

Product: TRUCK

Model: 797F TRUCK WSP

Configuration: 797F XQ Off-Highway Truck WSP00001-UP (MACHINE) POWERED BY C175-20 Engine

Disassembly and Assembly 797F Off-Highway Truck Power Train

Media Number -KENR8372-07

Publication Date -01/06/2017

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i06633678

Differential and Bevel Gear - Disassemble

SMCS - 3256-015; 3258-015

Disassembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	439-3939	Link Bracket As	3
B	195-0767	Frame Assembly	1
	195-6167	Rollover Stand Gp	1
C	6V-0006	Governor Pliers	1
D	439-3938	Link Bracket	2
F	195-4988	Hydraulic Floor Jack Gp	1
G	195-0764	Rollover Frame As	1
	4C-9832	Engine Rollover Stand	1
H	370-2786	Holding Fixture	1
	194-3725	Bearing Puller Gp ⁽¹⁾	1
J	5P-5201	Double Acting Cylinder	1
	2P-5550	Electric Hydraulic Pump Gp	1
	194-6716	Bearing Puller ⁽²⁾	1
K	194-4809	Gear Handler	1
L	1P-0520	Driver Gp	1

M	194-4802	Bearing Puller Gp	1
	196-0222	Hydraulic Cylinder	1
	2P-5550	Electric Hydraulic Pump Gp	1
N	194-4802	Bearing Puller Gp	1
	196-0257	Adapter Gp	1
	196-0222	Hydraulic Cylinder	1
	2P-5550	Electric Hydraulic Pump Gp	1
P	196-0349	Hydraulic Puller	1
	1U-7552	Hydraulic Cylinder	1
	2P-5550	Electric Hydraulic Pump Gp	1
Q	195-0766	Rollover Frame As	1
	4C-9832	Engine Rollover Stand	1
R	194-4803	Bearing Puller Gp	1
	196-0222	Hydraulic Cylinder	1
	2P-5550	Electric Hydraulic Pump Gp	1
S	9U-6580	Socket (2 3/4 inch)	1
T	194-4804	Bearing Puller Gp	1
	196-0222	Hydraulic Cylinder	1
	2P-5550	Electric Hydraulic Pump Gp	1
U	187-2730	Adapter	1
	1P-7404	Eyebolt (5/16x18-2A Thd)	1
V	194-4792	Gear Handler As	1
W	196-1218	Bearing Puller Gp	1
	FT-2747	Sleeve	1
	6V-0113	Double Acting Cylinder	1
	2P-5550	Electric Hydraulic Pump Gp	1

⁽¹⁾ This group includes **194-6716** Bearing Puller Gp.

⁽²⁾ The Bearing Puller is used only with **194-3725** Bearing Puller Gp.

Start By:

- a. Remove the differential and bevel gear.

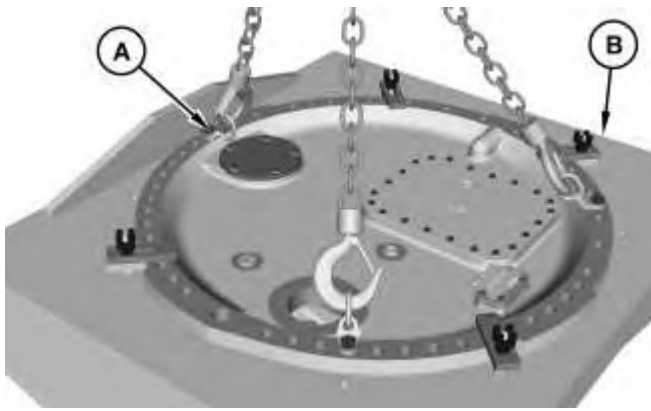


Illustration 1

g02332093

1. Use Tooling (A) and a suitable lifting device in order to position the differential and bevel gear into Tooling (B). The weight of the differential and bevel gear is approximately 3360 kg (7400 lb). Secure the differential and bevel gear to Tooling (B). Rotate Tooling (B).

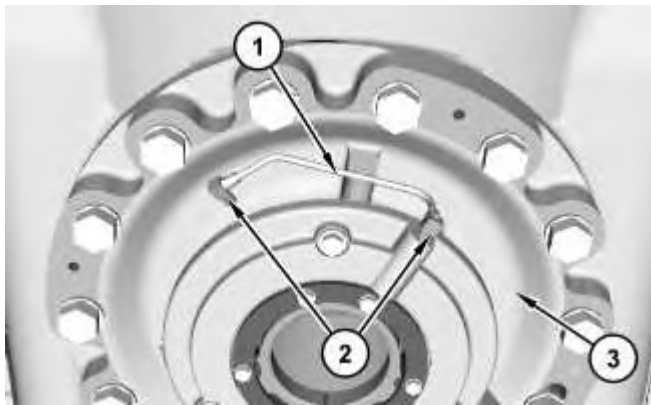


Illustration 2

g02178285

2. Remove tube assembly (1) from two elbows (2).
3. Remove two elbows (2) from cage assembly (3).

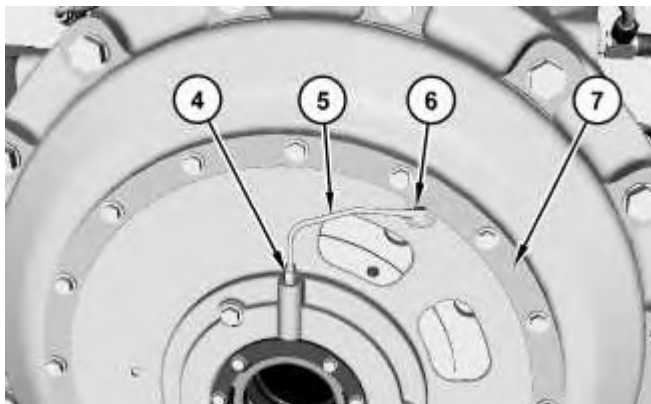


Illustration 3

g02178438

4. Remove tube assembly (5) from elbow (6) and connector (4).
5. Remove elbow (6) and connector (4) from cage assembly (7).

