DISASSEMBLY

Transmission

Special Tool(s)

ST1305-A	Remover, Mainshaft Bearing 308-058 (T77J-7025-H)
ST1303-A	Tube, Bearing Remover/Installer 308-024 (T75L-7025-B)
ST1304-A	Screw, Bearing Removal/Installer Tube 308-092 (T84T-7025-B)
ST1186-A	Holding Fixture, Transmission 307-003 (T57L-500-B)
ST1351-A	Slide Hammer 100-001 (T50T-100-A)
ST2200-A	Remover, Bushing 307-001 (TOOL-1175-AC)

(Continued)

Special Tool(s)

ST2026-A	Puller, 2 Jaw 205-D072 (D80L-1002-L) or equivalent
ST2272-A	Remover, Front Wheel Hub 205-D070 (D93P-1175-B) or equivalent

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DISASSEMBLY (Continued)

Transmission Internal Components — Disassembled View

DISASSEMBLY (Continued)

Item	Part Number	Description
1	7052	Input shaft seal
2	7L172	Shim
3	7025	Input shaft front bearing and cup
4	7017	Input shaft
5	7025	Input shaft pocket bearing
6	—	Input shaft thrust bearing
7	—	Input shaft thrust washer
8	7064	Retaining ring
9	7124	3rd/4th gear synchronizer assembly
10	7107	3rd/4th gear synchronizer blocking ring
11	—	3rd/4th gear synchronizer spring (part of 7124)
12	—	3rd/4th gear synchronizer insert (part of 7124)
13	—	3rd/4th gear synchronizer hub (part of 7124)
14	—	3rd/4th gear synchronizer sleeve (part of 7124)
15	7B340	3rd gear
16	7B369	3rd gear needle bearing
17	—	3rd gear bushing
18	—	Check ball
19	—	Thrust washer
20	—	2nd gear needle bearing
21	7102	2nd gear
22	7175	1st/2nd gear synchronizer inner cone
23	7174	1st/2nd gear synchronizer outer cone
24	7061	Output shaft
25	—	Retaining ring
26	7124	1st/2nd gear synchronizer assembly
27	7107	1st/2nd gear synchronizer blocking ring
28	—	1st/2nd gear synchronizer spring (part of 7124)
29	—	1st/2nd gear synchronizer hub (part of 7124)
30	—	1st/2nd gear synchronizer insert (part of 7124)
31	—	1st/2nd gear synchronizer sleeve (part of 7124)
32	7127	1st gear needle bearing

(Continued)

Item	Part Number	Description
33	7100	1st gear
34	—	Reverse clutch cone
35	7124	Reverse gear synchronizer assembly
36	7107	Reverse gear synchronizer blocking ring
37	—	Reverse gear synchronizer spring (part of 7124)
38	—	Reverse gear synchronizer hub (part of 7124)
39	—	Reverse gear synchronizer insert (part of 7124)
40	—	Reverse gear synchronizer sleeve (part of 7124)
41	—	Retaining ring
42	7N168	Reverse needle bearing
43	7C238	Reverse driven gear
44	—	Reverse gear bushing
45	—	Selector gate
46	7025	Mainshaft rear bearing and cup
47	7K316	Mainshaft 5th gear
48	—	Retaining ring
49	7H150	Output shaft speed (OSS) sensor ring
50	—	Retaining ring
51	7L172	Shim
52	7025	Countershaft front bearing and cup
53	7113	Countershaft
54	7025	Countershaft rear bearing and cup
55	—	Thrust bearing
56	7144	Countershaft 5th gear
57	—	Countershaft 5th gear needle bearing
58	—	Retaining ring
59	7124	5th gear synchronizer assembly
60	7107	5th gear synchronizer blocking ring
61	—	5th gear synchronizer spring (part of 7124)
62	—	5th gear synchronizer hub (part of 7124)
63	—	5th gear synchronizer insert (part of 7124)

(Continued)

DISASSEMBLY (Continued)

Item	Part Number	Description
64	—	5th gear synchronizer sleeve (part of 7124)
65	—	5th gear clutch cone
66	—	Retaining ring
67	—	Reverse idler gear support
68	7140	Reverse idler gear shaft
69	7141	Reverse idler gear
70	7E169	Reverse idler gear needle bearing

Disassembly

NOTE: If any roll pins, retaining rings or bearings are removed during disassembly, install new components. Install bearings and bearing cups as a set.

1. ⚠ **WARNING: Make sure protective eyewear is in place.**

   Clean the transmission exterior with solvent and dry with compressed air. During disassembly, clean all components with solvent and dry with compressed air.

2. Attach the transmission to the special tool.

3. Remove the output flange nut, washer and oil seal.

DISASSEMBLY (Continued)

4. Using the special tool, remove the output flange.

5. **NOTE:** Position a drain pan under the transmission.

   Remove the case plug, then rotate the transmission to a horizontal position.

