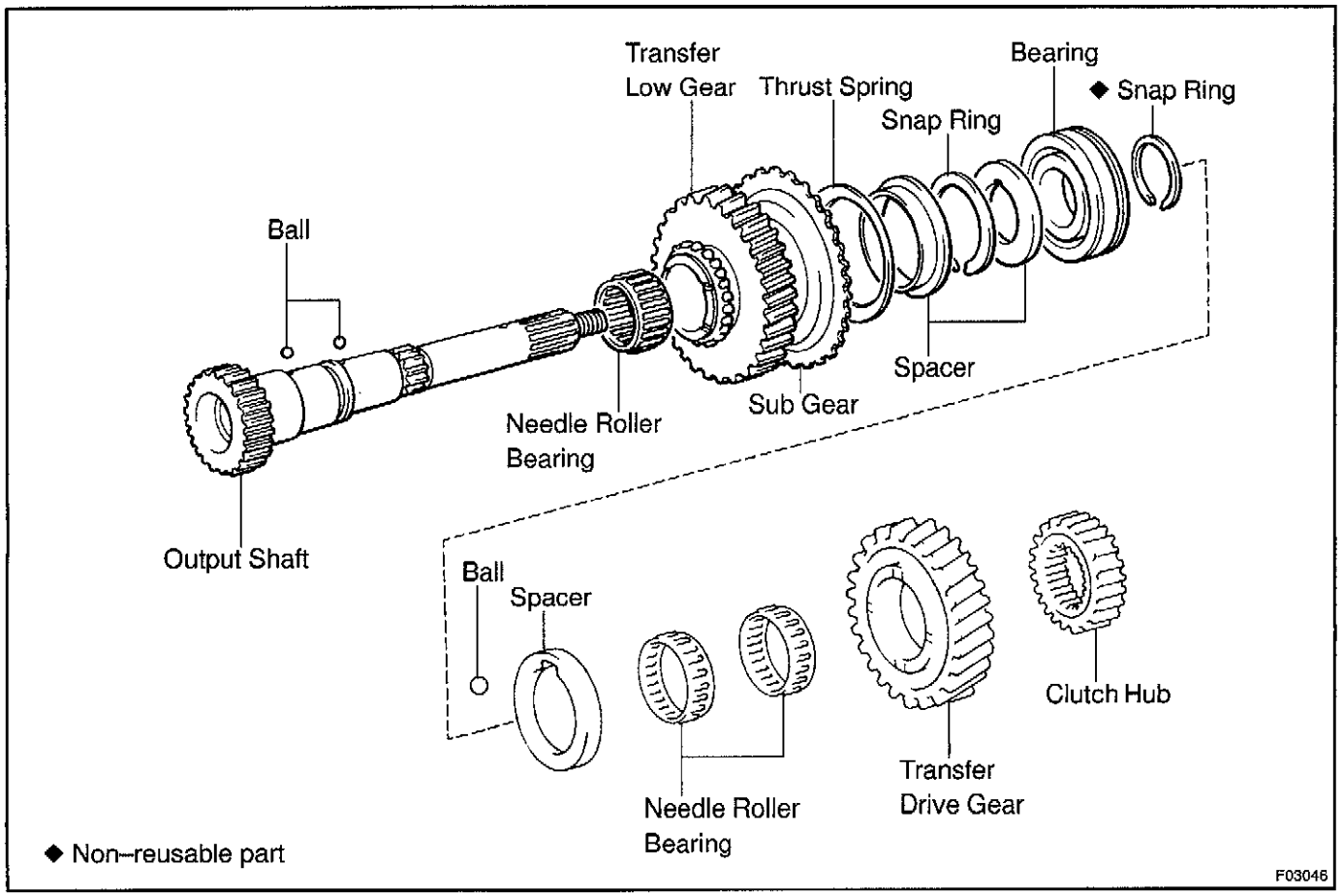
OUTPUT SHAFT

COMPONENTS

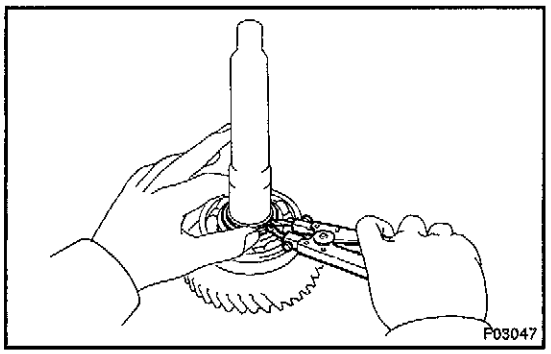
TR02J–01



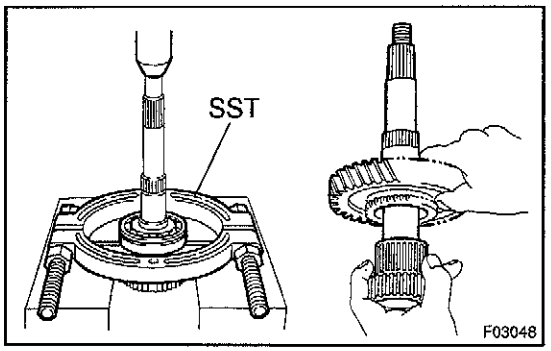
TR02K-01

DISASSEMBLY

REMOVE BEARING, LOW GEAR AND SUB GEAR

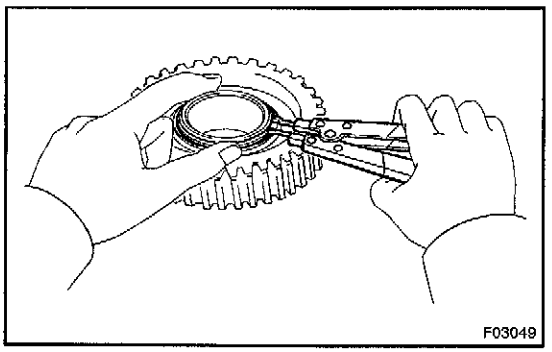


(a) Using a snap ring expander, remove the snap ring.



(b) Using SST, press out the bearing, spacer and low gear.
SST 09950–00020

(c) Remove the steel ball and needle roller bearing.

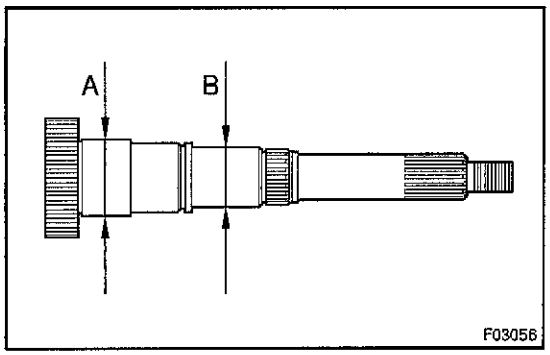


(d) Using a snap ring expander, remove the snap ring from the low gear.

(e) Remove the spacer, thrust spring and sub gear.