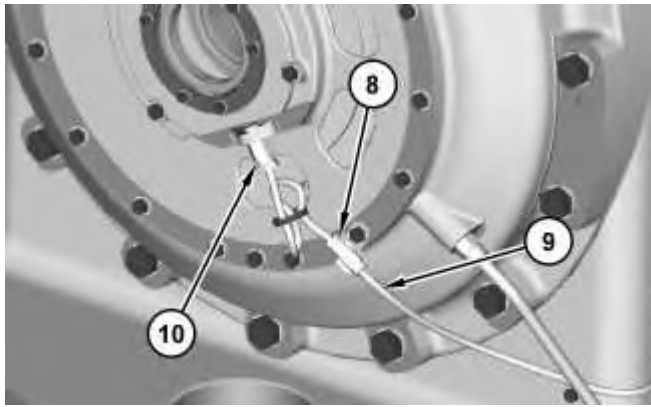


Illustration 4

g02332793

6. Disconnect harness assembly (8) from harness assembly (9). Tooling (C) in order to remove speed sensor (10).

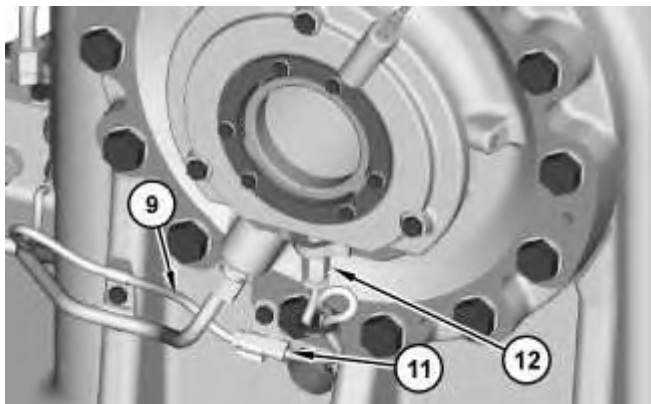
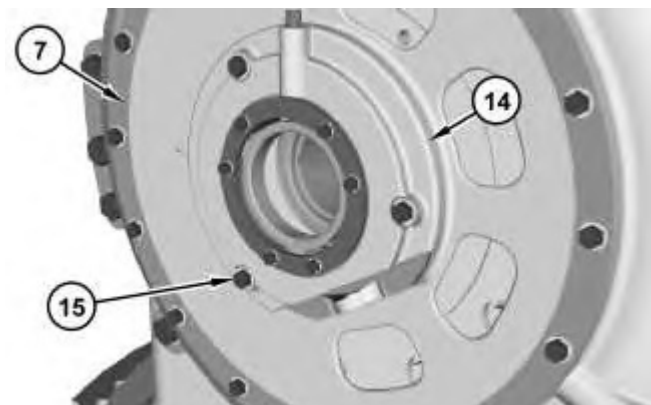


Illustration 5

g02332773

7. Disconnect harness assembly (11) from harness assembly (9). Use Tooling (C) in order to remove speed sensor (12).



8. Remove bolts (15) from housing (14).
9. Remove the gear and housing (14) from cage (7).

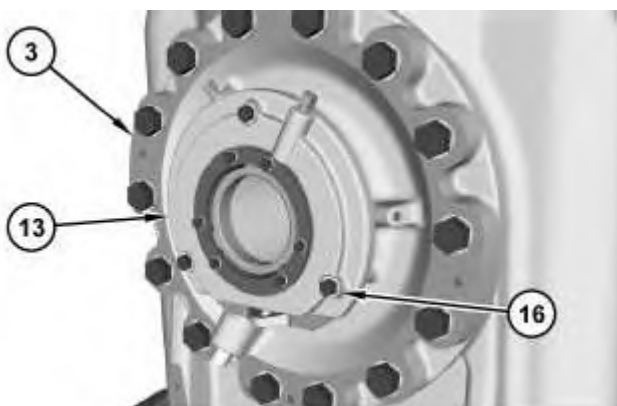


Illustration 7

10. Remove bolts (16) from housing (13).
11. Remove the gear and housing (13) from cage assembly (3).



Illustration 8

12. Remove bolts (17), retainer (18), disk drive (19), and gear sensor (20).
 13. Repeat Step 12 for the remaining gear.
-

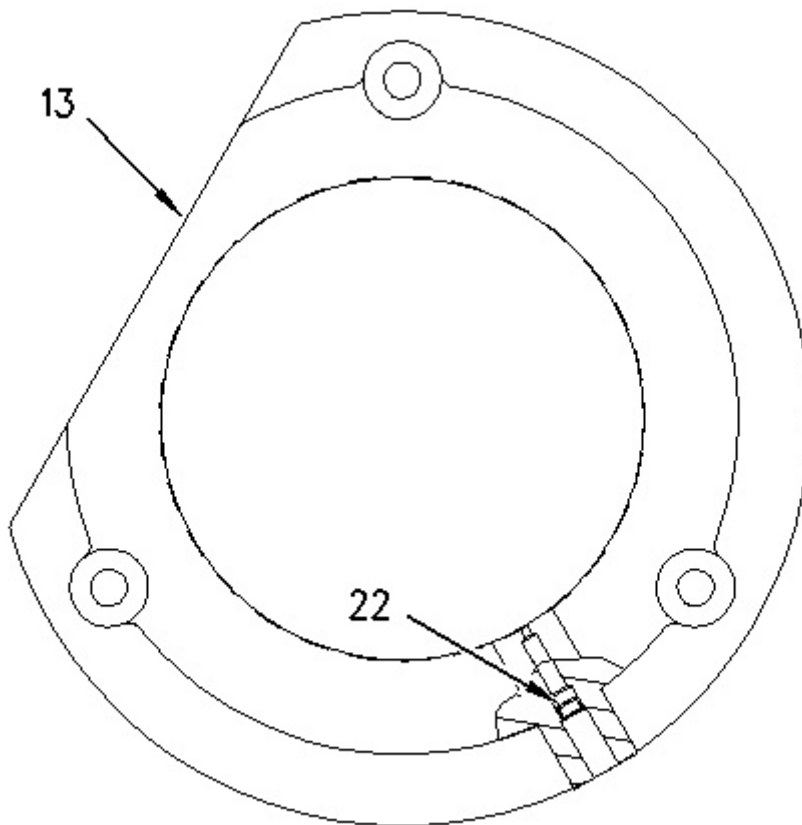


Illustration 9

g00702749

14. If necessary, remove orifice plug (22) from housing (13).
15. Repeat Step 14 for the remaining orifice plug from housing (14).



