



- (b) Remove the spacer and ball.
- (c) Remove the drive sprocket with front drive clutch sleeve.
- (d) Remove the needle roller bearing.
- (e) Remove the front drive synchronizer ring.
- (f) Remove the front drive sleeve, 3 shifting keys and 2 shifting key springs from the drive sprocket.

## INSPECTION

- 1. CHECK TRANSFER INPUT SHAFT
  - (a) Using a micrometer, measure the diameter of the input shaft journal surface.

### Minimum diameter:

47.59 mm (1.8736 in.)

If the diameter is less than the minimum, replace the input shaft.

 (b) Using a dial indicator, measure the inside diameter of the input shaft bushing.
 Maximum inside diameter: 39.14 mm (1.5409 in.)

If the inside diameter is greater than the maximum, replace the input shaft.



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### 2. CHECK PLANETARY PINION GEAR THRUST CLEARANCE

(a) Using a feeler gauge, measure the thrust clearance of the pinion gear.

### Standard clearance:

0.11 to 0.84 mm (0.0043 to 0.0331 in.) Maximum clearance:

### 0.84 mm (0.0331 in.)

If the clearance is greater than the maximum, replace the low planetary gear.

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# 3. CHECK PLANETARY PINION GEAR RADIAL CLEARANCE

(a) Using a dial indicator, measure the radial clearance of the pinion gear.

Standard clearance: 0.009 to 0.038 mm (0.0004 to 0.0015 in.) Maximum clearance: 0.038 mm (0.0015 in.)

If the clearance is greater than the maximum, replace the low planetary gear.

### 4. CHECK TRANSFER DRIVE SPROCKET THRUST CLEARANCE

(a) Using a feeler gauge, measure the thrust clearance. **Standard clearance:** 

0.10 to 0.25 mm (0.0039 to 0.0098 in.) Maximum clearance: 0.25 mm (0.0098 in.)

If the thrust clearance is greater than the maximum, replace the drive sprocket.

### 5. CHECK REAR TRANSFER OUTPUT SHAFT

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

Minimum diameter: 27.98 mm (1.1016 in.) for part A 36.98 mm (1.4561 in.) for part B

If the diameter is less than the minimum, replace the output shaft.

- 6. CHECK TRANSFER DRIVE SPROCKET RADIAL CLEARANCE
  - (a) Using a dial indicator, measure the radial clearance between the drive sprocket and output shaft with the needle roller bearing installed.

Standard radial clearance:

0.010 to 0.055 mm (0.0004 to 0.0022 in.) Maximum radial clearance: 0.055 mm (0.0022 in.)

If the radial clearance is greater than the maximum, replace the drive sprocket or needle roller bearing.

### 7. CHECK TRANSFER HIGH AND LOW CLUTCH SLEEVE AND NO. 2 TRANSFER GEAR SHIFT FORK CLEARANCE

 (a) Using a feeler gauge, measure the clearance between the clutch sleeve and No. 2 gear shift fork.
 Maximum clearance:

### 1.0 mm (0.039 in.)

If the clearance is greater than the maximum, replace the clutch sleeve or No. 2 gear shift fork.







### 8. CHECK FRONT DRIVE CLUTCH SLEEVE AND NO. 1 TRANSFER GEAR SHIFT FORK CLEARANCE

(a) Using a feeler gauge, measure the clearance between the clutch sleeve and No. 1 gear shift fork.
 Maximum clearance:

**1.0 mm (0.039 in.)** If the clearance is greater than the maximum, replace the clutch sleeve or No. 1 gear shift fork.

# REASSEMBLY

- 1. INSTALL TRANSFER DRIVE SPROCKET SUB-ASSEMBLY (for A.D.D. Manual Shift Type)
  - (a) Apply gear oil to the connecting areas of the clutch sleeve and drive sprocket.
  - (b) Install the clutch sleeve and 3 shifting keys onto the drive sprocket with the 2 shifting key springs. NOTICE:
    - Install the clutch sleeve in the correct direction.
    - Set the key springs so that their openings do not overlap, as shown in the illustration.
    - Make sure that the key springs are firmly connected to the shifting keys.
    - Make sure that the clutch sleeve and drive sprocket move smoothly.
  - (c) Apply gear oil to the front drive synchronizer ring's taper cone side.
  - (d) Install the front drive synchronizer ring.
  - (e) Apply gear oil to the output shaft and needle roller bearing.
  - (f) Install the needle roller bearing in the drive sprocket.
  - (g) Install the drive sprocket (with clutch sleeve).
  - (h) Install the ball and install the spacer so that it is aligned with the ball.