TR02L-01

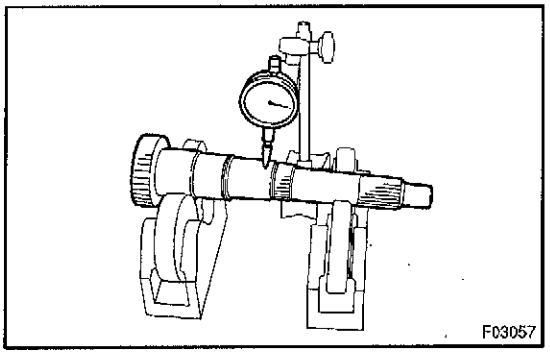
INSPECTION



1. INSPECT OUTPUT SHAFT

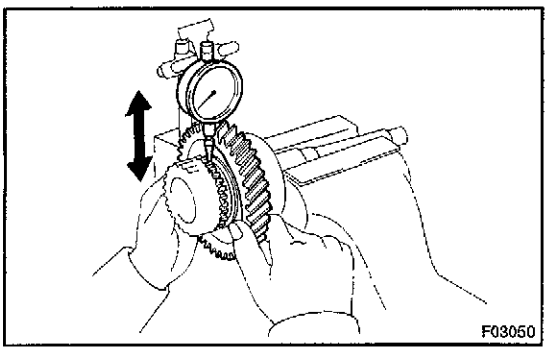
(a) Using a micrometer, measure the outer diameter of the output shaft journal surface.

Maximum diameter:
Part A: 44.984 mm (1.7710 in.)
Part B: 34.984 mm (1.3773 in.)



(b) Using a dial indicator, measure the output shaft runout.

Maximum runout: 0.03 mm (0.0012 in.)

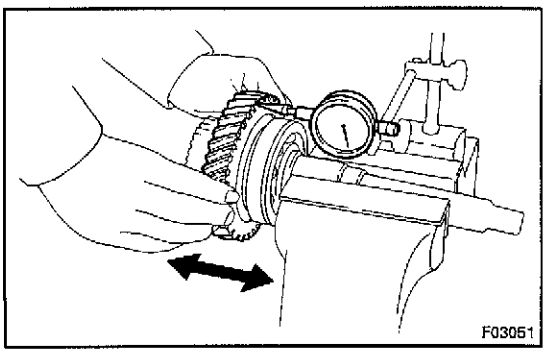


2. INSPECT LOW GEAR RADIAL CLEARANCE AND THRUST CLEARANCE

(a) Using a dial indicator, measure the radial clearance between the gear and shaft with the needle roller bearing installed.

Standard clearance:
0.010 – 0.055 mm (0.0004 – 0.0022 in.)
Maximum clearance: 0.075 mm (0.0030 in.)

If the clearance exceeds the maximum, replace the low gear, output shaft or needle roller bearing.

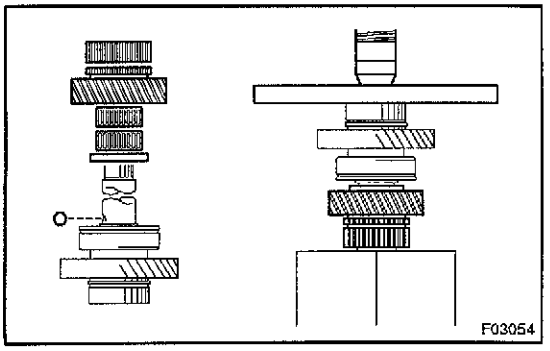


(b) Using a dial indicator, measure the low gear thrust clearance with the spacer and bearing installed.

HINT:
Do not touch the shaft end of the dial indicator to the sub gear.

Standard clearance:
0.10 – 0.25 mm (0.0039 – 0.0098 in.)
Maximum clearance: 0.30 mm (0.0118 in.)

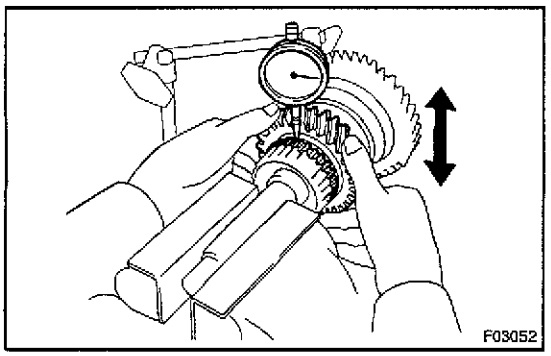
If the clearance exceeds the maximum, replace the spacer.



