



Service Repair Manual

Models

993K Wheel Loader

Previous Screen

Product: WHEEL LOADER

Model: 993K WHEEL LOADER Z8Z

Configuration: 993K Wheel Loader Z8Z00001-UP (MACHINE) POWERED BY C32 Engine

**Disassembly and Assembly
993K Wheel Loader Power Train**

Media Number -KENR5569-01

Publication Date -01/10/2012

Date Updated -05/07/2017

i02517748

Parking Brake - Disassemble

SMCS - 4267-015

Disassembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1P-0074	Slide Hammer Puller	1
B	8B-7557	Adapter	1

Start By:

- A. Remove the parking brake. Refer to Disassembly and Assembly, "Parking Brake - Remove".



Illustration 1

g00350733

1. Remove bolts (1) that are used to disengage the parking brake.

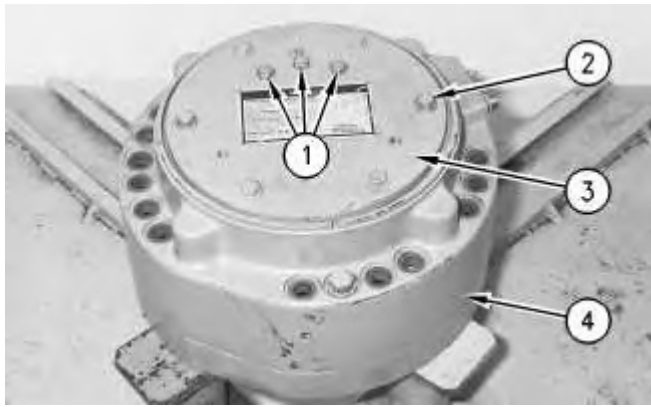


Illustration 2

g00351073

2. Install bolts (1) in the holes, as shown. Remove bolts (2) and the washers evenly.
3. Remove retaining plate (3) from brake housing (4) .



Illustration 3

g00375378

4. Remove spacers (5) from the brake housing.
-

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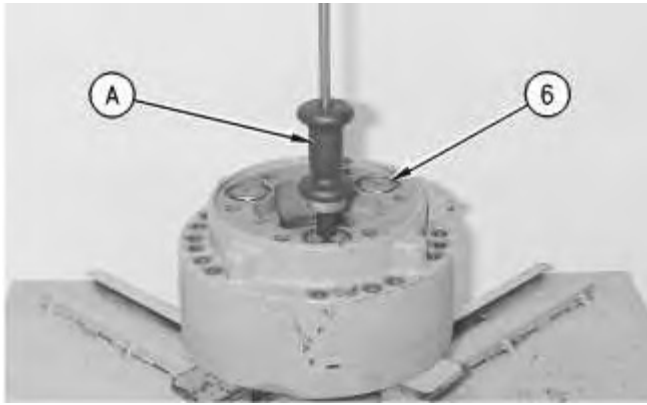


Illustration 4

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5. Use Tooling (A) and Tooling (B) in order to remove pistons (6) from the brake housing.



Illustration 5

g00375380

WARNING

Personal injury can result from being struck by parts propelled by a released spring force.

Make sure to wear all necessary protective equipment.

Follow the recommended procedure and use all recommended tooling to release the spring force.

6. Loosen bolts (7) evenly until the spring tension against brake housing (4) is released. Then remove bolts (7) and the washers.

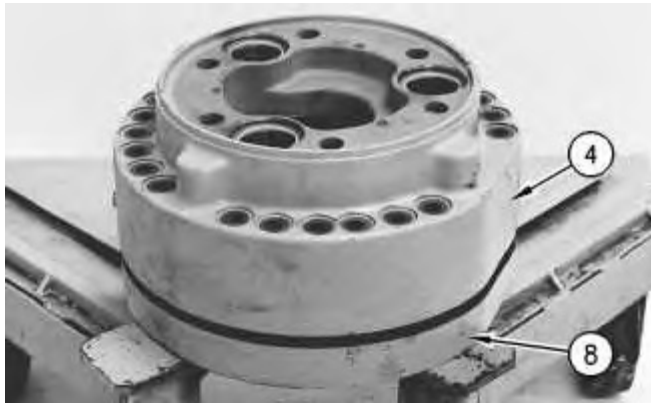


Illustration 6

g00375381

7. Use two persons to lift brake housing (4) off bearing cage assembly (8) . The weight of brake housing (4) is approximately 41 kg (90 lb).

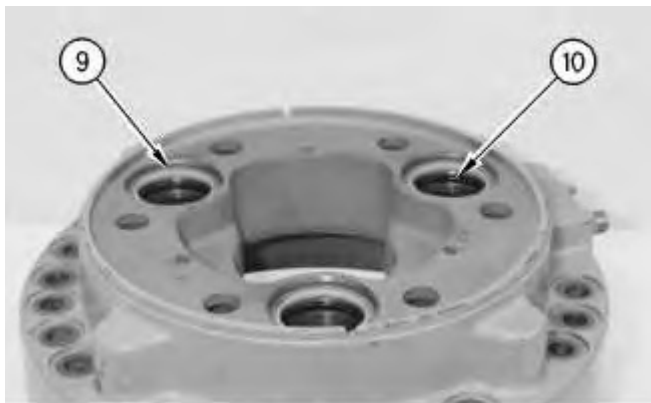


Illustration 7

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8. Remove lip seals (9) and O-ring seals (10) .

