

# Countershaft/Mainshaft

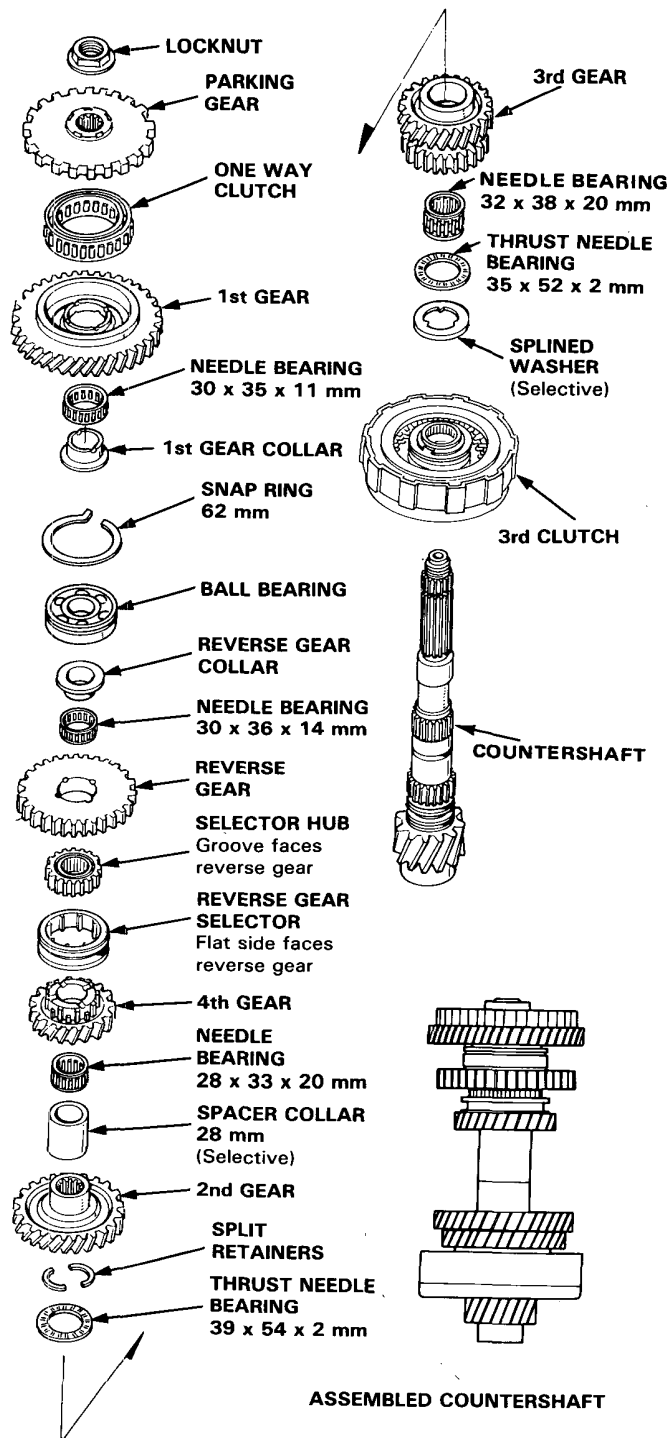
## Clearance Measurements

1. Remove both the mainshaft and countershaft bearings from the transmission housing.
2. Assemble the mainshaft and the countershaft including bearings and all parts shown below.
3. Install the mainshaft and countershaft assemblies into the torque converter housing.
4. Install the mainshaft holder to prevent the shafts from turning.
5. Torque the mainshaft locknut to 35 N·m (3.5 kg·m, 25 lb·ft). (Left-hand threads.)
6. Hold the parking gear on the countershaft with your hand and torque the countershaft locknut to 35 N·m (3.5 kg·m, 25 lb·ft).
7. Measure clearances as described on the next page.



Lubricate all parts with ATF before final reassembly.

## Countershaft Assembly

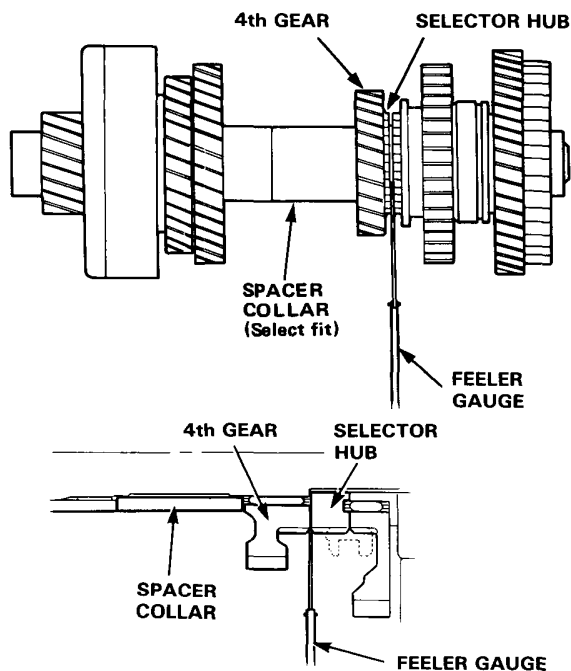




8. On the countershaft, measure the clearance between the shoulder on the selector hub and the shoulder on 4th gear.

**Countershaft 4th Gear Clearance:**

**Standard: 0.07–0.15 mm (0.003–0.006 in.)**



If clearance exceeds the service limit, measure the thickness of the spacer collar and select one which gives correct clearance.