Illustration 10

g00700433

16. Remove plate (21) from cage assembly (3).
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Illustration 11

g00702100

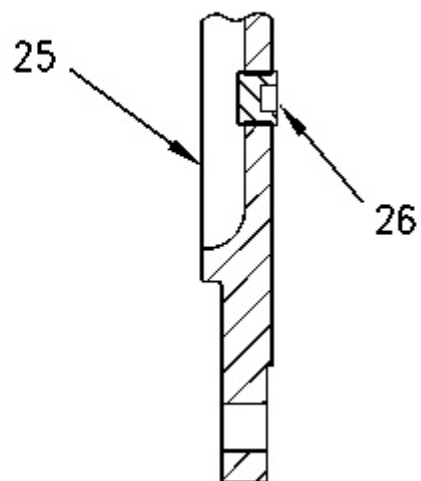
17. Remove bolts (23), the hard washers, and clip (24).



Illustration 12

g00700274

18. Use two people to remove plate assembly (25) from cage (7). The weight of plate assembly (25) is approximately 26 kg (57 lb).



19. Remove plug (26) from plate assembly (25).

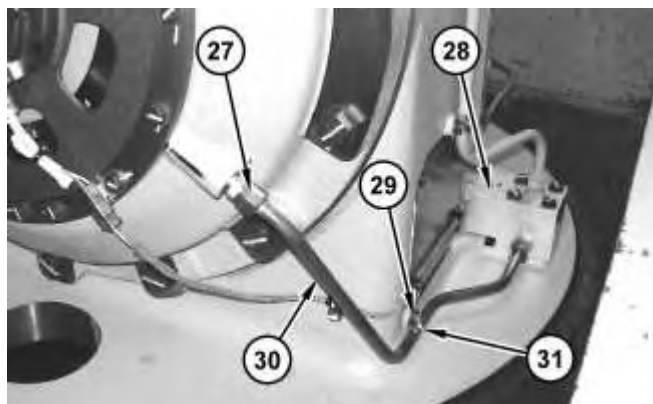


Illustration 14

g02178371

20. Remove bolt (29) and the washer that secures tube assembly (30) to the differential carrier assembly.
21. Remove clip (31) from tube assembly (30).
22. Remove tube assembly (30) from valve assembly (28) and seal connector (27).

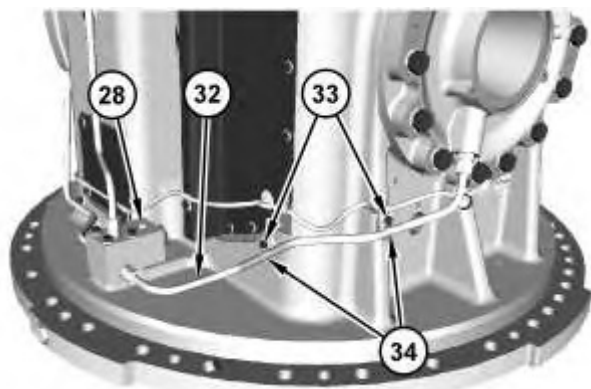


Illustration 15

g02178373

23. Remove bolts (33) and the washers that secure tube assembly (32) to the differential carrier assembly.
 24. Remove clips (34) from tube assembly (32).
 25. Remove tube assembly (32) from valve assembly (28) and connector (34).
-