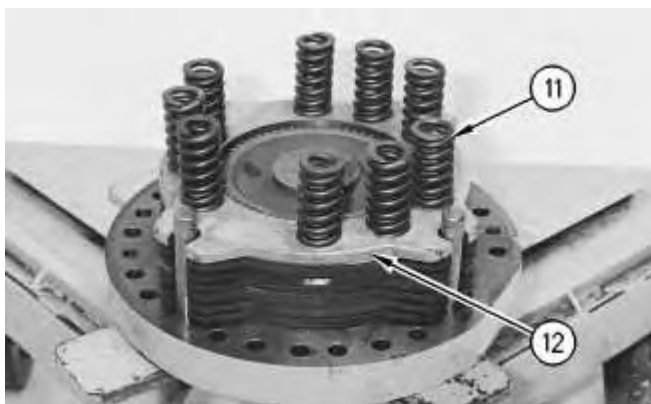


Illustration 8

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9. Remove springs (11) from pressure plate (12) .



Illustration 9

g00375387

10. Remove pressure plate (12) from bearing cage assembly (8) .

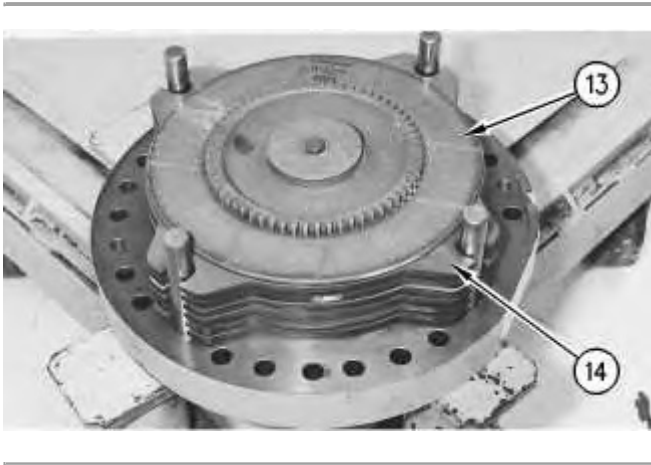
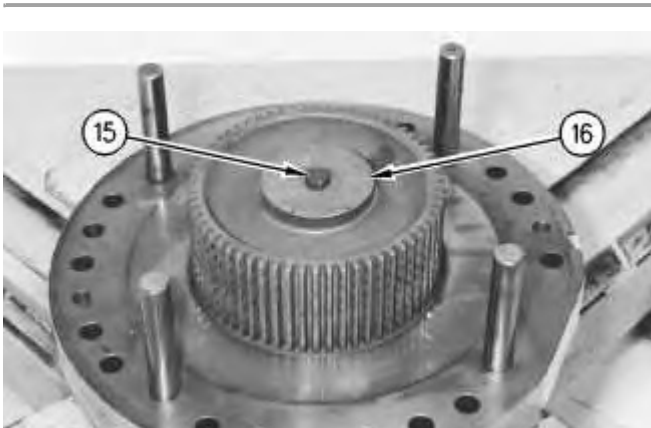