6. Using the special tool, remove the extension housing fluid seal.

7. Remove the output shaft speed (OSS) sensor.

8. Remove the 12 bolts.

9. Using a flat-blade screwdriver, separate the extension housing, then remove the gearshift offset lever from the transmission case.
   - Remove and discard the split pin from the gearshift offset lever during removal.

DISASSEMBLY (Continued)

10. Remove the 5th/reverse gear lockout bolt.

11. Remove the snap ring.

12. **NOTE:** Always install a new bearing race if installing a new bearing.

    Remove the output shaft bearing.

    - Inspect the bearing, install a new bearing if necessary.

13. Using the special tool, remove the output shaft bearing race.

14. Remove the bearing race spacer.

15. Remove the OSS sensor tone wheel retaining ring.

16. Using the special tools, remove the OSS sensor tone wheel.

DISASSEMBLY (Continued)

17. Remove the OSS sensor tone wheel check ball.

18. Remove and discard the 5th gear synchronizer retaining ring.

19. Using a 5/32-inch drift and a hammer, remove and discard the pin from the 5th gear shift fork.

20. **NOTE:** A flat-bladed screwdriver may aid in removal.

    Using the special tool, remove the 5th gear shift fork, synchronizer assembly, synchronizer cone and the 5th gear as an assembly.

21. Remove the 5th gear clutch cone.

22. Remove the 5th gear synchronizer blocking ring.
    - Inspect the blocking ring for wear or damage. Install new blocking rings as necessary.

DISASSEMBLY (Continued)

23. Remove the 5th gear synchronizer sleeve from the synchronizer hub.

24. Remove the synchronizer inserts and the springs.

25. Remove the 5th gear needle bearings and the thrust washer.
    - Inspect the needle bearings for wear or damage. Install new bearings as necessary.

26. Remove the check ball.

27. Using a 5/32-inch drift and a hammer, drive out the split pin, then remove the 5th/reverse lever fork. Discard the split pin.

28. Remove the main shift rail and the 2 plastic spacers.

DISASSEMBLY (Continued)

29. Remove and discard the 2 plastic spacers.

30. Using a 5/32-inch drift and a hammer, drive out the split pin, then remove the 3rd/4th shift finger. Discard the split pin.

31. Using a 5/32-inch drift and a hammer, drive out the split pin, then remove the 1st/2nd shift finger. Discard the split pin.

32. Remove the bolts and the shift interlock plate.

33. Using a magnet, remove the interlock pins.
    - One lock pin in the center rail, 2 between the rails.

34. Remove the 5th/reverse gear lockout side bolt.

DISASSEMBLY (Continued)

35. Remove the 5th/reverse gear lockout top bolt, then remove the seal, arm and spring.

36. ⚠ **CAUTION: Do not remove all the bolts while in the horizontal position.**

    Remove the bolts.

    - Rotate the transmission to a horizontal position. Remove 12 bolts, leaving 2 opposing bolts in. Rotate the transmission to a vertical position, then remove the remaining 2 bolts.

37. Carefully pry the clutch housing from the transmission main case.

38. Remove the transmission main case from the clutch housing.
    - The countershaft bearing will remain in the housing. Lightly tap the bearing to remove.
    - Inspect the bearing and install a new one if necessary.

DISASSEMBLY (Continued)

39. Remove the 3 detent plugs.

40. Remove the 3 detent springs.

41. Remove the 3 detents.

42. Using a jack and a block of wood, lift the mainshaft 13 mm (0.50 in) upward, then tilt the countershaft outward and remove the countershaft.

DISASSEMBLY (Continued)

43. While holding the mainshaft, release the jack and remove the mainshaft and shift assembly.

44. Remove the input shaft. For input shaft disassembly, refer to Input Shaft and Bearing in this section.

45. Carefully remove the shift rails and shift forks from the main shaft. For gearshift rail and fork disassembly, refer to Gearshift Rail and Fork in this section.

46. Remove the reverse idler shaft bolt. Remove and discard the seal.

47. Remove the reverse idler gear assembly.

48. Remove the reverse idler gear from the shaft.
    - Inspect the gear for wear or damage. Install a new gear as necessary.

DISASSEMBLY (Continued)

49. Remove the reverse idler gear bearing.
    - Inspect the bearing for wear or damage. Install new bearings as necessary.

50. Release the clip and remove the clutch slave cylinder connector.

51. Remove the clutch slave cylinder. For additional information, refer to Section 308-02.

52. Remove and discard the plastic retainer.

53. Disassemble the clutch housing.
    1 Remove the countershaft bearing cup and shim.
    2 Remove the input shaft bearing cup and shim.
    3 Remove the input shaft seal.
      - Carefully pry out from the inside of the case.

54. Remove the rear countershaft bearing.

DISASSEMBLY (Continued)

55. Remove the rear countershaft bearing cup and the rear output shaft bearing cup.