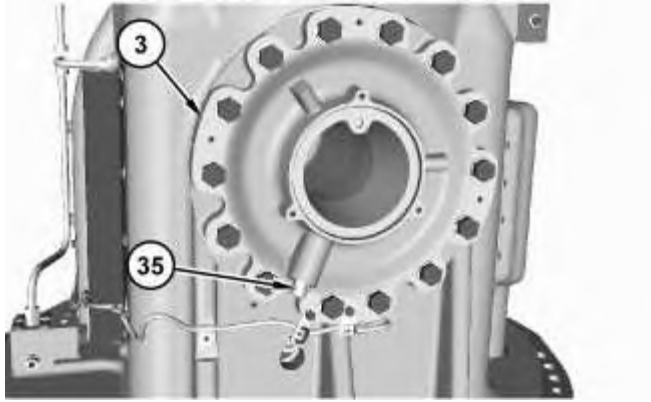


Illustration 16

g02279993

26. Remove connector (35) and the two O-ring seals from cage assembly (3).

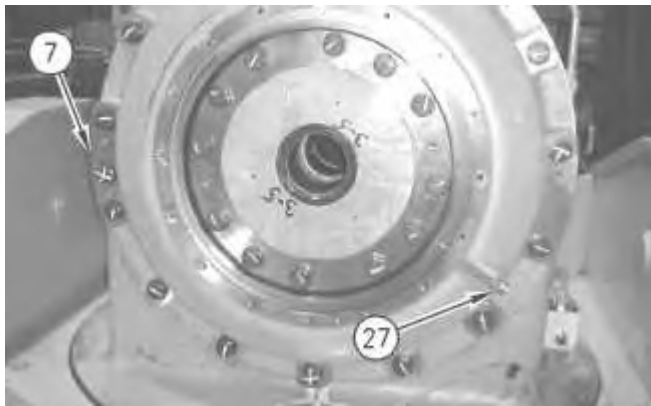


Illustration 17

g00700106

27. Remove seal connector (27) and the two O-ring seals from cage (7).

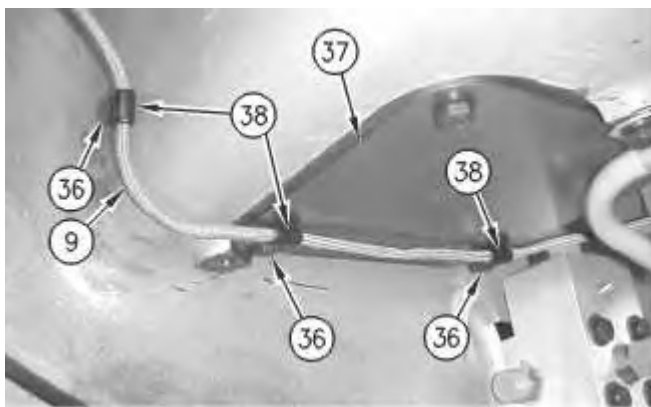


Illustration 18

g00702118

28. Remove two bolts (36) and the washers that secure harness assembly (9) to cover (37).
29. Remove the remaining three bolts (36), the washers and cover (37) from the differential carrier assembly.

30. Remove clips (38) from harness assembly (9).

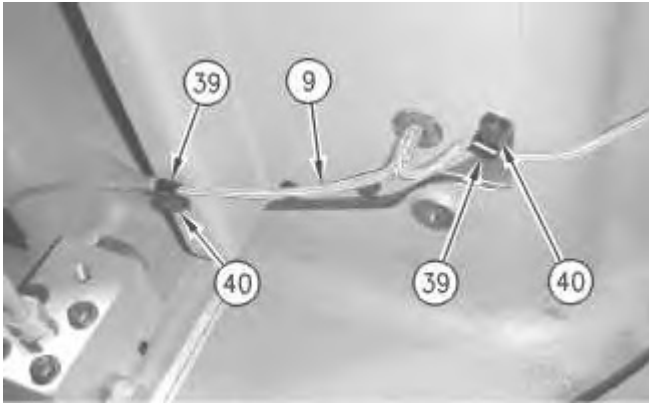


Illustration 19

g00702121

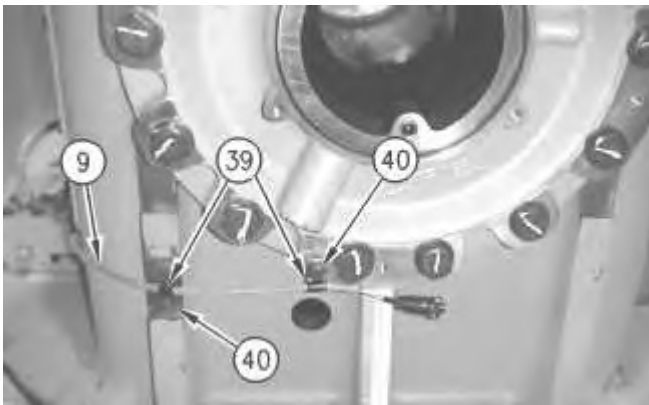


Illustration 20

g00700040

31. Remove bolts (40) and the washers that secure harness assembly (9) to the differential carrier assembly.

32. Remove four clips (39) from harness assembly (9).

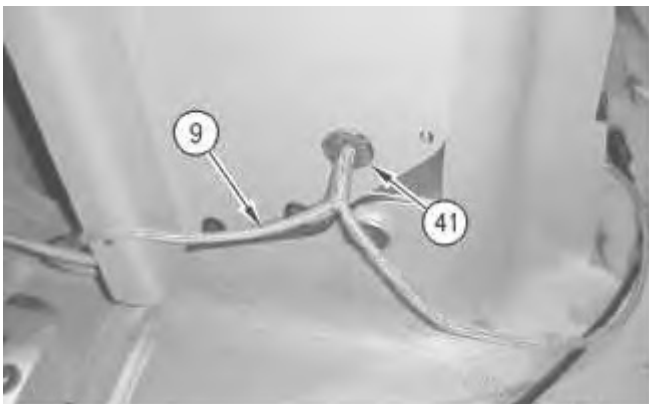


Illustration 21

g00700012

33. Remove split grommet (41) from the differential carrier assembly. Remove split grommet (41) from harness assembly (9).

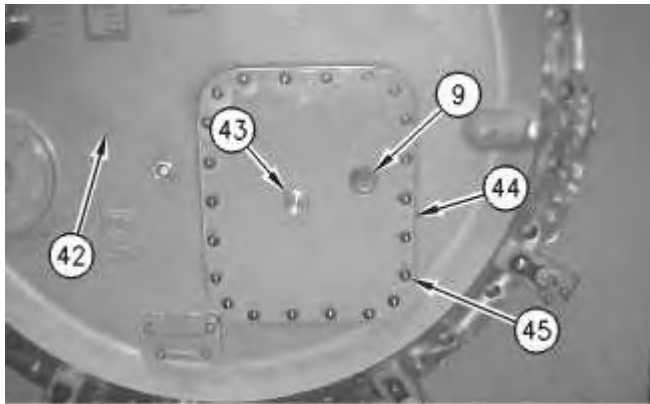


Illustration 22

g00699998

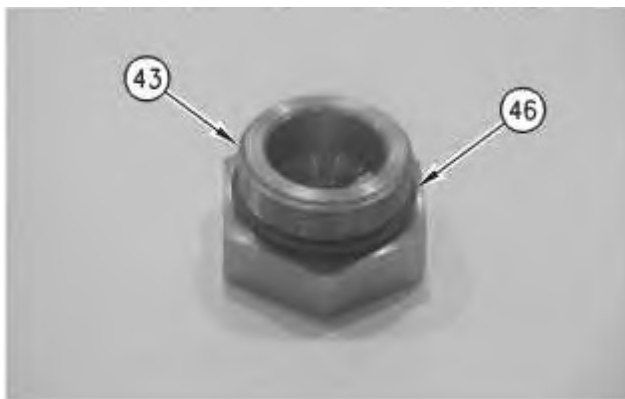


Illustration 23

g00700006

34. Rotate Tooling (B). Remove bolts (45) and the hard washers from cover assembly (44).
 35. Use two people in order to remove cover assembly (44) from differential carrier assembly (42). The weight of cover assembly (44) is approximately 24 kg (53 lb).
 36. Remove harness assembly (9) from cover assembly (44).
 37. Remove pipe plug (43) and the O-ring seal from cover assembly (44).
 38. Remove O-ring seal (46) from pipe plug (43).
-



