

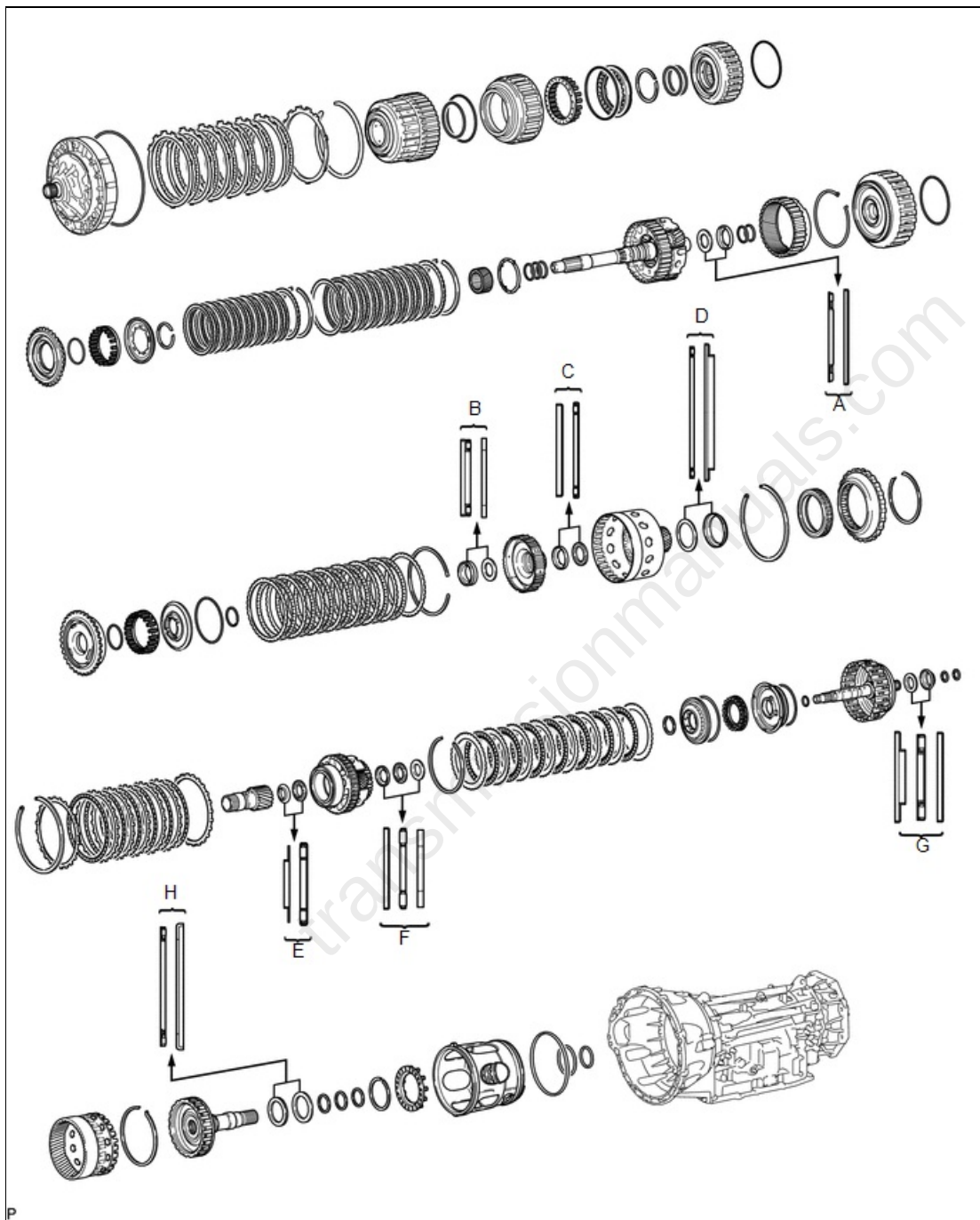
Last Modified: 12-21-2017	6.8:8.0.48	Doc ID: RM10000000T2ZT
Model Year Start: 2016	Model: LX570	Prod Date Range: [09/2015 -]
Title: AE80F AUTOMATIC TRANSMISSION / TRANSAXLE: AUTOMATIC TRANSMISSION UNIT: REASSEMBLY; 2016 - 2018 MY LX570 [09/2015 -]		

REASSEMBLY

PROCEDURE

1. BEARING POSITION

(a) Check each bearing position and installation direction.



Bearing Position:

POSITION	FRONT RACE DIAMETER INSIDE/OUTSIDE	THRUST BEARING DIAMETER INSIDE/OUTSIDE	REAR RACE DIAMETER INSIDE/OUTSIDE
A	-	36.2 mm (1.425 in.) / 58.2 mm (2.291 in.)	44.0 mm (1.732 in.) / 62.0 mm (2.441 in.)
B	-	34.5 mm (1.358 in.) / 49.9 mm (1.965 in.)	36.6 mm (1.441 in.) / 51.9 mm (2.043 in.)
C	46.5 mm (1.831 in.) / 60.1 mm (2.366 in.)	47.0 mm (1.850 in.) / 61.9 mm (2.437 in.)	-
D	-	71.2 mm (2.803 in.) / 84.5 mm (3.327 in.)	71.9 mm (2.831 in.) / 87.8 mm (3.457 in.)
E	30.0 mm (1.181 in.) / 49.9 mm (1.965 in.)	31.0 mm (1.221 in.) / 53.7 mm (2.112 in.)	-

POSITION	FRONT FACE DIAMETER	THRUST BEARING DIAMETER	REAR FACE DIAMETER
G	31.5 mm (1.240 in.) / 57.2 mm (2.256 in.) 26.2 mm (1.031 in.) / 52.5 mm (2.075 in.) INSIDE/OUTSIDE	28.7 mm (1.130 in.) / 53.8 mm (2.118 in.) 29.3 mm (1.154 in.) / 54.9 mm (2.161 in.) INSIDE/OUTSIDE	28.7 mm (1.130 in.) / 53.5 mm (2.106 in.) 29.3 mm (1.154 in.) / 54.9 mm (2.161 in.) INSIDE/OUTSIDE
H	-	58.9 mm (2.319 in.) / 76.7 mm (3.020 in.)	62.0 mm (2.441 in.) / 82.5 mm (3.248 in.)

2. INSTALL OUTPUT SHAFT REAR RADIAL BALL BEARING

- (a) Using SST, tap in a new output shaft rear radial ball bearing to the automatic transmission case sub-assembly.

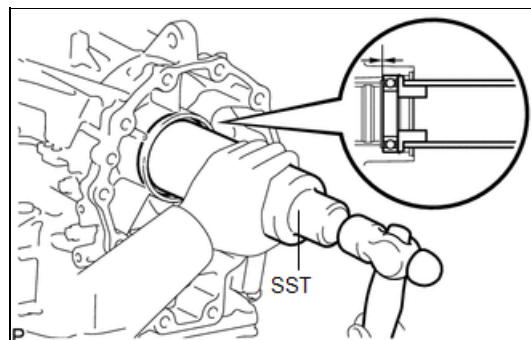
SST: 09316-60011

09316-00011

09316-00021

HINT:

Install the output shaft rear radial ball bearing so that there is no clearance between the output shaft rear radial ball bearing and the automatic transmission case sub-assembly.



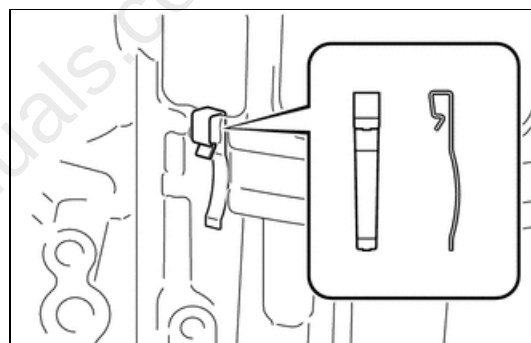
- (b) Using needle-nose pliers, install the snap ring.

3. INSTALL 1ST AND REVERSE BRAKE PLATE STOPPER SPRING

- (a) Install the 1st and reverse brake plate stopper spring to the automatic transmission case sub-assembly.

NOTICE:

The shapes of the parts are different. Refer to the illustration when installing the parts.



4. INSTALL NO. 2 BRAKE PISTON

- (a) Coat 3 new O-rings with ATF, and install them to the No. 2 brake piston.

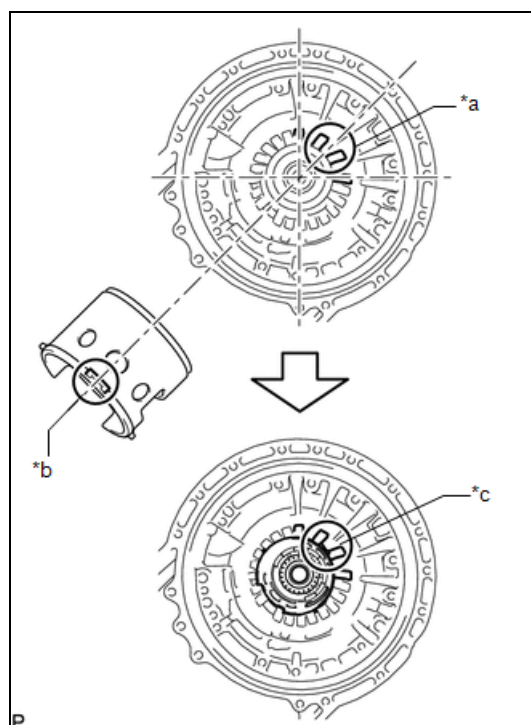
- (b) Install the No. 2 brake piston to the automatic transmission case sub-assembly.

Text in Illustration

*a	Spline
*b	Protrusion
*c	Spline and Protrusion

HINT:

Make sure that the parking hole of the No. 2 brake piston is on the bottom side by engaging the 2 protrusions of the brake piston to the spline grooves of the transmission case.



(c) Install the No. 2 brake piston return spring sub-assembly to the automatic transmission case sub-assembly.

(d) Set SST on the No. 2 brake piston return spring sub-assembly, tighten SST and compress the No. 2 brake piston return spring sub-assembly.

SST: 09380-50010

09381-05010

09381-05020

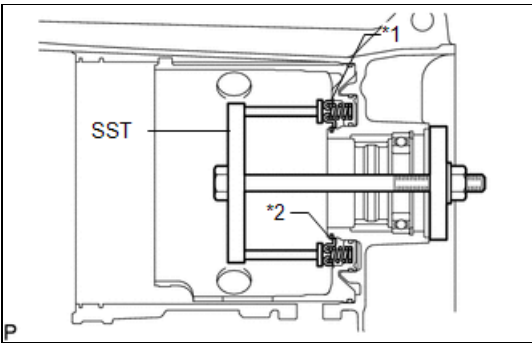
09381-05030

09381-05040

09381-05050

Text in Illustration

*1	No. 2 Brake Piston Return Spring Sub-assembly
*2	Snap Ring



(e) Using SST, install the snap ring.

