# GROUP 22B

## MANUAL TRANSAXLE OVERHAUL <W5M51>

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DISASSEMBLY STEPS

1. TRANSFER  
2. O-RING  
3. FRONT ROLL STOPPER BRACKET  
4. REAR ROLL STOPPER BRACKET  
5. ROLL STOPPER BRACKET ADAPTER  
6. SHIFT CABLE BRACKET

DISASSEMBLY STEPS

7. SELECT LEVER  
8. VEHICLE SPEED SENSOR  
9. BACKUP LIGHT SWITCH  
10. GASKET  
11. POPPET  
12. GASKET
DISASSEMBLY STEPS

13. INTERLOCK PLATE BOLT
14. GASKET
>>G<<
15. CONTROL HOUSING
16. NEUTRAL RETURN SPRING
>>F<<
17. UNDER COVER
18. REVERSE IDLER GEAR SHAFT BOLT
19. GASKET

DISASSEMBLY STEPS

20. REVERSE IDLER GEAR
>>E<<
21. TRANSAXLE CASE
>>D<<
22. OUTER RACE
>>D<<
23. OUTER RACE
>>D<<
24. SPACER
>>D<<
25. SPACER
>>D<<
26. SPACER

APPLY GEAR OIL TO ALL MOVING PARTS BEFORE INSTALLATION.
**Required Special Tools:**
- MB990935: Installer Adapter
- MB990938: Handle

**DISASSEMBLY STEPS**

- **27.** SPRING PIN
- **28.** 1ST-2ND SPEED SHIFT RAIL
- **29.** 1ST-2ND SPEED SHIFT FORK
- **30.** SPRING PIN
- **31.** SPRING PIN
- **32.** 3RD-4TH SPEED SHIFT RAIL
- **33.** 3RD-4TH SPEED SHIFT FORK

- **34.** 5TH-REVERSE SPEED SHIFT RAIL
- **35.** 5TH-REVERSE SPEED SHIFT FORK
- **36.** CENTER DIFFERENTIAL
- **37.** OUTPUT SHAFT
- **38.** INPUT SHAFT
- **39.** CLUTCH HOUSING
DISASSEMBLY SERVICE POINTS

<<A>> SPRING PIN REMOVAL
1. Shift the 5th-reverse shift fork in the direction shown in the illustration.
2. Using a pin punch, remove the spring pin from the shift fork and rail.

<<B>> 3RD-4TH SPEED SHIFT RAIL/3RD-4TH SPEED SHIFT FORK/5TH-REVERSE SPEED SHIFT RAIL/5TH-REVERSE SPEED SHIFT FORK REMOVAL
1. Pull out the shift rails from the shift rail holes in the clutch housing.
2. Remove the shift rails together with the shift forks.

<<C>> CENTER DIFFERENTIAL/OUTPUT SHAFT/INPUT SHAFT REMOVAL
Remove the input and output shafts together.

ADJUSTMENT BEFORE ASSEMBLY
SPACER SELECTION FOR INPUT SHAFT END PLAY/OUTPUT SHAFT PRELOAD/CENTER DIFFERENTIAL PRELOAD
<Measurement using a solder>

**CAUTION**
- If soft solder is not available, select the spacer in accordance with Plastigage method.
- If the spacer appropriate for the standard value cannot be selected using soft solder, select the spacer in accordance with Plastigage method.

1. Install the input shaft, output shaft and center differential as a set to the clutch housing.

   **NOTE:** If necessary, replace the input shaft, output shaft, center differential case and/or bearings before carrying out these adjustments.

2. Put solders [1.0 mm (0.039 in) diameter, about 10 mm (0.39 in) long] on the input shaft rear bearing at the positions shown in the illustration.

3. Put solders [1.0 mm (0.039 in) diameter, about 10 mm (0.39 in) long] on the transaxle case at the positions shown in the illustration.

4. Install the bearing outer races of the center differential and output shaft.

5. Install the transaxle case and tighten the bolts to the specified torque.

   **Tightening torque:** $44 \pm 5 \text{ N\cdot m (32 \pm 3 ft-lb)}$
6. Remove the transaxle case.
7. Remove the outer races and take out the crushed solders.
8. If the solders have not crushed, use thicker solders [1.6 mm (0.063 in) diameter, about 10 mm (0.39 in) long] and repeat steps 4 to 7.
9. Measure the thickness of the crushed solder with a micrometer and select spacers that will provide the standard end play/preload value.

**Standard value:**
- Input shaft end play: 0.05 – 0.17 mm (0.0020 – 0.0067 inch)
- Output shaft preload: 0.13 – 0.18 mm (0.0051 – 0.0071 inch)
- Center differential case preload: 0.05 – 0.11 mm (0.0020 – 0.0043 inch)

**<Measurement using Plastigage>**
1. Install the input shaft, output shaft and center differential as a set to the clutch housing.
   
   *NOTE: If necessary, replace the input shaft, output shaft, center differential case and/or bearings before carrying out these adjustments.*

2. Put plastigage [about 10 mm (0.39 in) long] on the input shaft rear bearing at the positions shown in the illustration.
3. Put plastigage [about 10 mm (0.39 in) long] on the transaxle case at the positions shown in the illustration.

4. Install the bearing outer races of the center differential and output shaft.

5. Install the transaxle case and tighten the bolts to the specified torque.

   **Tightening torque: 44 ± 5 N·m (32 ± 3 ft-lb)**

6. Remove the transaxle case.

7. Remove the outer races and take out the crushed plastigage.

8. If the Plastigages have not crushed, replace the spacer with a thicker one and repeat steps 4 to 7.

9. Measure the width of the crushed plastigage at its widest part using a scale printed on the plastigage package.

   **Standard value:**
   - Input shaft end play: 0.05 – 0.17 mm (0.0020 – 0.0067 inch)
   - Output shaft preload: 0.13 – 0.18 mm (0.0051 – 0.0071 inch)
   - Center differential case preload: 0.05 – 0.11 mm (0.0020 – 0.0043 inch)

**ASSEMBLY SERVICE POINTS**

**>>A<< INPUT SHAFT/OUTPUT SHAFT/CENTER DIFFERENTIAL INSTALLATION**

Install the input shaft, output shaft and center differential as a set.
**>>B<< 5TH-REVERSE SPEED SHIFT FORK/5TH-REVERSE SPEED SHIFT RAIL/3RD-4TH SPEED SHIFT FORK/3RD-4TH SPEED SHIFT RAIL INSTALLATION**

1. Assemble the 3rd-4th speed shift rail and fork, and 5th-reverse speed shift rail and fork.

2. Fit each shift fork in the groove of synchronizer sleeve and install the shift fork and rail assembly.

3. Insert the 3rd-4th speed shift rail and 5th speed-reverse shift rail into the rail hole in the clutch housing.

**>>C<< SPRING PIN INSTALLATION**

1. Align the pin holes in the shift rail and shift fork.

2. Insert the new spring pin. Push it in so that the slit and center axis of the rail are aligned.
>>D<< SPACER AND OUTER RACE INSTALLATION

1. Install the spacer selected in the section "ADJUSTMENT BEFORE ASSEMBLY."
2. Using special tools MB990935 and MB990938, press install the outer race into the transaxle case.