Illustration 24

g02335556

39. Remove O-ring seal (47).

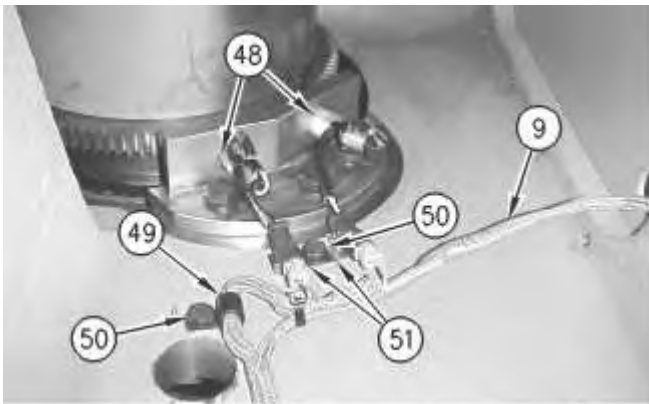


Illustration 25

g00699926

40. Remove the tie strap in order to loosen the two ends of harness assembly (9). Remove the tie straps in order to free the electrical connectors on output speed sensors (48).
41. Remove bolts (50) and the washers.
42. Remove clip (49) and clips (51).
43. Disconnect output speed sensors (48) at the electrical connections. Remove harness assembly (9) from the inside of the differential carrier assembly.



44. Remove bolt (54) and the hard washer from the differential carrier assembly.
45. Remove clip (53) from hose assembly (52).
46. Remove hose assembly (52) and the two O-ring seals.

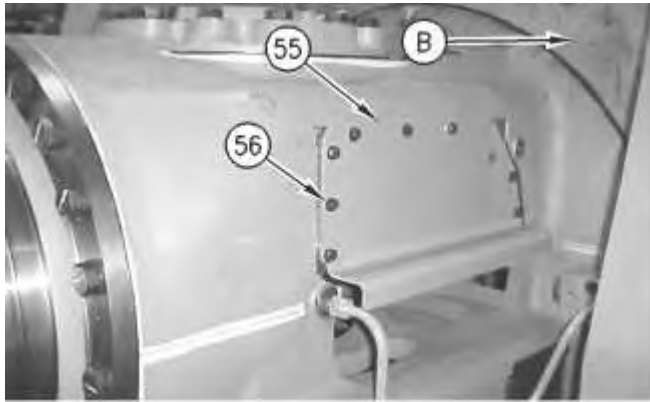


Illustration 27

47. Rotate Tooling (B). Remove bolts (56) and the washers from cover assembly (55).
48. Remove cover assembly (55) from the differential carrier assembly.

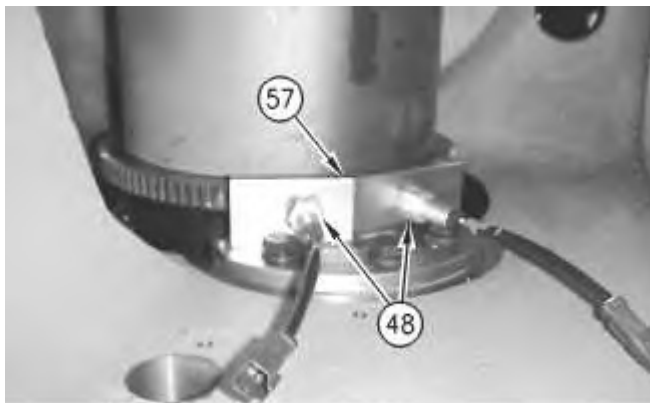


Illustration 28

49. Remove output speed sensors (48) from bracket assembly (57).
-

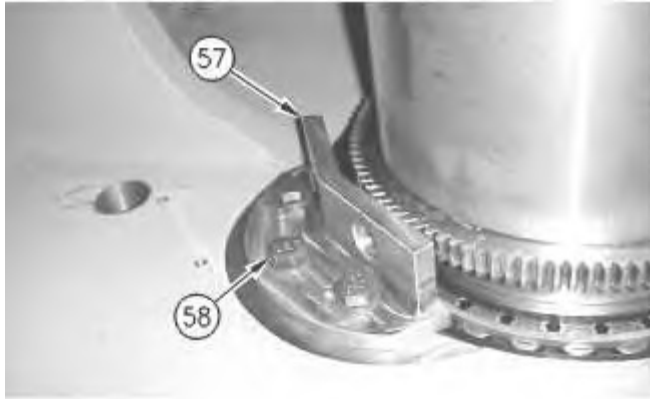


Illustration 29

g00699846

50. Remove bolts (58) and the washers that secure bracket assembly (57) to the differential carrier assembly.
51. Remove bracket assembly (57) from the differential carrier assembly.

