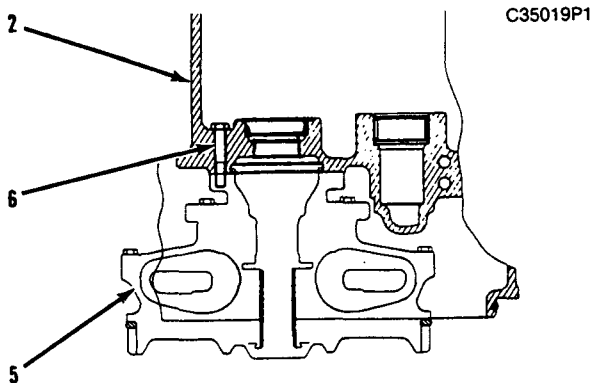


26. Lower the temperature of bearing (21) and install it in the converter impeller.
27. Install gear (20) and bolts (19) on the converter impeller.
28. If seal ring (22) was removed, replace it with a new one.
29. Put the converter impeller and carrier (18) in position in a press and press carrier (18) into the converter impeller as shown.
30. Put retaining ring (17) in position to hold the carrier (18) in position.
31. Install stator (15) and install pins (16). Install plates (14) and bolts (13).
32. Connect converter impeller (11) and rotating housing with bolts (9).
33. Turn the torque converter over and install cap (8) and retaining ring (7).



34. Position torque converter and then put cover (2) in position over the torque converter assembly and install six bolts (6) that hold it.

NOTICE

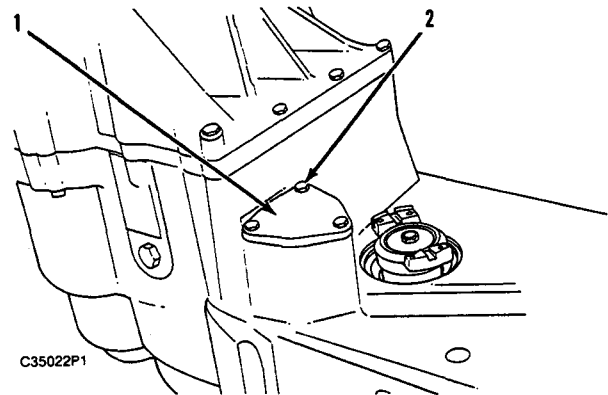
During the assembly of cover (2) and case (4), be sure the three clutch groups and the input shaft properly engage their respective bores or bearing. Do not force the cover and case together with the bolts, damage could be the result.

NOTE: Use a good gasket maker between cover (2) and case (4).

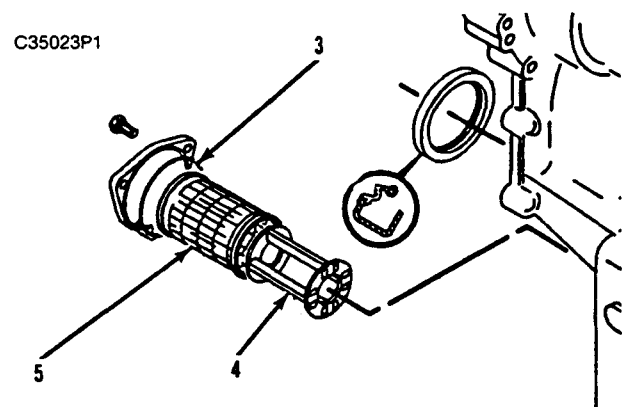
35. Fasten the two lifting brackets. Using a hoist, position cover (2) over and onto three clutch groups and the input shaft. Install six bolts (3) and eight bolts (1).

Transmission Magnetic Filter

Remove And Install Transmission Magnetic Filter



1. Remove bolts (2) and magnetic filter cover (1).



2. Remove and inspect O-ring seal (3) on the magnetic filter cover.
3. Remove magnetic filter (4) and suction screen (5) from the housing.

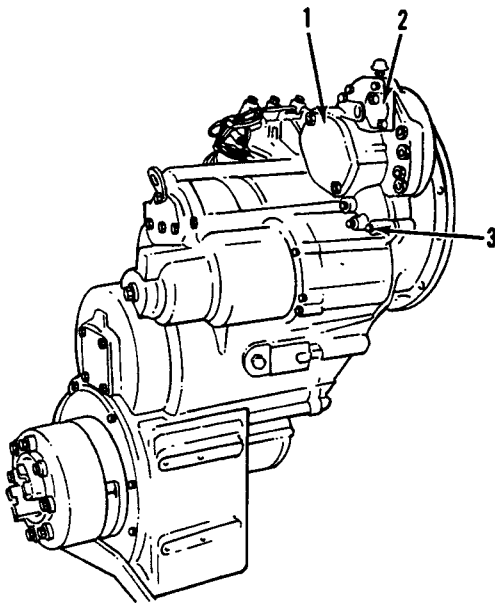
NOTE: The following steps are for installation of the transmission magnetic filter.

4. Install a new suction screen (5) and a new magnetic filter (4) in the housing if necessary.
5. Install a new O-ring seal (3) on the filter cover if necessary.
6. Install filter cover (1) with the bolts (2) that hold it.

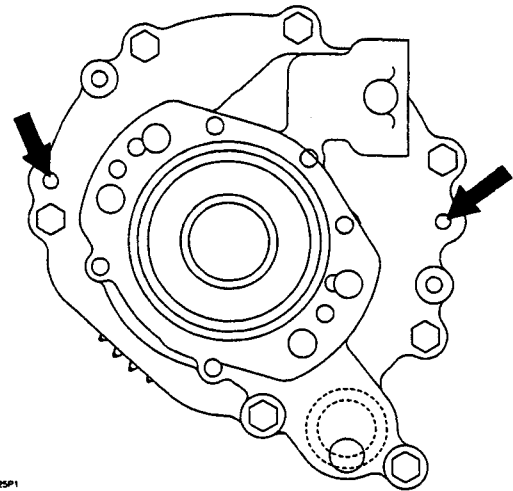
Transmission Oil Pump

Remove And Install Transmission Oil Pump

C35024P2



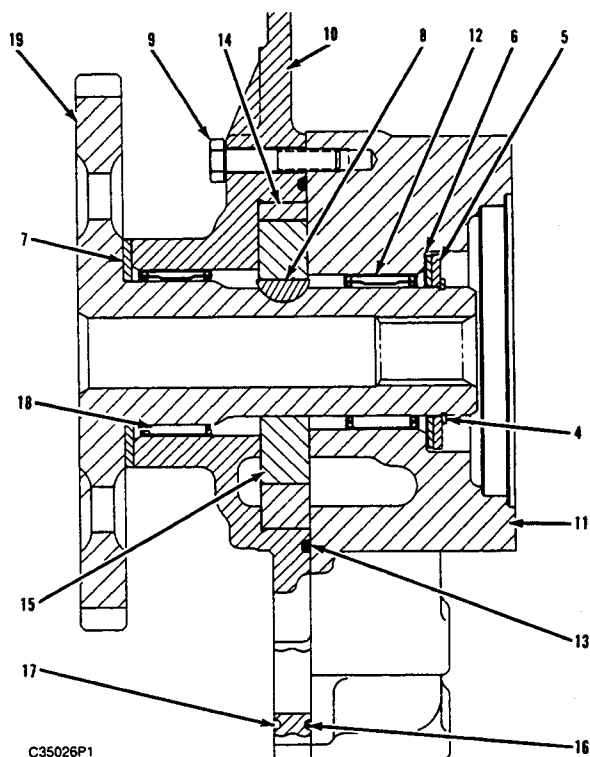
1. Remove covers (1) and (2) from the transmission oil pump. Remove seven bolts (3) that hold the transmission oil pump to the transmission case.



2. Install two bolts (3) and use them as forcing screws to separate the pump from the transmission housing. Remove the transmission oil pump.

NOTE: Install in the reverse order.

Disassemble And Assemble Transmission Oil Pump (Type 1)



Type 1 Pump Illustrated

1. Remove snap ring (4) and steel washer (5) from the transmission oil pump housing.
2. Remove thrust washer (6) from the transmission oil pump housing.
3. Put the transmission oil pump in position on a press and then press the shaft and gear from the pump housing.
4. Remove thrust washer (7) and if necessary, key (8) from the gear shaft.
5. Remove seven bolts (9) that hold pump housings (10) and (11) together.
6. Keep housings (10) and (11) together. Turn the housings over so that housing (11) is facing upward. Remove housing (11).
7. Inspect bearing (12). Remove bearing (12) from the housing (11) only if necessary.
8. Remove O-ring seals (13) and (16) from the housing (10). Remove gerotor gears (14) and (15) from the housing (10).

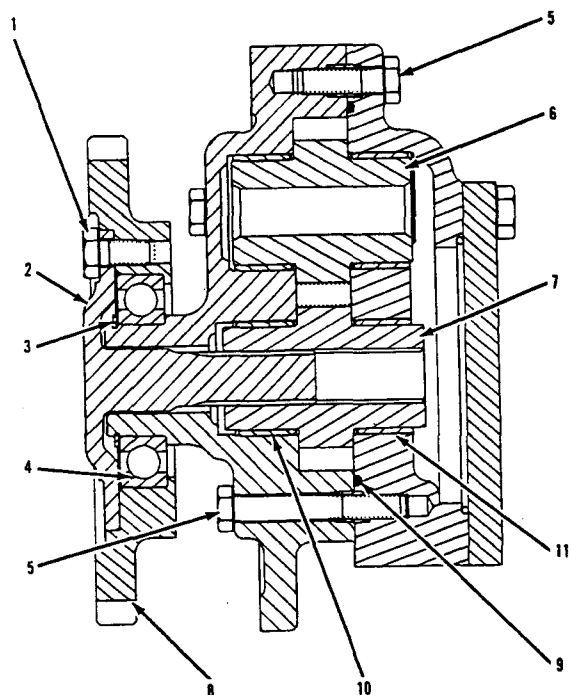
9. Turn housing (10) over and remove O-ring seal (17). Inspect bearing (18). Remove bearing (18) from the housing (10) only if necessary.

10. Inspect gear and shaft (19).

NOTE: The following steps are for the assembly of the transmission oil pump.