Illustration 10

g00375388

11. Remove brake discs (13) and clutch plates (14) .



12. Remove bolt (15) and retainer (16) from the brake shaft.

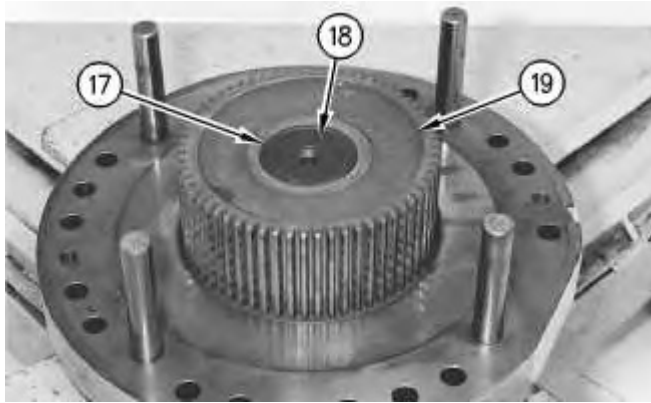


Illustration 12

13. Remove seal (17) and hub (19) from brake shaft (18) .

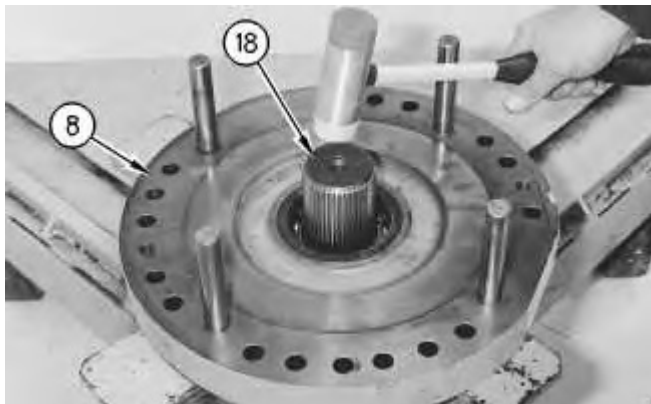


Illustration 13

14. Use a rubber mallet to tap brake shaft (18) out of the bottom side of bearing cage assembly (8) .
-

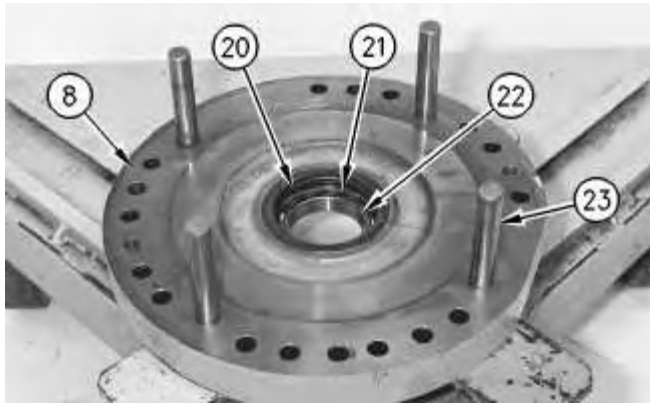


Illustration 14

g00375412

15. Remove lip seal (20) , ring (21) and bearing (22) from bearing cage assembly (8) .
16. If necessary, remove dowels (23) .

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Model: 993K WHEEL LOADER Z8Z

Configuration: 993K Wheel Loader Z8Z00001-UP (MACHINE) POWERED BY C32 Engine

**Disassembly and Assembly
993K Wheel Loader Power Train**

Media Number -KENR5569-01

Publication Date -01/10/2012

Date Updated -05/07/2017

i07352468

Parking Brake - Assemble

SMCS - 4267-016

Assembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1P-0074	Slide Hammer Puller Gp	1
B	8B-7557	Threaded Adapter	1
C	1P-0520	Driver Gp	1

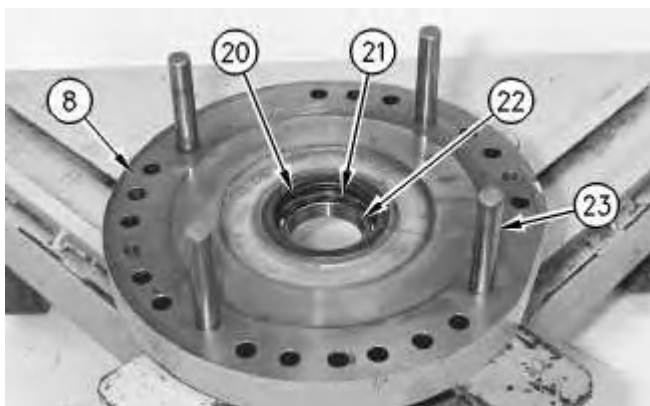


Illustration 1

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1. Use Tooling (C) to install bearing (22), ring (21), and lip seal (20) in bearing cage assembly (8).

2. If dowels (23) were removed, install the dowels.

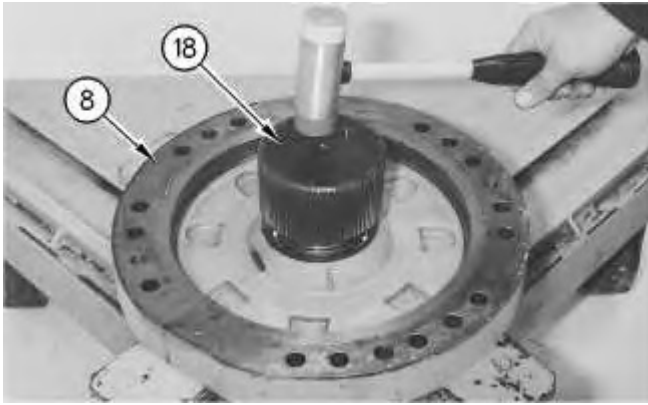


Illustration 2

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3. Turn bearing cage assembly (8) onto the opposite side. Use a rubber mallet to install brake shaft (18).

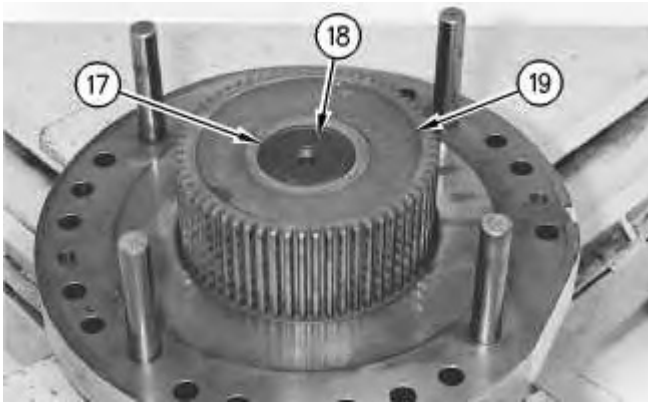


Illustration 3

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4. Turn the bearing cage assembly onto the opposite side. Install hub (19) and seal (17) on brake shaft (18).

