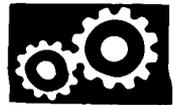
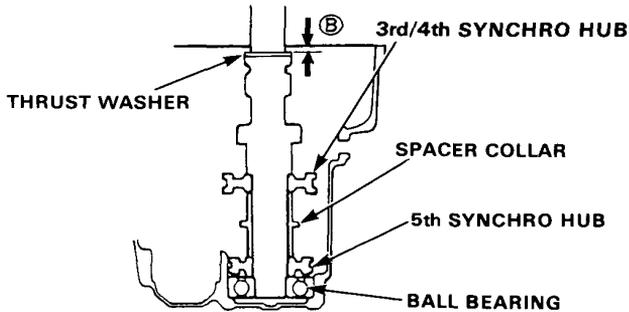


# Mainshaft Thrust Shim



## Adjustment

1. Remove the thrust shim and oil guide plate from the transmission housing.
2. Install the 3rd/4th synchro hub, spacer collar, 5th synchro hub, ball bearing and thrust washer on the mainshaft. Install the assembly in the transmission housing.



3. Measure the distance B between the end of the transmission housing and thrust washer.

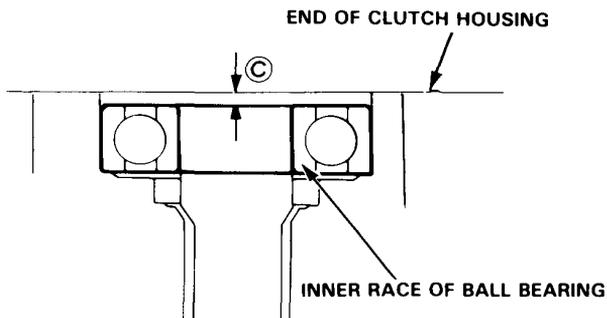
**NOTE:**

- Use a straight edge and feeler gauge.
- Measure at three locations and average the readings.

4. Measure the distance C between the surfaces of the clutch housing and bearing inner race.

**NOTE:**

- Use a straight edge and feeler gauge.
- Measure at three locations and average the readings.



5. Select the proper shim (or shim pair) on the basis of the following calculations:

**NOTE:** Do not use more than two shims.

(Basic Formula)

$$(B) + (C) - 0.95 = \text{shim thickness}$$

**Example of calculation:**

Distance B (2.00mm) + Distance C (0.09mm) = 2.09 mm  
 subtract the spring washer height (0.95mm) = the required thrust shim (1.14mm)

### D14A : 65 mm Thrust Shim

	PART NUMBER	THICKNESS
A	23931-PL3-A10	0.60 mm (0.0236 in.)
B	23932-PL3-A10	0.63 mm (0.0284 in.)
C	23933-PL3-A10	0.66 mm (0.0260 in.)
D	23934-PL3-A10	0.69 mm (0.0272 in.)
E	23935-PL3-A10	0.72 mm (0.0283 in.)
F	23936-PL3-A10	0.75 mm (0.0295 in.)
G	23937-PL3-A10	0.78 mm (0.0307 in.)
H	23938-PL3-A10	0.81 mm (0.0319 in.)
I	23939-PL3-A10	0.84 mm (0.0331 in.)
J	23940-PL3-A10	0.87 mm (0.0343 in.)
K	23941-PL3-A10	0.90 mm (0.0354 in.)
L	23942-PL3-A10	0.93 mm (0.0366 in.)
M	23943-PL3-A10	0.96 mm (0.0378 in.)
N	23944-PL3-A10	0.99 mm (0.0390 in.)
O	23945-PL3-A10	1.02 mm (0.0402 in.)
P	23946-PL3-A10	1.05 mm (0.0413 in.)
Q	23947-PL3-A10	1.08 mm (0.0425 in.)
R	23948-PL3-A10	1.11 mm (0.0437 in.)
S	23949-PL3-A10	1.14 mm (0.0449 in.)
T	23950-PL3-A10	1.17 mm (0.0461 in.)
U	23951-PL3-A10	1.20 mm (0.0472 in.)
V	23952-PL3-A10	1.23 mm (0.0484 in.)
W	23953-PL3-A10	1.26 mm (0.0496 in.)
X	23954-PL3-A10	1.29 mm (0.0508 in.)
Y	23955-PL3-A10	1.32 mm (0.0520 in.)
Z	23956-PL3-A10	1.35 mm (0.0531 in.)
AA	23957-PL3-A10	1.38 mm (0.0543 in.)
AB	23958-PL3-A10	1.41 mm (0.0555 in.)
AC	23959-PL3-A10	1.44 mm (0.0567 in.)
AD	23960-PL3-A10	1.47 mm (0.0579 in.)
AE	23961-PL3-A10	1.50 mm (0.0591 in.)
AF	23962-PL3-A10	1.53 mm (0.0602 in.)
AG	23963-PL3-A10	1.56 mm (0.0614 in.)
AH	23964-PL3-A10	1.59 mm (0.0626 in.)
AI	23965-PL3-A10	1.62 mm (0.0638 in.)
AJ	23966-PL3-A10	1.65 mm (0.0650 in.)
AK	23967-PL3-A10	1.68 mm (0.0661 in.)
AL	23968-PL3-A10	1.71 mm (0.0673 in.)
AM	23969-PL3-A10	1.74 mm (0.0685 in.)
AN	23970-PL3-A10	1.77 mm (0.0697 in.)
AO	23971-PL3-A10	1.80 mm (0.0709 in.)

