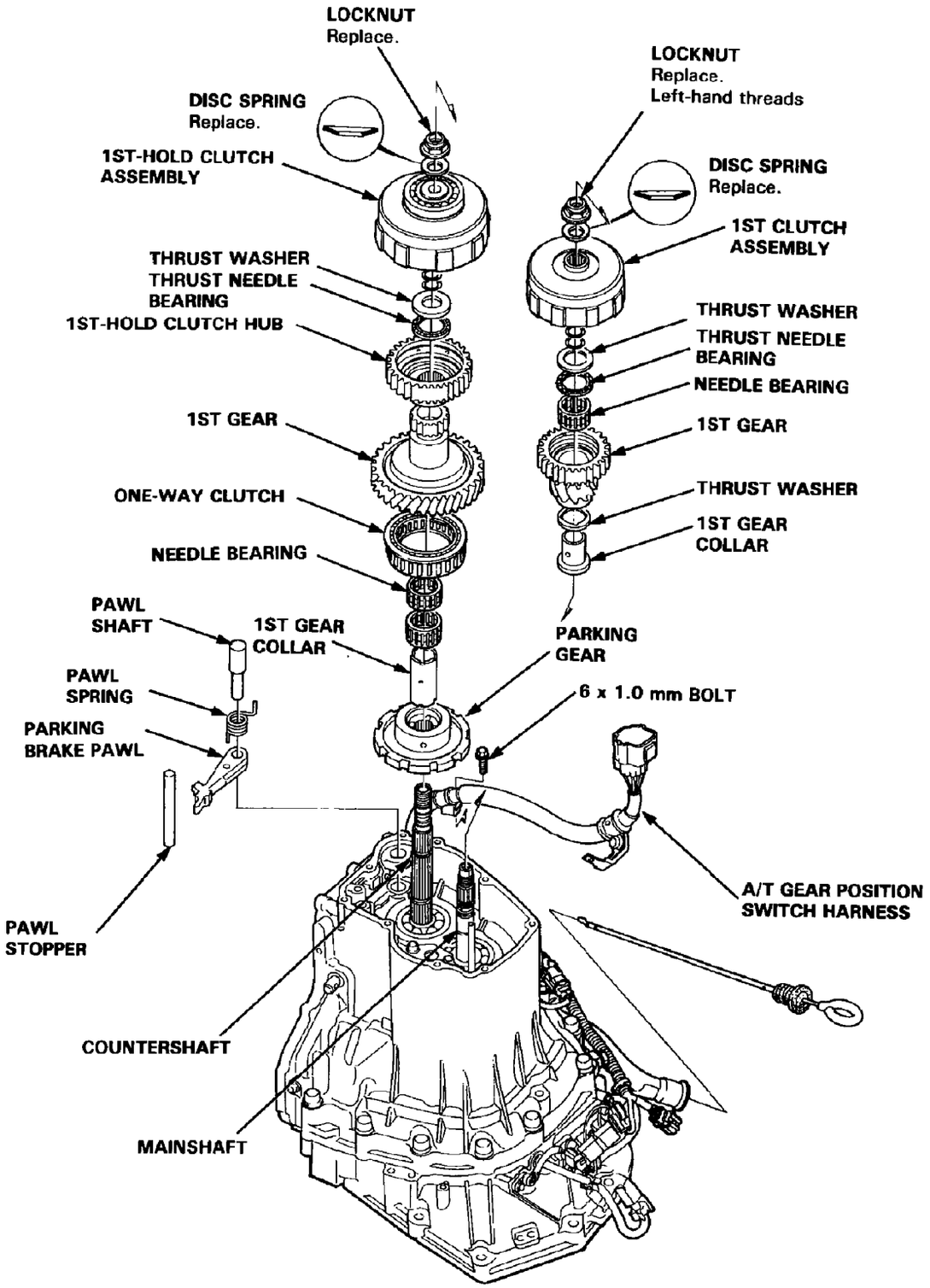
NOTE:
- Coat all parts with ATF.
- Replace parts below:
  - O-rings
  - Lock washers
  - Gaskets
  - Mainshaft and countershaft locknuts and disc springs
  - Sealing washers

TORQUE:
- **6 x 1.0 mm Bolts: 12 N·m (1.2 kg-m, 9 lb-ft)**
- **8 x 1.25 mm Bolts: 18 N·m (1.8 kg-m, 13 lb-ft)**
- **5 x 0.8 mm Flange nuts: 6 N·m (0.6 kg-m, 4 lb-ft)**