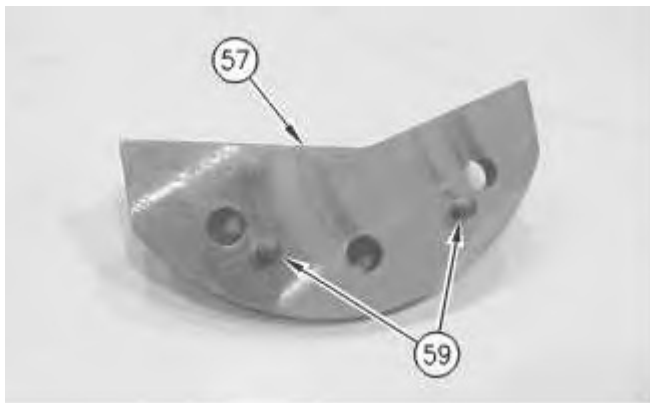


Illustration 30

g00699832

52. Remove two dowels (59) from bracket assembly (57).



Illustration 31

g00699734

53. Remove bolts (60) and the washers from cage assembly (3).

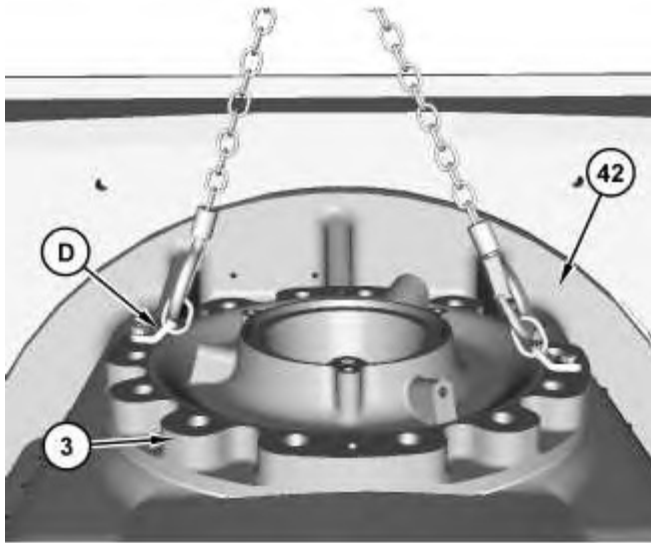


Illustration 32

g02306315

54. Use Tooling (D) in order to remove cage assembly (3) from differential carrier assembly (42). The weight of cage assembly (3) is approximately 75 kg (165 lb).

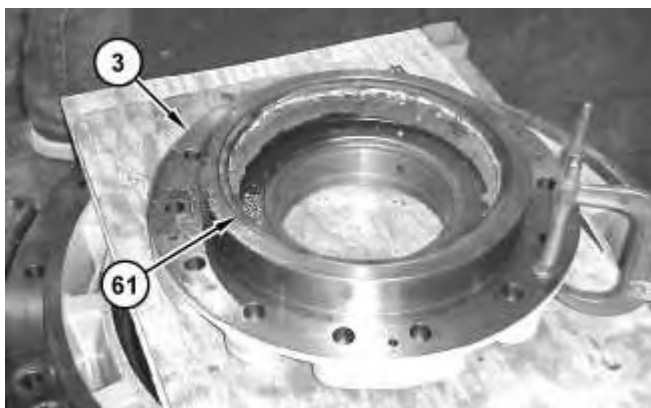


Illustration 33

g02306379



Illustration 34

g02306381

NOTICE

Do not use a cutting torch to remove the bearing cup.

NOTICE

Use the follow procedure in order to remove the bearing cup. Failure to follow this procedure could result in damage to the bearing cage.

55. Use a wire feed welder in order to apply weld beads around the entire interior of bearing cup (61). Use two pry bars in order to remove bearing cup (61) from cage assembly (3).

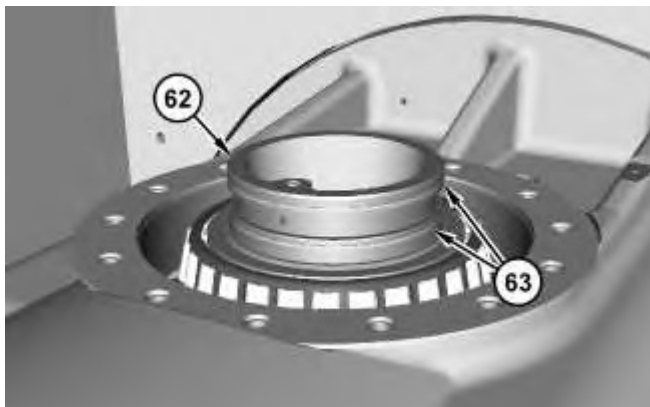


Illustration 35

g02316353

56. Remove two seal rings (63) from seal collar (62).

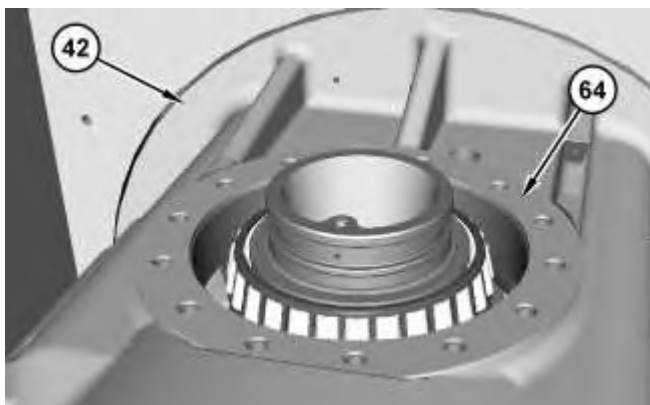


Illustration 36

g02316377

57. Remove shim pack (64) from differential carrier assembly (42).
-



Illustration 37

g00702782

58. Rotate Tooling (B). Remove bolts (65) and the washers from cage (7).

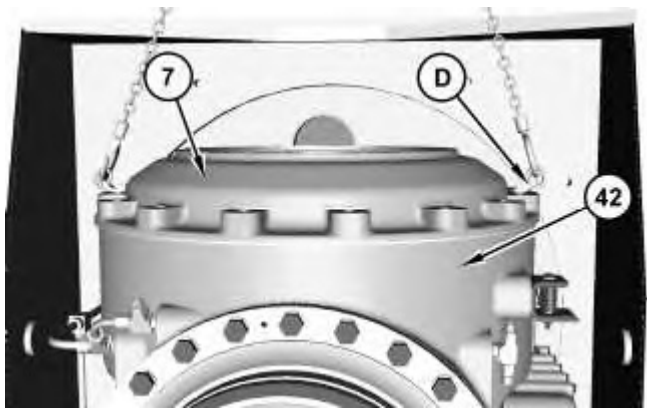


Illustration 38

g02306517

59. Use Tooling (D) in order to remove cage (7) from differential carrier assembly (42). The weight of cage (7) is approximately 270 kg (600 lb).