**Replacement spacer collars:**

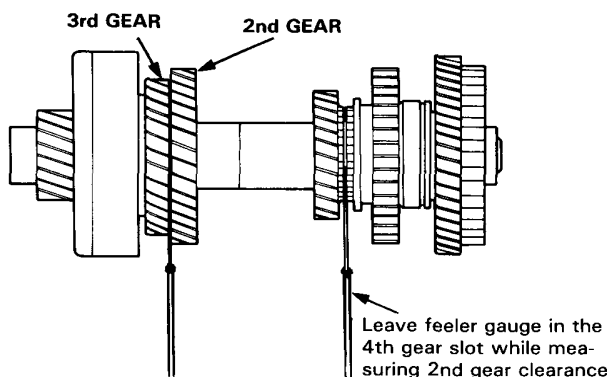
CLASS	P/N	THICKNESS
1	90511-PH0-0000	34.00 mm (1.339 in.)
2	90512-PH0-0000	34.05 mm (1.341 in.)
3	90513-PH0-0000	34.10 mm (1.342 in.)
4	90514-PH0-0000	34.15 mm (1.344 in.)
5	90515-PH0-0000	34.20 mm (1.346 in.)
6	90516-PH0-0000	34.25 mm (1.348 in.)
7	90517-PH0-0000	34.30 mm (1.350 in.)

**NOTE:** Leave feeler gauge in place (4th gear) while measuring 2nd gear clearance.

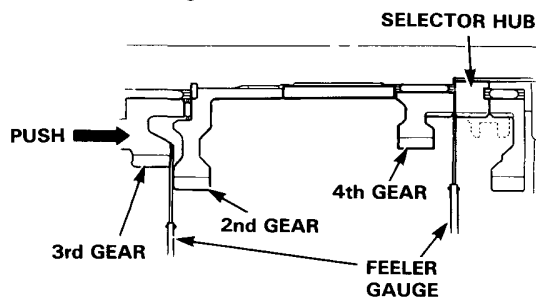
**Countershaft 2nd Gear Clearance:**

**Standard: 0.07–0.15 mm (0.003–0.006 in.)**

9. Slide the 3rd gear out fully. Measure and record the clearance between the 2nd and 3rd gears with a feeler gauge.



- Slide the 3rd gear in fully and again measure the clearance between the 2nd and 3rd gears with another feeler gauge.
- Calculate the difference between the two readings to determine the actual clearance between the two gears.



If clearance exceeds service limit, measure the thickness of the splined thrust washer (35 mm I.D.) and select one which gives the proper clearance.