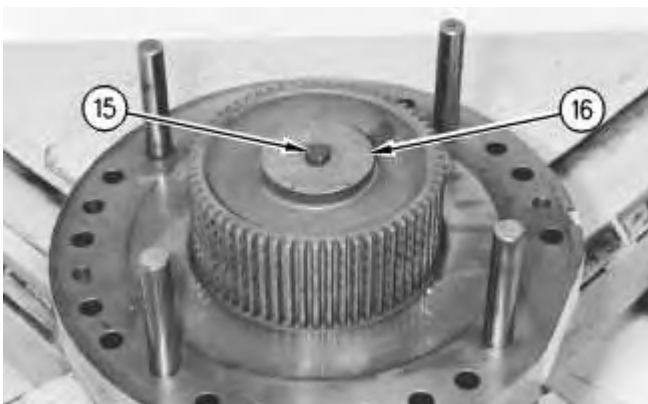


Illustration 4

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5. Install retainer (16) and bolt (15) on the brake shaft. Tighten bolt (15) to a torque of $105 \pm 20 \text{ N}\cdot\text{m}$ ($78 \pm 15 \text{ lb ft}$).

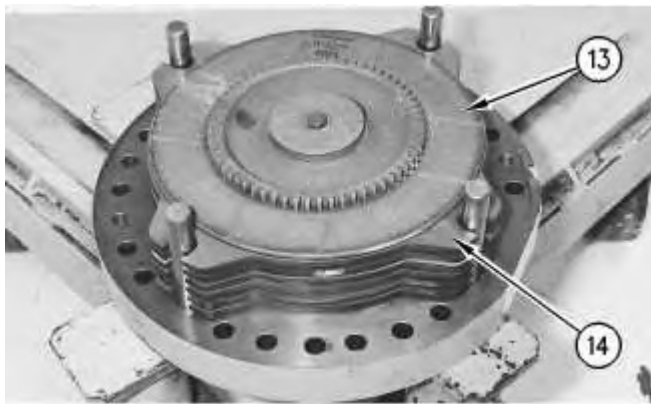


Illustration 5

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6. Install friction discs (13) and clutch plates (14) in alternating order. Start with a friction disc.

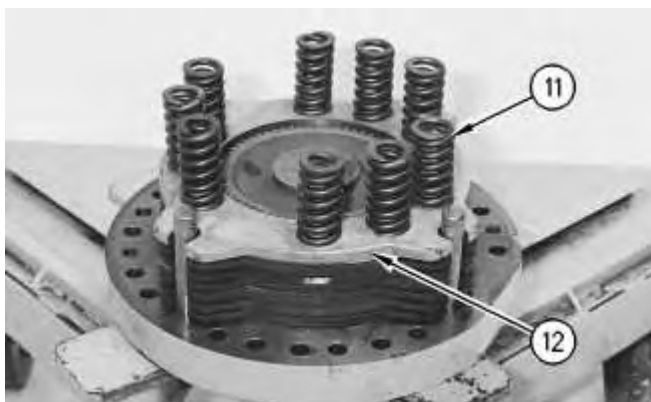
Note: BXY00435-UP and ; BTW00177-UP have more clutch plates than friction discs. For these machines start with a clutch plate.



Illustration 6

g00375387

7. Install pressure plate (12) on bearing cage assembly (8).



8. Install springs (11) on pressure plate (12).

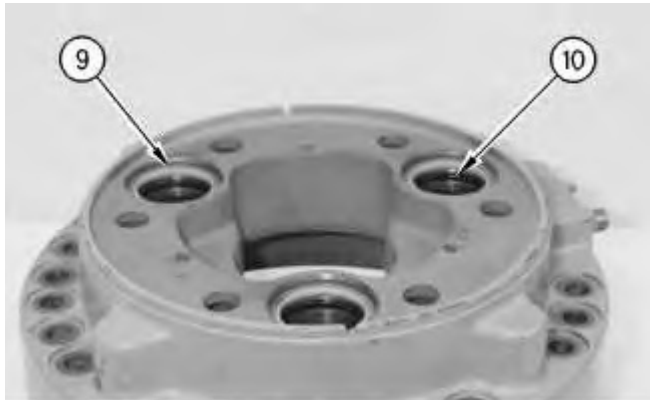


Illustration 8

9. Install O-ring seals (10) and lip seals (9) in the bores of the brake housing.

Note: Lip seals (9) must contact the counterbore in the brake housing. Make sure that the sealing lips are facing outward. Lubricate the sealing lip with the lubricant that is being sealed.