### 2. INSTALL REAR TRANSFER OUTPUT SHAFT RADIAL BALL BEARING

(a) Apply gear oil to the connecting areas of the output shaft and bearing.









- (b) Using SST and a press, press in a new bearing with the outer race snap ring groove facing toward the rear.
  - SST 09316-60011 (09316-00011, 09316-00071)

- 3. CHECK TRANSFER DRIVE SPROCKET THRUST CLEARANCE
  - (a) Using a feeler gauge, measure the thrust clearance. **Standard thrust clearance:**

0.10 to 0.25 mm (0.0039 to 0.0098 in.) Maximum thrust clearance: 0.25 mm (0.0098 in.)

If the thrust clearance is greater than the maximum, replace the drive sprocket.

- 4. INSTALL TRANSFER HIGH AND LOW CLUTCH SLEEVE
  - (a) Apply gear oil to the connecting areas of the clutch sleeve and clutch hub.
  - (b) Install the clutch onto the clutch hub. **NOTICE:** 
    - Install the clutch sleeve in the correct direction.
    - Make sure that the clutch sleeve and clutch hub move smoothly.

- 5. INSTALL TRANSFER OUTPUT SHAFT SHAFT SNAP RING
  - (a) Select a new snap ring that allows the minimum axial free play.

### Standard snap ring thickness

Mark	Specified Condition
К	2.00 to 2.05 mm (0.0787 to 0.0807 in.)
L	2.05 to 2.10 mm (0.0807 to 0.0827 in.)
Α	2.10 to 2.15 mm (0.0827 to 0.0846 in.)
В	2.15 to 2.20 mm (0.0846 to 0.0866 in.)
С	2.20 to 2.25 mm (0.0866 to 0.0886 in.)
D	2.25 to 2.30 mm (0.0886 to 0.0906 in.)
E	2.30 to 2.35 mm (0.0906 to 0.0925 in.)
F	2.35 to 2.40 mm (0.0925 to 0.0945 in.)
G	2.40 to 2.45 mm (0.0945 to 0.0965 in.)

Mark	Specified Condition
Н	2.45 to 2.50 mm (0.0965 to 0.0984 in.)
J	2.50 to 2.55 mm (0.0984 to 0.1004 in.)

(b) Using a snap ring expander, install the snap ring.
 NOTICE:
 Make sure that the snap ring is firmly installed into the groove.

6. INSTALL TRANSFER LOW PLANETARY RING GEAR

(a) Install the ring gear onto the case front. NOTICE:

Install the ring gear in the correct direction.



Front

(b) Using a screwdriver, install the snap ring.
 NOTICE:
 Make sure that the snap ring is firmly installed into the groove.

Compression Spring Case Plug Pin Pin



7. INSTALL PIN

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- 8. INSTALL COMPRESSION SPRING
- 9. INSTALL TRANSFER CASE PLUG
  - (a) Apply sealant to the threads of the plug. **Sealant:**

Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or the equivalent

- (b) Install the plug. Torque: 19 N\*m (190 kgf\*cm, 14 ft.\*lbf)
- 10. INSTALL TRANSFER LOW PLANETARY GEAR BEARING
  - (a) Using SST and a press, press in a new bearing. SST 09950-60010 (09951-00570), 09950-70010

(09951-00710)

Bearing depth:

7.7 to 8.3 mm (0.303 to 0.327 in.)

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### 11. INSTALL TRANSFER INPUT SHAFT BEARING

- (a) Using SST and a press, press in a new bearing with the groove facing forward.
  - SST 09223-15020, 09515-30010, 09950-70010 (09951-07100)



### 12. INSTALL TRANSFER INPUT BEARING SHAFT SNAP RING

(a) Select a new snap ring that allows 0.1 mm (0.004 in.) or less of axial free play.