>>E<< TRANSAXLE CASE INSTALLATION

⚠️ CAUTION
Squeeze out the sealant uniformly, while making sure that it is not broken or excessively applied.
1. Apply a 2 mm (0.08 inch) diameter bead of sealant (Mitsubishi genuine part number MD997740 or equivalent) to the illustrated position of the transaxle case.
   NOTE: Be sure to install the transaxle case while the sealant is wet (within 15 minutes).
2. Install the transaxle case.
3. Tighten the transaxle case mounting bolts to the specified torque.
   Tightening torque: 44 ± 5 N·m (32 ± 3 ft-lb)
   NOTE: After installation, keep the sealed area away from oil for approximately one hour.

>>F<< UNDER COVER INSTALLATION

⚠️ CAUTION
Squeeze out the sealant uniformly, while making sure that it is not broken or excessively applied.
1. Apply a 2 mm (0.08 inch) diameter bead of sealant (Mitsubishi genuine part number MD997740 or equivalent) to the illustrated position of the transaxle case.
   NOTE: Be sure to install the case quickly while the sealant is wet (within 15 minutes).
2. Install the under cover to the transaxle case and tighten the bolts to specified torque.
   Tightening torque: 6.9 ± 0.9 N·m (61 ± 7 in-lb)
   NOTE: After installation, keep the sealed area away from oil for approximately one hour.
>>G<< CONTROL HOUSING INSTALLATION

**CAUTION**
Squeeze out the sealant uniformly, while making sure that it is not broken or excessively applied.

1. Apply a 0.2 mm (0.08 inch) diameter bead of sealant (Mitsubishi genuine part number MD997740 or equivalent) to the illustrated position of the transaxle case.

   **NOTE:** Be sure to install the case quickly while the sealant is wet (within 15 minutes).

2. Install the control housing to the transaxle case and tighten the bolts to specified torque.

   **Tightening torque:** 18 ± 3 N·m (13 ± 2 ft-lb)

   **NOTE:** After installation, keep the sealed area away from oil for approximately one hour.

>>H<< SELECT LEVER INSTALLATION

1. Apply grease (Mitsubishi genuine grease part No. 0101011 or equivalent) to the control shaft sliding portion of the select lever shoe.

2. Install the select lever and tighten the bolts to specified torque.

   **Tightening torque:** 18 ± 3 N·m (13 ± 2 ft-lb)

INSPECTION

BACKUP LIGHT SWITCH
Check for continuity between terminals.

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INPUT SHAFT

DISASSEMBLY AND ASSEMBLY

**APPLY GEAR OIL TO ALL MOVING PARTS BEFORE INSTALLATION.**

**DISASSEMBLY STEPS**

1. SNAP RING
2. BALL BEARING
3. THRUST PLATE STOPPER
4. THRUST PLATE
5. 5TH SPEED GEAR
6. 4TH SPEED GEAR
7. NEEDLE ROLLER BEARING
8. 4TH SPEED GEAR SLEEVE
9. SYNCHRONIZER RING
10. SYNCHRONIZER SPRING
11. SYNCHRONIZER SLEEVE
12. 3RD-4TH SPEED SYNCHRONIZER HUB
13. OUTER SYNCHRONIZER RING
14. SYNCHRONIZER SPRING
15. SYNCHRONIZER CONE
16. INNER SYNCHRONIZER RING
17. 3RD SPEED GEAR
18. NEEDLE ROLLER BEARING
19. SNAP RING
20. BALL BEARING
21. OIL SEAL
22. INPUT SHAFT

**Required Special Tools:**

- MD998801: Bearing Remover
- MD998812: Installer Cap
- MD998813: Installer-100
- MD998818: Installer Adapter (38)
- MD998819: Installer Adapter (40)
- MD998825: Installer Adapter (52)
DISASSEMBLY SERVICE POINTS

<<A>> BALL BEARING REMOVAL
1. Using special tool MD998801, support the ball bearing, and then set them on the press.
2. Push down on the input shaft with the press and extract the ball bearing.

<<B>> THRUST PLATE STOPPER REMOVAL
Using a screwdriver, pry up the position shown in the illustration and remove the thrust plate stopper.

<<C>> 5TH SPEED GEAR REMOVAL
1. Using special tool MD998801, support the 5th speed gear, and then set them on the press.
2. Push down on the input shaft with the press and take off the 5th speed gear.

<<D>> 4TH SPEED GEAR SLEEVE REMOVAL
1. Using special tool MD998801, support the 3rd speed gear, and then set them on the press.
2. Push down on the input shaft with the press and remove the 4th speed gear sleeve.
**<<E>> BALL BEARING REMOVAL**

1. Using special tool MD998801, support the ball bearing, and then set them on the press.
2. Push down on the input shaft with the press and extract the ball bearing.

**ASSEMBLY SERVICE POINTS**

**>>A<< OIL SEAL INSTALLATION**

Install the oil seal into the illustrated position of the input shaft.

**>>B<< BALL BEARING INSTALLATION**

1. Using special tool MD998801, support the 2nd speed gear portion of the input shaft, and then set them on the press.
2. Using special tools MD998812, MD998813 and MD998818, press install the bearing with the press.

**>>C<< SNAP RING INSTALLATION**

1. Install the thickest snap ring that can be fitted in the snap ring groove of input shaft.
2. Make sure that the ball bearing end play meets the standard value.
   
   **Standard value:** 0 – 0.12 mm (0 – 0.0047 inch)
>>D<< SYNCHRONIZER SPRING INSTALLATION

Install the synchronizer spring to the illustrated position of the synchronizer ring and outer synchronizer ring.

>>E<< 3RD-4TH SPEED SYNCHRONIZER HUB INSTALLATION

1. Using special tool MD998801, support the 2nd speed gear portion of the input shaft, and then set them on the press.
2. Make sure that the inner synchronizer ring has been perfectly matched to the 3rd speed gear cone.
3. Check the installation direction of the 3rd-4th speed synchronizer hub, and put it on the input shaft.
4. Using special tools MD998812, MD998813 and MD998825, press install the 3rd-4th speed synchronizer hub with the press.
5. Make sure that the outer synchronizer ring can rotate freely.
>>F<< SYNCHRONIZER SLEEVE INSTALLATION
1. Check the installation direction of the synchronizer sleeve, and install it onto the 3rd-4th speed synchronizer hub.

2. Install the synchronizer sleeve so that the areas with teeth that have raised tips (three areas total) are aligned with the areas on the synchronizer hub that have deep grooves between the teeth (three areas total).

