



Taper Roller Bearing Preload Adjustment

NOTE: If any of the items listed below were replaced, the bearing preload must be adjusted.

- TRANSMISSION HOUSING
- CLUTCH HOUSING
- CARRIER
- TAPER ROLLER BEARING and OUTER RACE
- THRUST SHIM

1. Remove the bearing outer race and thrust shim from the transmission housing (page 8-22).

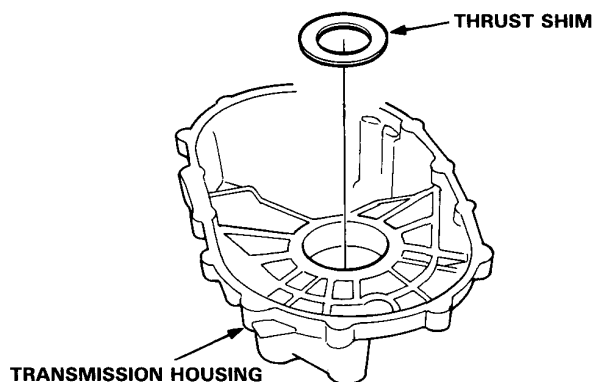
NOTE: Select the thrust shim only on the transmission housing side.

CAUTION: Do not reuse the thrust shim if the outer race was pried out.

NOTE: Let the transmission cool to the room temperature if the outer race was removed by heating the case before adjusting the bearing preload.

2. First try a 2.17 mm (0.085 in) thrust shim (standard shim).

CAUTION: Do not use more than one shim to adjust the bearing preload.



3. Select shim from the following table.

	PART NUMBER	THICKNESS
A	41381-PX5-000	1.90 mm (0.075 in)
B	41382-PX5-000	1.93 mm (0.076 in)
C	41383-PX5-000	1.96 mm (0.077 in)
D	41384-PX5-000	1.99 mm (0.078 in)
E	41385-PX5-000	2.02 mm (0.079 in)
F	41386-PX5-000	2.05 mm (0.081 in)
G	41387-PX5-000	2.08 mm (0.082 in)
H	41388-PX5-000	2.11 mm (0.083 in)
I	41389-PX5-000	2.14 mm (0.084 in)
*J	41390-PX5-000	2.17 mm (0.085 in)
K	41391-PX5-000	2.20 mm (0.087 in)
L	41392-PX5-000	2.23 mm (0.088 in)
M	41393-PX5-000	2.26 mm (0.089 in)
N	41394-PX5-000	2.29 mm (0.090 in)
O	41395-PX5-000	2.32 mm (0.091 in)
P	41396-PX5-000	2.35 mm (0.092 in)
Q	41397-PX5-000	2.38 mm (0.094 in)
R	41398-PX5-000	2.41 mm (0.095 in)
S	41399-PX5-000	2.44 mm (0.096 in)
T	41400-PX5-000	2.47 mm (0.097 in)

* Standard shim

4. After installing the shim, install the outer race in the transmission housing (page 8-22).

NOTE:

- Install the outer race squarely.
- Check that there is no clearance between the outer race, shim and transmission housing.

5. With the mainshaft and countershaft removed, install the differential assembly, and torque the clutch and transmission housing.

TORQUE: 10 x 1.25 mm: 45 N·m
(4.5 kg-m, 33 lb-ft)
8 x 1.25 mm: 28 N·m
(2.8 kg-m, 20 lb-ft)

NOTE: It is not necessary to use sealing agent between the housings.

(cont'd)

Differential

Taper Roller Bearing Preload Adjustment (cont'd)

6. Rotate the differential assembly in both directions to seat the bearing.
7. Measure the starting torque of the differential assembly with the Preload Inspection Tool and a torque wrench.

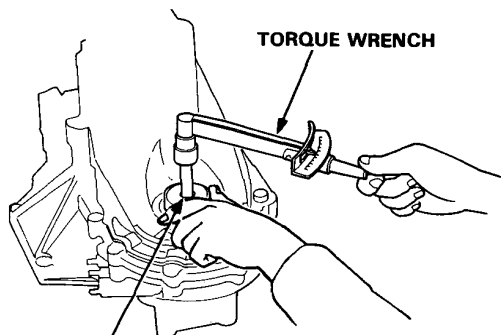
STANDARD: 1.4–2.6 N·m
(14–26 kg-cm, 12–23 lb-in)

NOTE:

- Measure the preload at normal room temperature.
- Measure the preload in both directions.

8. If out of spec, select the shim which will give the correct preload and repeat steps 1 thru 7.

NOTE: Changing the shim to the next size will increase or decrease preload about 3–4 kg-cm (2.60–3.47 lb-in).



PRELOAD INSPECTION TOOL
07HAJ-PK40201

9. How to select the correct shim:

- 1) Compare the preload you get with the standard 2.17 mm shim, with the specified preload of 14–26 kg-cm (12–19 lb-in).
- 2) If your measured preload is less than specified, subtract your's from the specified. If your's is more than specified, subtract the specified from your measurement.

For example:

$$\begin{array}{r} \textcircled{A} \text{ specified} \quad 26 \text{ kg-cm (23 lb-in)} \\ - \text{you measure} \quad 6 \text{ kg-cm (5 lb-in)} \\ \hline 20 \text{ kg-cm (18 lb-in) less} \end{array}$$

$$\begin{array}{r} \textcircled{B} \text{ you measure} \quad 34 \text{ kg-cm (30 lb-in)} \\ - \text{specified} \quad 26 \text{ kg-cm (23 lb-in)} \\ \hline 8 \text{ kg-cm (7 lb-in) more} \end{array}$$

- 3) Each shim size up or down from standard makes about 3–4 kg-cm (2.60–3.47 lb-in) difference in preload.

- In example A, your measured preload was 20 kg-cm less than standard so you need a shim five sizes thicker than standard (try the 2.32 mm shim, and recheck).
- In example B, your's was 8 kg-cm more than standard, so you need a shim two sizes thinner (try the 2.11 mm shim, and recheck).

10. After adjusting the preload, assemble the transmission and install the transmission housing.

TORQUE: 10 x 1.25 mm: 45 N·m
(4.5 kg-m, 33 lb-ft)
8 x 1.25 mm: 28 N·m
(2.8 kg-m, 20 lb-ft)

11. Rotate the differential assembly in both directions to seat the bearings.