### Standard snap ring thickness

Mark	Specified Condition
1	1.45 to 1.50 mm (0.0571 to 0.0591 in.)
2	1.50 to 1.55 mm (o.0591 to 0.0610 in.)
3	1.55 to 1.60 mm (0.0610 to 0.0630 in.)
4	1.60 to 1.65 mm (0.0630 to 0.0650 in.)
5	1.65 to 1.70 mm (0.0650 to 0.0669 in.)

(b) Using a snap ring expander, install the snap ring. **NOTICE:** 

Make sure that the snap ring is firmly installed into the groove.

### 13. INSTALL NO. 1 TRANSFER INPUT SHAFT SEAL RING

- (a) Apply gear oil to the 2 seal rings.
- (b) Install the 2 seal rings onto the input shaft. HINT:

Engage the seal rings securely to eliminate clearance, as shown in the illustration.



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### 14. INSTALL TRANSFER LOW PLANETARY GEAR BEARING

(a) Install the bearing onto the low planetary gear. **NOTICE:** 

### Install the bearing in the correct direction.

15. INSTALL NO. 1 TRANSFER THRUST BEARING RACE(a) Install the bearing race onto the low planetary gear.

### 16. INSTALL TRANSFER INPUT SHAFT

- (a) Apply gear oil to the contact surfaces of the input shaft and low planetary gear.
- (b) Install the input shaft onto the low planetary gear.



### 17. INSTALL MANUAL TRANSFER PLANETARY CARRIER WASHER

- (a) Apply gear oil to the washer.
- (b) Install the washer onto the low planetary gear.
- 18. INSTALL TRANSFER INPUT GEAR STOPPER BALL(a) Install the ball onto the low planetary gear.

### **19. INSTALL TRANSFER INPUT GEAR STOPPER**

(a) Install the stopper onto the low planetary gear.

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- 20. INSTALL TRANSFER INPUT GEAR STOPPER SHAFT SNAP RING
  - (a) Select a new snap ring that allows 0.05 to 0.15 mm (0.0020 to 0.0059 in.) of axial free play.

### Standard snap ring thickness

Mark	Specified Condition
A	2.10 to 2.15 mm (0.0827 to 0.0846 in.)
В	2.15 to 2.20 mm (0.0846 to 0.0866 in.)
С	2.20 to 2.25 mm (0.0866 to 0.0886 in.)
D	2.25 to 2.30 mm (0.0886 to 0.0906 in.)
E	2.30 to 2.35 mm (0.0906 to 0.0925 in.)
F	2.35 to 2.40 mm (0.0925 to 0.0945 in.)
G	2.40 to 2.45 mm (0.0945 to 0.0965 in.)
Н	2.45 to 2.50 mm (0.0965 to 0.0984 in.)
J	2.50 to 2.55 mm (0.0984 to 0.1004 in.)
к	2.55 to 2.60 mm (0.1004 to 0.1024 in.)
L	2.60 to 2.65 mm (0.1024 to 0.1043 in.)
М	2.65 to 2.70 mm (0.1043 to 0.1063 in.)
N	2.70 to 2.75 mm (0.1063 to 0.1083 in.)
Р	2.75 to 2.80 mm (0.1083 to 0.1102 in.)
Q	2.80 to 2.85 mm (0.1102 to 0.1122 in.)
R	2.85 to 2.90 mm (0.1122 to 0.1142 in.)
S	2.90 to 2.95 mm (0.1142 to 0.1161 in.)
Т	2.95 to 3.00 mm (0.1161 to 0.1181 in.)
U	3.00 to 3.05 mm (0.1181 to 0.1201 in.)

(b) Using a snap ring expander, install the snap ring. **NOTICE:** 

Make sure that the snap ring is firmly installed into the groove.











### 21. INSTALL TRANSFER CASE OIL SEAL

(a) Using SST and a hammer, tap in a new oil seal until its surface is flush with the case upper surface (No. 1).