11. Install O-ring seal (17) on housing (10). If bearing (18) was removed, lower the temperature of bearing (18) and install it back into it's original position.
12. Install thrust washer (7) and key (8) on gear shaft.
13. Install gerotor gears (14) and (15) in housing (10). Install O-ring seals (13) and (16) in housing (10).
14. Install housing (10) on the gear and shaft assembly. Make sure that key (8) is in alignment with the slot in the gerotor gear.
15. If bearing (12) was removed, lower the temperature of bearing (12) and install it back into it's original position.
16. Install housing (11) on housing (10) with seven bolts (9) that hold the housings together.
17. Install thrust washer (6) in the transmission pump housing.
18. Install steel washer (5) and then install snap ring (4) in the transmission oil pump housing.
19. Put the transmission oil pump in position on the transmission case. Install bolts (3) and then install covers (1) and (2) on the transmission oil pump.

Disassemble And Assemble Transmission Oil Pump (Type 2)

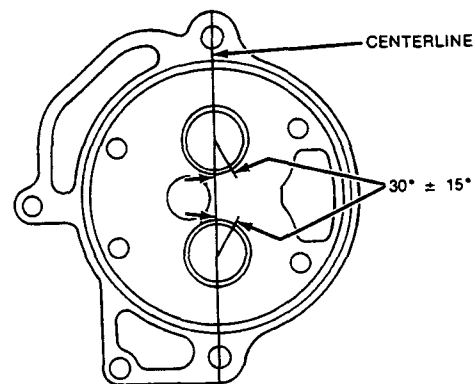


C35034P1

Type 2 Pump Illustrated

1. Remove bolts (1) and plate, then remove input shaft (2). Remove snap ring (3), then remove gear (8) and bearing (4). Remove bearing (4) from gear (8) if necessary.
2. Remove all bolts (5) and separate pump housings. Remove gears (6) and (7). Remove housing seal (9) and inspect.
3. Remove bearings (10) and (11) from the two housings if necessary.

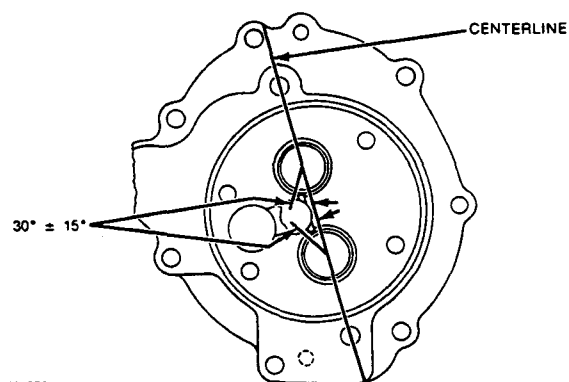
NOTE: Assemble in the reverse order. If bearings (10) and (11) were removed, read the following instructions.



B56937P2

Example of Bearing Installation in Housing

NOTE: Install bearings (10) in the housing. The bearing joint is $30^\circ \pm 15^\circ$ from the centerline as shown. The depth from the top of the bearing to the housing surface is 1.5 ± 0.5 mm ($.059 \pm .020$ in.)



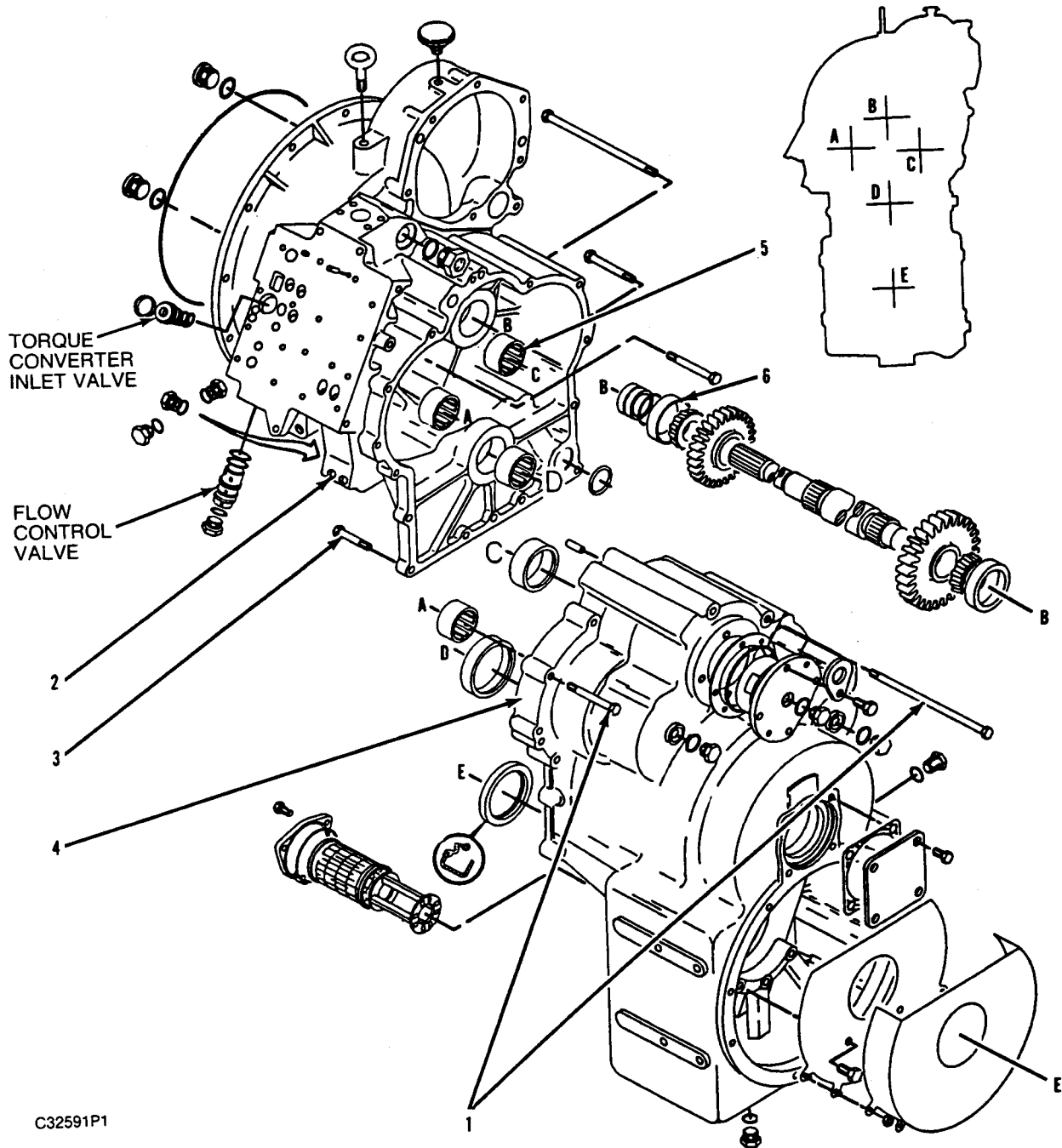
B56945P2

Example of Bearing Installation in End Housing

NOTE: Install bearings (11) in the end housing. The bearing joint is $30^\circ \pm 15^\circ$ from the centerline as shown. The depth from the top of the bearing to the end housing surface is 1.5 ± 0.5 mm ($.059 \pm .020$ in.)

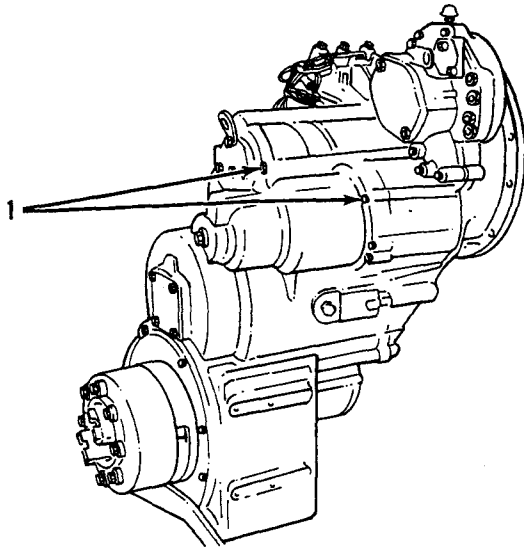
Transmission

Disassemble And Assemble Transmission



1. Remove the torque converter relief valve and the flow control valve if necessary.

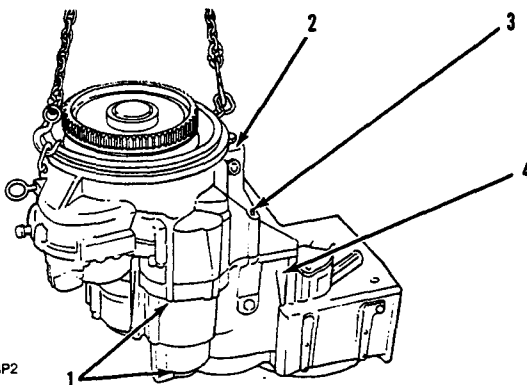
C35024P1



2. Remove eight bolts (1) and then put the transmission in the position shown in the next illustration.

NOTE: For easy disassembly and assembly of cover (2) and case (4), case (4) should be horizontal and level.

C35018P2

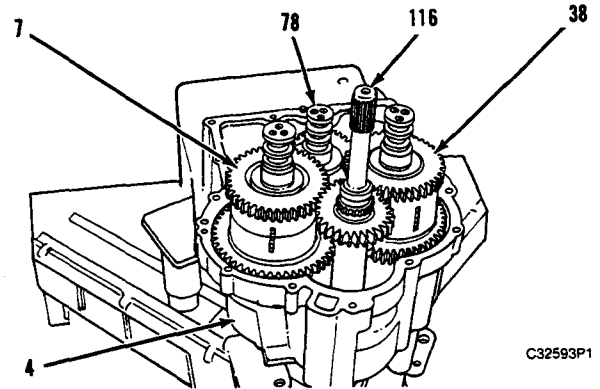


3. Fasten the two lifting brackets and a hoist to the flange of the torque converter cover. Remove six

bolts (3) that holds cover (2) and case (4) together. Lift the torque converter and cover (2) off of case (4).

NOTE: It may be necessary to tap on cover (2) with a plastic mallet to get cover (2) and case (4) to separate.