SST: 09350-30020

09350-07070

5. INSPECT PACK CLEARANCE OF NO. 2 BRAKE

INFO

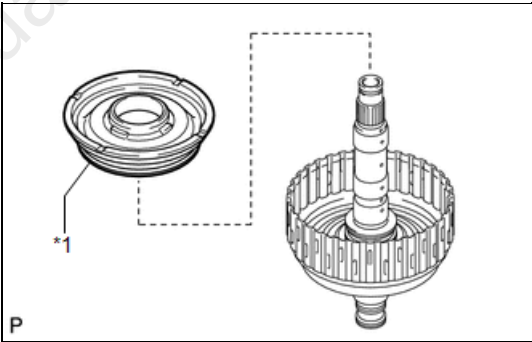
6. INSTALL DIRECT CLUTCH PISTON

- (a) Coat a new O-ring with ATF, and install it to the direct clutch drum sub-assembly.
- (b) Coat a new O-ring with ATF, and install it to the direct clutch piston.

(c) Install the direct clutch piston to the direct clutch drum sub-assembly.

Text in Illustration

*1	Direct Clutch Piston
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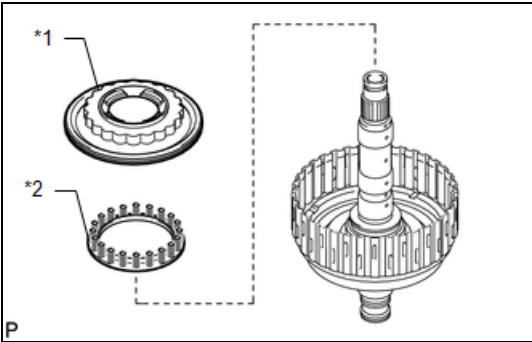


(d) Coat a new O-ring with ATF, and install it to the No. 2 clutch balancer.

(e) Install the direct clutch return spring sub-assembly and No. 2 clutch balancer to the direct clutch drum sub-assembly.

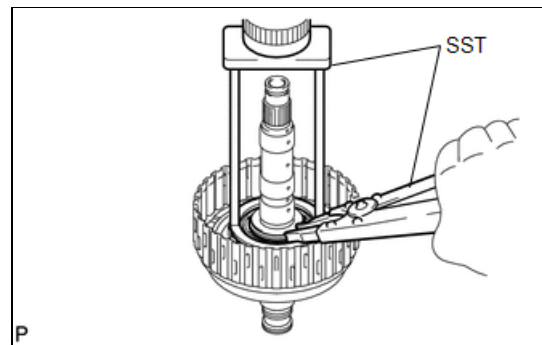
Text in Illustration

*1	No. 2 Clutch Balancer
*2	Direct Clutch Return Spring Sub-assembly



- (f) Place SST on the No. 2 clutch balancer and compress the direct clutch return spring sub-assembly with a press.

SST: 09387-00020



- (g) Using SST, install the snap ring.

SST: 09350-30020

09350-07070

7. INSTALL NO. 2 CLUTCH DISC SET

- (a) Install the 7 No. 2 clutch plates, 7 No. 2 clutch discs and the No. 2 clutch flange to the direct clutch drum sub-assembly.

Install in order:

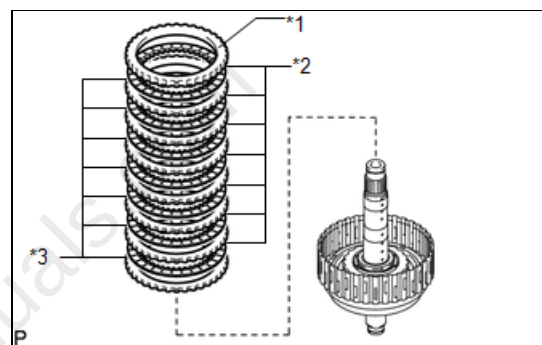
*3 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *1

Text in Illustration

*1	No. 2 Clutch Flange
*2	No. 2 Clutch Disc
*3	No. 2 Clutch Plate

NOTICE:

Make sure that the No. 2 clutch discs, No. 2 clutch plates and the No. 2 clutch flange are installed in the correct order.



- (b) Using a screwdriver, install the snap ring to the direct clutch drum sub-assembly.

Text in Illustration

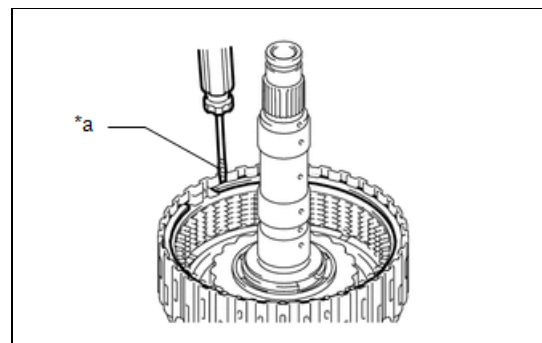
*a	Protective Tape
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NOTICE:

Be careful not to damage the direct clutch drum sub-assembly.

HINT:

Tape the screwdriver tip before use.



8. INSPECT PACK CLEARANCE OF NO. 2 CLUTCH

INFO

9. INSTALL DIRECT MULTIPLE DISC CLUTCH ASSEMBLY

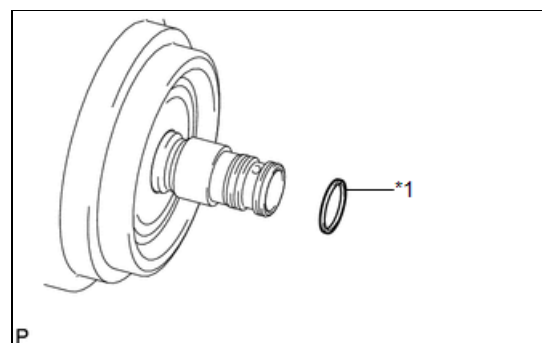
- (a) Coat a new oil seal ring with ATF, and install them to the direct multiple disc clutch assembly.

Text in Illustration

*1	Oil Seal Ring
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NOTICE:

Do not expand the gap of the oil seal rings excessively.



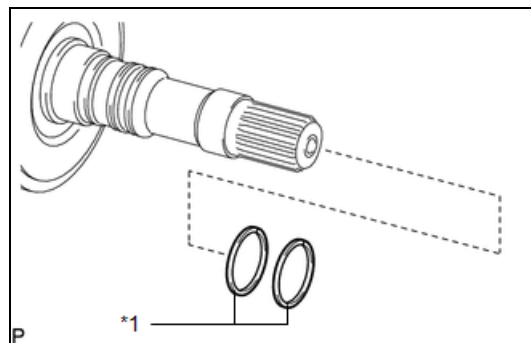
(b) Coat 2 new oil seal ring with ATF, and install them to the output shaft sub-assembly.

Text in Illustration

*1	Oil Seal Ring
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NOTICE:

Do not expand the gap of the oil seal rings excessively.



(c) Install the thrust needle roller bearing and 2 thrust bearing races to the direct multiple disc clutch assembly.

Thrust Needle Roller Bearing and Thrust Bearing Race Diameter:

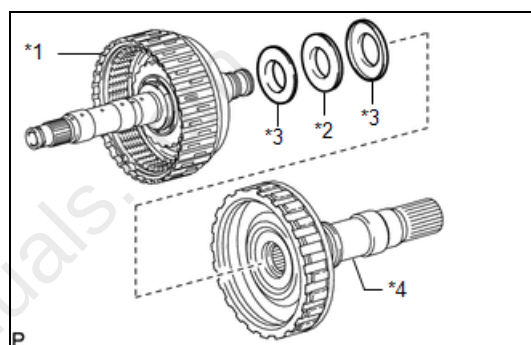
ITEM	INSIDE	OUTSIDE
for Front Side: Thrust bearing race (G)	26.2 mm (1.031 in.)	52.7 mm (2.075 in.)
Thrust needle roller bearing (G)	29.3 mm (1.154 in.)	51.2 mm (2.016 in.)
for Rear Side: Thrust bearing race (G)	29.3 mm (1.154 in.)	54.0 mm (2.126 in.)

Text in Illustration

*1	Direct Multiple Disc Clutch Assembly
*2	Thrust Needle Roller Bearing (G)
*3	Thrust Bearing Race (G)
*4	Output Shaft Sub-assembly

NOTICE:

Use a small amount of MP grease to make the thrust needle roller bearing and thrust bearing race stay securely in place.



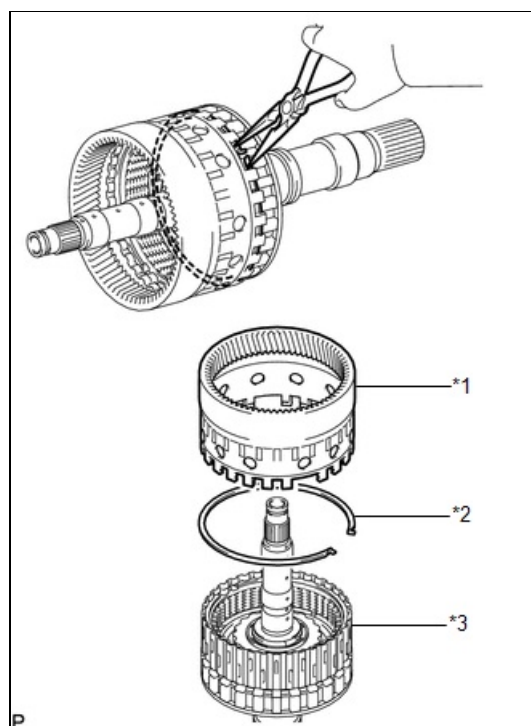
(d) Install the direct multiple disc clutch assembly to the output shaft sub-assembly.

10. INSTALL REAR PLANETARY RING GEAR

(a) Install the snap ring to the groove of the output shaft sub-assembly.

Text in Illustration

*1	Rear Planetary Ring Gear
*2	Snap Ring
*3	Output Shaft Sub-assembly



(b) Using needle-nose pliers, attach the snap ring to install the rear planetary ring gear to the output shaft sub-assembly.

11. INSTALL DIRECT MULTIPLE DISC CLUTCH ASSEMBLY WITH REAR PLANETARY RING GEAR AND OUTPUT SHAFT SUB-ASSEMBLY

- (a) Install the 2 thrust needle bearings, 2 thrust bearing races, direct multiple disc clutch assembly with rear planetary ring gear and output shaft sub-assembly to the automatic transmission case sub-assembly.

Thrust Needle Roller Bearing and Thrust Bearing Race Diameter:

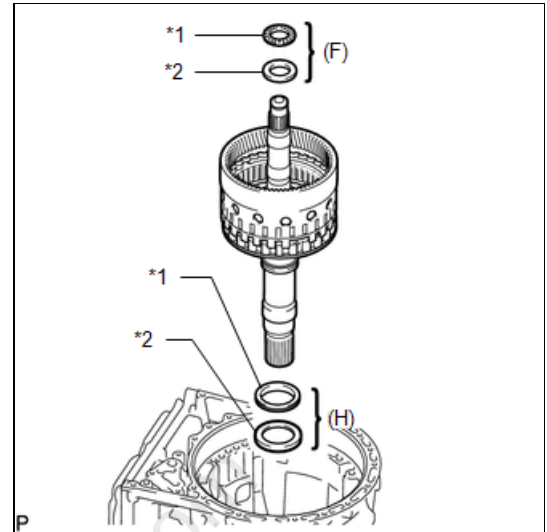
ITEM	INSIDE	OUTSIDE
Thrust bearing race (H)	62.0 mm (2.441 in.)	82.5 mm (3.248 in.)
Thrust needle roller bearing (H)	58.9 mm (2.319 in.)	76.7 mm (3.020 in.)
for Rear Side: Thrust bearing race (F)	28.7 mm (1.130 in.)	53.5 mm (2.106 in.)
Thrust needle roller bearing (F)	28.7 mm (1.130 in.)	53.8 mm (2.118 in.)