>>G<< 4TH SPEED GEAR SLEEVE INSTALLATION
1. Using special tool MD998801, support the 2nd speed gear portion of the input shaft, and then set them on the press.

2. Using special tools MD998812, MD998813 and MD998825, press install the 4th speed gear sleeve with the press.

>>H<< 5TH SPEED GEAR INSTALLATION
1. Using special tool MD998801, support the 2nd speed gear portion of the input shaft, and then set them on the press.

2. Using special tools MD998812, MD998813 and MD998825, press install the 5th speed gear in the input shaft.
>>I<< THRUST PLATE INSTALLATION
1. Install the thickest thrust plates that can be fitted in the groove of input shaft. Install the thrust plate so the surface stamped with the identification mark is facing up.
2. Make sure that the 5th speed gear end play meets the standard value.
   Standard value: $0 - 0.09$ mm ($0 - 0.0035$ inch)

>>J<< THRUST PLATE STOPPER INSTALLATION
Install the thrust plate stopper by pressing special tools MD998812, MD998813 and MD998825 by hand. Make sure that it is not tilted.

>>K<< BALL BEARING INSTALLATION
1. Using special tool MD998801, support the 2nd speed gear portion of the input shaft, and then set them on the press.
2. Using special tools MD998812 and MD998819, press install the ball bearing in the input shaft.

>>L<< SNAP RING INSTALLATION
1. Install the thickest snap ring that can be fitted in the groove of input shaft.
2. Make sure that the ball bearing end play meets the standard value.
   Standard value: $0 - 0.12$ mm ($0 - 0.0047$ inch)
INPUT SHAFT
1. Check the outside diameter of the needle bearing mounting portion for damage, abnormal wear and seizure.
2. Check the splines for damage and wear.
3. Check that the helical gear teeth surfaces are not damaged or worn.

NEEDLE ROLLER BEARING
1. Combine the needle roller bearing with the input shaft or bearing sleeve and gear, and check that it rotates smoothly without noise or play.
2. Check the needle roller bearing cage for deformation.

SYNCHRONIZER RING
1. Check the clutch gear teeth for damage.
2. Check the internal surface for damage, wear and broken threads.
3. Force the synchronizer ring toward the clutch gear and check clearance "A." If "A" is less than the limit, replace.
   Minimum limit: 0.5 mm (0.020 inch)
OUTER SYNCHRONIZER RING/INNER SYNCHRONIZER RING/SYNCHRONIZER CONE

⚠️ CAUTION ⚠️
When any of the outer ring, inner ring or cone has to be replaced, replace them as a set.
1. Check to ensure that the clutch gear tooth surface and cone surface are not damaged and broken.

2. Install the outer ring, inner ring and cone, press them against the gear, and check clearance "A." If "A" is less than the limit, replace.
   Minimum limit: 0.5 mm (0.020 inch)

SYNCHRONIZER SLEEVE AND HUB
1. Combine the synchronizer sleeve and hub, and check that they slide smoothly.
2. Check that the sleeve is free from damage at its inside splines ends.

SYNCHRONIZER SPRING
Check that the spring is not sagging, deformed or broken.
SPEED GEARS
1. Check that the helical and clutch gear tooth surfaces are not damaged or worn.
2. Check that the synchronizer cone surfaces are not roughened, damaged or worn.
3. Check that the gear inside diameter and front and rear surfaces are not damaged or worn.

OUTPUT SHAFT
DISASSEMBLY AND ASSEMBLY

APPLICATION

APPLY GEAR OIL TO ALL MOVING PARTS BEFORE INSTALLATION.

DISASSEMBLY STEPS

>>Q<< 1. SNAP RING
<<A>> 2. TAPER ROLLER BEARING

<<B>> 3. REVERSE GEAR BEARING SLEEVE
<<O>> 4. NEEDLE ROLLER BEARING
**DISASSEMBLY STEPS**

5. REVERSE GEAR
6. INNER SYNCHRONIZER RING
7. SYNCHRONIZER CONE
8. OUTER SYNCHRONIZER RING
9. SYNCHRONIZER SPRING
10. SYNCHRONIZER SLEEVE
11. 5TH SPEED-REVERSE SYNCHRONIZER HUB
12. SYNCHRONIZER RING
13. SYNCHRONIZER SPRING
14. 5TH SPEED GEAR
15. NEEDLE ROLLER BEARING
16. 5TH SPEED GEAR SLEEVE
17. 4TH SPEED GEAR
18. SNAP RING
19. 3RD SPEED GEAR
20. 2ND SPEED GEAR
21. NEEDLE ROLLER BEARING

**DISASSEMBLY STEPS**

22. 2ND SPEED GEAR SLEEVE
23. INNER SYNCHRONIZER RING
24. SYNCHRONIZER CONE
25. OUTER SYNCHRONIZER RING
26. SYNCHRONIZER SPRING
27. SYNCHRONIZER SLEEVE
28. 1ST-2ND SPEED SYNCHRONIZER HUB
29. OUTER SYNCHRONIZER RING
30. SYNCHRONIZER SPRING
31. INNER SYNCHRONIZER RING
32. SYNCHRONIZER CONE
33. 1ST SPEED GEAR
34. NEEDLE ROLLER BEARING
35. 1ST SPEED GEAR SLEEVE
36. TAPER ROLLER BEARING
37. OIL SEAL
38. OUTPUT SHAFT

**Required Special Tools:**
- MD998364: Camshaft Oil Seal Installer
- MD998801: Bearing Remover
- MD998812: Installer Cap
- MD998813: Installer-100
- MD998814: Installer-200
- MD998819: Installer Adapter (40)
- MD998820: Installer Adapter (42)
- MD998821: Installer Adapter (44)
- MD998824: Installer Adapter (50)
- MD998917: Bearing Remover

**DISASSEMBLY SERVICE POINTS**

**<<A>> TAPER ROLLER BEARING REMOVAL**

1. Using special tool MD998801, support the taper roller bearing, and then set them on the press.
2. Push down on the output shaft with the press, and take out the taper roller bearing.

**<<B>> REVERSE GEAR BEARING SLEEVE REMOVAL**

1. Using special tool MD998801, support the reverse gear, and then set them on the press.
2. Push down on the output shaft with the press and remove the reverse gear bearing sleeve.
<<C>> 5TH SPEED-REVERSE SYNCHRONIZER HUB REMOVAL
1. Using special tool MD998801, support the 4th speed gear, and then set them on the press.
2. Push down on the output shaft with the press and remove the 5th speed-reverse synchronizer hub.

<<D>> 3RD SPEED GEAR REMOVAL
1. Using special tool MD998917, support the 2nd speed gear, and then set them on the press.
2. Push down on the output shaft with the press and remove the 3rd speed gear.

<<E>> 2ND SPEED GEAR SLEEVE REMOVAL
1. Using special tool MD998917, support the 1st speed gear, and then set them on the press.
2. Push down on the output shaft with the press and remove the 2nd speed gear sleeve.