**Replacement splined thrust washers:**

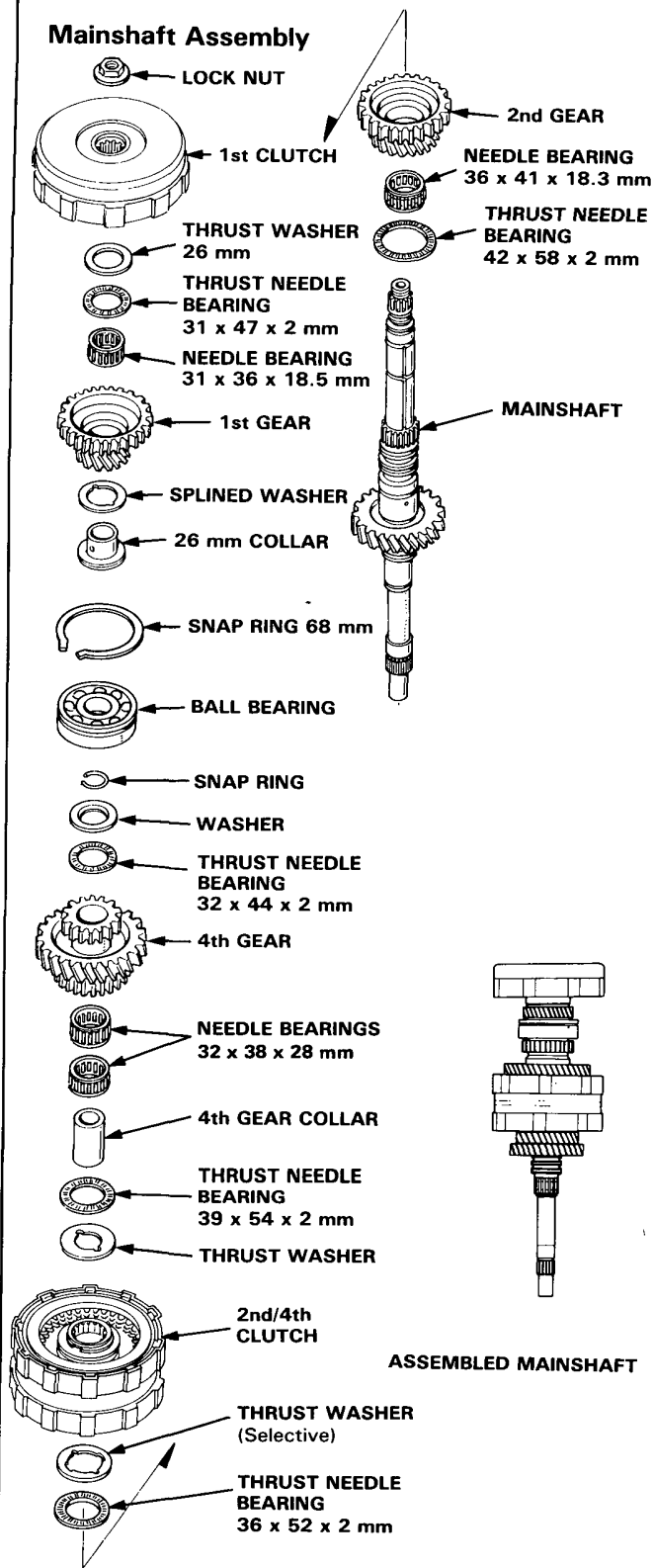
CLASS	P/N	THICKNESS
A	90411-PA9-0100	2.97–3.00 mm (0.117–0.118 in.)
B	90412-PA9-0100	3.02–3.05 mm (0.119–0.120 in.)
C	90413-PA9-0100	3.07–3.10 mm (0.121–0.122 in.)
D	90414-PA9-0100	3.12–3.15 mm (0.123–0.124 in.)
E	90415-PA9-0100	3.17–3.20 mm (0.125–0.126 in.)
F	90416-PA9-0100	3.22–3.25 mm (0.127–0.128 in.)
G	90417-PA9-0100	3.27–3.30 mm (0.129–0.130 in.)
H	90418-PA9-0100	3.32–3.35 mm (0.131–0.132 in.)
I	90419-PA9-0100	3.37–3.40 mm (0.133–0.134 in.)

(cont'd)

# Countershaft/Mainshaft

## Clearance Measurements (cont'd)

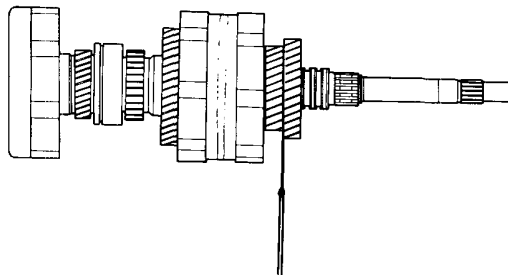
### Mainshaft Assembly



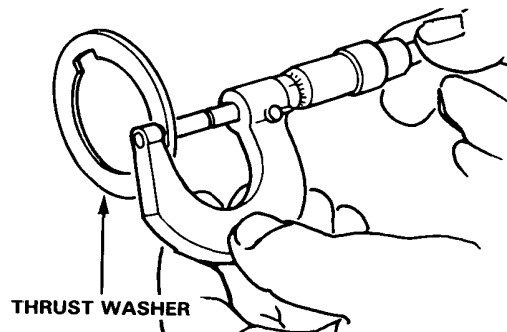
NOTE: Make all measurements before changing the thrust washers. Recheck after making the adjustments.

- On the mainshaft measure the clearance between the shoulder of 2nd gear and main 3rd gear, the same way you did on the countershaft in step 9.

**Mainshaft 2nd Gear Clearance:**  
Standard (New): 0.07—0.15 mm  
(0.003—0.006 in.)



If the clearance exceeds the service limit, measure the thickness of the 2nd clutch thrust washer (36 mm I.D.) and select one which gives the correct clearance.



Replacement washer (36 mm I.D.)

CLASS	P/N	THICKNESS
A	90441-PC9-000	3.47—3.50 mm (0.137—0.138 in.)
B	90442-PC9-000	3.52—3.55 mm (0.139—0.140 in.)
C	90443-PC9-000	3.57—3.60 mm (0.141—0.142 in.)
D	90444-PC9-000	3.62—3.65 mm (0.143—0.144 in.)
E	90445-PC9-000	3.67—3.70 mm (0.145—0.146 in.)
F	90446-PC9-000	3.72—3.75 mm (0.147—0.148 in.)
G	90447-PC9-000	3.77—3.80 mm (0.149—0.150 in.)
H	90448-PC9-000	3.82—3.85 mm (0.151—0.152 in.)
I	90449-PC9-000	3.87—3.90 mm (0.153—0.154 in.)