Text in Illustration

*1	Thrust Needle Roller Bearing
*2	Thrust Bearing Race

NOTICE:

Use a small amount of MP grease to make the thrust needle roller bearing and thrust bearing race stay securely in place.



12. INSTALL REAR PLANETARY GEAR ASSEMBLY

- (a) Install the thrust bearing race, rear planetary gear assembly and thrust needle roller bearing to the automatic transmission case sub-assembly.

Thrust Needle Roller Bearing and Thrust Bearing Race Diameter:

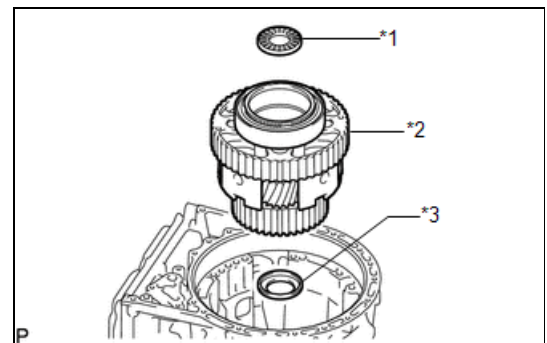
ITEM	INSIDE	OUTSIDE
for Front Side Thrust bearing race (F)	31.5 mm (1.240 in.)	57.3 mm (2.256 in.)
Thrust needle roller bearing (E)	31.0 mm (1.221 in.)	53.7 mm (2.114 in.)

Text in Illustration

*1	Thrust Needle Roller Bearing
*2	Rear Planetary Gear Assembly
*3	Thrust Bearing Race

NOTICE:

- Before installing the rear planetary gear assembly, apply ATF to the sliding surfaces of the rear planetary gear assembly bush. After the installation, check that the rear planetary gear assembly rotates smoothly.
- Use a small amount of MP grease to make the thrust needle roller bearing and thrust bearing race stay securely in place.



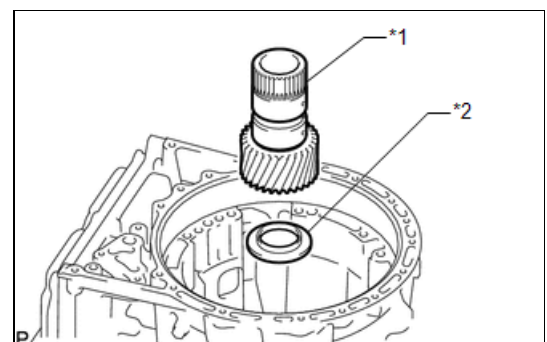
13. INSTALL REAR PLANETARY SUN GEAR SUB-ASSEMBLY

- (a) Install the thrust bearing race and rear planetary sun gear sub-assembly to the automatic transmission case sub-assembly.

Standard Thrust Bearing Race Diameter:

ITEM	INSIDE	OUTSIDE
Thrust bearing race (E)	30.0 mm (1.181 in.)	49.9 mm (1.965 in.)

Text in Illustration

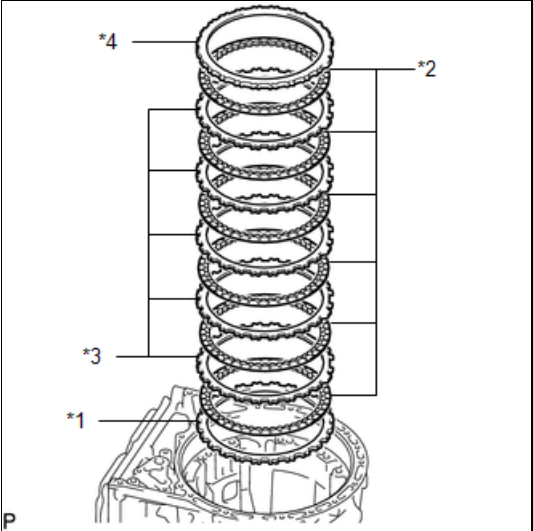


*1	Rear Planetary Sun Gear Sub-assembly
*2	Thrust Bearing Race (E)

- NOTICE:**
- Before installing the rear planetary sun gear sub-assembly, apply ATF to the sliding surfaces of the rear planetary sun gear sub-assembly bush. After the installation, check that the rear planetary sun gear sub-assembly rotates smoothly.
 - Use a small amount of MP grease to make the thrust bearing race stay securely in place.

14. INSTALL NO. 2 BRAKE DISC SET

(a) Install the No. 2 brake flange, 6 No. 2 brake discs, 5 No. 2 brake plates and brake plate to the automatic transmission case sub-assembly.



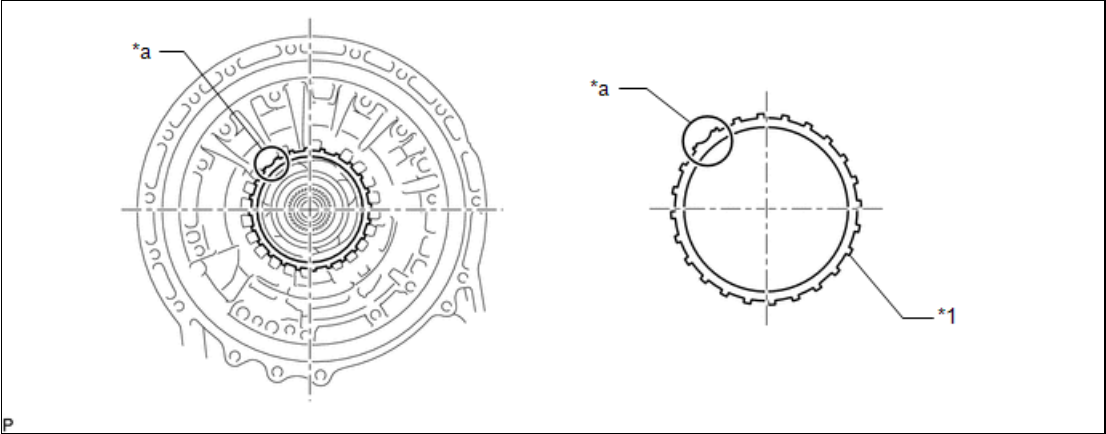
Install in order:
*4 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *1

Text in Illustration

*1	Brake Plate
*2	No. 2 Brake Disc
*3	No. 2 Brake Plate
*4	No. 2 Brake Flange

- NOTICE:**
- Make sure that the No. 2 brake discs, No. 2 brake plates, brake plate and No. 2 brake flange are installed in the correct order.

- HINT:**
- Assemble the automatic transmission case sub-assembly, No. 2 brake flange, No. 2 brake plate and brake plate by aligning their grooves as shown in the illustration.



Text in Illustration

*1	Brake Plate, No. 2 Brake Plate and No. 2 Brake Flange	-	-
*a	Groove	-	-

(b) Install the snap ring to the automatic transmission case sub-assembly.

15. INSTALL NO. 1 ONE-WAY CLUTCH

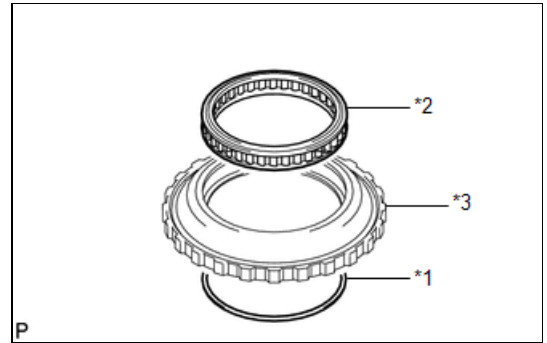
(a) Install the No. 1 one-way clutch to the one-way clutch outer race with the snap ring.

Text in Illustration

*1	Snap Ring
*2	No. 1 One-way Clutch
*3	One-way Clutch Outer Race

NOTICE:

Make sure that the No. 1 one-way clutch is oriented correctly.

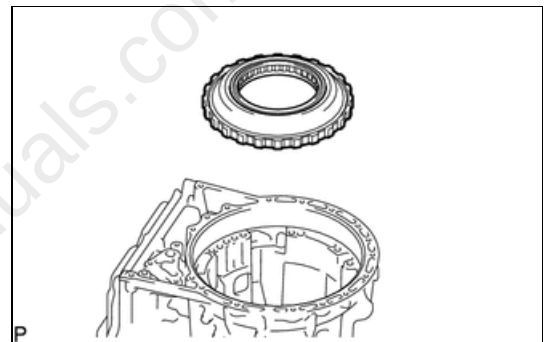


16. INSPECT NO. 1 ONE-WAY CLUTCH

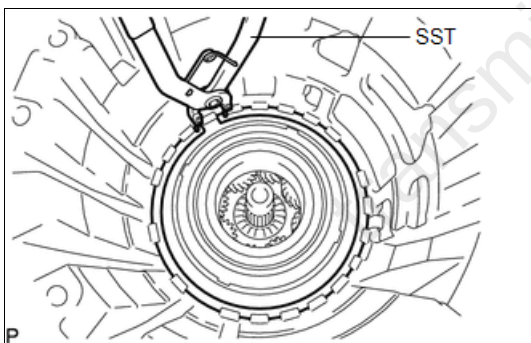
INFO

17. INSTALL ONE-WAY CLUTCH OUTER RACE WITH NO. 1 ONE-WAY CLUTCH

(a) Install the one-way clutch outer race with No. 1 one-way clutch to the automatic transmission case sub-assembly.



(b) Using SST, install the snap ring to the automatic transmission case sub-assembly.

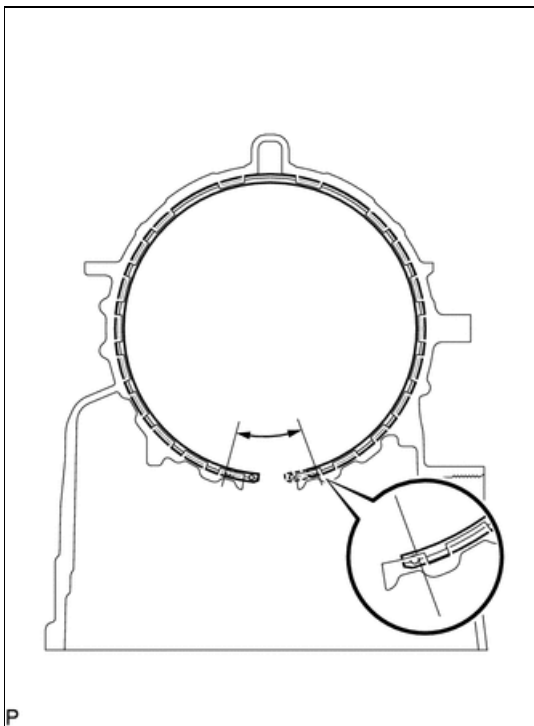


SST: 09350-30020

09350-07060

NOTICE:

Install the snap ring so that its end gap will be within the range shown in the illustration.