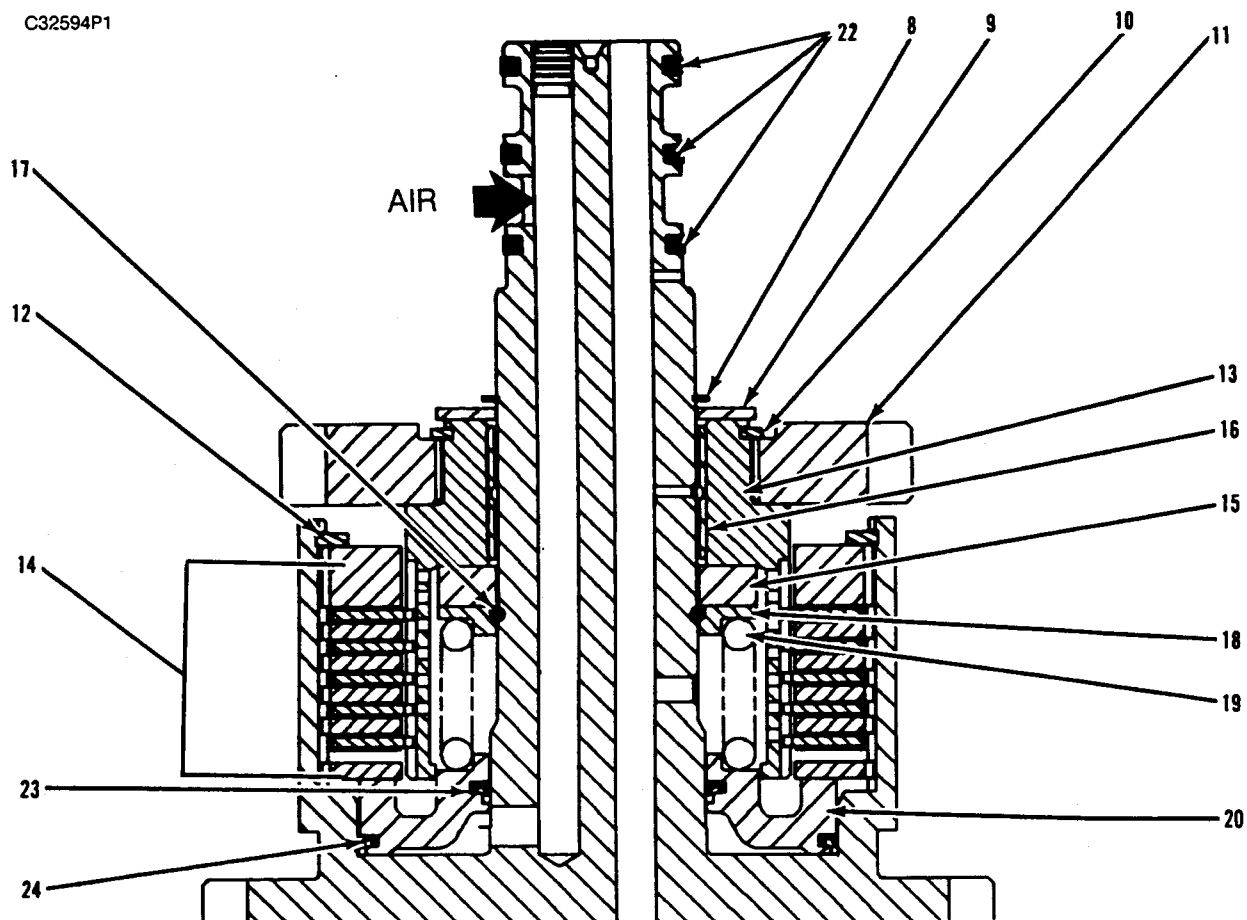
4. Remove three bearings (5) and cup (6) from cover (2).



C32593P1

5. Remove forward low and forward high clutch group (7) from case (4). The weight of the forward low and forward high clutch is 60 lbs. (27.24 kg).

C32594P1



Disassembly of Forward Low Clutch Illustrated

NOTE: Disassemble the forward low clutch. The same disassembly procedure will be used for the forward high clutch and the reverse clutch.

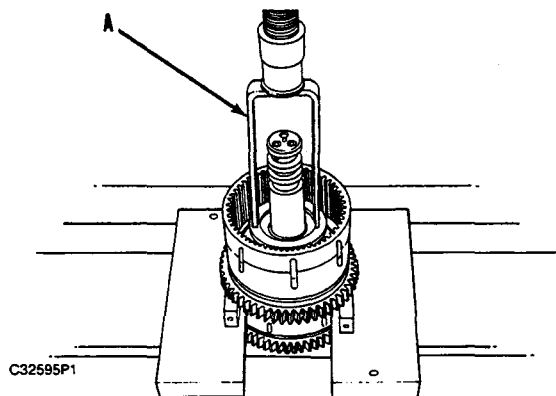
6. Remove snap ring (8) and thrust washer (9). Lift gear (11) and hub (13) out of the clutch together. Remove snap ring (10) and gear (11) from hub (13) only if necessary.

7. Remove bearing (16) from hub (13) only if necessary.

NOTE: Thrust washer (15) may have stuck to hub (13).

8. Remove thrust washer (15).

9. Remove large retaining ring (12) and remove plates and discs (14).



WARNING

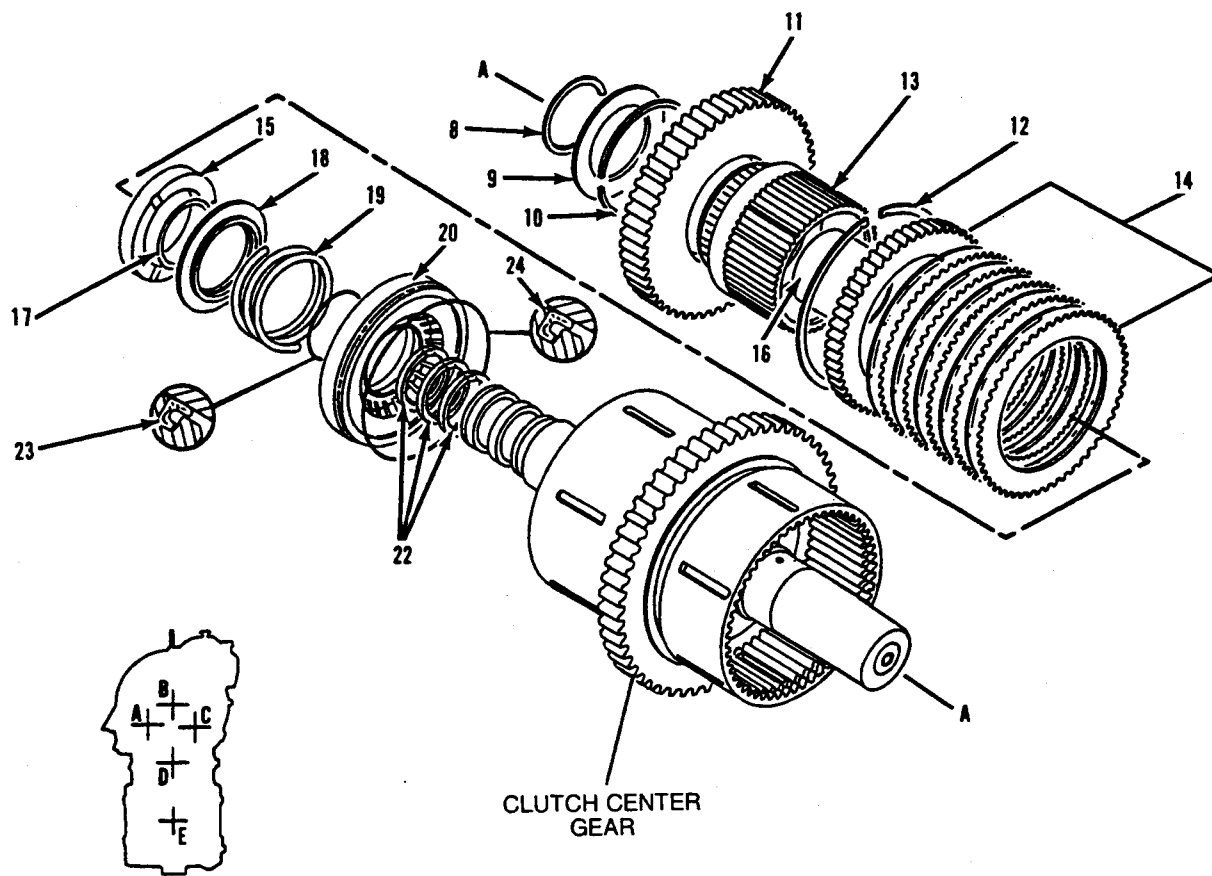
To prevent personal injury, release or compress the spring slowly. Failure to follow these instructions could cause the spring force to release rapidly and cause personal injury.

10. Put the clutch in a press, with tooling (A) compress spring (19) and remove retaining ring (17). Carefully release spring pressure and remove spring retainer (18) and spring (19).

WARNING

When removing the piston with air pressure, do not exceed 90 psi. Be sure to position a shop towel and your hand over the piston to prevent it from coming out of the bore too quickly. Be sure to wear eye protection.

11. Remove piston (20) by applying air pressure to the proper passage. Remove lip seals (23) and (24) from piston (20).
12. Remove three seal rings (22) from the shaft.

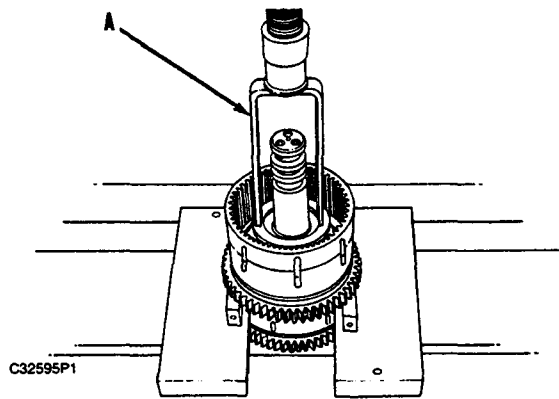


C32596P1

Assembly of Forward Low Clutch Illustrated

NOTE: Assemble the forward low clutch. The same assembly procedure will be used for the forward high clutch and the reverse clutch.