3. INSPECT TRANSFER DRIVE GEAR RADIAL CLEARANCE AND THRUST CLEARANCE

(a) Using a press, install the ball, spacer, 2 needle roller bearings and transfer drive gear to output shaft assembly.

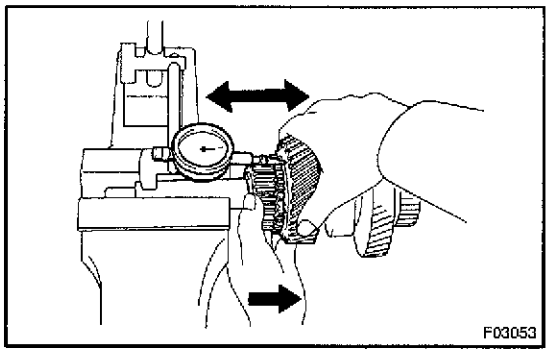
(b) Install the clutch hub.



(c) Using a dial indicator, measure the radial clearance between the gear and shaft with the needle roller bearing installed.

Standard clearance:
0.009 – 0.051 mm (0.0004 – 0.0020 in.)
Maximum clearance: 0.071mm (0.0028 in.)

If the clearance exceeds the maximum, replace the drive gear, output shaft or needle roller bearing.

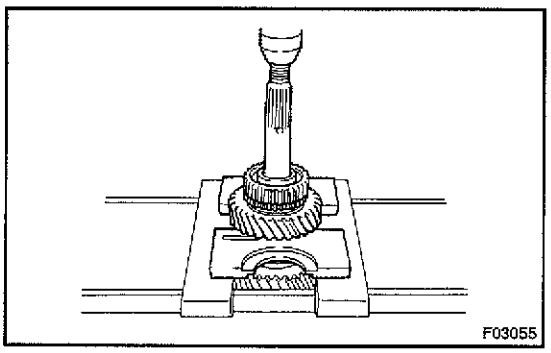


(d) Using a dial indicator, measure the drive gear thrust clearance with the clutch hub and spacer installed.

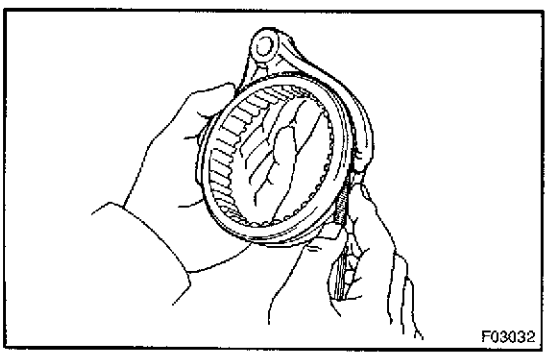
Standard clearance:
0.009 – 0.27 mm (0.0035 – 0.0106 in.)
Maximum clearance: 0.32mm (0.0126 in.)

If the clearance exceeds the maximum, replace the spacer.

(e) Remove the clutch hub.



(f) Using a press, remove the transfer drive gear, 2 needle roller bearings, spacer and ball.



4. INSPECT NO.1 SHIFT FORK AND CLUTCH SLEEVE CLEARANCE

Using a feeler gauge, measure the clearance between the No.1 shift fork and clutch sleeve.

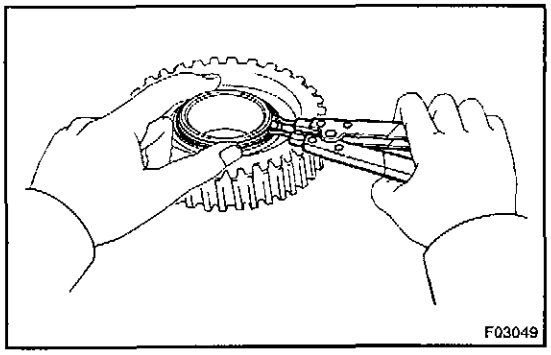
Maximum clearance: 1.0 mm (0.039 in.)