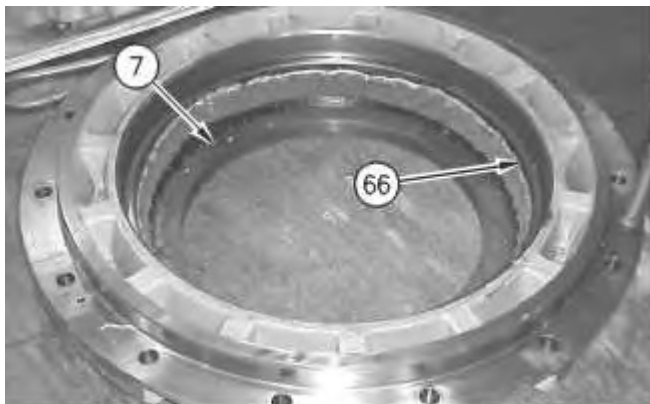


Illustration 39

g00725807



Illustration 40

g00725812

NOTICE

Do not use a cutting torch to remove the bearing cup.

NOTICE

Use the follow procedure in order to remove the bearing cup. Failure to follow this procedure could result in damage to the bearing cage.

60. Use a wire feed welder in order to apply a weld bead around the entire interior of bearing cup (66). Use two pry bars in order to remove bearing cup (66) from cage (7).

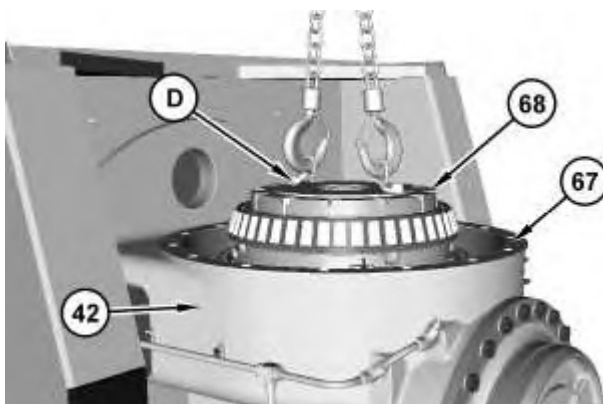


Illustration 41

g02316255

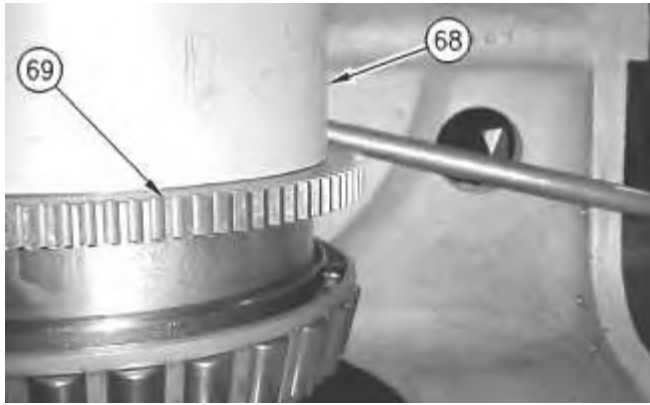


Illustration 42

g00698321

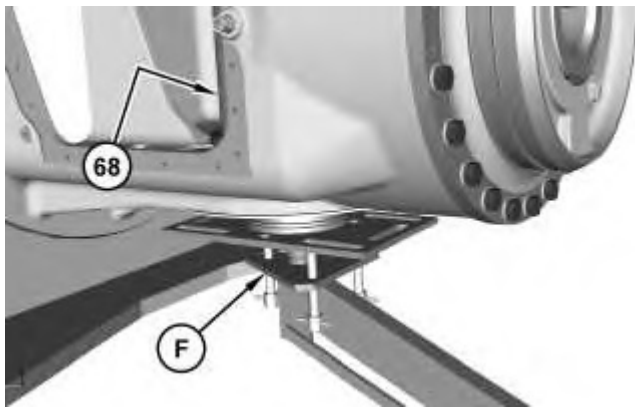


Illustration 43

g02337339

61. Remove shims (67) from differential carrier assembly (42). Install Tooling (D) to differential (68). Attach a suitable lifting device to Tooling (D). Position Tooling (F) below differential carrier assembly (42) in order to support differential (68).

Note: Use a suitable prybar in order to guide gear (69) around the boss on the inside of differential carrier assembly (42).

62. Raise differential (68) out of differential carrier assembly (42). The weight of differential (68) is approximately 825 kg (1820 lb).

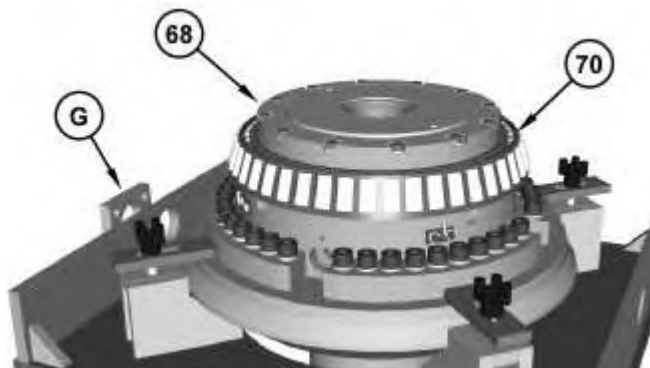


Illustration 44

g02340156

63. Position differential (68) onto Tooling (G).

NOTICE

Do not use a cutting torch to remove the bearing cone. Failure to follow this procedure could result in damage to the bearing cage.