- 13.** Install three seal rings (22) on the shaft.
- 14.** Install lip seals (23) and (24) on piston (20) as illustrated, with lip toward the clutch center gear.
- 15.** Install piston (20) into the clutch using the piston installation tool.

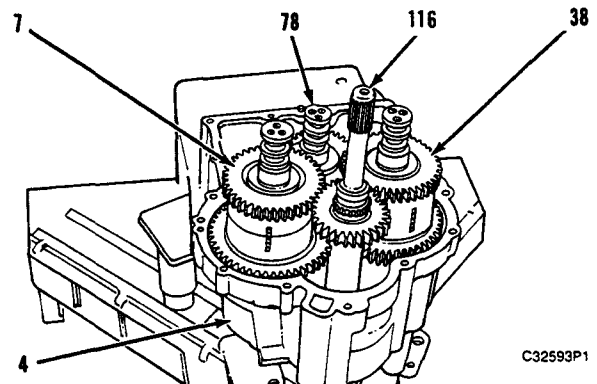


! WARNING

To prevent personal injury, release or compress the spring slowly. Failure to follow these instructions could cause the spring force to release rapidly and cause personal injury.

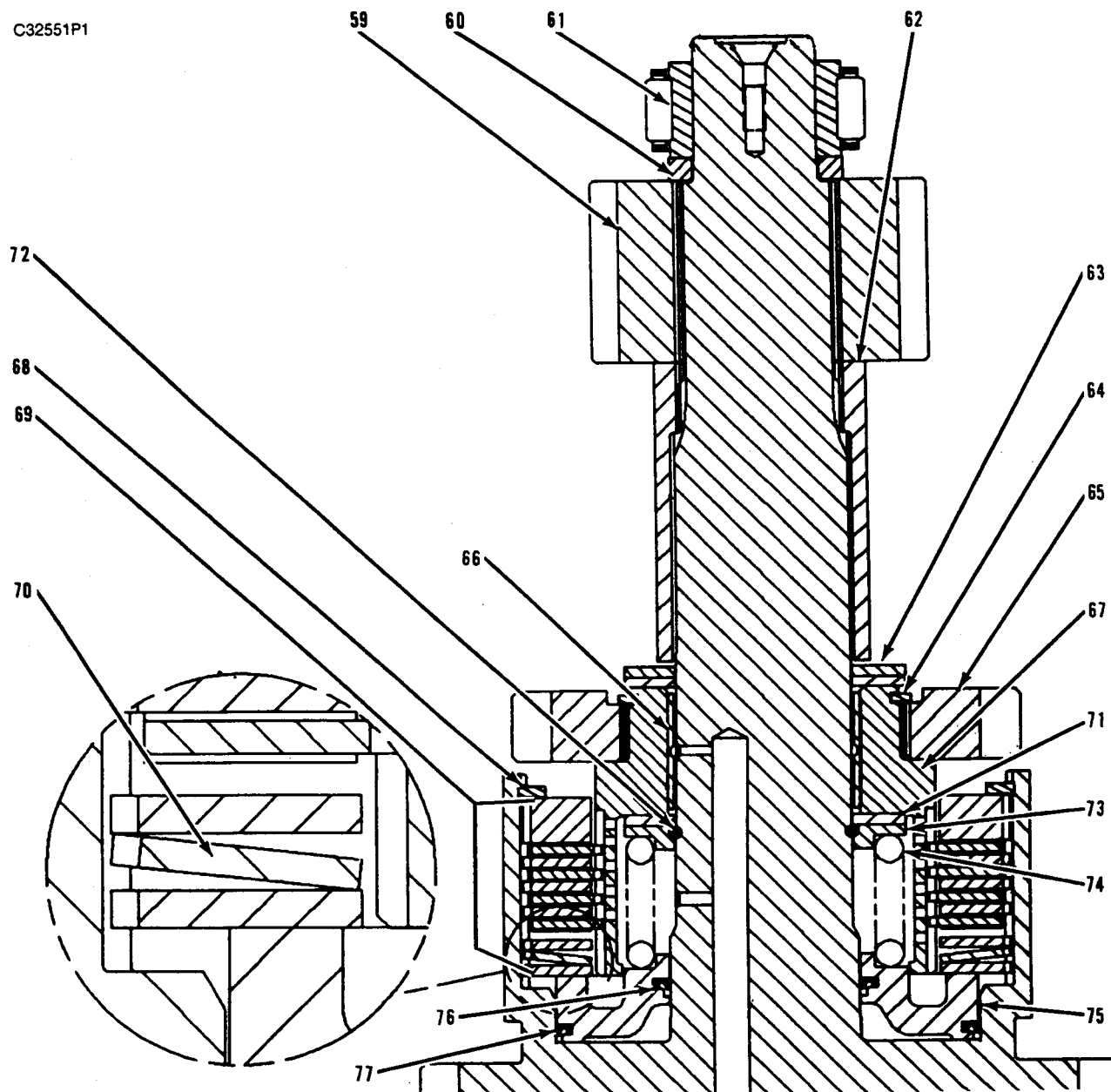
16. Position spring (19) and spring retainer (18) into the clutch. Position the clutch in a press, use tooling (A) and compress spring (19) until retaining ring (17) can be installed.
17. Install thrust washer (15). Install clutch plates and friction disc (14). Starting with a plate first and then a friction disc, repeating plate and disc until all plates and discs are installed. Ending the clutch plate and friction disc stack with the thick end plate.
18. Install large retaining ring (12).
19. Install bearing (16) in hub (13) if it was removed. Install hub (13), gear (11) and snap ring (10).
20. Install thrust washer (9) and snap ring (8).
21. Disassemble and Assemble forward high clutch.

NOTE: Put forward low and forward high clutch group (7) aside and go to the next step.



22. Remove reverse and second speed clutch group (38) from housing (4). The weight of the reverse and second speed clutch is 70 lbs. (31.78 kg).
23. Disassemble and Assemble reverse clutch.

C32551P1



Disassemble Second Speed Clutch

NOTE: Disassemble the second speed clutch.

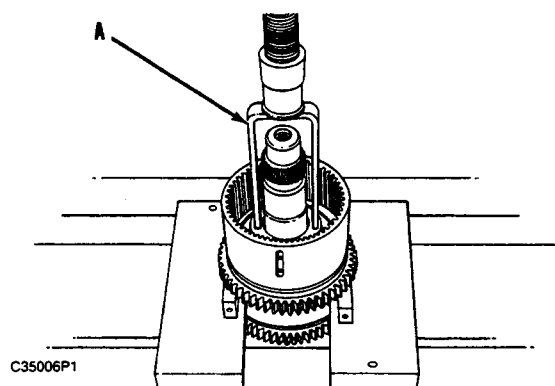
- 24.** Use a puller and remove gear (59), spacer (60) and bearing (61) all at the same time.
- 25.** Remove spacer (62) and two thrust washers (63).

- 26.** Lift gear (65) and hub (67) out of the clutch together. Remove snap ring (64) and gear (65) from hub (67) only if necessary.

- 27.** Remove bearing (66) from hub (67) only if necessary.

NOTE: Thrust washer (71) may have stuck to hub (67).

28. Remove thrust washer (71).
29. Remove large retaining ring (68) and remove plates and discs (69) with disc spring (70).



! WARNING

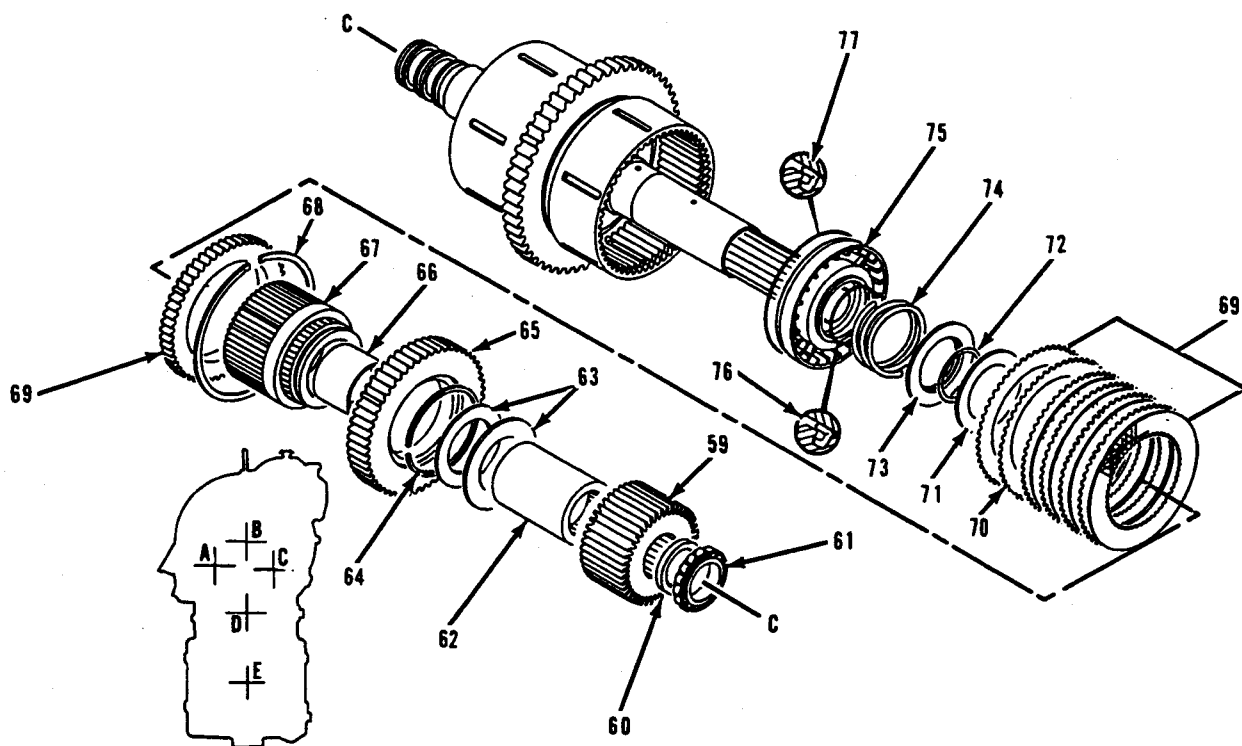
To prevent personal injury, release or compress the spring slowly. Failure to follow these instructions could cause the spring force to release rapidly and cause personal injury.