<<F>> 1ST SPEED GEAR SLEEVE REMOVAL
1. Using special tool MD998801, support the 1st speed gear sleeve, and then set them on the press.
2. Push down on the output shaft with the press and remove the 1st speed gear sleeve.
<<G>> TAPER ROLLER BEARING REMOVAL
1. Using special tool MD998801, support the taper roller bearing, and then set them on the press.
2. Push down on the output shaft with the press and remove the taper roller bearing.

ASSEMBLY SERVICE POINTS

>>A<< OIL SEAL INSTALLATION
Make sure that the oil seal is pressed into the position shown in the illustration.

>>B<< TAPER ROLLER BEARING INSTALLATION
1. Using special tool MD998801, support the output shaft gear, and then set them on the press.
2. Using special tools MD998812 and MD998819, press install the taper roller bearing with the press.

>>C<< 1ST SPEED GEAR SLEEVE INSTALLATION
1. Set the output shaft on the press support stand.
2. Using special tools MD998812, MD998814, MD998824 and MD998364, press install the 1st speed gear sleeve with the press.
**>>D<< SYNCHRONIZER SPRING INSTALLATION**
Install the synchronizer spring to the illustrated position of the outer synchronizer ring.

![Synchro Spring](image)

**>>E<< 1ST-2ND SPEED SYNCHRONIZER HUB INSTALLATION**
1. Set the output shaft on the press support stand.
2. Check that the 1st-2nd speed synchronizer hub is in the correct installation direction, and put it on the output shaft.
3. Using special tools MD998812, MD998814, MD998824 and MD998364, press install the 1st-2nd speed synchronizer hub with the press.
4. Make sure that the outer synchronizer ring on the 1st speed gear side can rotate freely.

![Hub Installation](image)

**>>F<< SYNCHRONIZER SLEEVE INSTALLATION**
1. Check that the synchronizer sleeve is in the correct direction for installation, and install it on the 1st-2nd speed synchronizer hub.

![Sleeve Installation](image)
2. Install the synchronizer sleeve so that the areas with teeth that have raised tips (three areas total) are aligned with the areas on the synchronizer hub that have deep grooves between the teeth (three areas total).

>>G<< 2ND SPEED GEAR SLEEVE INSTALLATION

1. Set the output shaft on the press support stand.
2. Using special tools MD998812, MD998814, MD998824 and MD998364, press install the 2nd speed sleeve onto the output shaft.

>>H<< 3RD SPEED GEAR INSTALLATION

1. Check that the 2nd speed gear and the outer synchronizer ring have been properly installed. Also, make sure the claws on the synchronizer cone (four places) are correctly fitted into the holes in the 2nd speed gear (four places).
2. Using special tools MD998812, MD998814, MD998824 and MD998364, press install the 3rd speed gear onto the output shaft.
3. Make sure that the 2nd speed gear and the outer synchronizer ring can rotate freely.

>>I<< SNAP RING INSTALLATION

1. Install the thickest snap ring that can be fitted in the groove of output shaft.
2. Make sure that the 3rd speed gear end play meets the standard value.

   Standard value: 0 −0.09 mm (0 −0.0035 inch)
>>J<< 4TH SPEED GEAR INSTALLATION
1. Set the output shaft on the press support stand.
2. Using special tools MD998812, MD998813, MD998821 and MD998364, press install the 4th speed gear onto the output shaft.

>>K<< 5TH SPEED GEAR SLEEVE INSTALLATION
Using special tools MD998812, MD998813, MD998821 and MD998364, press install the 5th speed gear sleeve onto the output shaft.

>>L<< SYNCHRONIZER SPRING INSTALLATION
Install the synchronizer spring to the illustrated position of the synchronizer ring.

>>M<< 5TH SPEED-REVERSE SYNCHRONIZER HUB INSTALLATION
1. Set the output shaft on the press support stand.
2. Make sure that the synchronizer ring is fitted correctly on the cone of the 5th speed gear.
3. Check that the 5th speed-reverse synchronizer hub is oriented correctly for installation, and fit it on the output shaft.
4. Using special tools MD998812, MD998813, MD998821 and MD998364, press install the 5th speed-reverse synchronizer hub with the press.
5. Make sure that the synchronizer ring on the 5th speed gear side can rotate freely.

>>N<< SYNCHRONIZER SLEEVE INSTALLATION
1. Check that the synchronizer sleeve is in the correct direction for installation, and install it on the 5th speed-reverse synchronizer hub.

2. Install the synchronizer sleeve so that the areas with teeth that have raised tips (three areas total) are aligned with the areas on the synchronizer hub that have deep grooves between the teeth (three areas total).

>>O<< REVERSE GEAR BEARING SLEEVE INSTALLATION
1. Make sure the synchronizer ring, reverse gear and needle roller bearing have been correctly installed.
2. Using special tools MD998812, MD998820 and MD998364, press fit the reverse gear sleeve. Make sure that the reverse gear and the synchronizer ring can rotate freely during the pressing process.
>>P<< TAPER ROLLER BEARING INSTALLATION
Using special tools MD998812, MD998819 and MD998364, press install the taper roller bearing.

>>Q<< SNAP RING INSTALLATION
1. Install the thickest snap ring that can be fitted in the groove of output shaft.
2. Make sure that the taper roller bearing end play meets the standard value.
   Standard value: 0 – 0.09 mm (0 – 0.0035 inch)

INSPECTION

OUTPUT SHAFT
1. Check the splines for damage and wear.
2. Check that the helical gear teeth surfaces are not damaged or worn.

NEEDLE ROLLER BEARING
1. Combine the needle roller bearing with the bearing sleeve and gear, and check that it rotates smoothly without noise or play.
2. Check the needle roller bearing cage for deformation.
SYNCHRONIZER RING <FOR 5TH SPEED>
1. Check if the clutch gear teeth are damaged.
2. Check internal surface for damage, wear and broken threads.

3. Force the synchronizer ring toward the clutch gear and check clearance "A." If "A" is less than the limit, replace the synchronizer ring.

   Minimum limit: 0.5 mm (0.020 inch)

OUTER SYNCHRONIZER RING/INNER SYNCHRONIZER RING/SYNCHRONIZER CONE <FOR REVERSE>

**CAUTION**
When replacing, replace the outer ring, inner ring and cone as a set.

1. Check that the clutch gear tooth surfaces and cone surfaces are not damaged or broken.

2. Install the outer ring, inner ring and cone, force them toward the gear, and check clearance "A." If "A" is less than the limit, replace them as a set.