SST 09316-60011 Oil seal depth: -0.5 to 0.5 mm (-0.020 to 0.020 in.) NOTICE:

Be careful not to damage the case front.

- (b) Coat the lip of the seal with MP grease.
- (c) Using SST and a hammer, tap in a new oil seal until its surface is flush with the case upper surface (No. 2).

SST 09316-60011 Oil seal depth: -0.5 to 0.5 mm (-0.020 to 0.020 in.) NOTICE:

Be careful not to damage the case front.

(d) Coat the lip of the seal with MP grease.

### 22. INSTALL FRONT TRANSFER OUTPUT SHAFT NEEDLE ROLLER BEARING

- (a) Apply gear oil to the bearing.
- (b) Install the bearing onto the low planetary gear.

- 23. INSTALL TRANSFER LOW PLANETARY GEAR SPLINE PIECE
  - (a) Install the gear spline piece onto the low planetary gear.

(b) Using a screwdriver, install the snap ring.
 NOTICE:
 Be careful not to damage the gear spline piece.

(122 to 176°F).











### 24. INSTALL TRANSFER LOW PLANETARY GEAR ASSEMBLY WITH TRANSFER INPUT SHAFT

- (a) Install the low planetary gear with input shaft.
  HINT:
  If necessary, heat the case front to about 50 to 80°C
- (b) Using a snap ring expander, install the snap ring.
  NOTICE:
  Make sure that the snap ring is firmly installed into the groove.

### 25. INSTALL TRANSFER OIL PUMP GEAR

- (a) Apply gear oil to the sliding surface of the oil pump gear.
- (b) Install the oil pump gear with the nut.

### 26. INSTALL TRANSFER OIL PUMP BODY O-RING

(a) Coat a new O-ring with gear oil and install it onto the pump body.

- 27. INSTALL TRANSFER OIL PUMP BODY SUB-ASSEMBLY
  - (a) Install the oil pump body with the 3 bolts.Torque: 7.5 N\*m (76 kgf\*cm, 66 in.\*lbf)









### 28. INSTALL TRANSFER CASE MAGNET

- 29. INSTALL TRANSFER OIL SEPARATOR SUB-ASSEMBLY
  - (a) Install the oil separator with the 3 bolts.Torque: 7.5 N\*m (76 kgf\*cm, 66 in.\*lbf)
- **30. INSTALL NO. 1 TRANSFER CASE PLUG (for Filler)** (a) Install a new gasket and the filler plug.
  - Torque: 37 N\*m (377 kgf\*cm, 27 ft.\*lbf)
- 31. INSTALL NO. 1 TRANSFER CASE PLUG (for Drain)
  - (a) Install a new gasket and the drain plug.Torque: 37 N\*m (377 kgf\*cm, 27 ft.\*lbf)
- 32. INSTALL TRANSFER INPUT GEAR RADIAL BALL BEARING
  - (a) Apply gear oil to the contact surfaces of the bearing and driven sprocket.
  - (b) Using SST and a press, press in a new bearing. **SST 09316-60011 (09316-00031) NOTICE:**

After press-fitting the bearing to the driven sprocket, check that the bearing moves smoothly.

### 33. INSTALL TRANSFER DRIVEN SPROCKET BEARING

- (a) Apply gear oil to the contact surfaces of the bearing and driven sprocket.
- (b) Using a press, press in a new bearing. **NOTICE:**

After press-fitting the bearing to the driven sprocket, check that the bearing moves smoothly.

- 34. INSTALL REAR TRANSFER OUTPUT SHAFT, TRANSFER FRONT DRIVE CHAIN AND TRANSFER DRIVEN SPROCKET
  - (a) Mount the rear case in a vise.
    NOTICE:
    Place aluminum plates on the vise to prevent damage to the rear case.
  - (b) Install the output shaft and driven sprocket onto the front drive chain.
  - (c) Install the output shaft, front drive chain and driven sprocket onto the rear case.
     NOTICE:

When installing the output shaft, make sure that the installation of the synchronizer ring, sleeve and shifting keys are not affected.

HINT:

Check that the output shaft and driven sprocket turn smoothly.





If necessary, heat the rear case to approximately 50 to 80°C (122 to 176°F).