30. Put the clutch in a press, with tooling (A) compress spring (74) and remove retaining ring (72). Carefully release spring pressure and remove spring retainer (73) and spring (74).

! WARNING

When removing the piston with air pressure, do not exceed 90 psi. Be sure to position a shop towel and your hand over the piston to prevent it from coming out of the bore too quickly. Be sure to wear eye protection.

31. Remove piston (75) by applying air pressure to the proper passage. Remove lip seals (76) and (77) from piston (75).

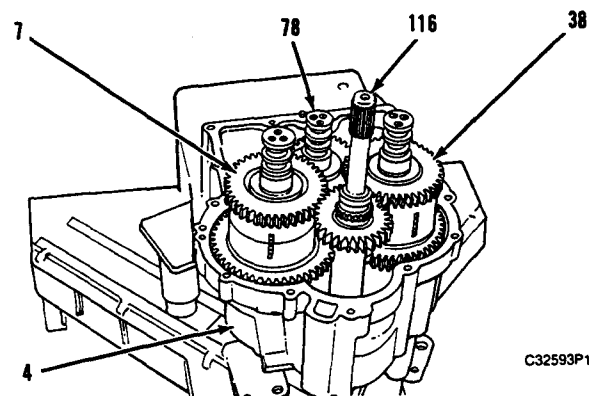
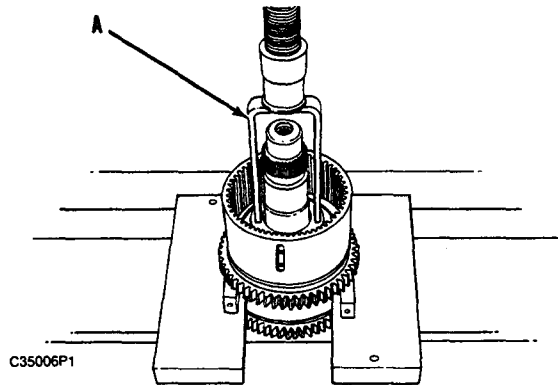


C35001P1

Assemble Second Speed Clutch

NOTE: Assemble the second speed clutch. Lubricate all clutch parts with a light coat of clean oil.

- 32.** Install lip seals (76) and (77) on piston (75) as illustrated, with lip toward the clutch center gear.
- 33.** Install piston (75) into the clutch using the piston installation tool.



⚠ WARNING

To prevent personal injury, release or compress the spring slowly. Failure to follow these instructions could cause the spring force to release rapidly and cause personal injury.

- 34.** Position spring (74) and spring retainer (73) into the clutch. Position the clutch in a press, use tooling (A) and compress spring (74) until retaining ring (72) can be installed.

NOTICE

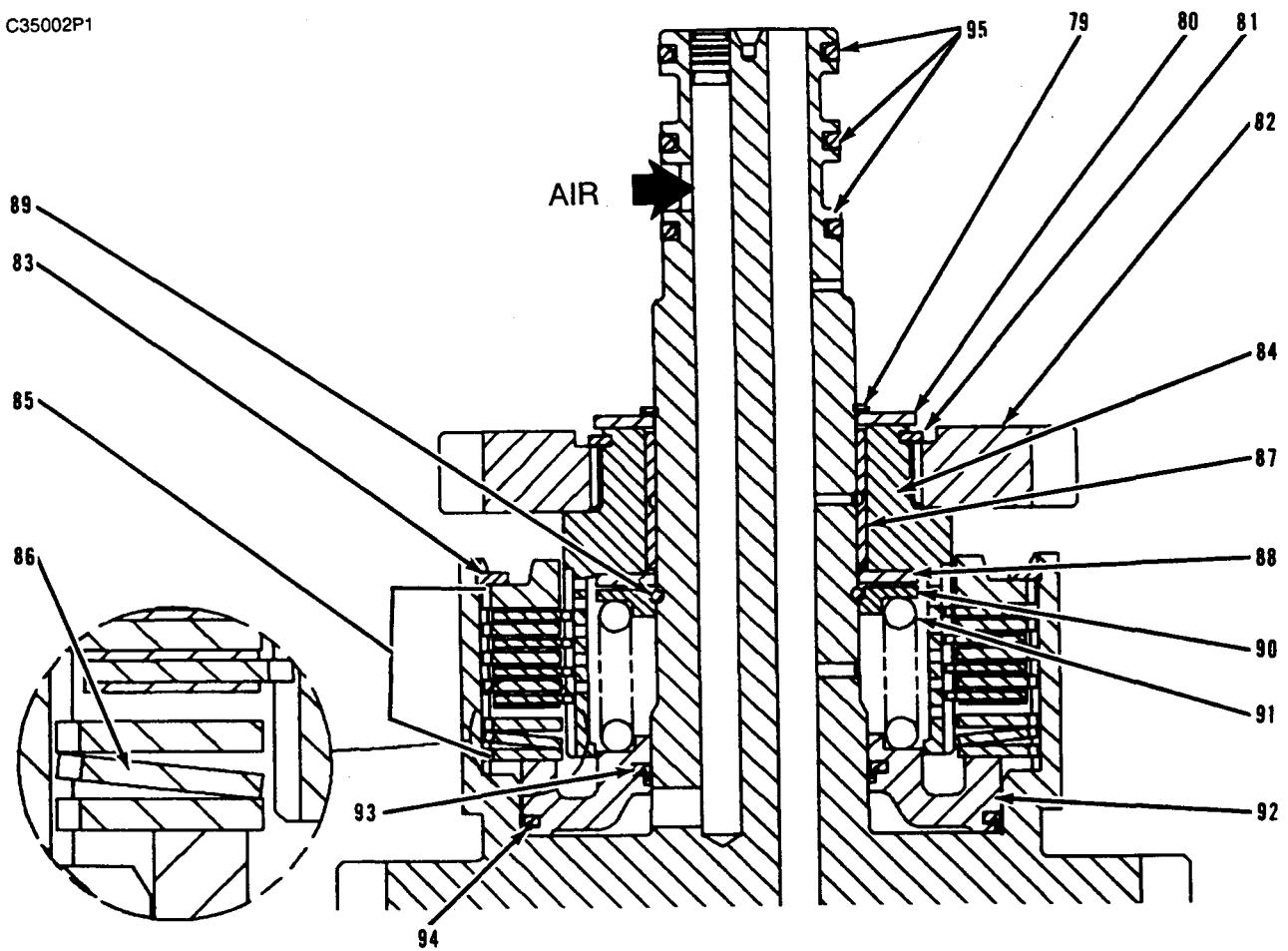
Disc spring (70) must be assembled as shown or internal transmission damage will result.

- 35.** Install thrust washer (73). Install disc spring (70), clutch plates and friction disc (69). Starting with a plate, then disc spring (70) then a second plate. Next is a friction disc, repeating plate and disc until all plates and discs are installed. Ending the clutch plate and friction disc stack with the thick end plate.
- 36.** Install large retaining ring (68).
- 37.** Install bearing (66) in hub (67) if it was removed. Install hub (67), gear (65) and snap ring (64).
- 38.** Install thrust washers (63) and spacer (62).
- 39.** Install gear (59), spacer (60) and bearing (61).

NOTE: Put reverse and second speed clutch group (38) aside and go to the next step.

- 40.** Remove third and first speed clutch group (78) from case (4). The weight of the third and first speed clutch is 110 lbs. (49.94 kg).

C35002P1



Disassemble Third Speed Clutch

NOTE: Disassemble the third speed clutch.

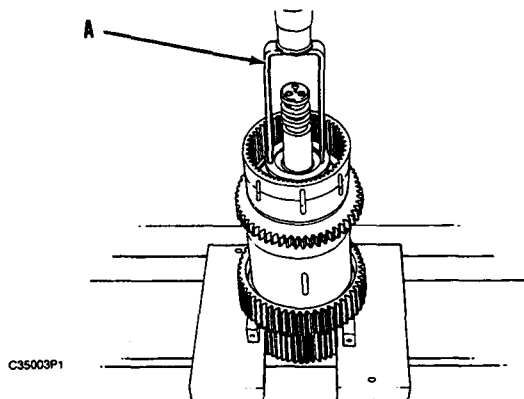
41. Remove snap ring (79) and thrust washer (80). Lift gear (82) and hub (84) out of the clutch together. Remove snap ring (81) and gear (82) from hub (84) only if necessary. Remove bearing (87) from hub (84) only if necessary.

42. Remove large retaining ring (83) and remove plates and discs (85) with disc spring (86).

NOTE: Thrust washer (88) may stick to hub (84).