   Minimum limit: 0.5 mm (0.020 inch)
OUTER SYNCHRONIZER RING/INNER SYNCHRONIZER RING/SYNCHRONIZER CONE <FOR 1 ST SPEED AND 2 ND SPEED>

**CAUTION**
When replacing, replace the outer ring, inner ring and cone as a set.

1. Check that the clutch gear tooth surfaces and cone surfaces are not damaged or broken.

2. Install the outer ring, inner ring and cone, force them toward the gear, and check clearance "A." If "A" is less than the limit, replace them as a set.
   Minimum limit: 0.5 mm (0.020 inch)

SYNCHRONIZER SLEEVE AND HUB

1. Combine the synchronizer sleeve and hub, and check that they slide smoothly.
2. Check that the sleeve is free from damage at its inside splines ends.

SYNCHRONIZER SPRING

Check that the spring is not sagging, deformed or broken.
SPEED GEARS
1. Check that the helical and clutch gear tooth surfaces are not damaged or worn.
2. Check that the synchronizer cone surfaces are not roughened, damaged or worn.
3. Check that the gear inside diameter and front and rear surfaces are not damaged or worn.

REVERSE IDLER GEAR
DISASSEMBLY AND ASSEMBLY

APPLY GEAR OIL TO ALL MOVING PARTS BEFORE INSTALLATION.

DISASSEMBLY STEPS
1. SNAP RING
2. CONE SPRING
3. THRUST WASHER
4. STEEL BALL
5. REVERSE IDLER GEAR
6. NEEDLE ROLLER BEARING
7. REVERSE IDLER GEAR SHAFT
VEHICLE SPEED SENSOR

DISASSEMBLY AND ASSEMBLY

APPLY GEAR OIL TO ALL MOVING PARTS BEFORE INSTALLATION.

DISASSEMBLY STEPS
1. E-CLIP
2. SPEED SENSOR GEAR

DISASSEMBLY STEPS
3. O-RING
4. SPEED SENSOR
SELECT LEVER

DISASSEMBLY AND ASSEMBLY

DISASSEMBLY STEPS
1. DUST COVER
2. NUT
3. SPRING WASHER
4. WASHER
5. SELECT LEVER BUSHING

DISASSEMBLY STEPS
6. SELECT LEVER SHOE
7. SELECT LEVER
   >>A<< 8. SELECT LEVER BUSHING
   >>A<< 9. DUST COVER
10. SELECT LEVER SHAFT

TSB Revision
ASSEMBLY SERVICE POINT

>>A<< DUST COVER AND SELECT LEVER BUSHING INSTALLATION

Make sure the dust cover and select lever bushing installation direction is correct, and distinguished parts are correctly assembled. Refer to the figure at left.

CONTROL HOUSING

DISASSEMBLY AND ASSEMBLY

21.7 ± 0.3 N·m
16.1 ± 0.2 ft-lb
DISASSEMBLY STEPS
1. SPRING WASHER
2. STOPPER BRACKET
<<A>>
3. LOCK PIN
4. INTERLOCK PLATE
5. CONTROL FINGER
>>D<<
6. SPRING PIN
7. STOPPER BODY

DISASSEMBLY STEPS
8. NEUTRAL RETURN SPRING
9. CONTROL SHAFT
>>C<<
10. AIR BREATHER
11. CONTROL SHAFT BOOT
>>B<<
12. OIL SEAL
>>A<<
13. NEEDLE BEARING
14. CONTROL HOUSING

DISASSEMBLY SERVICE POINT
<<A>> LOCK PIN REMOVAL
Drive out the lock pin in the direction shown.

ASSEMBLY SERVICE POINTS
>>A<< NEEDLE BEARING INSTALLATION
Press fit the needle bearing into the control housing side as shown.
Make sure that the side with the model number stamped on it faces the end of the control housing as shown.

>>B<< OIL SEAL INSTALLATION
Apply gear oil (Hypoid gear oil SAE 75W-90 or 75W-85W conforming to API classification GL-4) to the oil seal lip area.
>>C<< AIR BREATHER INSTALLATION
1. Apply sealant (3M™ AAD Part Number 8001 or equivalent) to the inserting portion of air breather.

2. Install the air breather so that the embossed mark is in the direction shown in the illustration.

>>D<< SPRING PIN INSTALLATION
Drive in the spring pin so that the slit is in the direction shown in the illustration.

>>E<< LOCK PIN INSTALLATION
Drive the lock pin in the direction shown in the illustration.
DISASSEMBLY AND ASSEMBLY

DISASSEMBLY STEPS
1. CLUTCH RELEASE BEARING RETAINER
   >>E<< 2. OIL SEAL
   <<A>> 3. OUTER RACE
   >>B<< 4. OUTER RACE
   >>B<< 5. BUSHING*
   >>A<< 6. COVER-A
   >>A<< 7. COVER-B
   8. CLUTCH HOUSING

Required Special Tools:
- MB990928: Installer Adapter
- MB990935: Installer Adapter
- MB990938: Handle
- MB991445: Bushing Remover and Installer Base
- MD999566: Claw

NOTE: *: Refer to the needle bearing and bushing installation procedures only when replacing the transaxle case.
DISASSEMBLY SERVICE POINT

<<A>> OUTER RACE REMOVAL
Using special tool MD999566, remove the outer race from the clutch housing.

<<B>> OUTER RACE REMOVAL
Using special tool MD999566, remove the outer race from the clutch housing.

ASSEMBLY SERVICE POINTS

>>A<< COVER-B/Cover-A INSTALLATION
Install the covers directed as shown in the illustration.
**>>B<< BUSHING INSTALLATION**

1. Press fit the bushing so the seam is away from the air vent.

2. Be sure the bushing is fully seated as shown. It must be 1 mm (0.04 inch) below the housing surface.

**>>C<< OUTER RACE INSTALLATION**

Using special tools MB990938 and MB990935, press fit the outer race into the clutch housing.

**>>D<< OUTER RACE INSTALLATION**

1. Check the installation direction of the outer race.
2. Using special tools MB990938 and MB991445, press fit the outer race into the clutch housing.
>>E<< OIL SEAL INSTALLATION
1. Pack grease (Mitsubishi genuine grease part No. 0101011 or equivalent) in the oil seal lip area.

2. Using special tools MB990938 and MB990928, press fit the oil seal into the clutch housing.
DISASSEMBLY STEPS

1. OIL SEAL
2. NEEDLE BEARING*
3. OIL GUIDE
4. OIL GUIDE

DISASSEMBLY STEPS (Continued)

5. BUSHING*
6. TRANSAXLE

NOTE: *: Refer to the needle bearing and bushing installation procedures only when replacing the transaxle case.

Required Special Tool:
- MD998800: Differential Oil Seal Installer
ASSEMBLY SERVICE POINTS

>>A<< BUSHING INSTALLATION
1. Press fit the bushing so the seam is away from the air vent.

2. Be sure the bushing is fully seated as shown. It must be 3 mm (0.12 inch) below the housing surface.

>>B<< OIL GUIDE INSTALLATION
1. Evenly press the oil guide so it is fully seated and at an angle.