18. INSTALL SUN GEAR INPUT DRUM SUB-ASSEMBLY

- (a) Install the thrust bearing race, thrust needle roller bearing and sun gear input drum sub-assembly to the automatic transmission case sub-assembly.

Thrust Needle Roller Bearing and Thrust Bearing Race Diameter:

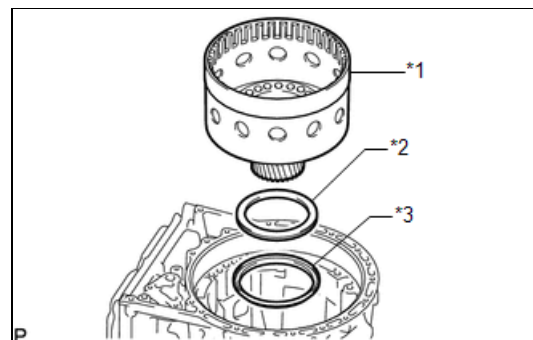
ITEM	INSIDE	OUTSIDE
Thrust bearing race (D)	71.9 mm (2.831 in.)	87.8 mm (3.457 in.)
Thrust needle roller bearing (D)	71.2 mm (2.803 in.)	84.5 mm (3.327 in.)

Text in Illustration

*1	Sun Gear Input Drum Sub-assembly
*2	Thrust Needle Roller Bearing (D)
*3	Thrust Bearing Race (D)

NOTICE:

- Before installing the sun gear input drum sub-assembly, apply ATF to the sliding surfaces of the sun gear input drum sub-assembly bush. After the installation, check that the sun gear input drum sub-assembly rotates smoothly.
- Use a small amount of MP grease to make the thrust needle roller bearing and thrust bearing race stay securely in place.



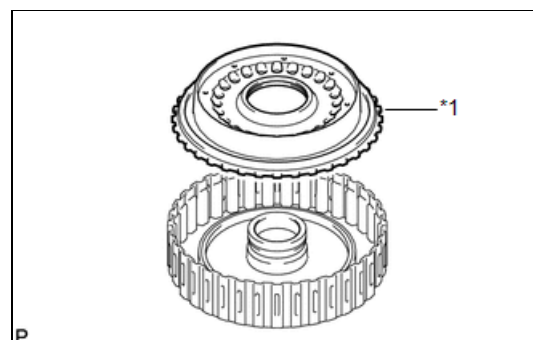
19. INSTALL FORWARD CLUTCH PISTON

- (a) Coat 2 new O-rings with ATF, and install them to the forward clutch piston.

- (b) Install the forward clutch piston to the forward clutch drum sub-assembly.

Text in Illustration

*1	Forward Clutch Piston
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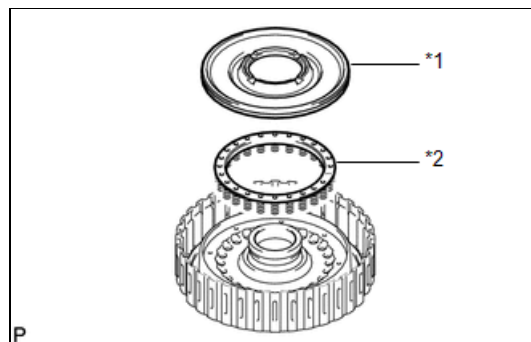


- (c) Coat a new O-ring with ATF, and install it to the No. 1 clutch balancer.

- (d) Install the forward clutch return spring sub-assembly and No. 1 clutch balancer to the forward clutch drum sub-assembly.

Text in Illustration

*1	No. 1 Clutch Balancer
*2	Forward Clutch Return Spring Sub-assembly



- (e) Set SST on the No. 1 clutch balancer, tighten SST and compress the No. 1 clutch balancer.

SST: 09380-50010

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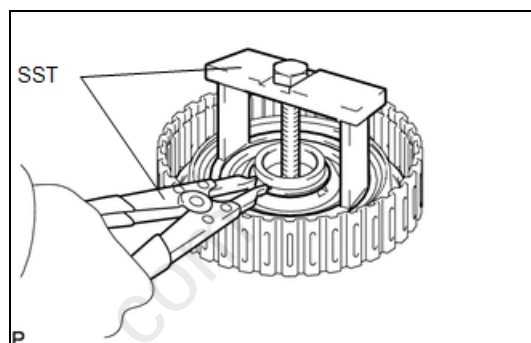
09381-05030

09381-05040

09381-05050

NOTICE:

Stop pressing when the balancer is lowered to the place 1 to 2 mm (0.039 to 0.078 in.) from the snap ring groove to prevent spring sheet deformation.



- (f) Using SST, install the snap ring.

SST: 09350-30020

09350-07070

NOTICE:

- Be sure that the end gap of the snap ring is not aligned with the spring retainer claw.
- Do not expand the snap ring excessively.

20. INSTALL FORWARD MULTIPLE CLUTCH DISC SET

- (a) Install the 7 forward multiple clutch plates, 7 forward multiple clutch discs and forward clutch flange to the forward clutch drum sub-assembly.

Install in order:

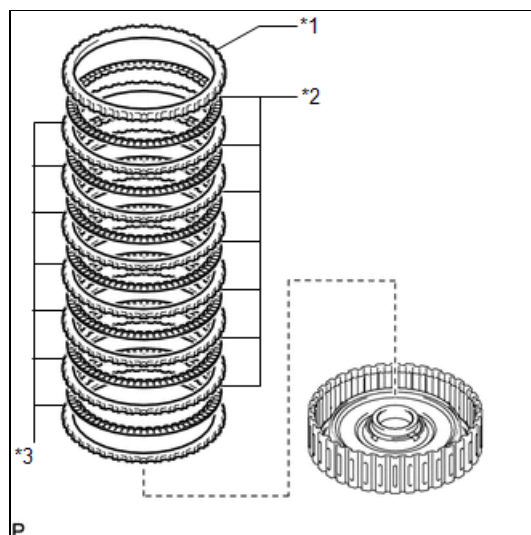
*3 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *1

Text in Illustration

*1	Forward Clutch Flange
*2	Forward Multiple Clutch Disc
*3	Forward Multiple Clutch Plate

NOTICE:

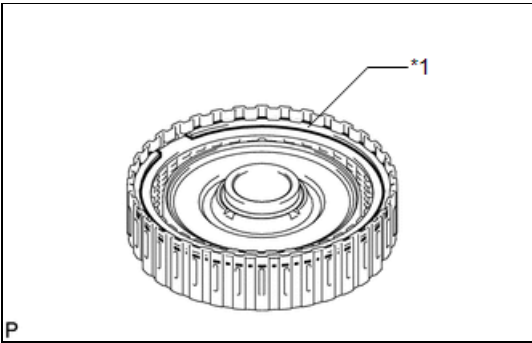
Make sure that the forward multiple clutch discs, forward multiple clutch plates and the forward clutch flange are installed in the correct order.



- (b) Install the snap ring to the forward clutch drum sub-assembly.

Text in Illustration

*1	Snap Ring
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21. INSPECT PACK CLEARANCE OF FORWARD MULTIPLE CLUTCH

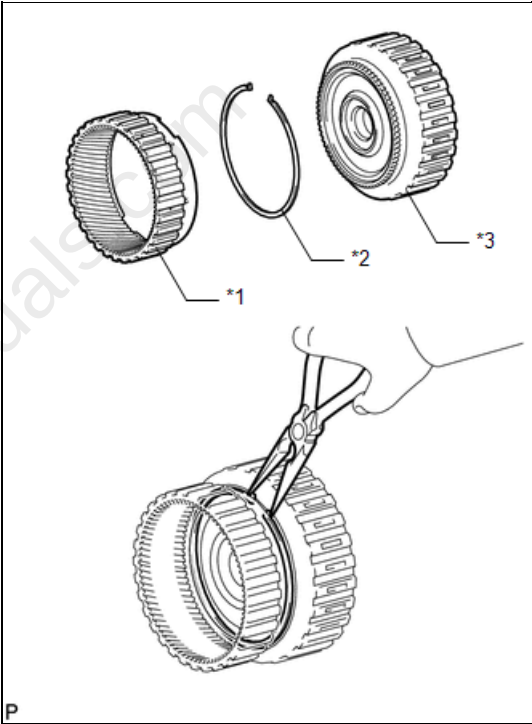
INFO

22. INSTALL FRONT PLANETARY RING GEAR

- (a) Using needle-nose pliers, install the snap ring to the groove of forward multiple disc clutch assembly.

Text in Illustration

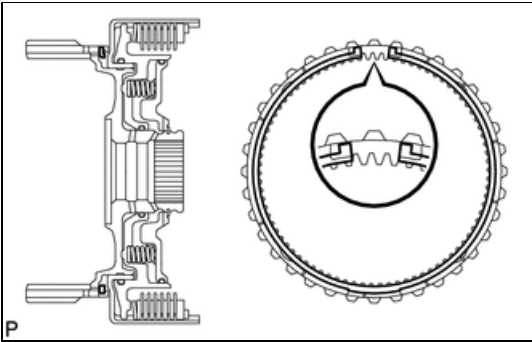
*1	Front Planetary Ring Gear
*2	Snap Ring
*3	Forward Multiple Disc Clutch Assembly



- (b) Using needle-nose pliers, contract the snap ring and install the front planetary ring gear to the forward multiple disc clutch assembly.

NOTICE:

Confirm that the snap ring is correctly located in the groove of the forward multiple disc clutch assembly as shown in the illustration.



23. INSTALL FORWARD MULTIPLE DISC CLUTCH HUB

- (a) Install the thrust needle roller bearing, thrust bearing race and forward multiple disc clutch assembly with front planetary ring gear to the forward multiple disc clutch hub.

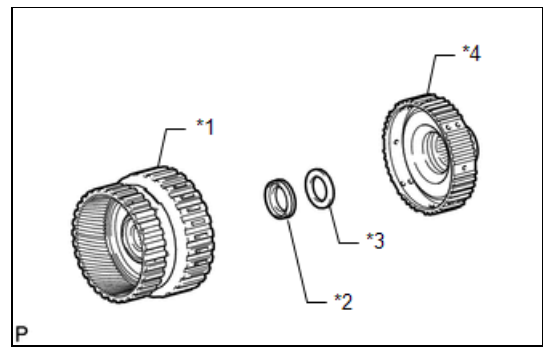
Thrust Needle Roller Bearing and Thrust Bearing Race Diameter:

ITEM	INSIDE	OUTSIDE

ITEM	INSIDE	OUTSIDE
Thrust needle roller bearing (B)	34.5 mm (1.358 in.)	49.9 mm (1.965 in.)
Thrust bearing race (B)	36.6 mm (1.441 in.)	51.9 mm (2.043 in.)

Text in Illustration

*1	Forward Multiple Disc Clutch Assembly with Front Planetary Ring Gear
*2	Thrust Needle Roller Bearing (B)
*3	Thrust Bearing Race (B)
*4	Forward Multiple Disc Clutch Hub



NOTICE:

Use a small amount of MP grease to make the thrust needle roller bearing and thrust bearing race stay securely in place.

