TOTAL END PLAY MEASUREMENT/ADJUSTMENT

id051700665200

Caution
- **The total end play is the play (gap) in the axial direction of each planetary gear.**
- **If the total end play adjustment is not performed, it may cause damage to the thrust needle bearing between each planetary gear or other parts. Accurately perform the following servicing.**

Preparation Before Servicing

1. Print out the measurement/adjustment value input sheet. (See MEASUREMENT/ADJUSTMENT VALUE INPUT SHEET.)

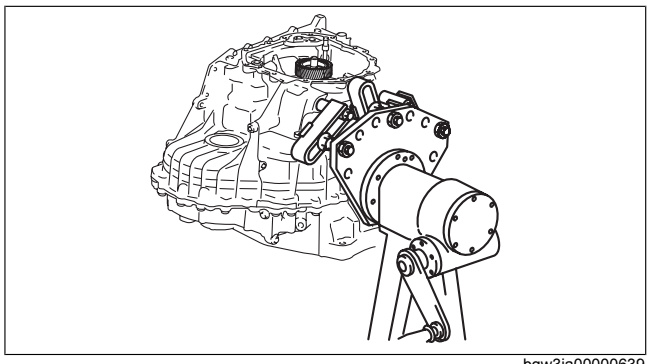
Note
- When performing the measurement/adjustment, input the measured and calculated values into the measurement/adjustment value input sheet.
- If the measurement/adjustment value input sheet has already been printed out for the other measurements/adjustments, use the sheet.

Total End Play Measurement/Adjustment

1. Rotate and adjust the rotation handle of the engine stand so that the end cover side is facing upward.

Caution
- **To reduce error during the total end play measurement, adjust so that the alignment surface of the transaxle case with the end cover is level.**

2. Remove any remaining old sealant on the contact surfaces of the transaxle case and end cover.



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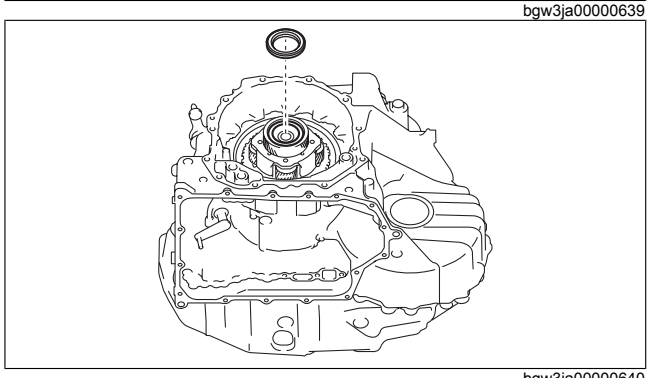
3. Assemble the shim (FZ01 19 2L1) for the total end play measurement/adjustment.



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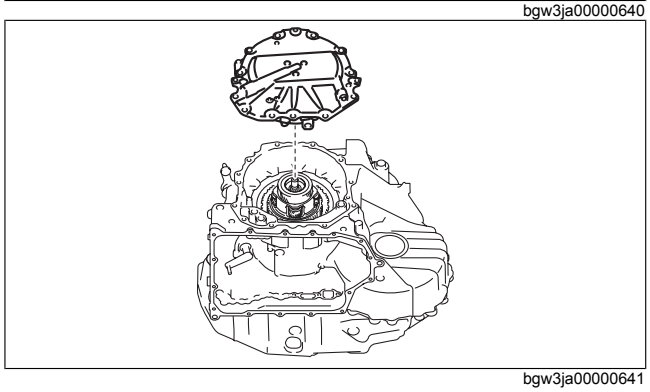
4. Assemble the end cover component.

Note
- Adjust the oil pipe and assemble the end cover component so that the oil pipe is assembled to the end cover oil passage.