>>C<< NEEDLE BEARING INSTALLATION
1. Check the installation direction of the needle bearing.
2. Press fit the needle bearing until it is flush with the case.
>>D<<OIL SEAL INSTALLATION

1. Apply gear oil (Hypoid gear oil SAE 75W-90 or 75W-85W conforming to API classification GL-4).

2. Using special tool MD998800, press fit the oil seal into the transaxle case.
Apply gear oil to all moving parts before installation.

**DISASSEMBLY STEPS**

1. CENTER DIFFERENTIAL DRIVE GEAR
2. CENTER DIFFERENTIAL FLANGE
3. TAPERED ROLLER BEARING
4. SPACER
5. SNAP RING
6. SIDE GEAR
7. FRONT OUTPUT SHAFT
8. LOCK PIN
9. PINION SHAFT
10. PINION SHAFT HOLDER
11. PINIONS
12. WASHERS
13. SIDE GEAR
14. SPACER
15. TAPERED ROLLER BEARING
16. SPEEDOMETER DRIVEN GEAR
17. DIFFERENTIAL CASE

**Required Special Tools:**
- MD998812: Installer Cap
- MD998917: Bearing Remover
- MB990930: Installer Adapter
- MD998823: Installer Adapter (48)
- MB990937: Installer Adapter
DISASSEMBLY SERVICE POINTS

<<A>> TAPERED ROLLER BEARING REMOVAL
1. Support the tapered roller bearing with special tool MD998917, and then set them on the press.
2. Push down on the differential case with the press to remove the bearing.

<<B>> TAPER ROLLER BEARING REMOVAL
1. Support the taper roller bearing with special tools MD998917 and MB990930, and then set them on the press.
2. Push down on the differential case with the press to remove the bearing.

ASSEMBLY SERVICE POINTS

>>A<< TAPERED ROLLER BEARING INSTALLATION
Using special tool MB990937, press install the taper roller bearing.
**>>B<< TAPERED ROLLER BEARING INSTALLATION**
Using special tools MD998812 and MD998823, press install the taper roller bearing.

**>>C<< SPACER, SIDE GEAR, WASHER, PINION AND PINION SHAFT, PINION SHAFT HOLDER, LOCK PIN, FRONT OUTPUT SHAFT, SNAP RING, CENTER DIFFERENTIAL FLANGE, INSTALLATION**

1. Mount a spacer on the back surface of the side gear, and then install the side gear in the differential case.
   **NOTE:** When a new side gear is to be installed, use a medium thickness spacer [0.93 to 1.00 mm (0.0366 to 0.0395 inch)].
2. Place the washers on the back of the pinions, and simultaneously mesh the four pieces with the side gears. Place them into position while rotating them. Then, install the pinion shaft holder.
3. Insert the pinion shaft.
4. Install the lock pin so that it will be oriented in the direction shown.
5. Install the front output shaft on the side gear, and install the snap ring.
6. Mount a spacer on the back surface of the side gear, and then install the side gear in the differential case.
   **NOTE:** When a new side gear is to be installed, use a medium thickness spacer [0.93 to 1.00 mm (0.0366 to 0.0395 inch)].
7. Install the center differential flange by aligning the matching marks, and temporarily tighten the four machine screws.
8. Measure the backlash between the side gear and pinion.
   **Standard value:**
   0.025 – 0.150 mm (0.0010 – 0.0059 inch)
9. If the backlash is out of the standard value, select a spacer and re-measure the backlash.
   **NOTE:** Adjust until the backlash on both sides are equal.
>>D<< DIFFERENTIAL DRIVE GEAR
INSTALLATION

1. Apply sealant (3M™ STUD Locking No.4170 or equivalent) to the entire threaded portion of the bolt.

2. Tighten to the specified torque in the illustrated sequence.
   
   Tightening torque: $133 \pm 4$ N·m ($98 \pm 3$ ft-lb)
TRANSFER

DISASSEMBLY AND ASSEMBLY

APPLY GEAR OIL TO ALL MOVING PARTS BEFORE INSTALLATION.

DISASSEMBLY STEPS

1. DUST SEAL GUIDE

2. OIL SEAL

3. OIL SEAL

4. O-RING

5. OIL SEAL

Required Special Tools:

- MD998800: Oil Seal Installer
- MD999506: Crankshaft Installer
- MB990936: Installer Adapter
ASSEMBLY SERVICE POINTS

>>A<< OIL SEAL INSTALLATION
1. Apply gear oil (Hypoid gear oil API classification GL-5 SAE 90).
2. Using special tool MD998800, press fit the oil seal into the transfer cover.

>>B<< O-RING INSTALLATION
Install a O-ring to the transfer, and apply gear oil (Hypoid gear oil API classification GL-5 SAE 90) to the O-ring.

>>C<< OIL SEAL INSTALLATION
1. Apply gear oil (Hypoid gear oil API classification GL-5 SAE 90).
2. Using special tool MD999506, press fit the oil seal into the transfer.

>>D<< OIL SEAL INSTALLATION
1. Apply gear oil (Hypoid gear oil API classification GL-5 SAE 90).
2. Using special tool MB990936, press fit the oil seal into the transfer.
## FASTENER TIGHTENING SPECIFICATIONS

### TRANSAXLE

<table>
<thead>
<tr>
<th>ITEM</th>
<th>SPECIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer-clutch housing mounting bolt</td>
<td>$69 \pm 9 \text{ N} \cdot \text{m (51 \pm 7 ft-lb)}$</td>
</tr>
<tr>
<td>Under cover mounting bolt</td>
<td>$6.9 \pm 0.9 \text{ N} \cdot \text{m (61 \pm 7 in-lb)}$</td>
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<tr>
<td>Interlock plate bolt</td>
<td>$30 \pm 3 \text{ N} \cdot \text{m (22 \pm 2 ft-lb)}$</td>
</tr>
<tr>
<td>Clutch housing-transaxle case mounting bolt</td>
<td>$44 \pm 5 \text{ N} \cdot \text{m (32 \pm 3 ft-lb)}$</td>
</tr>
<tr>
<td>Clutch release bearing retainer mounting bolt</td>
<td>$9.8 \pm 2.0 \text{ N} \cdot \text{m (86 \pm 17 in-lb)}$</td>
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<tr>
<td>Control housing mounting bolt</td>
<td>$18 \pm 3 \text{ N} \cdot \text{m (13 \pm 2 ft-lb)}$</td>
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<tr>
<td>Shift cable bracket mounting bolt</td>
<td>$18 \pm 3 \text{ N} \cdot \text{m (13 \pm 2 ft-lb)}$</td>
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<tr>
<td>Vehicle speed sensor mounting bolt</td>
<td>$3.9 \pm 1.0 \text{ N} \cdot \text{m (34 \pm 8 in-lb)}$</td>
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<tr>
<td>Stopper bracket mounting bolt</td>
<td>$21.7 \pm 0.3 \text{ N} \cdot \text{m (16.1 \pm 0.2 ft-lb)}$</td>
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<tr>
<td>Select lever mounting bolt</td>
<td>$18 \pm 3 \text{ N} \cdot \text{m (13 \pm 2 ft-lb)}$</td>
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<tr>
<td>Select lever mounting nut</td>
<td>$11 \pm 1 \text{ N} \cdot \text{m (97 \pm 8 in-lb)}$</td>
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<tr>
<td>Differential drive gear mounting bolt</td>
<td>$133 \pm 4 \text{ N} \cdot \text{m (98 \pm 3 ft-lb)}$</td>
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<tr>
<td>Center differential flange to differential case mounting bolt</td>
<td>$3.9 \pm 1.0 \text{ N} \cdot \text{m (34 \pm 8 in-lb)}$</td>
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<tr>
<td>Backup light switch</td>
<td>$32 \pm 2 \text{ N} \cdot \text{m (23 \pm 1 ft-lb)}$</td>
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<tr>
<td>Poppet spring</td>
<td>$32 \pm 2 \text{ N} \cdot \text{m (23 \pm 1 ft-lb)}$</td>
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<tr>
<td>Reverse idler gear shaft mounting bolt</td>
<td>$48 \pm 6 \text{ N} \cdot \text{m (35 \pm 4 ft-lb)}$</td>
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<tr>
<td>Roll stopper bracket mounting bolt</td>
<td>$70 \pm 10 \text{ N} \cdot \text{m (52 \pm 7 ft-lb)}$</td>
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</tbody>
</table>

### GENERAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>SPECIFICATION</th>
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<tbody>
<tr>
<td>Model</td>
<td>W5M51-2-X5BH</td>
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<tr>
<td>Applicable engine</td>
<td>4G63</td>
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<td>Type</td>
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<td>Gear ratio</td>
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<td>1st</td>
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<td>5th</td>
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<td>Reverse</td>
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<td>Final reduction ratio</td>
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<tr>
<td>Speedometer gear ratio (driven/drive)</td>
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## SERVICE SPECIFICATIONS

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<thead>
<tr>
<th>ITEM</th>
<th>STANDARD VALUE</th>
<th>MINIMUM LIMIT</th>
</tr>
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<tbody>
<tr>
<td>Input shaft end play mm (in)</td>
<td>0.05 – 0.17 (0.0020 – 0.0067)</td>
<td>–</td>
</tr>
<tr>
<td>Input shaft front bearing end play mm (in)</td>
<td>0 – 0.12 (0 – 0.0047)</td>
<td>–</td>
</tr>
<tr>
<td>Input shaft rear bearing end play mm (in)</td>
<td>0 – 0.12 (0 – 0.0047)</td>
<td>–</td>
</tr>
<tr>
<td>Input shaft 5th speed gear end play mm (in)</td>
<td>0 – 0.09 (0 – 0.0035)</td>
<td>–</td>
</tr>
<tr>
<td>Output shaft preload mm (in)</td>
<td>0.13 – 0.18 (0.0051 – 0.0071)</td>
<td>–</td>
</tr>
<tr>
<td>Output shaft taper roller bearing end play mm (in)</td>
<td>0 – 0.09 (0 – 0.0035)</td>
<td>–</td>
</tr>
<tr>
<td>Output shaft 3rd speed gear end play mm (in)</td>
<td>0 – 0.09 (0 – 0.0035)</td>
<td>–</td>
</tr>
<tr>
<td>Center differential pinion backlash mm (in)</td>
<td>0.025 – 0.150 (0.0010 – 0.0059)</td>
<td>–</td>
</tr>
<tr>
<td>Center differential case preload mm (in)</td>
<td>0.05 – 0.11 (0.0020 – 0.0043)</td>
<td>–</td>
</tr>
<tr>
<td>Synchronizer ring back surface to gear clearance mm (in)</td>
<td>–</td>
<td>0.5 (0.020)</td>
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</tbody>
</table>

## SEALANTS AND ADHESIVES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>SPECIFIED SEALANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clutch housing-transaxle case mating surface</td>
<td>Mitsubishi genuine sealant part No. MD997740 or equivalent</td>
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<tr>
<td>Control housing-transaxle case mating surface</td>
<td></td>
</tr>
<tr>
<td>Under cover-transaxle case mating surface</td>
<td></td>
</tr>
<tr>
<td>Air breather</td>
<td>3M™AAD Part No.8001 or equivalent</td>
</tr>
<tr>
<td>Center differential drive gear bolt</td>
<td>3M™STUD Locking No.4710 or equivalent</td>
</tr>
</tbody>
</table>

## LUBRICANTS

### TRANSAXLE

<table>
<thead>
<tr>
<th>ITEM</th>
<th>SPECIFIED SEALANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speedometer gear O-ring</td>
<td>Hypoid gear oil SAE 75W-90 or 75W-85W conforming to API classification GL-4</td>
</tr>
<tr>
<td>Control shaft oil seal lip gear oil</td>
<td></td>
</tr>
<tr>
<td>Driveshaft oil seal lip gear oil</td>
<td></td>
</tr>
<tr>
<td>Each O-ring</td>
<td>Mitsubishi part No. 0101011 or equivalent</td>
</tr>
<tr>
<td>Select lever shoe</td>
<td></td>
</tr>
<tr>
<td>Input shaft oil seal</td>
<td></td>
</tr>
</tbody>
</table>

### TRANSFER

<table>
<thead>
<tr>
<th>ITEM</th>
<th>SPECIFIED SEALANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each O-ring</td>
<td>Hypoid gear oil API classification GL-5 SAE 90</td>
</tr>
<tr>
<td>Each oil seal</td>
<td></td>
</tr>
</tbody>
</table>
SNAP RINGS, SPACERS AND THRUST PLATE FOR ADJUSTMENT

**Spacer**
(For adjustment of input shaft end play)

<table>
<thead>
<tr>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION SYMBOL</th>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION SYMBOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.98 (0.0386)</td>
<td>98</td>
<td>1.43 (0.0563)</td>
<td>43</td>
</tr>
<tr>
<td>1.07 (0.0421)</td>
<td>07</td>
<td>1.52 (0.0598)</td>
<td>52</td>
</tr>
<tr>
<td>1.16 (0.0457)</td>
<td>16</td>
<td>1.61 (0.0634)</td>
<td>61</td>
</tr>
<tr>
<td>1.25 (0.0492)</td>
<td>25</td>
<td>1.70 (0.0669)</td>
<td>70</td>
</tr>
<tr>
<td>1.34 (0.0528)</td>
<td>34</td>
<td>1.79 (0.0705)</td>
<td>79</td>
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</table>