64. Grind a slot through the cage of roller bearing cone (70) in order to remove the bearing rollers and the cage.

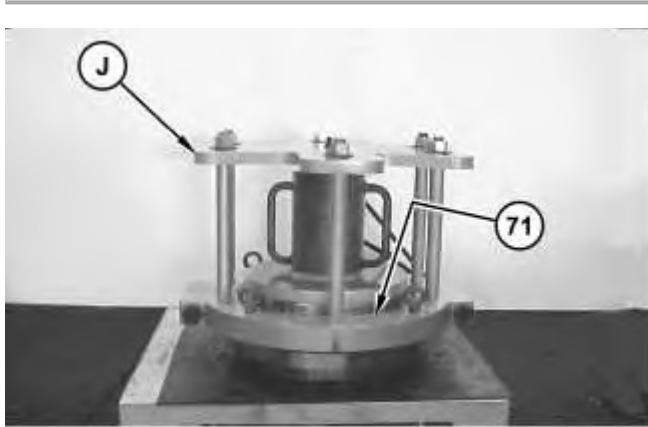


Illustration 45

g02340239

65. Use Tooling (J) in order to remove bearing race (71).

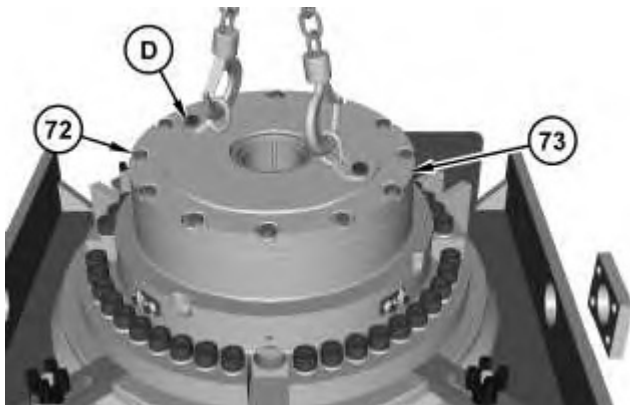


Illustration 46

g02340216

66. Remove bolts (72). Use Tooling (A) and a suitable lifting device in order to remove cover (73).



Illustration 47

g02339303

67. Remove thrust washer (74).

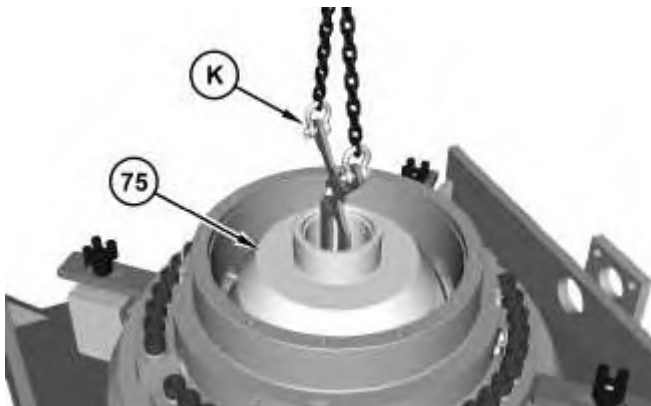


Illustration 48

g02339196

68. Use Tooling (K) and a suitable lifting device in order to remove side gear (75). The weight of side gear (75) is approximately 45 kg (100 lb).

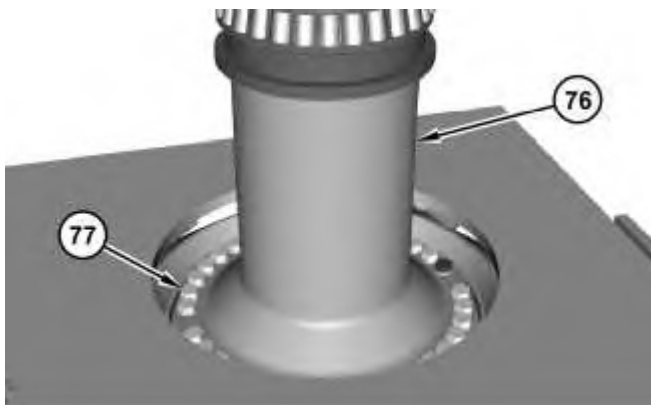


Illustration 49

g02339600

69. Rotate Tooling (G). Attach a suitable lifting device onto differential housing (76). The weight of differential housing (76) is approximately 213 kg (470 lb). Remove bolts (77). Remove differential housing (76).
-

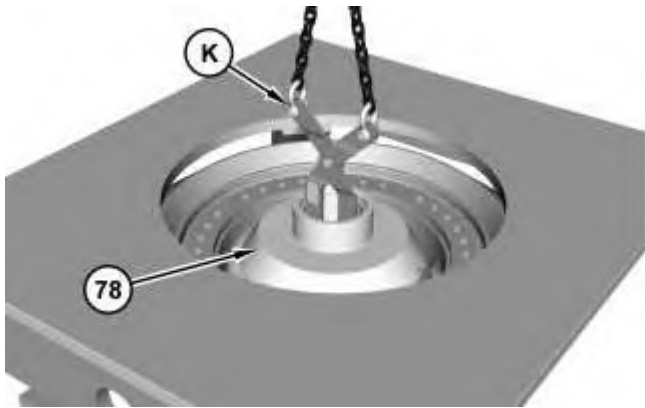


Illustration 50

g02340516

70. Use Tooling (K) and a suitable lifting device in order to remove side gear (78) from the housing assembly. The weight of side gear (78) is approximately 45 kg (100 lb).



Illustration 51

g02338537

71. Remove thrust washer (79) from differential housing (76).

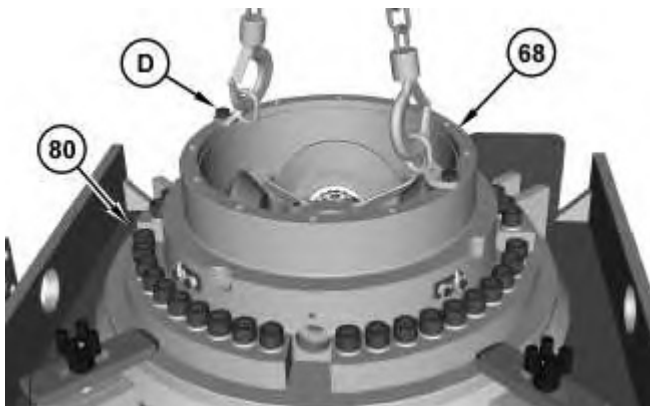


Illustration 52

g02340396

72. Remove bolts (80). Use Tooling (A) and a suitable lifting device in order to remove differential (68). The weight of differential (68) is approximately 304 kg (670 lb).

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