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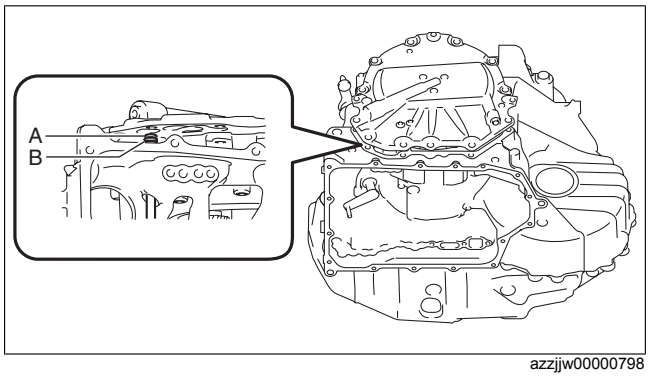
A : End cover oil passage
B : Oil pipe



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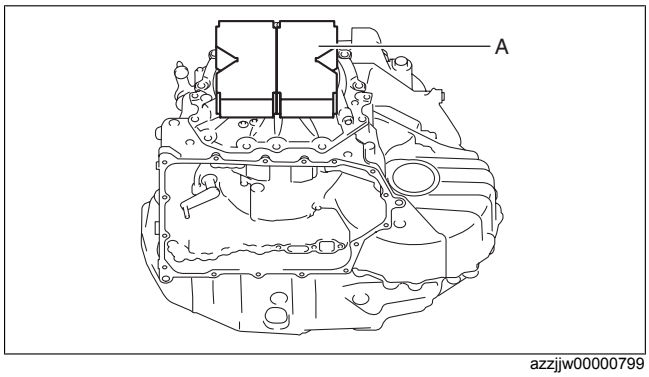
5. Place a 98—196 N {10.0—19.9 kgf, 23.0—44.0 lbf} weight on the end cover.

Note
- Use a V-block as a weight.
- To reduce error during the total end play measurement, place the weight near the center of the end cover.

A : Weight (V-block)



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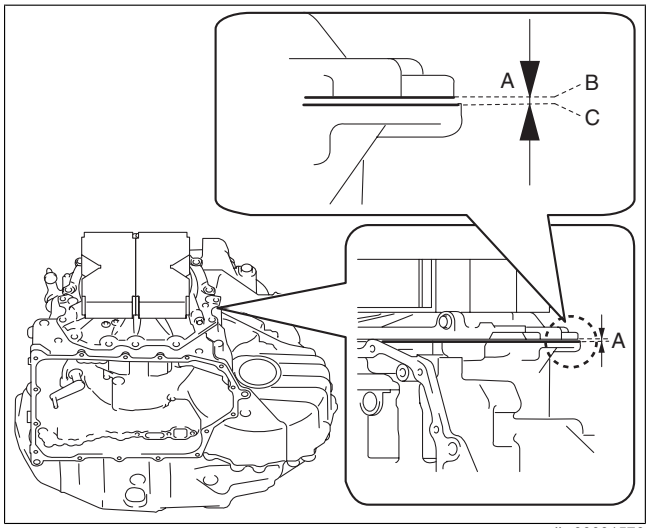
6. Measure the total end play adjustment value using the following procedure:

Note
- The total end play adjustment value is the gap between the transaxle case and end cover with the shim (FZ01 19 2L1) for the total end play measurement/adjustment assembled.
- Recommended measuring instrument: Thickness gauge

(1) Measure the total end play adjustment value (gap between the transaxle case and end cover) in four locations (each separated by 90°) and calculate the average end play adjustment value.

A : Total end play adjustment value
B : End cover end (alignment surface with transaxle case)
C : Transaxle case end (alignment surface with end cover)

(2) Input the measured total end play adjustment value and calculated average of the total end play adjustment value into the measurement/adjustment value sheet.



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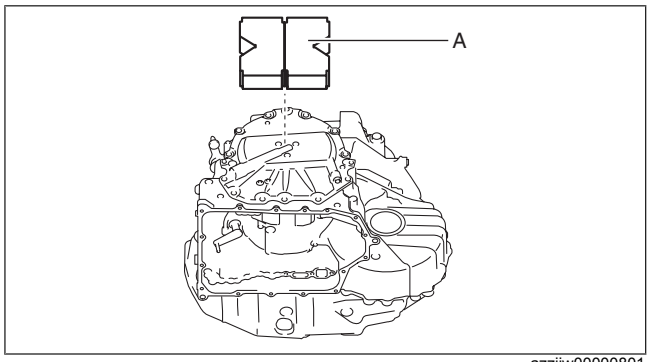
7. Remove the weight on the end cover.

