



# Service Repair Manual

## **Model**

321D LCR EXCAVATOR

---

[Previous Screen](#)

Product: EXCAVATOR

Model: 321D LCR EXCAVATOR KBZ

Configuration: 321D LCR Excavator KBZ00001-UP (MACHINE) POWERED BY C6.4 Engine

## Disassembly and Assembly

### 321D LCR Excavator Machine Systems

Media Number -KENR6012-03

Publication Date -01/04/2010

Date Updated -20/04/2010

i02700167

## Boom - Remove

SMCS - 6501-011

## Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	8S-7640	Stand	2
	8S-7631	Tube	2
	8S-8048	Saddle	2
	8S-7615	Pin	2
B	3S-6224	Electric Hydraulic Pump (115 Volt) <sup>(1)</sup>	1
	141-1785	Receiving Sleeve	1
	137-8460	Puller Stud	1
	9U-5346	Nut	1
	6V-3175	Hydraulic Cylinder	1

<sup>(1)</sup> 8S-8033 Electric Hydraulic Pump (230 Volt) is available.

### Start By:

- A. Remove the stick. Refer to Disassembly and Assembly, "Stick - Remove".
- B. Release hydraulic system pressure. Refer to Disassembly and Assembly, "Hydraulic System Pressure - Release".

**Note:** Put identification marks on all lines, on all hoses, on all wires, and on all tubes for installation purposes. Plug all lines, hoses, and tubes. This helps to prevent fluid loss and this helps to keep contaminants from entering the system.

---

## NOTICE

**Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.**

**Refer to Special Publication, NENG2500, "Caterpillar Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Caterpillar products.**

**Dispose of all fluids according to local regulations and mandates.**



**At operating temperature, the hydraulic oil is hot and under pressure. Hot oils can cause burns.**

**To prevent possible personal injury, release the pressure in the work tool hydraulic circuit (boom, stick, bucket, and swing), travel circuits, and the hydraulic oil tank at the filler cap before any hydraulic lines or components are disconnected or removed.**

**Remove the filler cap only when the engine is stopped and the filler cap is cool enough to touch.**

- 
1. Drain the hydraulic oil into a suitable container for storage or disposal. Refer to Operation and Maintenance Manual, "Hydraulic System Oil - Change".
-

**<https://www.ebooklibonline.com>**

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

**<https://www.ebooklibonline.com>**

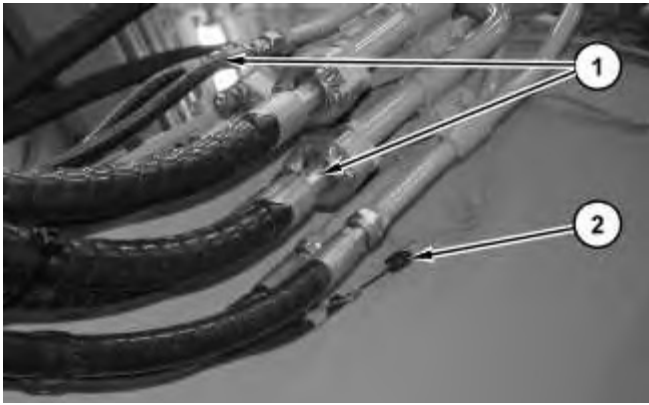


Illustration 1

g01348609

2. Disconnect hose assemblies (1) and disconnect harness assembly (2) .

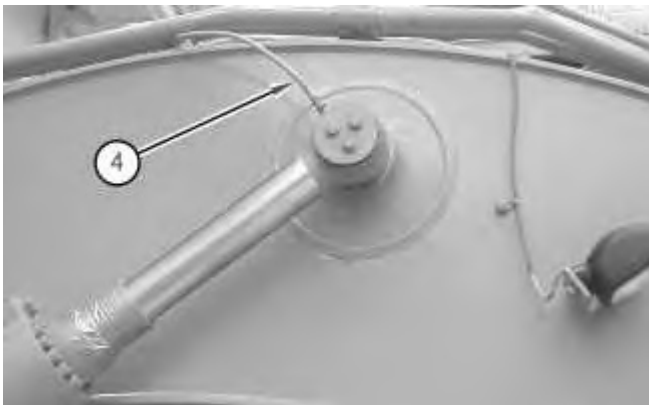
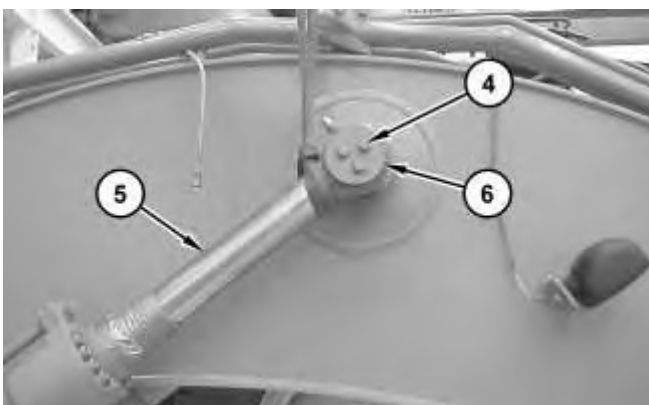