43. Remove thrust washer (88).

44. Remove bearing (87) from hub (84) only if necessary.



! WARNING

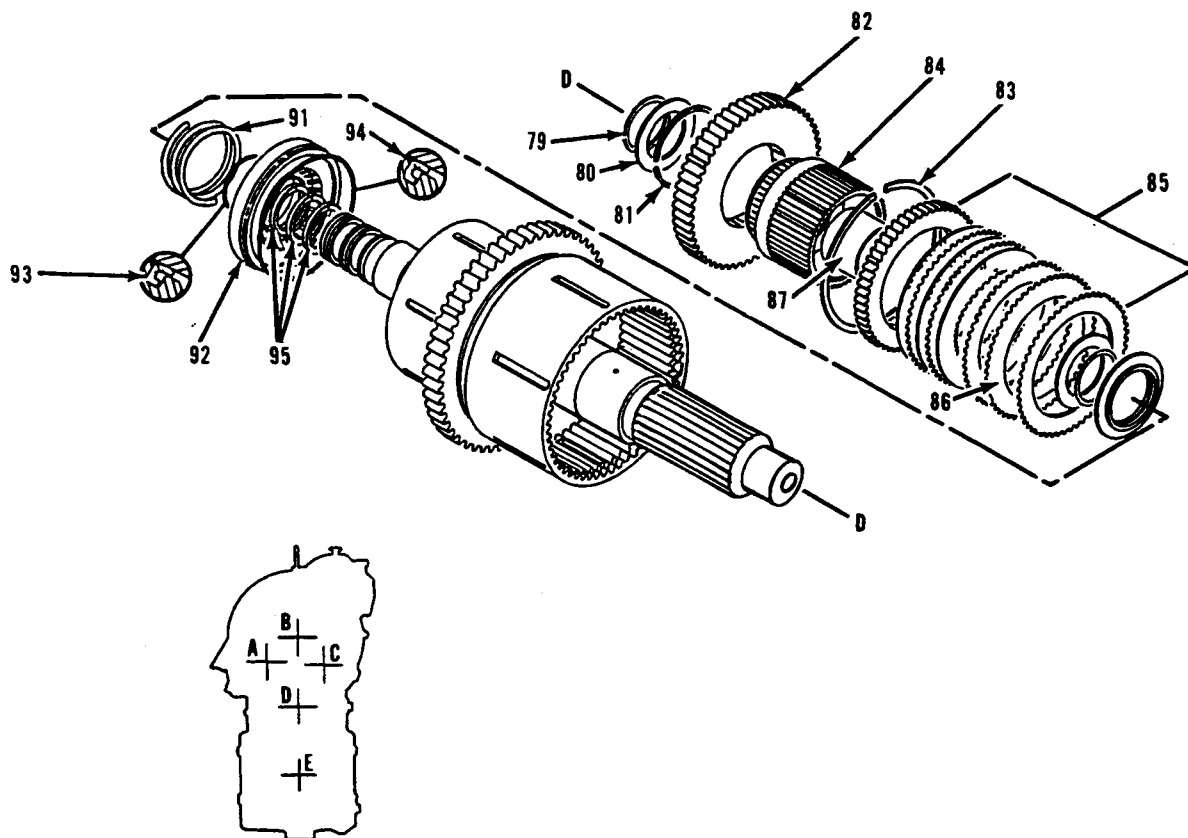
To prevent personal injury, release or compress the spring slowly. Failure to follow these instructions could cause the spring force to release rapidly and cause personal injury.

- 45.** Put the third speed clutch in a press, with tooling (A) compress spring (91) and remove retaining ring (89). Carefully release spring pressure and remove spring retainer (90) and spring (91).

! WARNING

When removing the piston with air pressure, do not exceed 90 psi. Be sure to position a shop towel and your hand over the piston to prevent it from coming out of the bore too quickly. Be sure to wear eye protection.

- 46.** Remove piston (92) by applying air pressure to the proper passage. Remove lip seals (93) and (94) from piston (92).
- 47.** Remove three seal rings (95) from shaft.

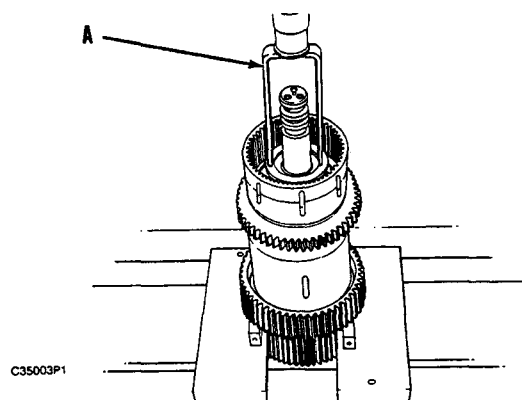


C35004P1

Assemble Third Speed Clutch

NOTE: Assemble the third speed clutch. Lubricate all clutch parts with a light coat of clean oil.

- 48.** Install lip seals (93) and (94) on piston (92) as illustrated, with lip toward the clutch center gear.
- 49.** Install piston (92) into the clutch using the piston installation tool.



WARNING

To prevent personal injury, release or compress the spring slowly. Failure to follow these instructions could cause the spring force to release rapidly and cause personal injury.

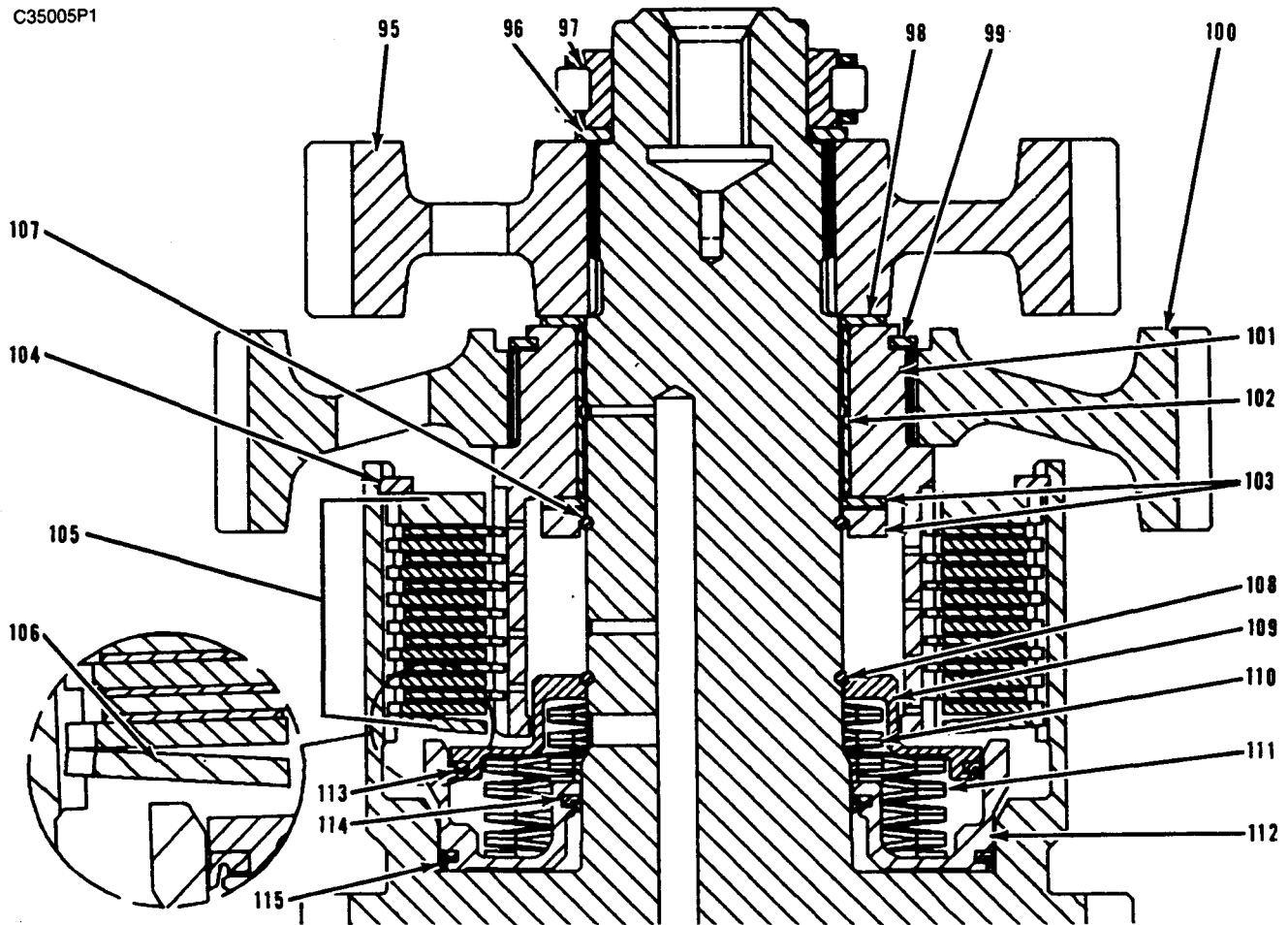
- 50.** Position spring (91) and spring retainer (90) into the clutch. Position the clutch in a press, use tooling (A) and compress spring (91) until retaining ring (89) can be installed.
-

NOTICE

Disc spring (86) must be assembled as shown or internal transmission damage will result.

- 51.** Install thrust washer (88). Install disc spring (86), clutch plates and friction disc (85). Starting with a plate, then disc spring (86) then a second plate. Next is a friction disc, repeating plate and disc until all plates and discs are installed. Ending the clutch plate and friction disc stack with the thick end plate.
- 52.** Install large retaining ring (83).
- 53.** Install bearing (87) in hub (84) if it was removed. Install hub (84), gear (82) and snap ring (81).
- 54.** Install thrust washer (80) and snap ring (79).

C35005P1



Disassemble First Speed Clutch

NOTE: Disassemble the first speed clutch.

55. Using two pry bars between gears (100) and (95), remove gear (95), thrust washer (96) and bearing (97) as a group.

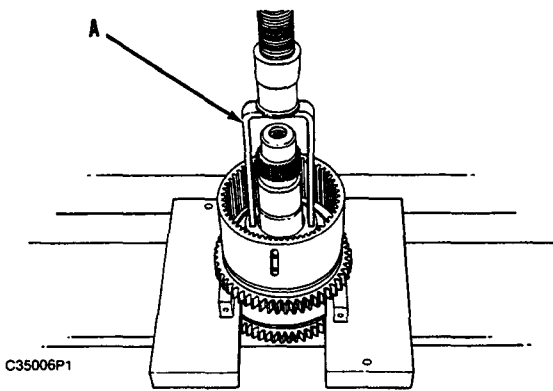
NOTE: Thrust washer (98) may stick to gear (95).