(d) Using a snap ring expander, install the snap ring.
 NOTICE:
 Make sure that the snap ring is firmly installed into the groove.

- 35. INSTALL TRANSFER HIGH AND LOW SHIFT FORK SHAFT
  - (a) Apply gear oil to the connecting areas of the shift fork shaft and each part.
  - (b) Install the shift fork shaft and No. 2 gear shift fork. **NOTICE:**

Install the shift fork shaft and No. 2 gear shift fork in the correct directions.

- (c) Install the spring and ball into the hole.
- (d) Apply sealant to the threads of the plug. **Sealant:**

Part No. 08833-00083, THREE BOND 1344, LOCTITE 242 or the equivalent

- Using a hexagon wrench, install the plug.
  Torque: 19 N\*m (190 kgf\*cm, 14 ft.\*lbf)
- 36. INSTALL FRONT TRANSFER DRIVE SHIFT FORK SHAFT
  - (a) Apply gear oil to the straight pin.
  - (b) Install the straight pin into the hole.













- (c) Apply gear oil to the connecting areas of the shift fork shaft and each part.
- (d) Install the shift fork shaft, No. 1 gear shift fork, spring and shift shaft stopper.
  NOTICE:

Install the shift fork shaft, No. 1 gear shift fork and shift shaft stopper in the correct directions.

(e) Using a pin punch and hammer, install the 2 slotted pins.

NOTICE:

When installing the slotted pins, make sure that groove A of the pin is facing in the same direction as the shaft.

- (f) Install the spring and ball into the hole.
- (g) Apply sealant to the threads of the plug. **Sealant:**

Part No. 08833-00083, THREE BOND 1344, LOCTITE 242 or the equivalent

(h) Using a hexagon wrench, install the plug.
 Torque: 19 N\*m (190 kgf\*cm, 14 ft.\*lbf)

- 37. INSTALL REAR TRANSFER CASE
  - (a) Apply FIPG to the rear case as shown in the illustration.

### FIPG:

Part No. 08826-00090, THREE BOND 1281 or the equivalent

NOTICE:

If the removed rear case will be reused: After removing the rear case, be sure to perform the following before reinstalling it: 1) using a knife, cut off any old FIPG on the rear case's contact surface, 2) clean off any remaining old FIPG from the rear case's contact surface, and 3) reapply FIPG to the rear case.







 (b) Install the clamp and rear case with the 12 bolts.
 Torque: 28 N\*m (285 kgf\*cm, 21 ft.\*lbf) NOTICE:

Tighten the bolts of the rear case within 10 minutes of applying the FIPG. The FIPG will dry very quickly.

### 38. INSTALL TRANSFER OUTPUT WASHER

(a) Install the 2 output washers.

### **39. INSTALL TRANSFER COVER OIL SEAL**

- (a) Using SST and a hammer, tap in a new oil seal until its surface is flush with the housing upper surface.
  SST 09223-46011, 09631-32020
  NOTICE:
- Be careful not to damage the extension housing.
- (b) Coat the lip of the oil seal with MP grease.
- 40. INSTALL TRANSFER EXTENSION HOUSING SUB-ASSEMBLY
  - (a) Apply FIPG to the extension housing as shown in the illustration.
    FIPG:

THREE BOND 1281 or the equivalent NOTICE:

If the removed extension housing will be reused:

After removing the housing, be sure to perform the following before reinstalling it: 1) using a knife, cut off any old FIPG on the housing's contact surface, 2) clean off any remaining old FIPG from the housing's contact surface, and 3) reapply FIPG to the housing.

(b) Apply sealant to the threads of the bolts. **Sealant:** 

Part No. 08833-00080 THREE BOND 1344, LOCTITE 242 or the equivalent

 (c) Install the extension housing with the 5 bolts.
 Torque: 12 N\*m (122 kgf\*cm, 9 ft.\*lbf) NOTICE:

Tighten the bolts of the extension housing within 10 minutes of applying the FIPG. The FIPG will dry very quickly.

- 41. INSTALL SPEEDOMETER DRIVEN HOLE COVER SUB-ASSEMBLY
  - (a) Install the O-ring and speedometer driven hole cover sub-assembly with the bolt.