Illustration 2

g01348621

3. Disconnect lubrication hose assembly (3) .

**Note:** Put a plug in the end of the hose assembly. Put a cap on the fitting. This will help to prevent fluid loss. This will help also keep contaminants out of the lubrication system.



4. Attach a suitable lifting device to boom cylinder (5). The weight of boom cylinder (5) is approximately 285 kg (630 lb).
5. Remove bolts (4) and remove retainer plate (6) .



Illustration 4

g01348633

6. Remove spacer (7) .

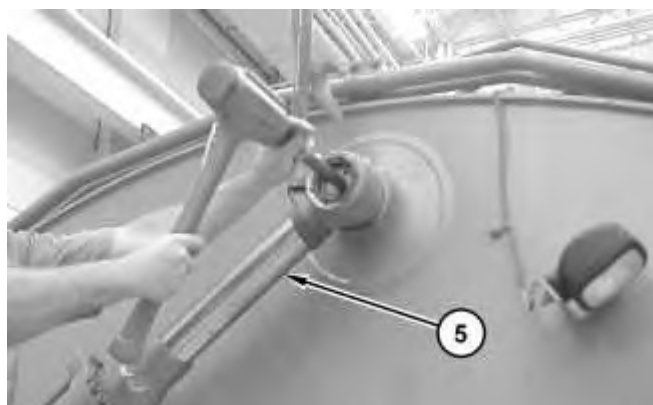
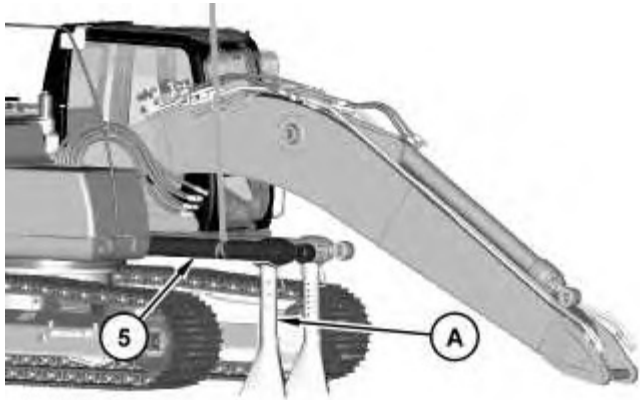


Illustration 5

g01348635

7. Use a hammer and a punch to remove the pin from the rod end of boom cylinder (5) .
-



---

Illustration 6

g01348639

8. Position Tooling (A) so that boom cylinder (5) will be supported in a horizontal position. Lower boom cylinder (5) to Tooling (A) .