56. Remove thrust washer (98), snap ring (99) and gear (100). Remove hub (101). Remove two thrust washers (103).

57. Remove bearing (102) from hub (101) only if necessary.

58. Remove large retaining ring (104) and remove plates and discs (105) with disc spring (106).

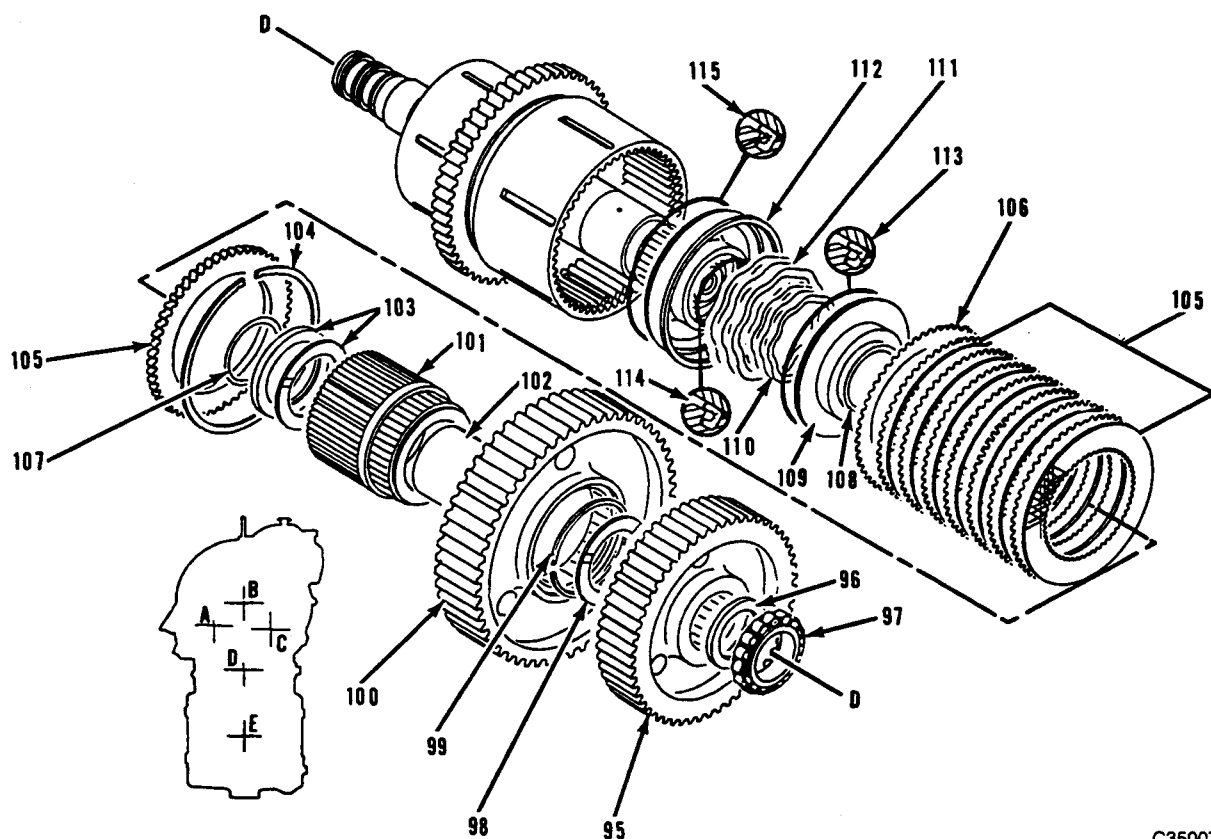
59. Remove retaining ring (107).



⚠ WARNING

To prevent personal injury, release or compress the spring slowly. Failure to follow these instructions could cause the spring force to release rapidly and cause personal injury.

- 60.** Put the first speed clutch in a press, with tooling (A) compress wave springs (110) and (111), then remove retaining ring (108). Carefully release wave spring pressure and remove balance piston (109).
- 61.** Remove wave springs (110) and (111). Remove piston (112). Remove lip seals (114), (115) and from piston (112). Remove lip seal (113) from balance piston (109).

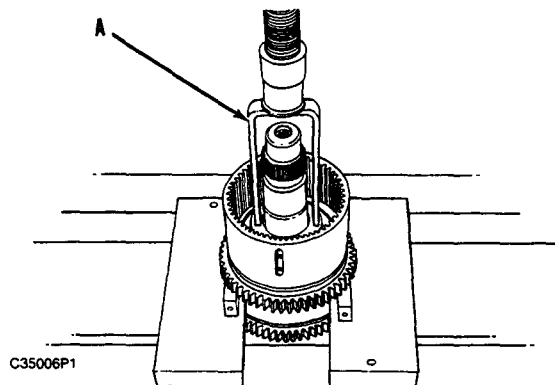


C35007P1

Assemble First Speed Clutch

NOTE: Assemble the first speed clutch. Lubricate all clutch parts with a light coat of clean oil.

- 62.** Install lip seals (114) and (115) on piston (112) as illustrated, with lip toward the clutch center gear. Install piston (112) into the clutch.
- 63.** Install wave springs (110) and (111). Install lip seal (113) on balance piston (109) as illustrated, with lip toward the clutch center gear.



⚠ WARNING

To prevent personal injury, release or compress the spring slowly. Failure to follow these instructions could cause the spring force to release rapidly and cause personal injury.

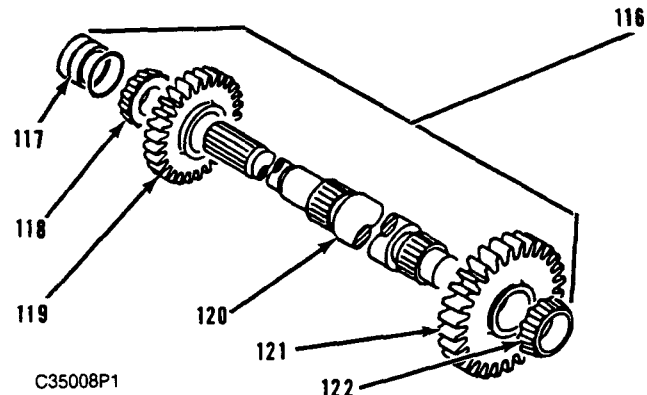
64. Position the clutch in a press, use tooling (A) and compress wave springs (110) and (111) until retaining ring (108) can be installed.
65. Install retaining ring (107) and thrust washers (103).
66. Install bearing (102) in hub (101) if it was removed. Install hub (101).

NOTICE

Disc spring (106) must be assembled as shown or internal transmission damage will result.

67. Install disc spring (106), clutch plates and friction disc (105). Start with disc spring (106) first, then a plate and a friction disc, repeating plate and disc until all plates and discs are installed. Ending the clutch plate and friction disc stack with the thick end plate.
68. Install large retaining ring (104).
69. Install gear (100), snap ring (99) and thrust washer (98), gear (95), thrust washer (96) and bearing (97).

NOTE: Put third and first speed clutch group (78) aside and go to the next step.

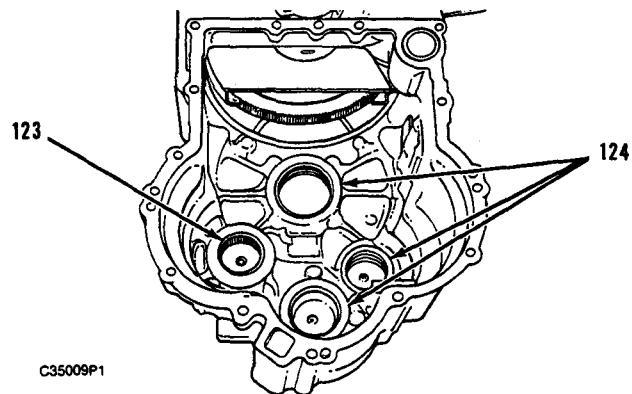


Input Shaft Assembly

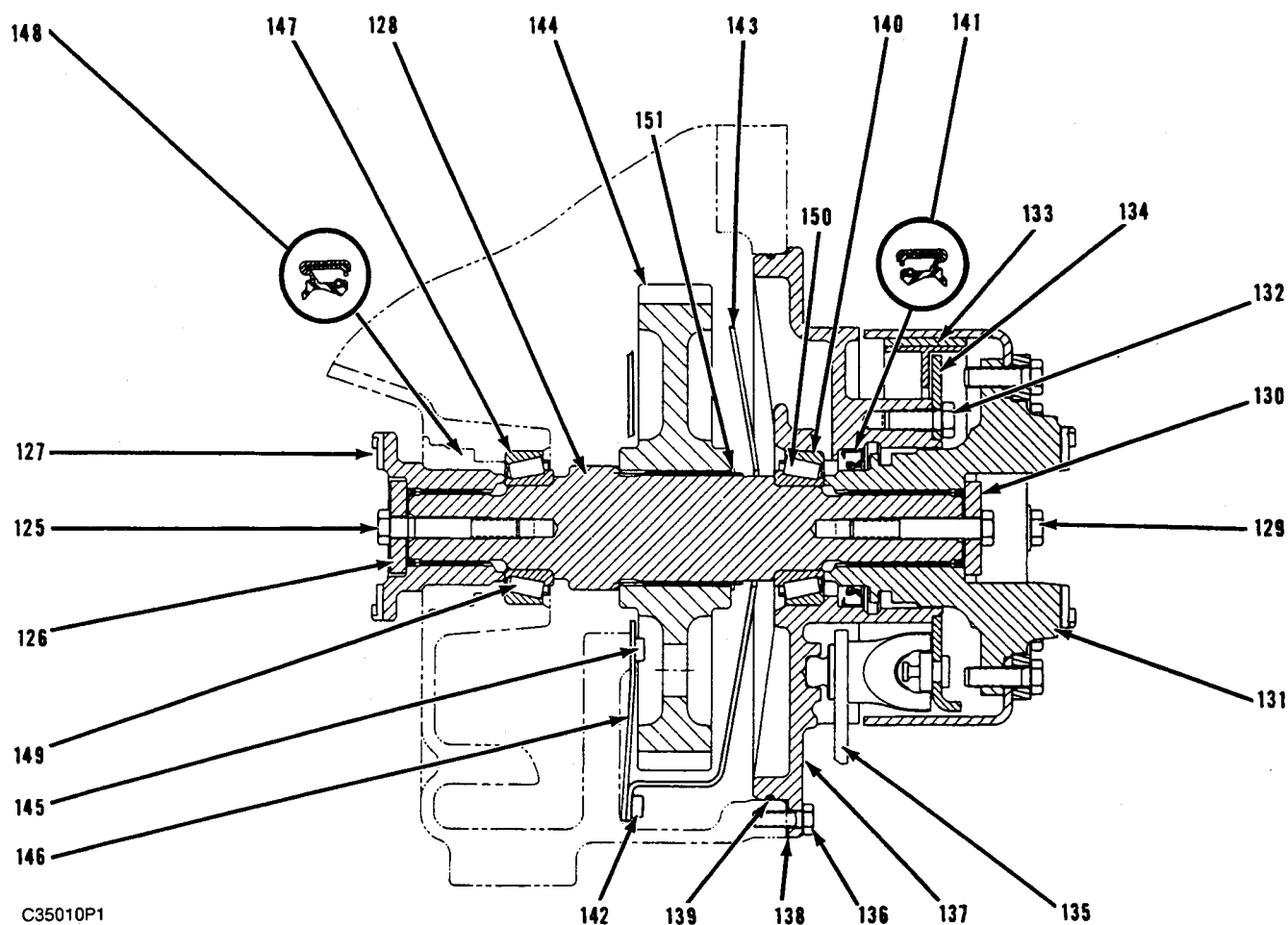
70. Remove input shaft assembly (116) from transmission housing (4).
71. Remove carrier (117) with seal ring, from shaft (120).
72. Remove bearings (118) and (122), remove gears (119) and (121) from shaft (120).