A : Weight (V-block)



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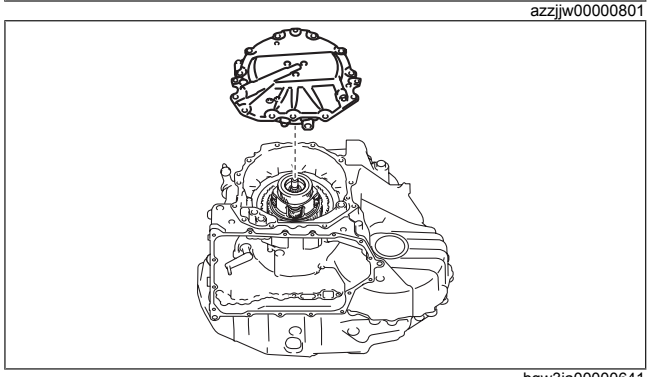
8. Remove the end cover component.



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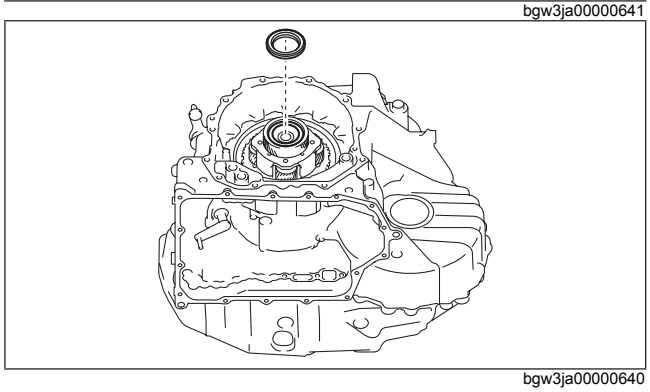
9. Remove the shim (FZ01 19 2L1) for the total end play measurement/adjustment.
10. Measure the thickness of the removed shim (FZ01 19 2L1) for the total end play measurement/adjustment.

Note
- Recommended measuring instrument: Micrometer

11. Input the measured shim thickness into the measurement/adjustment value input sheet.
12. Select the appropriate shim from the following table.



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Range*	Selected shim thickness
Exceeds 3.545 mm {0.1396 in}, 3.645 mm {0.1435 in} or less	3.0 mm {0.118 in}
Exceeds 3.445 mm {0.1356 in}, 3.545 mm {0.1396 in} or less	2.9 mm {0.114 in}
Exceeds 3.345 mm {0.1317 in}, 3.445 mm {0.1356 in} or less	2.8 mm {0.110 in}
Exceeds 3.245 mm {0.1278 in}, 3.345 mm {0.1317 in} or less	2.7 mm {0.106 in}
Exceeds 3.145 mm {0.1238 in}, 3.245 mm {0.1278 in} or less	2.6 mm {0.102 in}
Exceeds 3.045 mm {0.1199 in}, 3.145 mm {0.1238 in} or less	2.5 mm {0.098 in}
Exceeds 2.945 mm {0.1159 in}, 3.045 mm {0.1199 in} or less	2.4 mm {0.094 in}
Exceeds 2.845 mm {0.1120 in}, 2.945 mm {0.1159 in} or less	2.3 mm {0.091 in}
Exceeds 2.745 mm {0.1081 in}, 2.845 mm {0.1120 in} or less	2.2 mm {0.087 in}
Exceeds 2.645 mm {0.1041 in}, 2.745 mm {0.1081 in} or less	2.1 mm {0.083 in}

* : The range is the sum of the average value of the total end play adjustment value and the thickness value of the removed shim (FZ01 19 2L1) for the total end play measurement/adjustment.

Range = B + C

B: Average total end play adjustment value

C: Thickness of shim (FZ01 19 2L1) for total end play measurement/adjustment

Note

Example

B: Average total end play adjustment value is 0.115 mm {0.00453 in}

C: Thickness of the shim (FZ01 19 2L1) for the total end play measurement/adjustment is 3.010 mm {0.11850 in}

Range = 0.115 mm {0.00453 in} + 3.010 mm {0.11850 in} = 3.125 mm {0.12303 in}, a shim of 2.5 mm {0.098 in} thickness should be selected.