24. INSTALL FORWARD MULTIPLE DISC CLUTCH ASSEMBLY WITH FRONT PLANETARY RING GEAR AND FORWARD MULTIPLE DISC CLUTCH HUB

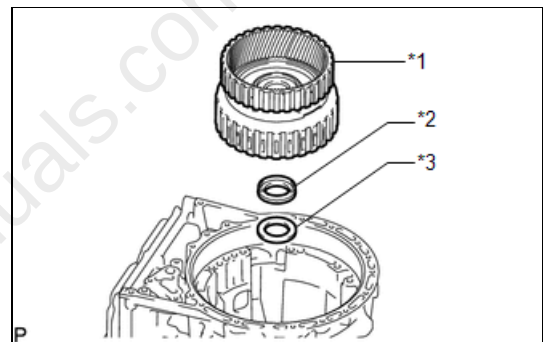
- (a) Install the thrust bearing race, thrust needle roller bearing and forward multiple disc clutch assembly with front planetary ring gear and forward multiple disc clutch hub to the automatic transmission case sub-assembly.

Thrust Needle Roller Bearing and Thrust Bearing Race Diameter:

ITEM	INSIDE	OUTSIDE
Thrust needle race (C)	47.0 mm (1.850 in.)	61.9 mm (2.437 in.)
Thrust bearing roller bearing (C)	46.5 mm (1.831 in.)	60.1 mm (2.366 in.)

Text in Illustration

*1	Forward Multiple Disc Clutch Assembly with Front Planetary Ring Gear
*2	Thrust Bearing Race (C)
*3	Thrust Needle Roller Bearing (C)



NOTICE:

- Before installing the forward multiple disc clutch assembly, apply ATF to the sliding surfaces of the forward multiple disc clutch assembly bush. After the installation, check that the forward multiple disc clutch assembly rotates smoothly.
- Use a small amount of MP grease to make the thrust needle roller bearing and thrust needle roller bearing race stay securely in place.

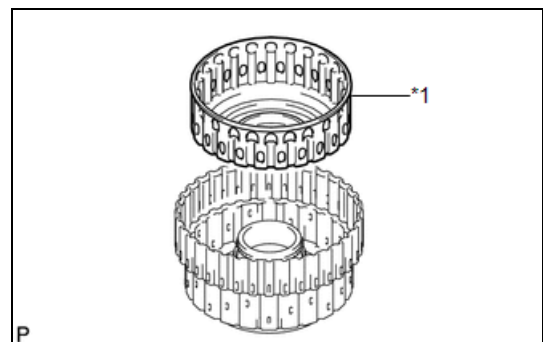
25. INSTALL REVERSE CLUTCH PISTON SUB-ASSEMBLY

- (a) Coat a new O-ring with ATF, and install it to the reverse clutch drum sub-assembly.

- (b) Install the reverse clutch piston sub-assembly to the reverse clutch drum sub-assembly.

Text in Illustration

*1	Reverse Clutch Piston Sub-assembly
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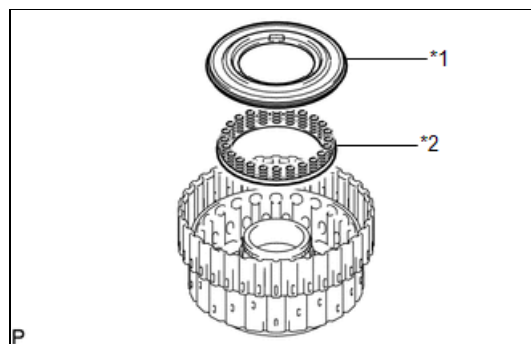
- (c) Coat a new O-ring with ATF, and install it to the No. 3 clutch balancer.

- (d) Install the reverse clutch return spring sub-assembly (front) and No. 3 clutch balancer to

the reverse clutch drum sub-assembly.

Text in Illustration

*1	No. 3 Clutch Balancer
*2	Reverse Clutch Return Spring Sub-assembly (Front)



- (e) Set SST on the No. 3 clutch balancer, tighten SST and compress the No. 3 clutch balancer.

SST: 09380-50010

09381-05010

09381-05020

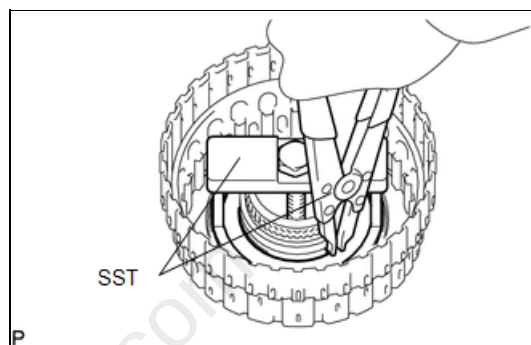
09381-05030

09381-05040

09381-05050

NOTICE:

Stop pressing when the balancer is lowered to the place 1.0 to 2.0 mm (0.0394 to 0.0787 in.) from the snap ring groove to prevent spring sheet deformation.



- (f) Using SST, install the snap ring.

SST: 09350-30020

09350-07070

NOTICE:

- Be sure that the end gap of the snap ring is not aligned with the spring retainer claw.
- Do not expand the snap ring excessively.

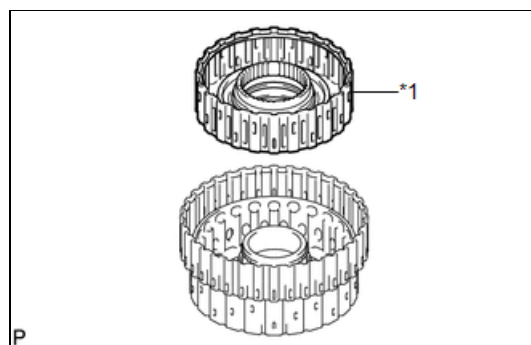
26. INSTALL OVERDRIVE DIRECT CLUTCH DRUM SUB-ASSEMBLY

- (a) Coat 3 new O-rings with ATF, and install them to the overdrive direct clutch drum sub-assembly.

- (b) Install the overdrive direct clutch drum sub-assembly to the reverse clutch drum sub-assembly.

Text in Illustration

*1	Overdrive Direct Clutch Drum Sub-assembly
----	---



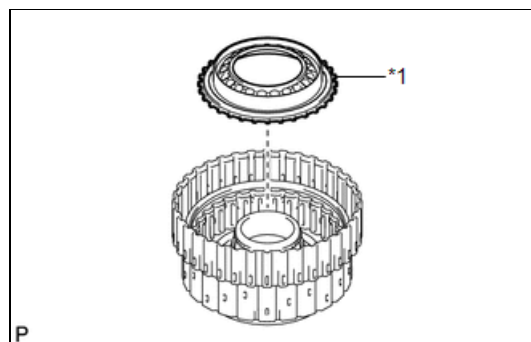
27. INSTALL NO. 4 CLUTCH PISTON

- (a) Coat a new O-ring with ATF, and install it to the No. 4 clutch piston.

- (b) Install the No. 4 clutch piston to the overdrive direct clutch drum sub-assembly.

Text in Illustration

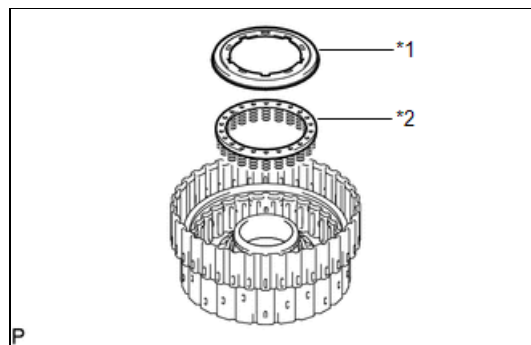
*1	No. 4 Clutch Piston
----	---------------------



- (c) Install the reverse clutch return spring sub-assembly (rear) and reverse clutch balancer to the overdrive direct clutch drum sub-assembly.

Text in Illustration

*1	Reverse Clutch Balancer
*2	Reverse Clutch Return Spring Sub-assembly (Rear)



- (d) Set SST on the reverse clutch balancer, tighten SST and compress the reverse clutch balancer.

SST: 09380-50010

09381-05010

09381-05020

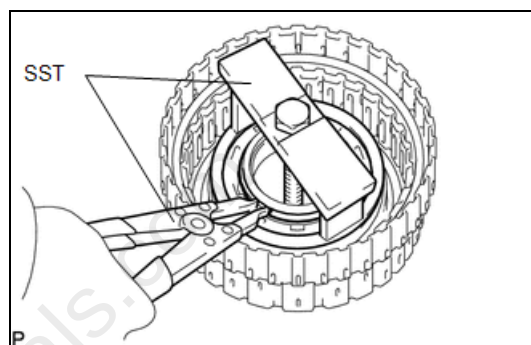
09381-05030

09381-05040

09381-05050

NOTICE:

Stop pressing when the balancer is lowered to the place 1.0 to 2.0 mm (0.0394 to 0.0787 in.) from the snap ring groove to prevent spring sheet deformation.



- (e) Using SST, install the snap ring.

SST: 09350-30020

09350-07070

NOTICE:

- Be sure that the end gap of the snap ring is not aligned with the spring retainer claw.
- Do not expand the snap ring excessively.

28. INSTALL OVERDRIVE DIRECT CLUTCH DISC

- (a) Install the 6 overdrive direct clutch plates, 6 overdrive direct clutch discs and overdrive clutch flange to the overdrive direct clutch drum sub-assembly.

Install in order:

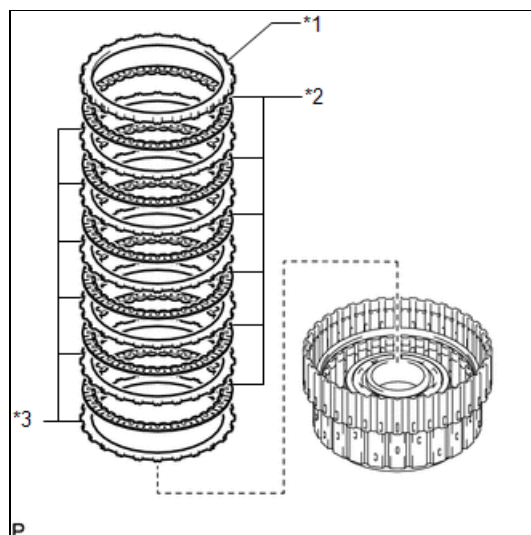
*3 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *3

Text in Illustration

*1	Overdrive Clutch Flange
*2	Overdrive Direct Clutch Disc
*3	Overdrive Direct Clutch Plate

NOTICE:

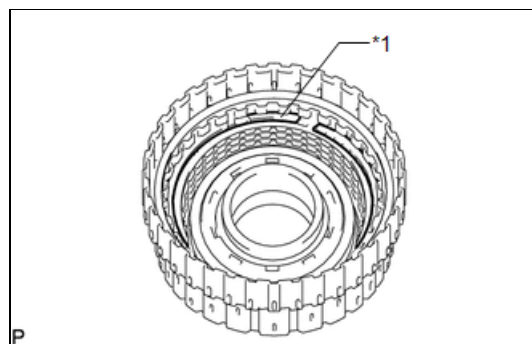
Make sure that the overdrive direct clutch discs, overdrive direct clutch plates and the overdrive clutch flange are installed in the correct order.



(b) Install the snap ring to the overdrive direct clutch drum sub-assembly.