**Snap ring**
(For adjustment of input shaft front bearing end play)

<table>
<thead>
<tr>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION COLOR</th>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.43 (0.0563)</td>
<td>Green (2)</td>
<td>1.59 (0.0626)</td>
<td>Yellow (2)</td>
</tr>
<tr>
<td>1.51 (0.0594)</td>
<td>White (2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Snap ring**
(For adjustment of input shaft rear bearing end play)

<table>
<thead>
<tr>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION COLOR</th>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.44 (0.0567)</td>
<td>None</td>
<td>1.58 (0.0622)</td>
<td>Brown</td>
</tr>
<tr>
<td>1.51 (0.0594)</td>
<td>Blue</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Thrust plate**
(For adjustment of input shaft 5th speed gear end play)

<table>
<thead>
<tr>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION SYMBOL</th>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION SYMBOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.82 (0.1504)</td>
<td>0</td>
<td>3.98 (0.1567)</td>
<td>6</td>
</tr>
<tr>
<td>3.86 (0.1520)</td>
<td>2</td>
<td>4.02 (0.1583)</td>
<td>7</td>
</tr>
<tr>
<td>3.90 (0.1535)</td>
<td>3</td>
<td>4.06 (0.1598)</td>
<td>8</td>
</tr>
<tr>
<td>3.94 (0.1551)</td>
<td>5</td>
<td>4.10 (0.1614)</td>
<td>9</td>
</tr>
</tbody>
</table>

**Spacer**
(For adjustment of output shaft preload)

<table>
<thead>
<tr>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION SYMBOL</th>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION SYMBOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.86 (0.0339)</td>
<td>86</td>
<td>1.19 (0.0469)</td>
<td>L</td>
</tr>
<tr>
<td>0.89 (0.0350)</td>
<td>92</td>
<td>1.22 (0.0480)</td>
<td>G</td>
</tr>
<tr>
<td>0.92 (0.0362)</td>
<td>92</td>
<td>1.25 (0.0492)</td>
<td>M</td>
</tr>
<tr>
<td>0.95 (0.0374)</td>
<td>95</td>
<td>1.28 (0.0504)</td>
<td>N</td>
</tr>
<tr>
<td>0.98 (0.0386)</td>
<td>98</td>
<td>1.31 (0.0516)</td>
<td>E</td>
</tr>
<tr>
<td>1.01 (0.0398)</td>
<td>01</td>
<td>1.34 (0.0528)</td>
<td>O</td>
</tr>
<tr>
<td>1.04 (0.0409)</td>
<td>04</td>
<td>1.37 (0.0539)</td>
<td>P</td>
</tr>
<tr>
<td>1.07 (0.0421)</td>
<td>07</td>
<td>1.40 (0.0551)</td>
<td>None</td>
</tr>
<tr>
<td>1.10 (0.0433)</td>
<td>J</td>
<td>1.43 (0.0563)</td>
<td>Q</td>
</tr>
<tr>
<td>1.13 (0.0445)</td>
<td>D</td>
<td>1.46 (0.0575)</td>
<td>R</td>
</tr>
<tr>
<td>1.16 (0.0457)</td>
<td>K</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Snap ring (For adjustment of output shaft rear bearing end play)

<table>
<thead>
<tr>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION COLOR</th>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.36 (0.0535)</td>
<td>Yellow</td>
<td>1.55 (0.0610)</td>
<td>White</td>
</tr>
<tr>
<td>1.40 (0.0551)</td>
<td>Green</td>
<td>1.58 (0.0622)</td>
<td>Brown</td>
</tr>
<tr>
<td>1.44 (0.0567)</td>
<td>None</td>
<td>1.63 (0.0642)</td>
<td>Orange</td>
</tr>
<tr>
<td>1.48 (0.0583)</td>
<td>Black</td>
<td>1.68 (0.0661)</td>
<td></td>
</tr>
<tr>
<td>1.51 (0.0594)</td>
<td>Blue</td>
<td></td>
<td></td>
</tr>
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</table>

### Snap ring (For adjustment of output shaft 3rd speed gear end play)

<table>
<thead>
<tr>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION COLOR</th>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.81 (0.1106)</td>
<td>None</td>
<td>2.97 (0.1169)</td>
<td>Green</td>
</tr>
<tr>
<td>2.85 (0.1122)</td>
<td>Blue</td>
<td>3.01 (0.1185)</td>
<td>Black</td>
</tr>
<tr>
<td>2.89 (0.1138)</td>
<td>Brown</td>
<td>3.05 (0.1201)</td>
<td>White</td>
</tr>
<tr>
<td>2.93 (0.1154)</td>
<td>Yellow</td>
<td>3.09 (0.1217)</td>
<td>Orange</td>
</tr>
</tbody>
</table>

### Spacer (For adjustment of center differential case preload)

<table>
<thead>
<tr>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION SYMBOL</th>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION SYMBOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.74 (0.0292)</td>
<td>74</td>
<td>1.04 (0.0409)</td>
<td>04</td>
</tr>
<tr>
<td>0.77 (0.0303)</td>
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<td>1.07 (0.0421)</td>
<td>07</td>
</tr>
<tr>
<td>0.80 (0.0315)</td>
<td>80</td>
<td>1.10 (0.0433)</td>
<td>J</td>
</tr>
<tr>
<td>0.83 (0.0327)</td>
<td>83</td>
<td>1.13 (0.0445)</td>
<td>D</td>
</tr>
<tr>
<td>0.86 (0.0339)</td>
<td>86</td>
<td>1.16 (0.0457)</td>
<td>K</td>
</tr>
<tr>
<td>0.89 (0.0350)</td>
<td>89</td>
<td>1.19 (0.0469)</td>
<td>L</td>
</tr>
<tr>
<td>0.92 (0.0362)</td>
<td>92</td>
<td>1.22 (0.0480)</td>
<td>G</td>
</tr>
<tr>
<td>0.95 (0.0374)</td>
<td>95</td>
<td>1.25 (0.0492)</td>
<td>M</td>
</tr>
<tr>
<td>0.98 (0.0386)</td>
<td>98</td>
<td>1.28 (0.0504)</td>
<td>N</td>
</tr>
<tr>
<td>1.01 (0.0398)</td>
<td>01</td>
<td>1.31 (0.0516)</td>
<td>E</td>
</tr>
</tbody>
</table>

### Spacer (For adjustment of center differential case backlash)

<table>
<thead>
<tr>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION SYMBOL</th>
<th>THICKNESS mm (in)</th>
<th>IDENTIFICATION SYMBOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6 (0.0236)</td>
<td>–</td>
<td>0.9 (0.0354)</td>
<td>–</td>
</tr>
<tr>
<td>0.7 (0.0276)</td>
<td>–</td>
<td>1.0 (0.0394)</td>
<td>–</td>
</tr>
<tr>
<td>0.8 (0.0315)</td>
<td>–</td>
<td>1.1 (0.0433)</td>
<td>–</td>
</tr>
</tbody>
</table>