NOTE: Assemble the input shaft.

73. Install gears (121) and (119), install bearings (118) and (122) on shaft (120).
74. Install carrier (117) on shaft (120), then install the seal ring on carrier (117).



75. Remove bearings (123) and roller bearing cups (124) only if necessary.

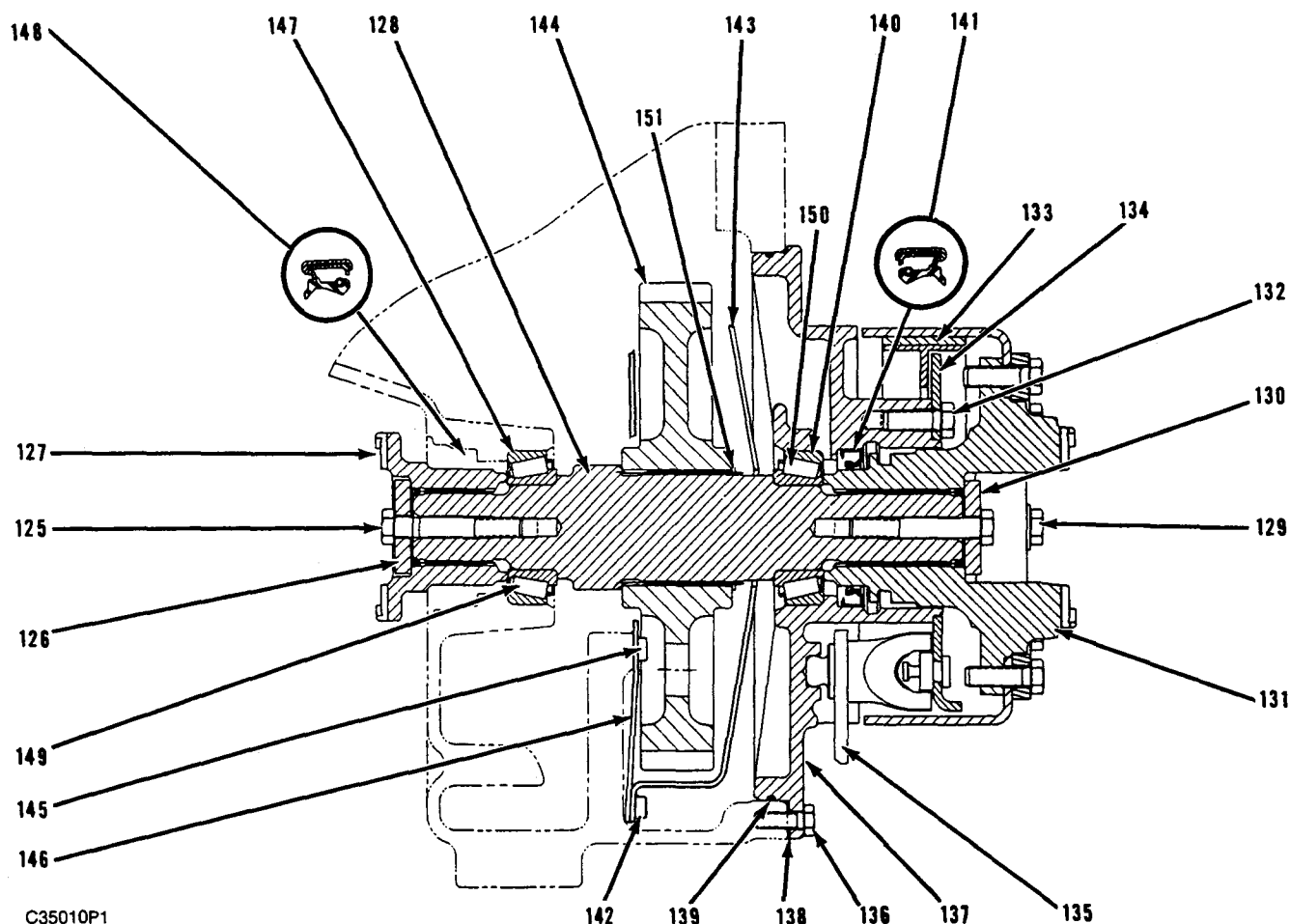


Disassemble Output Gear Group.

NOTE: Disassemble the output gear group.

- 76.** Remove bolt (125), washer and O-ring (126) and then yoke (127) from the front of output shaft (128).
- 77.** Remove bolt (129), washer and O-ring (130). Remove yoke and drum (131) as a unit. Remove the drum from the yoke if necessary.
- 78.** Remove four bolts (132) holding brake group in place. Remove brake shoes (133), plate (134) and brake lever (135).
- 79.** Remove eight bolts (136). Install two of these bolts in the threaded holes in cover (137), and use as forcing screws.
- 80.** Tighten forcing screws down evenly to force cover (137) to separate from the transmission housing. Remove cover (137) and shims (138).

- 81.** Remove O-ring seal (139), bearing race (140) and lip seal (141) from cover (137).
- 82.** Remove four nuts (142) and remove sheet metal cover (143). Remove output shaft (128) and gear (144) from the transmission housing.
- 83.** Remove three bolts (145) sheet metal plate (146). Remove bearing race (147) and lip seal (148).
- 84.** Remove bearing (149) from output shaft (128). Remove bearing (150), snap ring (151) and gear (144) from the parking brake end of output shaft (128).



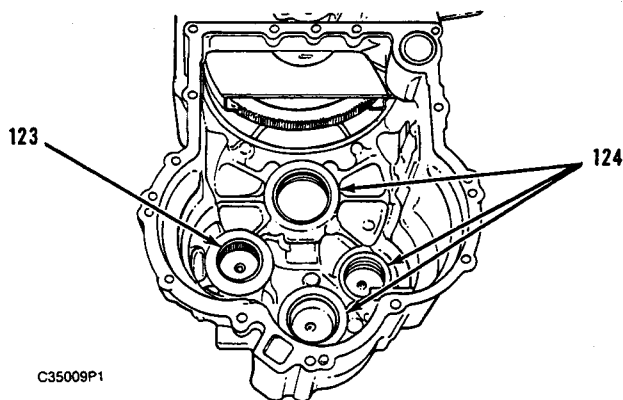
Assemble Output Gear Group.

85. Install gear (144), snap ring (151) and bearing (150) on output shaft (128). Install bearing (149) on output shaft (128).
86. Install bearing race (147) and lip seal (148). Position sheet metal plate (146) and install bolts (145).
87. Position output shaft (128) and gear (144) in the transmission housing. Position sheet metal cover (143) and install nuts (142).

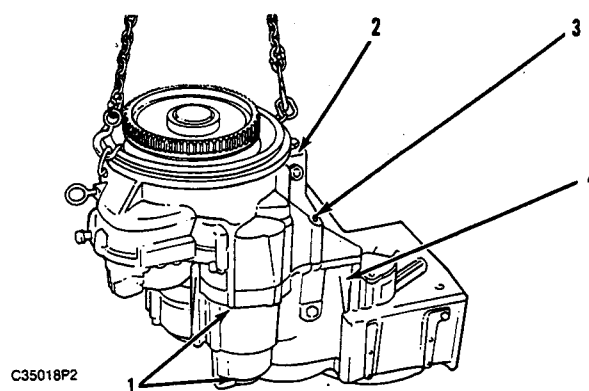
NOTE: To determine the proper thickness of shim pack (138), refer to the SPECIFICATION section of this service manual.

88. Install bearing race (140), lip seal (141) and O-ring seal (139) to cover (137). Install shim pack (138), cover (137) and install bolts (136).
89. Position brake lever (135), shoes (133), plate (134) and install bolts (133).

90. Install brake drum and yoke (131). Position the yoke and drum on shaft (128), install O-ring and washer (130) then install bolt (129).
91. Position yoke (127), O-ring and washer (126) and then install bolt (125).



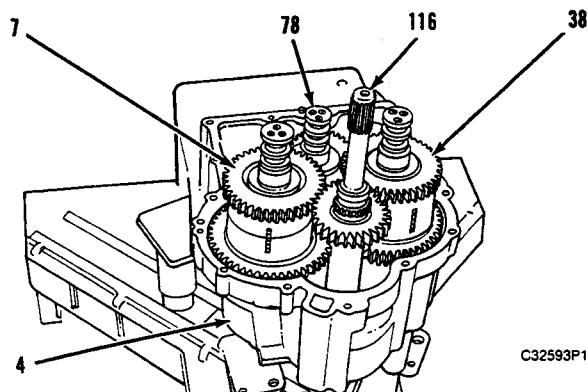
- 92.** Install roller bearing cups (124) and bearings (123) if they were removed.



NOTE: For easy assembly of cover (2) and case (4), case (4) should be horizontal and level.

NOTICE

During the assembly of cover (2) and case (4), be sure the three clutch groups and the input shaft properly engage their respective bores or bearing. Do not force the cover and case together with the bolts, damage could be the result.



- 98.** Using a hoist, position cover (2) over and onto three clutch groups and the input shaft. Install six bolts (3) and eight bolts (1).

- 93.** Position transmission housing (4) as illustrated.

NOTE: When installing input shaft assembly (116) the proper shim pack must be used to achieve the correct end play. To determine the proper thickness of the shim pack, refer to the SPECIFICATION section of this service manual.

- 94.** Install input shaft assembly (116).
95. Install third and first speed clutch group (78).
96. Install reverse and second speed clutch group (38).
97. Install forward low and forward high clutch group (7).

NOTE: Use a good gasket maker between cover (2) and case (4).