Text in Illustration

*1	Snap Ring
----	-----------



29. INSPECT PACK CLEARANCE OF OVERDRIVE DIRECT CLUTCH

INFO

30. INSTALL NO. 3 CLUTCH DISC SET

(a) Install the 6 No. 3 clutch plates, 6 No. 3 clutch discs and No. 3 clutch flange to the reverse clutch drum sub-assembly.

Install in order:

*4 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *1

No. 3 Clutch Plate Thickness:

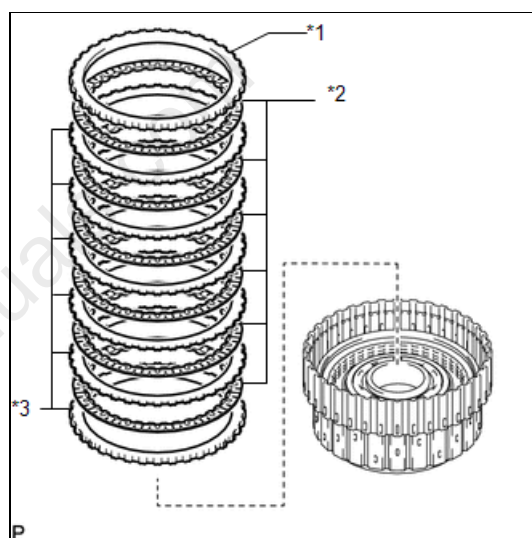
ITEM	THICKNESS
No. 3 Clutch Plate (A)	1.8 mm (0.0709 in.)
No. 3 Clutch Plate (B)	3.5 mm (0.138 in.)

Text in Illustration

*1	No. 3 Clutch Flange
*2	No. 3 Clutch Discs
*3	No. 3 Clutch Plate (A)
*4	No. 3 Clutch Plate (B)

NOTICE:

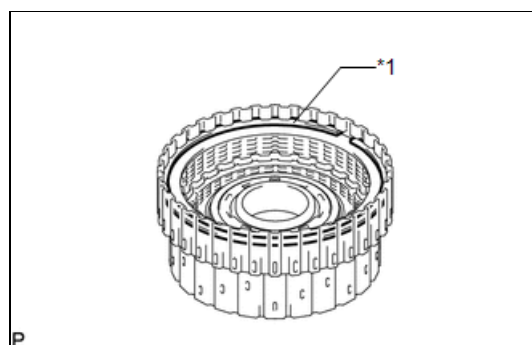
Make sure that the No. 3 clutch discs, No. 3 clutch plates and the No. 3 clutch flange are installed in the correct order.



(b) Install the snap ring to the reverse clutch drum sub-assembly.

Text in Illustration

*1	Snap Ring
----	-----------



31. INSPECT PACK CLEARANCE OF NO. 3 CLUTCH

INFO

32. INSTALL FRONT PLANETARY GEAR ASSEMBLY

(a) Install the front planetary gear radial needle roller bearing to the front planetary gear

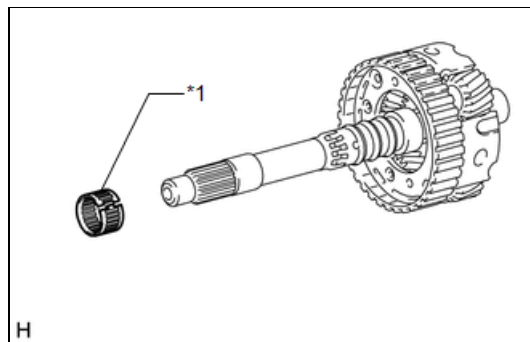
assembly.

Text in Illustration

*1	Front Planetary Gear Radial Needle Roller Bearing
----	---

NOTICE:

Do not expand the front planetary gear radial needle roller bearing excessively.



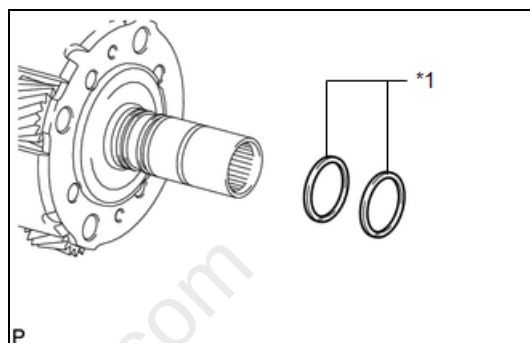
(b) Coat 2 new oil seal rings with ATF, and install them to the front planetary gear assembly.

Text in Illustration

*1	Oil Seal Ring
----	---------------

NOTICE:

Do not expand the oil seal ring ends excessively.



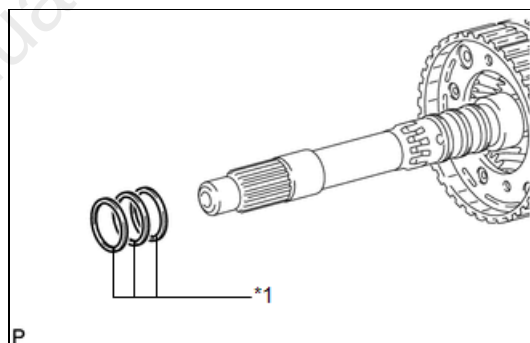
(c) Coat 3 new oil seal rings with ATF, and install them to the front planetary gear assembly.

Text in Illustration

*1	Oil Seal Ring
----	---------------

NOTICE:

Do not expand the oil seal ring ends excessively.



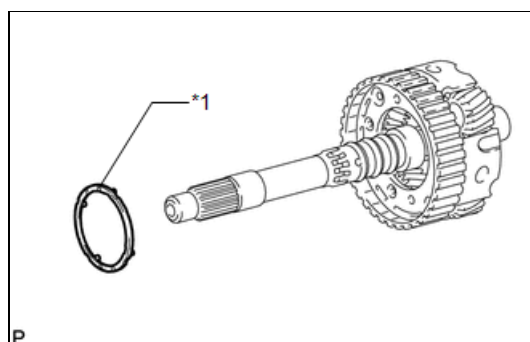
(d) Install the planetary carrier thrust washer to the front planetary gear assembly.

Text in Illustration

*1	Planetary Carrier Thrust Washer
----	---------------------------------

NOTICE:

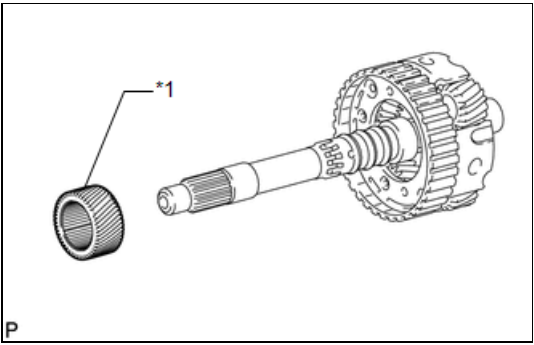
Use a small amount of MP grease to make the planetary carrier thrust washer stay securely in place.



(e) Install the front planetary sun gear to the front planetary gear assembly.

Text in Illustration

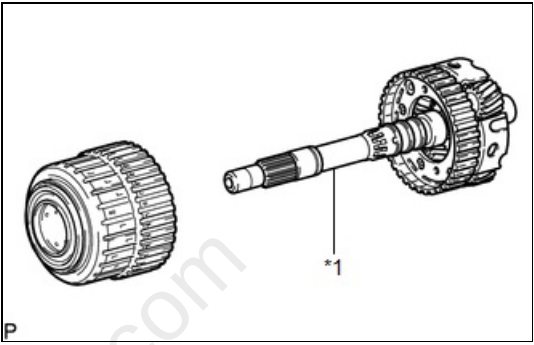
*1	Front Planetary Sun Gear
----	--------------------------



- (f) Assemble the front planetary gear assembly together with the front planetary sun gear to the overdrive and reverse multiple disc clutch assembly.

Text in Illustration

*1	Front Planetary Gear Assembly
----	-------------------------------



33. INSPECT PACK CLEARANCE OF NO. 1 BRAKE

INFO

34. INSTALL OVERDRIVE AND REVERSE MULTIPLE DISC CLUTCH ASSEMBLY AND FRONT PLANETARY GEAR ASSEMBLY

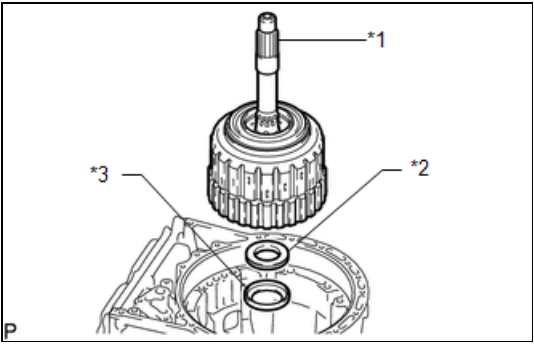
- (a) Install the thrust bearing race, thrust needle roller bearing, and overdrive and reverse multiple disc clutch assembly and front planetary gear assembly to the automatic transmission case sub-assembly.

Thrust Needle Roller Bearing and Thrust Bearing Race Diameter:

ITEM	INSIDE	OUTSIDE
Thrust needle roller bearing (A)	36.2 mm (1.425 in.)	58.2 mm (2.291 in.)
Thrust bearing race (A)	44.0 mm (1.732 in.)	62.0 mm (2.441 in.)

Text in Illustration

*1	Overdrive and Reverse Multiple Disc Clutch Assembly and Front Planetary Gear Assembly
*2	Thrust Needle Roller Bearing (A)
*3	Thrust Bearing Race (A)



NOTICE:

- Before installing the reverse clutch drum sub-assembly, apply ATF to the sliding surfaces of the reverse clutch drum sub-assembly. After the installation, check that the overdrive direct clutch drum sub-assembly rotates smoothly.
- Use a small amount of MP grease to make the thrust bearing and thrust bearing race stay securely in place.

- (b) Install the snap ring to the automatic transmission case sub-assembly.

35. INSTALL NO. 1 BRAKE DISC SET

- (a) Install the selected No. 1 brake flange, 6 No. 1 brake discs and 6 No. 1 brake plates to

the automatic transmission case sub-assembly.

Install in order:

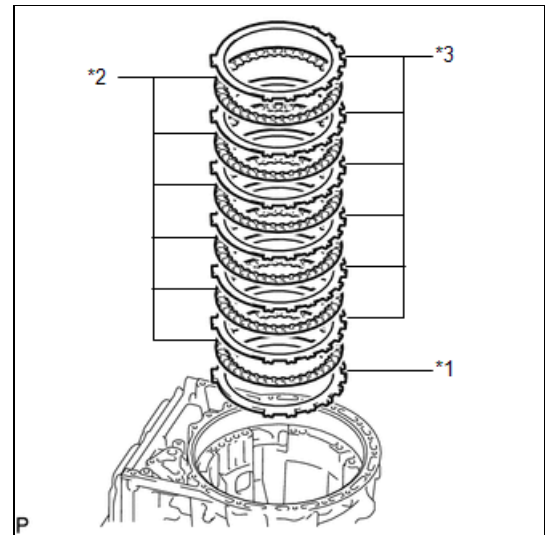
*1 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *3 - *2 - *3

Text in Illustration

*1	No. 1 Brake Flange
*2	No. 1 Brake Disc
*3	No. 1 Brake Plate

NOTICE:

Make sure that the No. 1 brake discs, No. 1 brake plates and the No. 1 brake flange are installed in the correct order.