---

Illustration 7

g01348645

9. Remove shim (8). Repeat for the opposite side.
  10. Repeat Step 3 through Step 9 for the other boom cylinder.
-

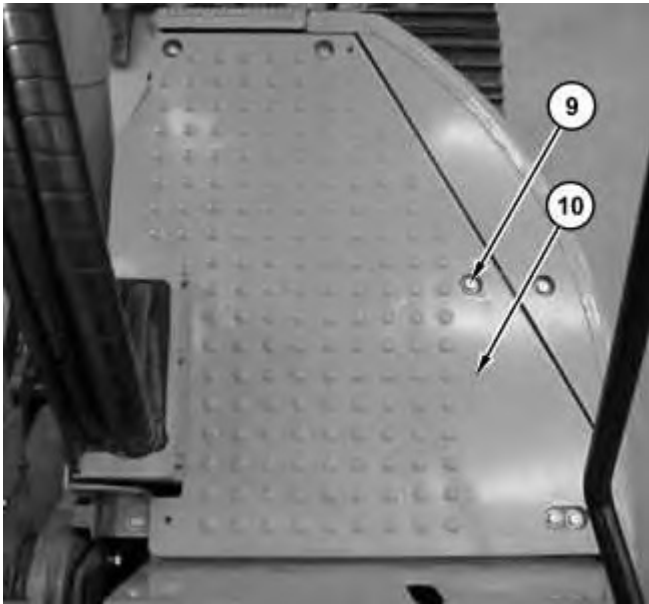


Illustration 8

g01348653

11. Remove bolts (9) and remove panel (10) .

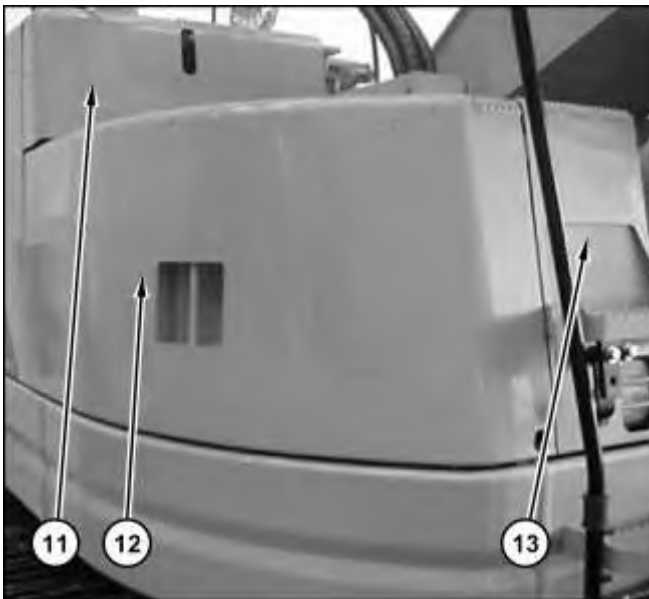


Illustration 9

g01348675

12. Remove panels (11), (12) and (13) .

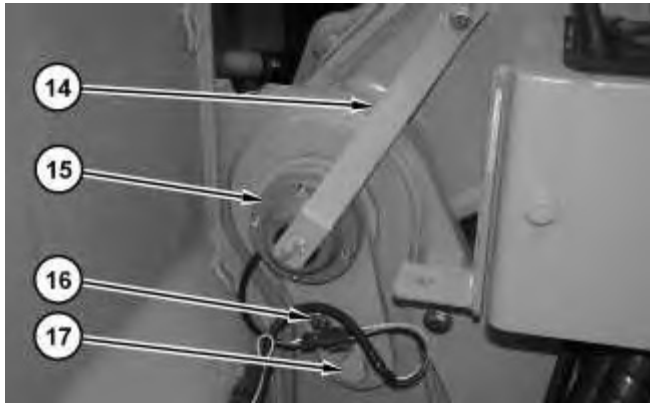


Illustration 10

g01348684

13. Remove support (14) .
14. Remove sensor (15) and bolt (16). Position sensor (15) out of the way.
15. Remove bolt (17) .

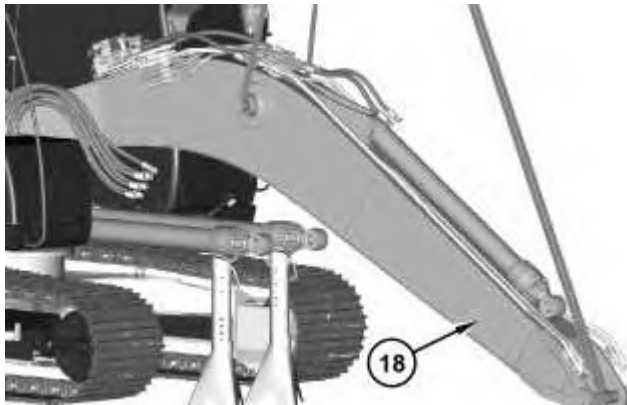


Illustration 11

g01348695

16. Attach a suitable lifting device to boom (18), as shown. The weight of the boom and the stick cylinder is approximately 1635 kg (3600 lb). Apply slight lifting tension to boom (18) .