TRANSMISSION

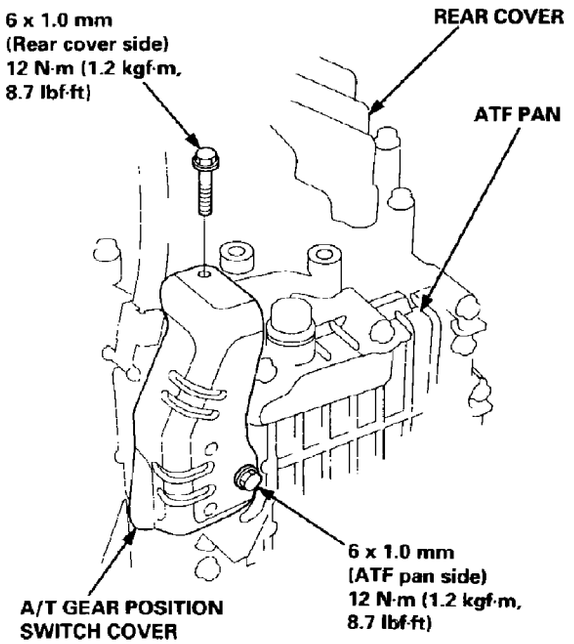
REASSEMBLY



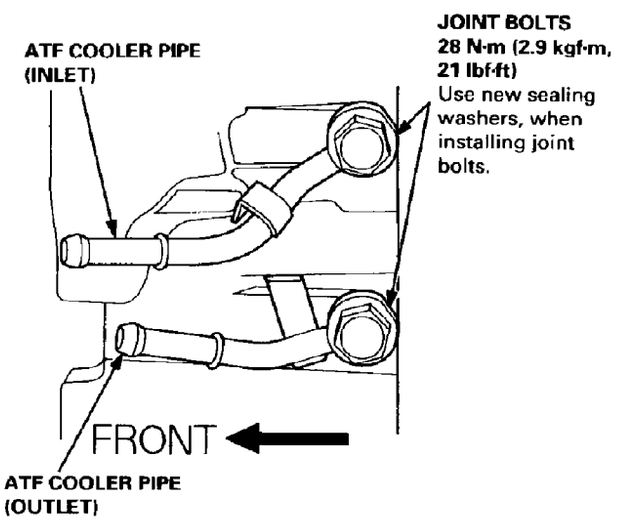
TRANSMISSION

REASSEMBLY

49. Install the A/T gear position switch cover. Tighten the bolt on the ATF pan side loosely so that there is no clearance between the A/T gear position switch cover and the ATF pan. Then tighten the bolt on the rear side cover side to the specified torque, and tighten the bolt on the ATF pan side to the specified torque.



50. Install the ATF cooler pipes on the transmission housing, if necessary.



51. Install the ATF dipstick.

52. Connect the connectors, and install them on the connector brackets and connector holder.

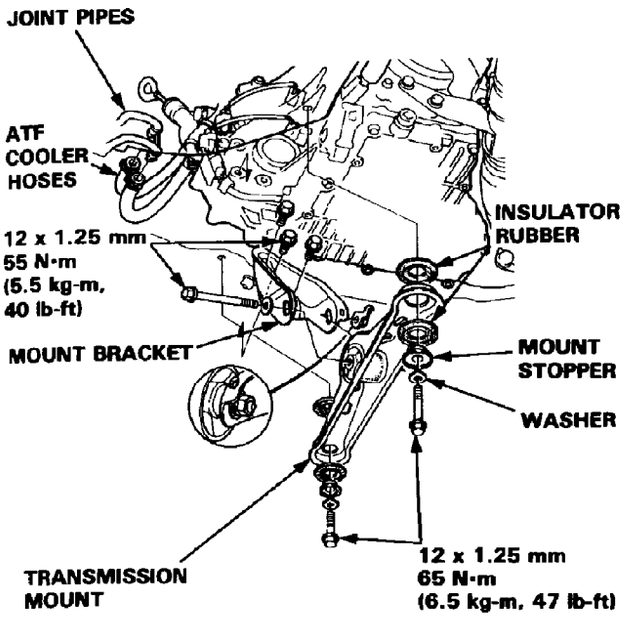
TRANSMISSION

INSTALLATION

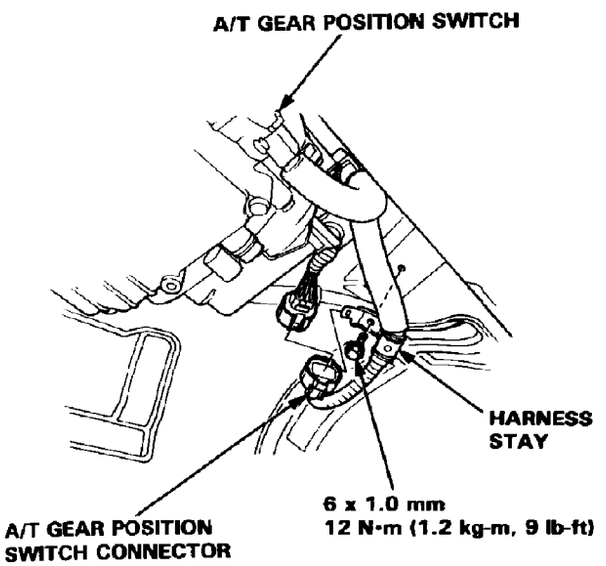
17. Connect the ATF cooler hoses to the joint pipes.

    NOTE: Flush the ATF cooler before connecting the cooler hoses.

18. Install the transmission mount bracket and mount.



19. Install the A/T gear position switch harness stay, then connect the A/T gear position switch connector.



20. Install the shift cable holder on the transmission housing.

21. Install the control lever with a new lock washer to the control shaft.

    CAUTION: Take care not to bend the shift cable.

22. Install the shift cable cover.

23. Install the exhaust manifold stay.

24. Install the exhaust pipe A.

25. Install the two bolts of the exhaust pipe A stay to the transmission rear cover.