Illustration 9

10. Use two persons to lift brake housing (4) onto bearing cage assembly (8). The weight of brake housing (4) is approximately 41 kg (90 lb).
-



Illustration 10

g00375380

! WARNING

Personal injury can result from being struck by parts propelled by a released spring force.

Make sure to wear all necessary protective equipment.

Follow the recommended procedure and use all recommended tooling to release the spring force.

11. Install the washers and bolts (7) in brake housing (4). Tighten bolts (7) evenly to a torque of $270 \pm 40 \text{ N}\cdot\text{m}$ ($200 \pm 30 \text{ lb ft}$).



Illustration 11

g00380075

12. Lubricate pistons (6) lightly with the lubricant that is being sealed. Use Tooling (A) and Tooling (B) to install pistons (6) in the brake housing.
13. Install spacers (5) in the brake housing.

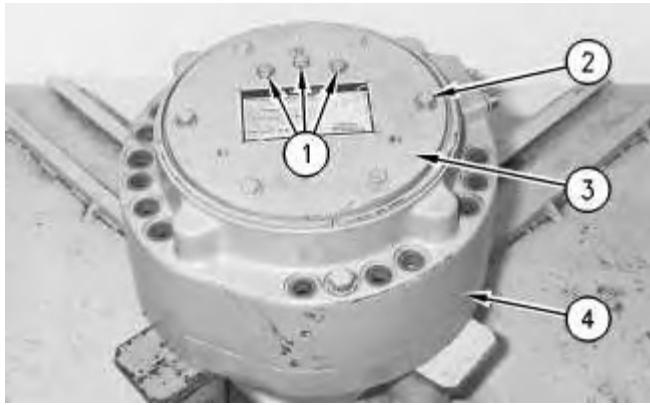


Illustration 12

g00351073

14. Install retaining plate (3) on brake housing (4).
15. Install the washers and bolts (2) that secure retaining plate (3) to brake housing (4). Tighten the bolts (2) evenly to a torque of 105 ± 20 N·m (78 ± 15 lb ft).
16. Remove bolts (1).



Illustration 13

g00350733

17. Install bolts (1) into a different location. Bolts (1) are used to disengage the parking brake.

End By:

- a. Install the parking brake. Refer to Disassembly and Assembly, "Parking Brake - Install".

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Product: WHEEL LOADER

Model: 993K WHEEL LOADER Z8Z

Configuration: 993K Wheel Loader Z8Z00001-UP (MACHINE) POWERED BY C32 Engine

Disassembly and Assembly 993K Wheel Loader Power Train

Media Number -KENR5569-01

Publication Date -01/10/2012

Date Updated -05/07/2017

i02964861

Parking Brake - Install

SMCS - 4267-012

Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7575	Link Bracket	3
B	1U-9200	Lever Puller Hoist	2
C	6V-6640	Sealant	1

1. Apply a thin bead of Tooling (C) to the mating surface of the parking brake assembly and the housing of the output transfer gear.
-

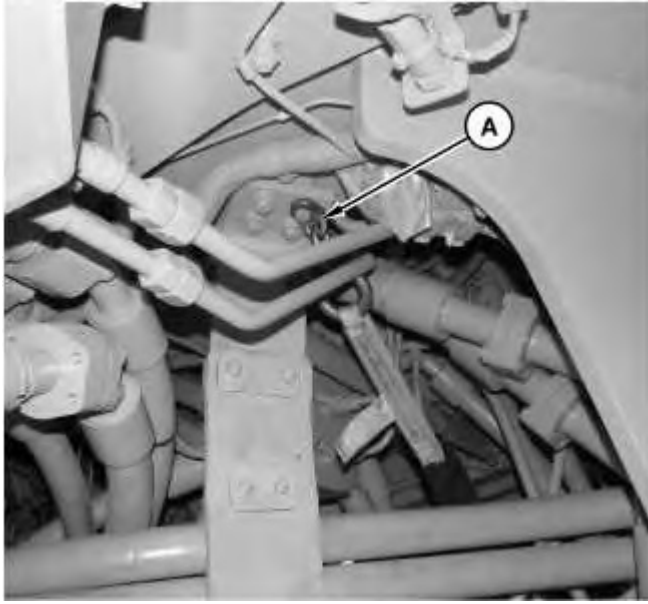


Illustration 1

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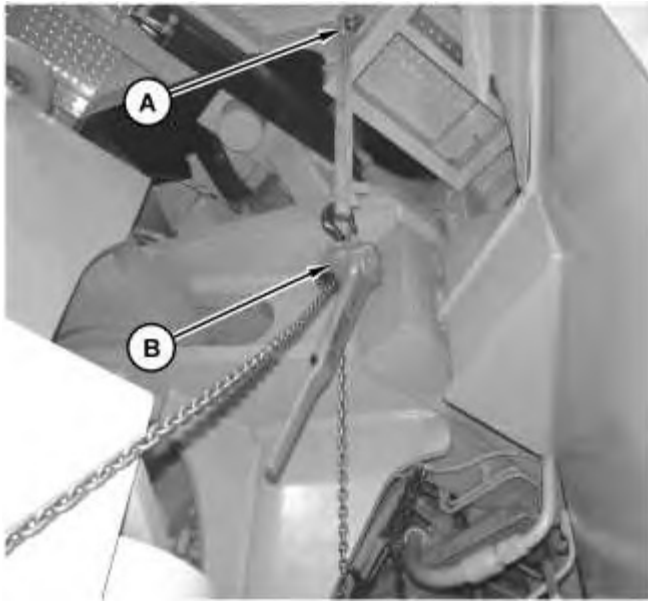