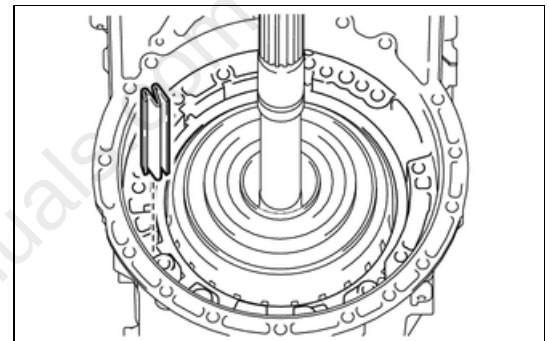


36. INSTALL OVERDRIVE BRAKE PLATE STOPPER SPRING

- (a) Install the overdrive brake plate stopper spring to the automatic transmission case sub-assembly as shown in the illustration.

NOTICE:

Install the overdrive brake plate stopper spring so that the wider side is facing inwards.

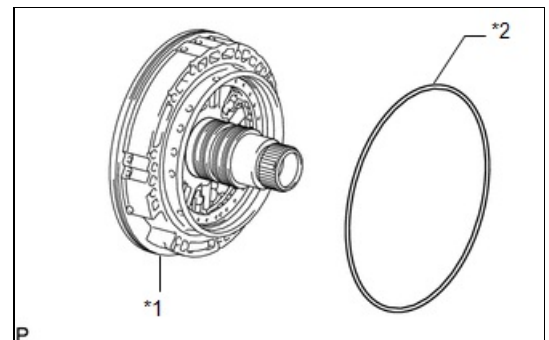


37. INSTALL OIL PUMP ASSEMBLY

- (a) Coat a new oil pump O-ring with ATF, and install it to the oil pump assembly.

Text in Illustration

*1	Oil Pump Assembly
*2	Oil Pump O-ring



- (b) Clean and degrease the threads of the 11 bolts and the contact surfaces of the automatic transmission case sub-assembly and the oil pump assembly with non-residue solvent.

NOTICE:

During installation, do not allow oil to contact the bolts or the surface of the oil pump assembly body.

- (c) Place the oil pump assembly through the input shaft, and align the bolt holes of the oil pump assembly with the automatic transmission case sub-assembly.
(d) Hold the input shaft, and lightly press the oil pump assembly to slide the oil seal rings into the front planetary gear assembly.

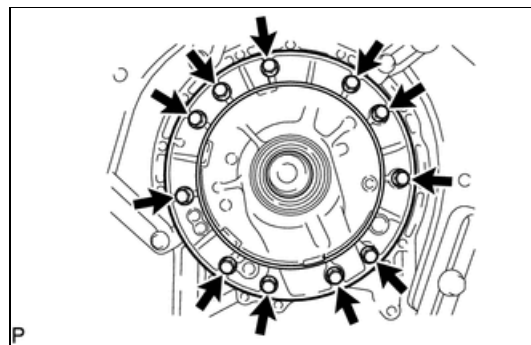
NOTICE:

Be careful not to damage the O-ring and oil seal rings.

(e) Install the 11 bolts.

Torque:

25 N·m {250 kgf·cm, 18 ft·lbf}



38. INSPECT INDIVIDUAL PISTON OPERATION

INFO

39. INSTALL MANUAL DETENT SPRING SUB-ASSEMBLY

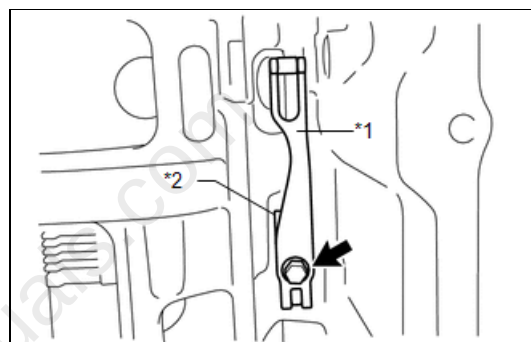
(a) Install the manual detent spring sub-assembly and manual detent spring cover with the bolt.

Torque:

10 N·m {102 kgf·cm, 7 ft·lbf}

Text in Illustration

*1	Manual Detent Spring Sub-assembly
*2	Manual Detent Spring Cover



40. INSTALL MANUAL VALVE LEVER SHAFT OIL SEAL

(a) Using SST and a hammer, tap in 2 new manual valve lever shaft oil seals.

SST: 09350-30020

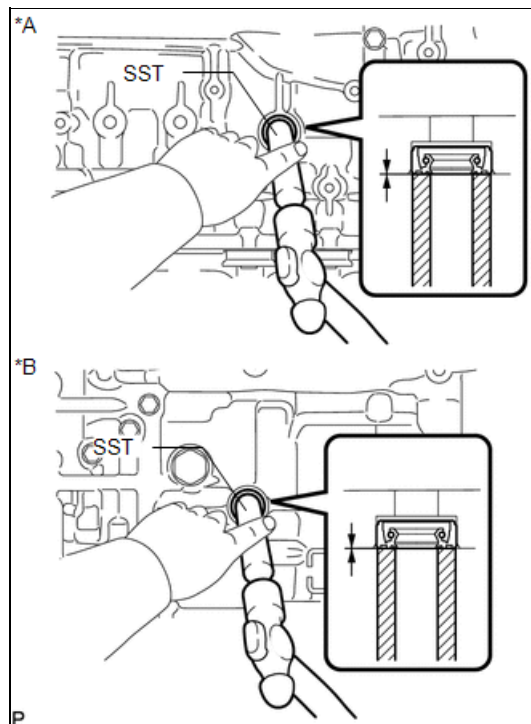
09350-07110

Standard depth:

-0.2 to 0.4 mm (-0.00788 to 0.0157 in.)

Text in Illustration

*A	for RH Side
*B	for LH Side



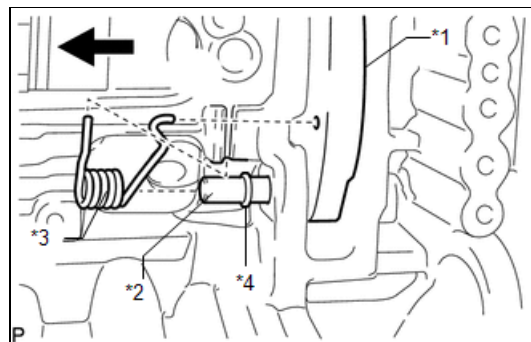
(b) Coat the lip of the 2 manual valve lever shaft oil seals with MP grease.

41. INSTALL PARKING LOCK PAWL SHAFT

(a) Install the E-ring to the parking lock pawl shaft.

Text in Illustration

*1	Parking Lock Pawl
*2	Parking Lock Pawl Shaft
*3	Spring
*4	E-ring



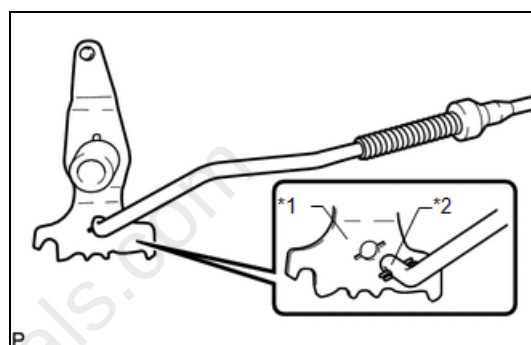
(b) Install the parking lock pawl, parking lock pawl shaft and spring.

42. INSTALL PARKING LOCK ROD SUB-ASSEMBLY

(a) Connect the parking lock rod sub-assembly to the manual valve lever sub-assembly.

Text in Illustration

*1	Manual Valve Lever Sub-assembly
*2	Parking Lock Rod Sub-assembly

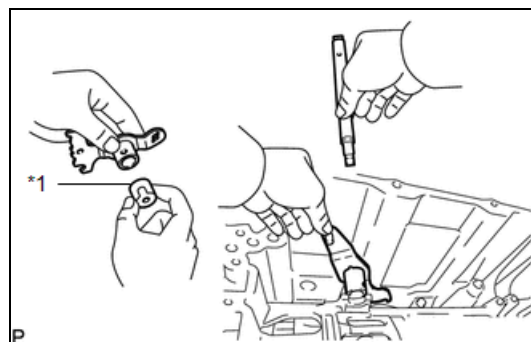


43. INSTALL MANUAL VALVE LEVER SUB-ASSEMBLY

(a) Install a new spacer to the manual valve lever sub-assembly.

Text in Illustration

*1	Spacer
----	--------

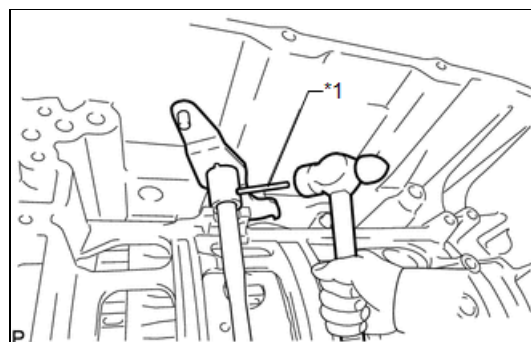


(b) Install the manual valve lever shaft to the manual valve lever sub-assembly and automatic transmission case sub-assembly.

(c) Using a hammer, install a new spring pin.

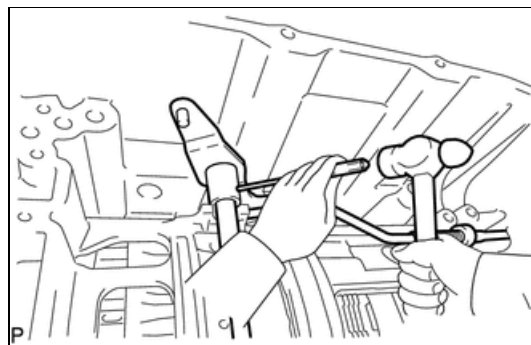
Text in Illustration

*1	Spring Pin
----	------------



(d) Turn the spacer and manual valve lever shaft to align the smaller hole on the spacer with the indent on the manual valve lever sub-assembly.

(e) Using a 3 mm pin punch and a hammer, stake the spacer.



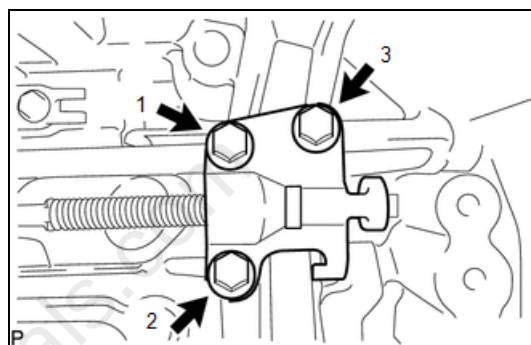
(f) Check that the spacer does not turn.