(cont'd)

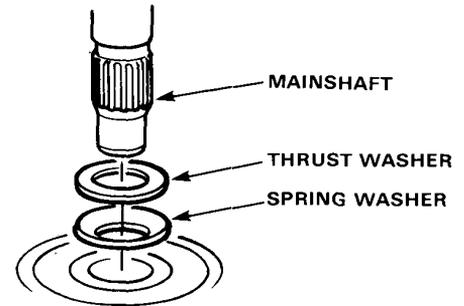
# Mainshaft Thrust Shim

## Adjustment (cont'd)

### D16A: 70 mm Thrust Shim

	PART NUMBER	THICKNESS
A	23931-PL3-B00	0.60 mm (0.0236 in.)
B	23932-PL3-B00	0.63 mm (0.0284 in.)
C	23933-PL3-B00	0.66 mm (0.0260 in.)
D	23934-PL3-B00	0.69 mm (0.0272 in.)
E	23935-PL3-B00	0.72 mm (0.0283 in.)
F	23936-PL3-B00	0.75 mm (0.0295 in.)
G	23937-PL3-B00	0.78 mm (0.0307 in.)
H	23938-PL3-B00	0.81 mm (0.0319 in.)
I	23939-PL3-B00	0.84 mm (0.0331 in.)
J	23940-PL3-B00	0.87 mm (0.0343 in.)
K	23941-PL3-B00	0.90 mm (0.0354 in.)
L	23942-PL3-B00	0.93 mm (0.0366 in.)
M	23943-PL3-B00	0.96 mm (0.0378 in.)
N	23944-PL3-B00	0.99 mm (0.0390 in.)
O	23945-PL3-B00	1.02 mm (0.0402 in.)
P	23946-PL3-B00	1.05 mm (0.0413 in.)
Q	23947-PL3-B00	1.08 mm (0.0425 in.)
R	23948-PL3-B00	1.11 mm (0.0437 in.)
S	23949-PL3-B00	1.14 mm (0.0449 in.)
T	23950-PL3-B00	1.17 mm (0.0461 in.)
U	23951-PL3-B00	1.20 mm (0.0472 in.)
V	23952-PL3-B00	1.23 mm (0.0484 in.)
W	23953-PL3-B00	1.26 mm (0.0496 in.)
X	23954-PL3-B00	1.29 mm (0.0508 in.)
Y	23955-PL3-B00	1.32 mm (0.0520 in.)
Z	23956-PL3-B00	1.35 mm (0.0531 in.)
AA	23957-PL3-B00	1.38 mm (0.0543 in.)
AB	23958-PL3-B00	1.41 mm (0.0555 in.)
AC	23959-PL3-B00	1.44 mm (0.0567 in.)
AD	23960-PL3-B00	1.47 mm (0.0579 in.)
AE	23961-PL3-B00	1.50 mm (0.0591 in.)
AF	23962-PL3-B00	1.53 mm (0.0602 in.)
AG	23963-PL3-B00	1.56 mm (0.0614 in.)
AH	23964-PL3-B00	1.59 mm (0.0626 in.)
AI	23965-PL3-B00	1.62 mm (0.0638 in.)
AJ	23966-PL3-B00	1.65 mm (0.0650 in.)
AK	23967-PL3-B00	1.68 mm (0.0661 in.)
AL	23968-PL3-B00	1.71 mm (0.0673 in.)
AM	23969-PL3-B00	1.74 mm (0.0685 in.)
AN	23970-PL3-B00	1.77 mm (0.0697 in.)
AO	23971-PL3-B00	1.80 mm (0.0709 in.)