# Front Rear Image: Im



### 42. INSTALL TRANSFER OUTPUT SHAFT COMPANION FLANGE OIL SEAL (for Front)

(a) Using SST and a hammer, tap in a new oil seal. SST 09950-60010 (09951-00320), 09950-70010 (09951-07100)

NOTICE:

Be careful not to damage the companion flange.

- 43. INSTALL TRANSFER OUTPUT SHAFT COMPANION FLANGE OIL SEAL (for Rear)
  - (a) Using SST and a hammer, tap in a new oil seal (for rear) in the same way as the oil seal (for front).
    - SST 09950-60010 (09951-00320), 09950-70010 (09951-07100) NOTICE:

Be careful not to damage the companion flange.

- 44. INSTALL OUTPUT SHAFT COMPANION FLANGE SUB-ASSEMBLY (for Front)
  - (a) Apply gear oil to the connecting areas of the companion flange and driven sprocket.
  - (b) Install the companion flange onto the driven sprocket.
  - (c) Using SST to hold the companion flange, install a new lock nut.

Torque: 118 N\*m (1,203 kgf\*cm, 87 ft.\*lbf)

- (d) Using a chisel and hammer, stake the lock nut to the driven sprocket.
  NOTICE:
  - Securely stake the shaft to the lock nut's groove.
  - Be careful not to damage parts around the lock nut.
  - Do not apply excessive force to the shaft.
- 45. INSTALL OUTPUT SHAFT COMPANION FLANGE SUB-ASSEMBLY (for Rear)
  - (a) Apply gear oil to the connecting areas of the companion flange and output shaft.

- (b) Using SST, install the companion flange (rear) in the same way as the companion flange (front).
  - 09330-00021, 09950-40011 (09951-04020, SST 09952-04010, 09953-04030, 09954-04010, 09955-04051, 09957-04010, 09958-04011) Torque: 118 N\*m (1,203 kgf\*cm, 87 ft.\*lbf)
- 46. INSTALL BREATHER OIL DEFLECTOR SUB-ASSEMBLY
- 47. INSTALL TRANSFER CONTROL SHIFT LEVER RETAINER SUB-ASSEMBLY
  - (a) Install the retainer with the 4 bolts. Torque: 18 N\*m (183 kgf\*cm, 13 ft.\*lbf)



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### 48. INSTALL TRANSFER COVER OIL SEAL

- (a) Using SST and a hammer, tap in a new oil seal until its surface is flush with the bearing retainer upper surface.
  - 09950-60010 (09951-00590), 09950-70010 SST (09951 - 07100)

### NOTICE:

Be careful not to damage the bearing retainer.

(b) Coat the lip of the oil seal with MP grease.

### 49. INSTALL TRANSFER BEARING RETAINER SUB-ASSEMBLY

(a) Apply FIPG to the bearing retainer as shown in the illustration. FIPG:

> Part No. 08826-00090, THREE BOND 1281 or the equivalent

NOTICE:

If the removed bearing retainer will be reused: After removing the retainer, be sure to perform the following before reinstalling it: 1) using a knife, cut off any old FIPG on the retainer's contact surface, 2) clean off any remaining old FIPG from the retainer's contact surface, and 3) reapply FIPG to the retainer.

(b) Apply sealant to the bolt threads. Sealant:

Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or the equivalent

(c) Install the retainer with the 5 bolts. Torque: 12 N\*m (122 kgf\*cm, 9 ft.\*lbf)



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NOTICE:

Tighten the bolts of the bearing retainer within 10 minutes of applying the FIPG. The FIPG will dry very quickly.

# NO. 1 NO. 2 NO. 2 NO. 2 C133822E01

### 50. INSTALL TRANSFER INDICATOR SWITCH

 (a) Install new gaskets and the indicator switches.
 Torque: 37 N\*m (377 kgf\*cm, 27 ft.\*lbf) HINT:

Indicator switch:

No. 1	Indicator switch (neutral position)
No. 2	Indicator switch (L4 position)
No. 3	Indicator switch (4WD position)