44. INSTALL PARKING LOCK PAWL BRACKET

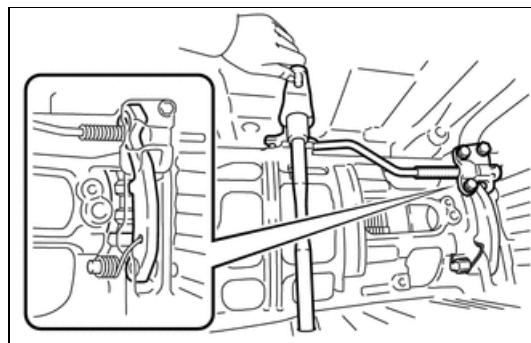
(a) Install the parking lock pawl bracket to the automatic transmission case sub-assembly with the 3 bolts, in several steps in the order shown in the illustration.

Torque:

18 N·m {184 kgf·cm, 13 ft·lbf}



(b) Move the manual valve lever sub-assembly to the P position, and check the output shaft sub-assembly is locked by the parking lock pawl.



45. INSTALL TRANSMISSION REVOLUTION SENSOR (SP2)

INFO

46. INSTALL TRANSMISSION WIRE

INFO

47. INSTALL TRANSMISSION VALVE BODY ASSEMBLY

INFO

48. INSTALL VALVE BODY OIL STRAINER ASSEMBLY

INFO

49. INSTALL AUTOMATIC TRANSMISSION OIL PAN SUB-ASSEMBLY

INFO

50. INSTALL AUTOMATIC TRANSMISSION CASE PLUG

(a) for T55 "TORX" Type:

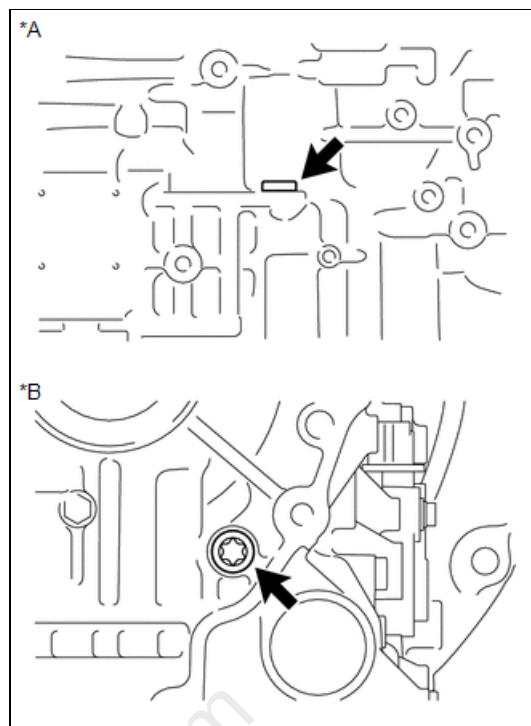
Text in Illustration

*A	for LH Side
*B	for Rear Side

- (1) Install the 2 new O-rings to the 2 automatic transmission case plugs.
- (2) Using a T55 "TORX" socket wrench, install the 2 automatic transmission case plugs to the automatic transmission case sub-assembly.

Torque:

40 N·m {403 kgf·cm, 30 ft·lbf}

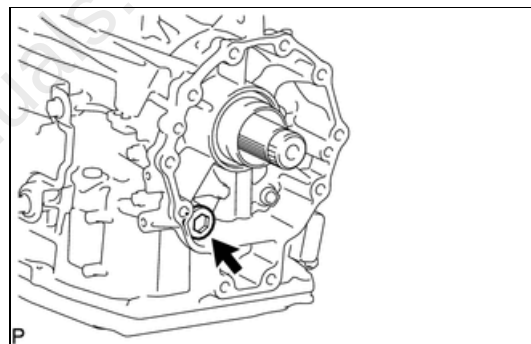


(b) for 17 mm Hexagon Type:

- (1) Install a new O-ring to the automatic transmission case plug.
- (2) Install the automatic transmission case plug to the automatic transmission case sub-assembly.

Torque:

80 N·m {816 kgf·cm, 59 ft·lbf}



51. INSTALL REFILL PLUG

- (a) Install a new O-ring to the refill plug.
- (b) Install the refill plug.

Torque:

39 N·m {400 kgf·cm, 29 ft·lbf}

52. INSTALL OIL COOLER TUBE UNION

- (a) Install the 2 new O-rings to the 2 oil cooler tube unions.

(b) Using SST, install the 2 oil cooler tube unions to the automatic transmission case sub-assembly.

SST: 09268-78010

Torque:

Specified tightening torque :

29 N·m {300 kgf·cm, 22 ft·lbf}

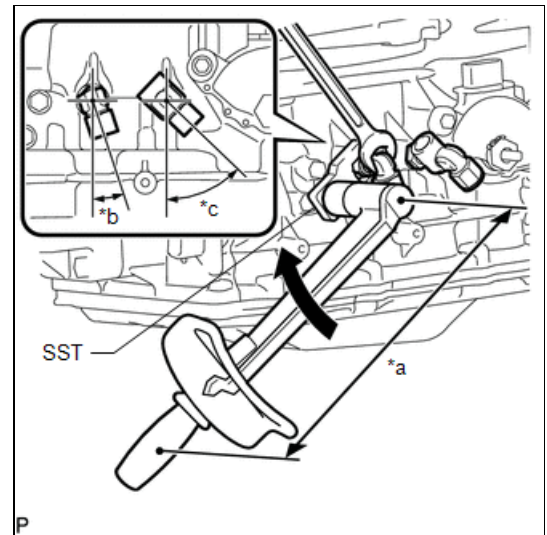
Text in Illustration

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*a	Torque Wrench Fulcrum Length
*b	18 to 22°
*c	43 to 47°

HINT:

- Calculate the torque wrench reading when changing the fulcrum length of the torque wrench (See page [INFO](#)).
- When using SST (fulcrum length of 34.5 mm (1.3583 in.)) + torque wrench (fulcrum length of 180 mm (7.0866 in.)): 25 N*m (252 kgf*cm, 18 ft.*lbf)



53. INSTALL PARK/NEUTRAL POSITION SWITCH ASSEMBLY

INFO

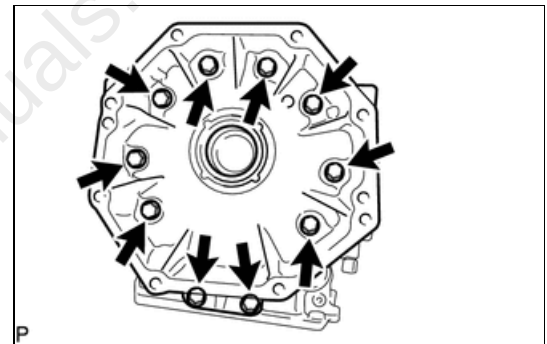
54. INSTALL REAR TRANSFER ADAPTER

- (a) Coat a new O-ring with ATF and install it to the rear transfer adapter.

- (b) Install the rear transfer adapter with the 10 bolts.

Torque:

34 N·m {345 kgf·cm, 25 ft·lbf}



55. INSTALL TRANSFER CASE ADAPTER REAR OIL SEAL

- (a) Coat the lip of a new transfer case adapter rear oil seal with MP grease.

- (b) Using SST and a hammer, tap in the transfer case adapter rear oil seal.

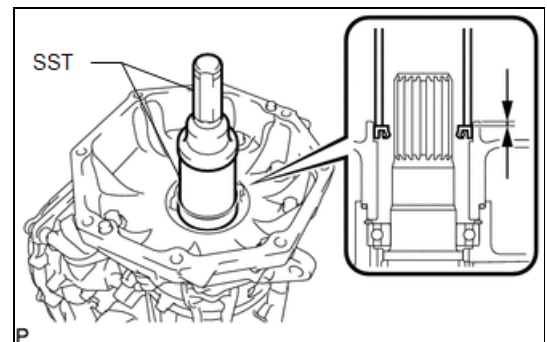
SST: 09223-50010

SST: 09710-30031

09710-03171

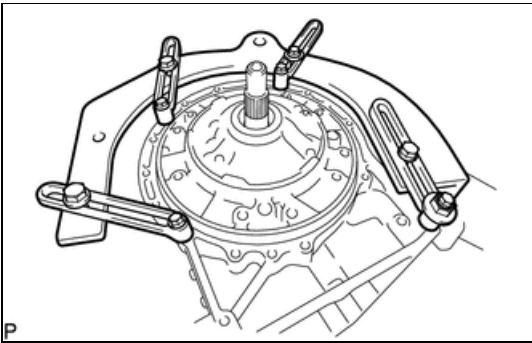
Standard depth:

0 to 1 mm (0 to 0.0393 in.)



56. INSTALL AUTOMATIC TRANSMISSION HOUSING

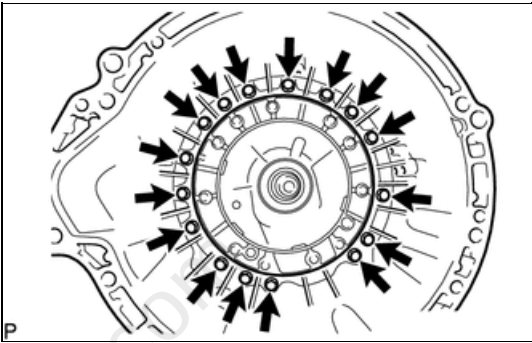
(a) Remove the automatic transmission assembly from the overhaul attachment.



(b) Install the automatic transmission housing to the automatic transmission case sub-assembly with the 16 bolts.

Torque:

25 N·m {250 kgf·cm, 18 ft·lbf}



57. INSTALL TRANSMISSION BREATHER HOSE SUB-ASSEMBLY

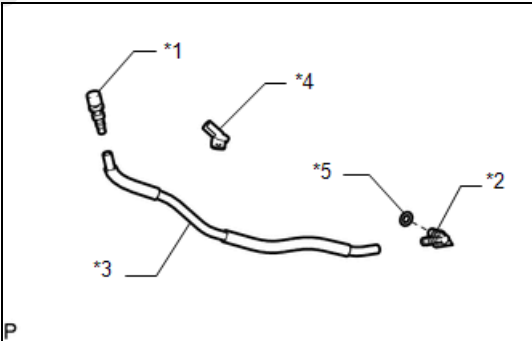
(a) Coat a new breather plug O-ring with ATF, and install it to the No. 1 breather plug.

Text in Illustration

*1	No. 2 Breather Plug
*2	No. 1 Breather Plug
*3	Breather Plug Hose
*4	Clamp
*5	Breather Plug O-ring

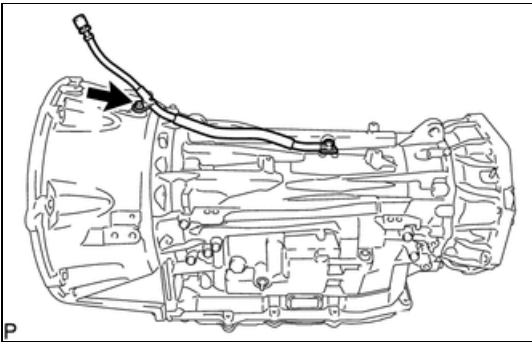
NOTICE:

Ensure that the breather plug O-ring is not twisted.



(b) Install the No. 1 breather plug and No. 2 breather plug to the breather plug hose.

(c) Install the clamp to the breather plug hose.



(d) Install the transmission breather hose sub-assembly to the automatic transmission case sub-assembly with the bolt.

Torque:

5.4 N·m {55 kgf·cm, 48 in·lbf}