6. Check the thrust clearance in the manner described below.
  - a. Install the shims selected in the transmission housing.
  - b. Install the thrust washer and spring washer in the mainshaft.

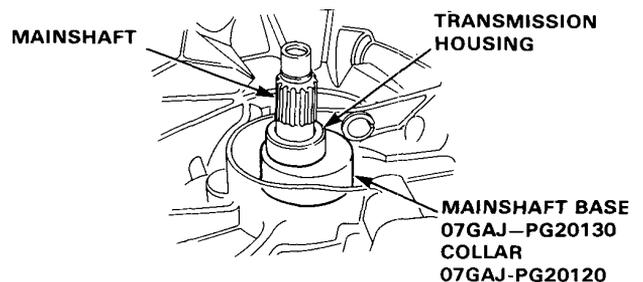


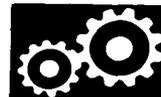
#### NOTE:

- Clean the thrust washer, spring washer and shim thoroughly before installation.
  - Install the thrust washer, spring washer and shim properly.
- c. Install the mainshaft in the clutch housing.
  - d. Place the transmission housing over the mainshaft and onto the clutch housing.
  - e. Tighten the clutch and transmission housings with several 10mm bolts.
  - f. Tap the mainshaft with a plastic hammer.
7. Check the thrust clearance in the manner described below.
 

**CAUTION: Measurement should be made at room temperature.**

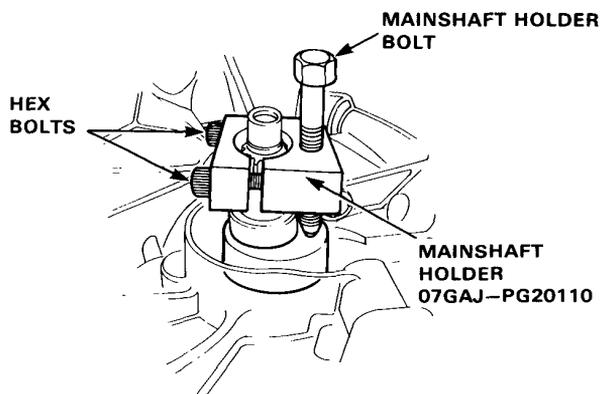
    - a. Slide the mainshaft base and the collar over the mainshaft.





b. Attach the mainshaft holder to the mainshaft as follows:

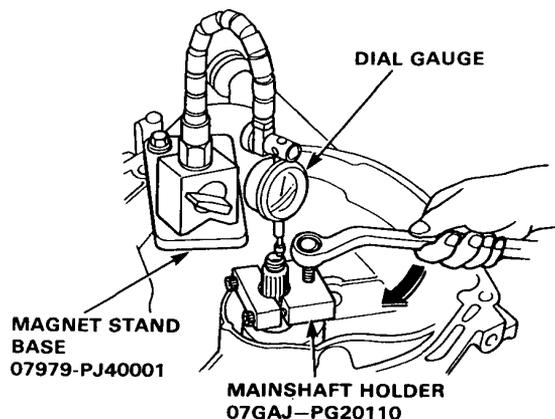
- Back-out the mainshaft holder bolt and loosen the two hex bolts.
- Fit the holder over the mainshaft so its lip is towards the transmission.
- Align the mainshaft holder's lip around the groove at the inside of the mainshaft splines, then tighten the hex bolts.



c. Seat the mainshaft fully by tapping its end with a plastic hammer.

d. Thread the mainshaft holder bolt in until it just contacts the wide surface of the mainshaft base.

e. Zero a dial gauge on the end of the mainshaft.



f. Turn the mainshaft holder bolt clockwise; stop turning when the dial gauge has reached its maximum movement. The reading on the dial gauge is the amount of mainshaft end play.

**CAUTION: Turning the shaft holder bolt more than 60 degrees after the needle of the dial gauge stops moving may damage the transmission.**

g. Clearance is correct if reading is between 0.13–0.20mm (0.0051–0.0079 in).

If not, recheck necessary shim thickness.