Illustration 2

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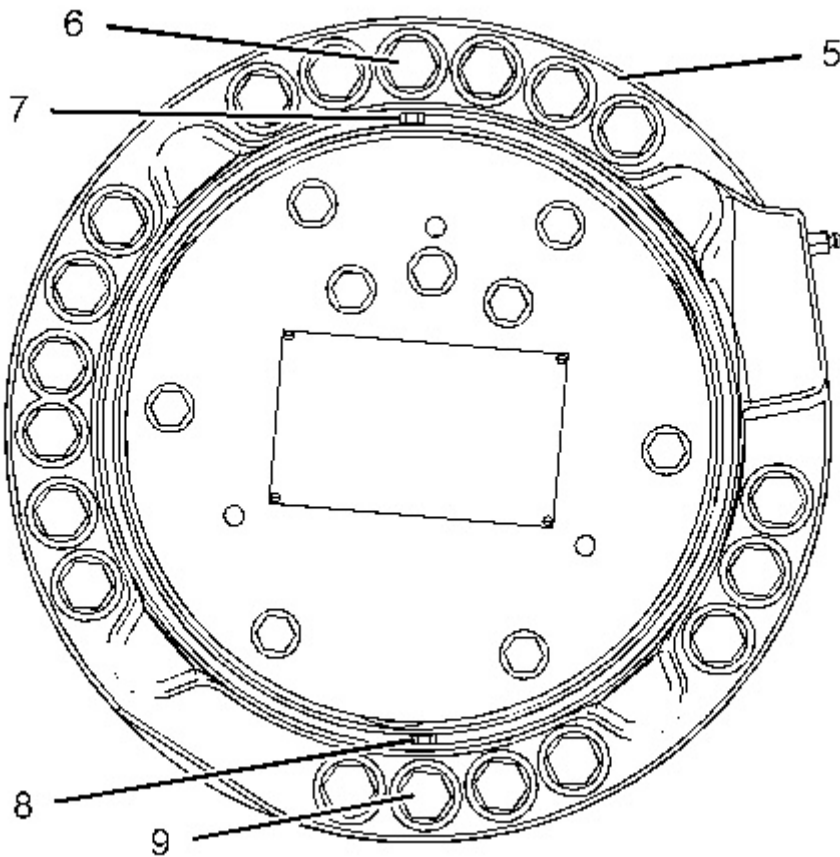


Illustration 3

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2. Attach Tooling (A) and Tooling (B) to parking brake assembly (5). Tooling (A) should be installed onto parking brake assembly (5) only at bolt location (6). Bolts (6) and (9) are used to keep parking brake assembly (5) assembled. Bolts (6) and (9) are located next to notches (7) and (8). The weight of parking brake assembly (5) is approximately 158 kg (350 lb).

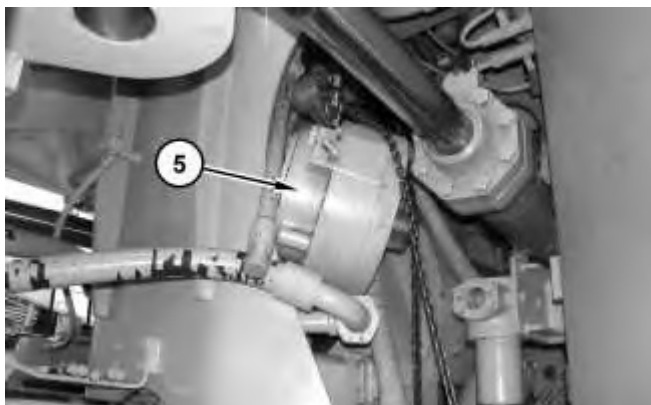


Illustration 4

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3. Install parking brake assembly (5).