If the clearance exceeds the maximum, replace the shift fork or clutch sleeve.

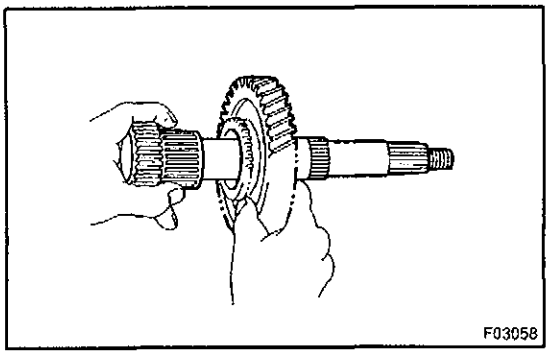
TR02M-01

REASSEMBLY

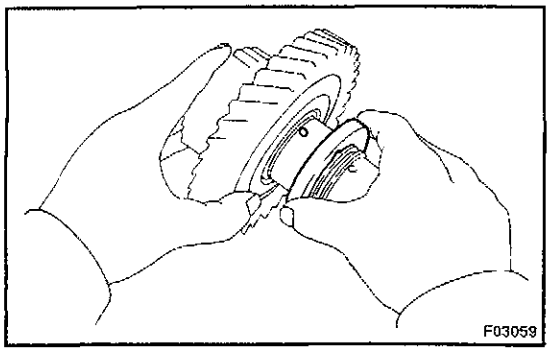
INSTALL SUB GEAR, LOW GEAR AND BEARING



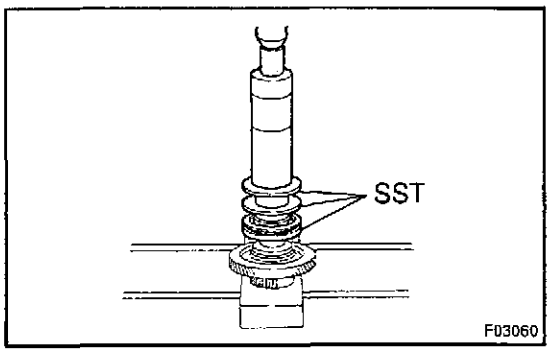
(a) Install the sub gear, thrust spring and spacer.
(b) Using a snap ring expander, install the snap ring.



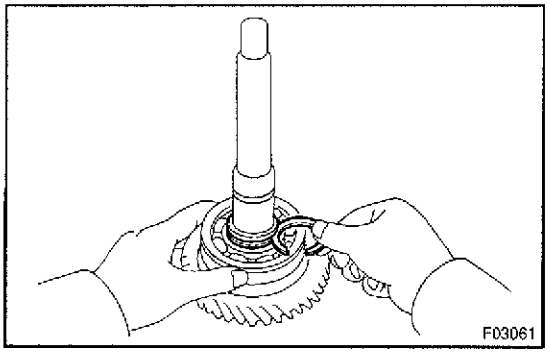
(c) Apply MP grease to the needle roller bearing.
(d) Install the low gear with needle roller bearing to the output shaft.



(e) Install the steel ball on the output shaft.
(f) Install the spacer.



(g) Using SST, press in a new bearing.
SST 09316–60011 (09316–00011, 09316–00041, 09316–00051)



(h) Select a snap ring that will allow minimum axial play and install it on the shaft.

Maximum play: 0.10 mm (0.0039 in.)

Mark	Thickness mm (in.)
0	2.40 – 2.45 (0.0945 – 0.0965)
1	2.45 – 2.50 (0.0965 – 0.0984)
2	2.50 – 2.55 (0.0984 – 0.1004)
3	2.55 – 2.60 (0.1004 – 0.1024)
4	2.60 – 2.65 (0.1024 – 0.1043)
5	2.65 – 2.70 (0.1043 – 0.1063)