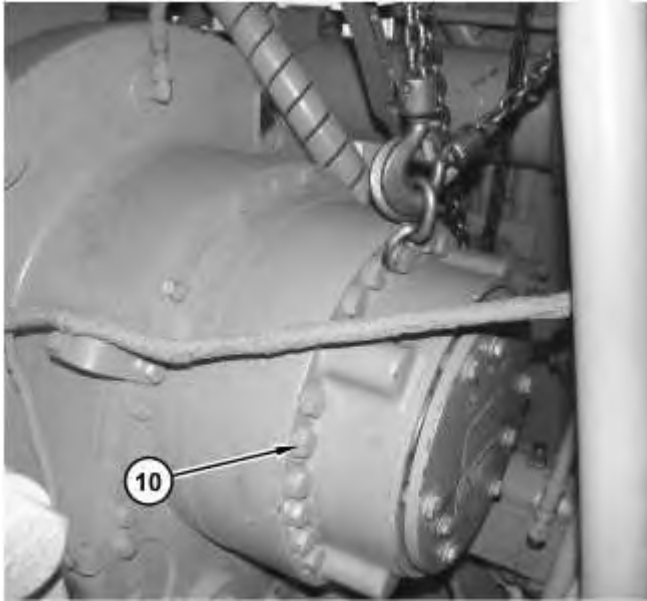


Illustration 5

g01487153

4. Install bolts (10). Tighten bolts (10) to a torque of 270 ± 40 N·m (200 ± 30 lb ft).

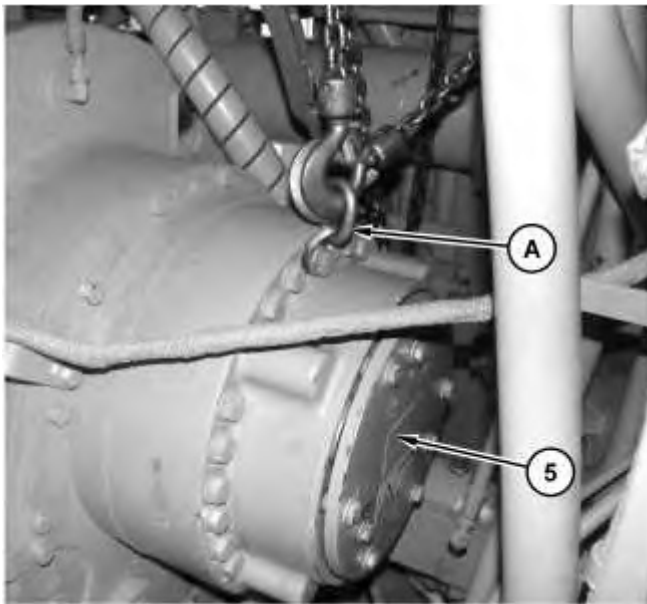


Illustration 6

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5. Remove Tooling (A). Install the bolt and tighten the bolt that held Tooling (A) to a torque of 270 ± 40 N·m (200 ± 30 lb ft).

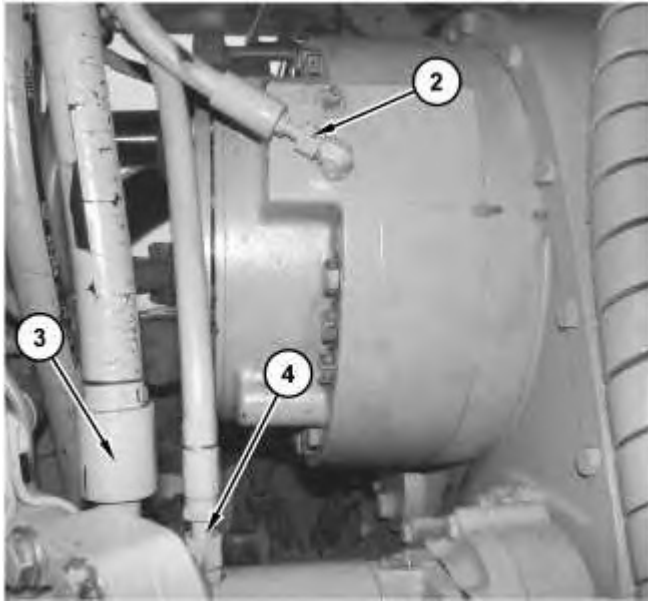


Illustration 7

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6. Connect hose assemblies (2), (3), and (4).

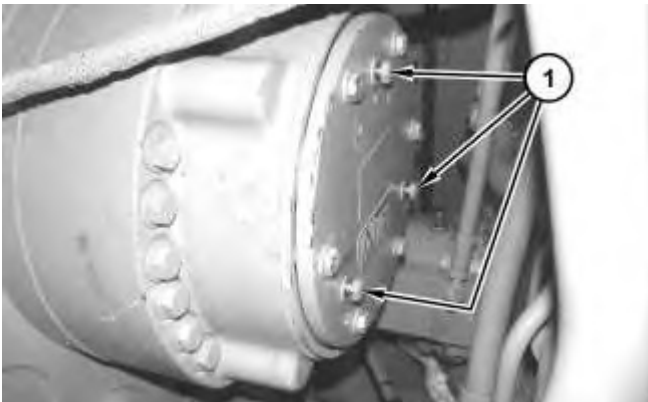


Illustration 8

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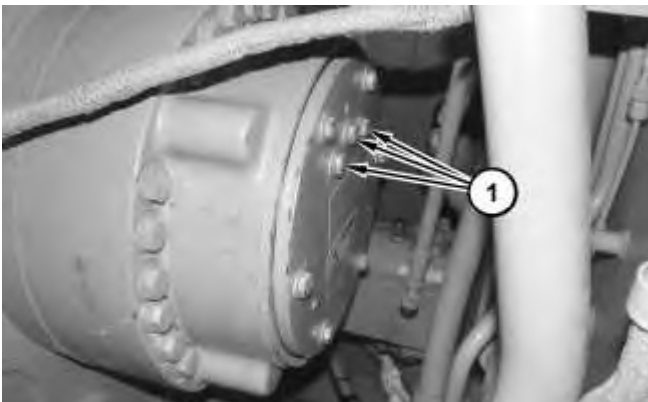


Illustration 9

g01486813

7. Remove three bolts (1). Install bolts (1) into the storage location, as shown. Refer to Illustration 9.

End By:

- a. Separate the steering frame lock. Refer to Disassembly and Assembly , "Steering Frame Lock - Separate and Connect".

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Model: 993K WHEEL LOADER Z8Z

Configuration: 993K Wheel Loader Z8Z00001-UP (MACHINE) POWERED BY C32 Engine

Disassembly and Assembly 993K Wheel Loader Power Train

Media Number -KENR5569-01

Publication Date -01/10/2012

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i04892747

Tire and Rim (Front) - Remove and Install

SMCS - 4202-010-FR

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	9U-7489	Lift Stand	2
	277-7200	Hydraulic Pump	1
B	194-7586	Pneumatic Wrench Gp	1
C	155-3597	Wheel Chock	2

Start By:

- a. Connect the steering frame lock.
-



Illustration 1

g03030981

1. Raise the lift arms. Place suitable cribbing under each of the lift arms, as shown. The measurements of the cribbing should be approximately 305 mm (12.0 inch) wide and 610 mm (24.0 inch) long. Lower the lift arms onto the suitable cribbing. Tilt the bucket forward so that the cutting edge of the bucket is resting on the ground.
2. Release the hydraulic system pressure.
3. Place Tooling (C) under the rear tires of the machine.

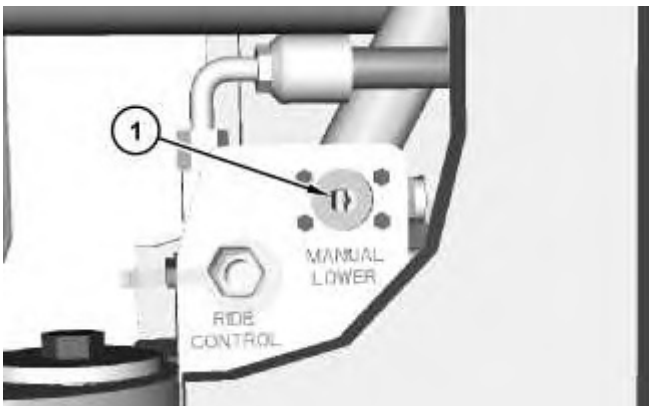


Illustration 2

g03030987

4. Turn valve (1) to the Manual Lower position.



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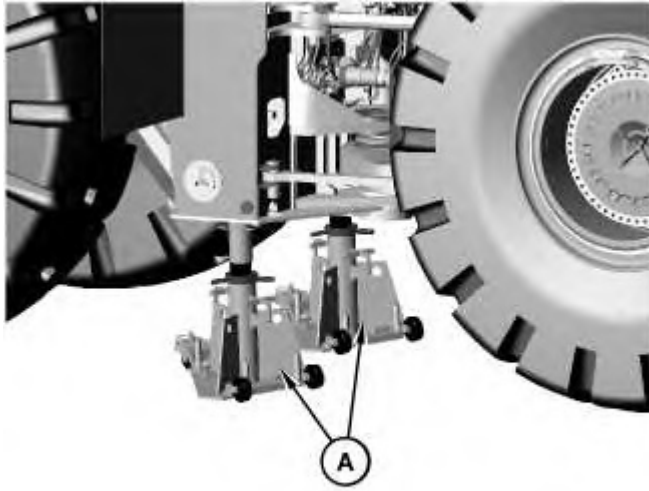


Illustration 3

g03030992

5. Install Tooling (A) under the front frame of the machine, as shown. Use Tooling (A) to raise the front of the machine until the tires are off the ground.

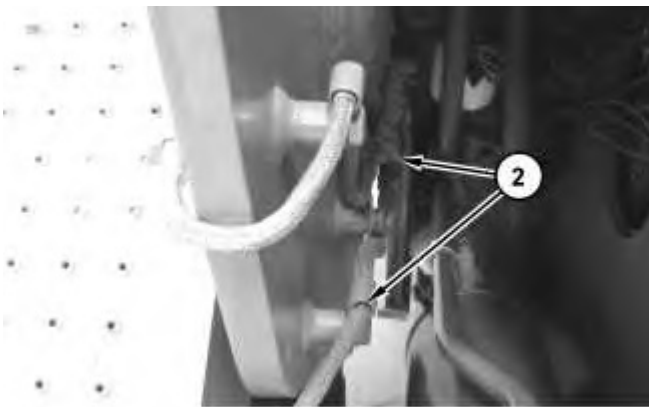


Illustration 4

g03031036

6. Disconnect harness assembly and clips (2).



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