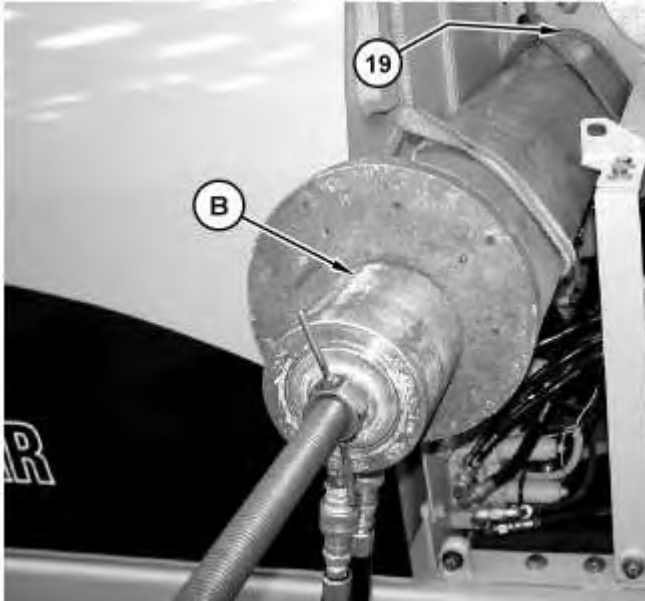


Illustration 12

g01348698

17. Attach a suitable lifting device to Tooling (B). Remove pin (19). The weight of Tooling (B) and pin (19) is approximately 159 kg (350 lb). Remove pin (19) and remove all shims that are present.
18. Carefully remove boom (18) from the machine. The weight of the boom and the stick cylinder is approximately 1635 kg (3600 lb).

[Previous Screen](#)

Product: EXCAVATOR

Model: 321D LCR EXCAVATOR KBZ

Configuration: 321D LCR Excavator KBZ00001-UP (MACHINE) POWERED BY C6.4 Engine

## Disassembly and Assembly

### 321D LCR Excavator Machine Systems

Media Number -KENR6012-03

Publication Date -01/04/2010

Date Updated -20/04/2010

i02702096

## Boom Bearings - Remove and Install

SMCS - 6501-010-BD

### Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	3S-6224	Electric Hydraulic Pump (115 Volt) <sup>(1)</sup>	1
	4C-9634	Puller Stud	1
	9U-6832	Nut	1
	6V-0113	Double Acting Cylinder	1
	134-8469	Spacer	1
	5P-7398	Bearing Puller Adapter	1

<sup>(1)</sup> 8S-8033 Electric Hydraulic Pump (230 Volt) is available.

#### Start By:

A. Remove the boom. Refer to Disassembly and Assembly, "Boom - Remove".

**Note:** Cleanliness is an important factor. Before the disassembly procedure, the exterior of the component should be thoroughly cleaned. This will help to prevent dirt from entering the internal mechanism.

---

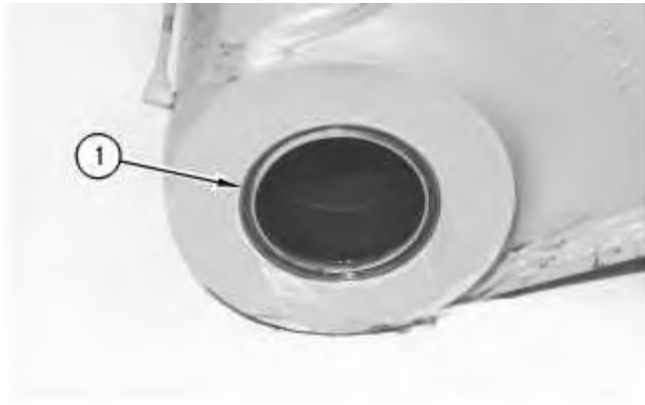


Illustration 1

g01351217

1. Remove lip seal (1) .

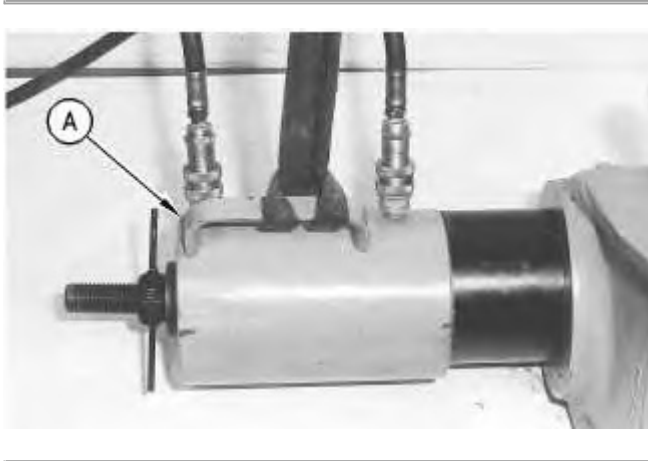


Illustration 2

g01351218

2. Use Tooling (A) to remove the sleeve bearing.
3. Repeat Steps 1 through 2 in order to remove the lip seal and the sleeve bearing from the other side of the boom.

## Installation Procedure

Table 2

Required Tools			
Tool	Part Number	Part Description	Qty
A	3S-6224	Electric Hydraulic Pump (115 Volt) <sup>(1)</sup>	1
	4C-9634	Puller Stud	1
	9U-6832	Nut	1
	6V-0113	Double Acting Cylinder	1

	134-8469	Spacer	1
	5P-7398	Bearing Puller Adapter	1
B	1P-0520	Bearing and Seal Driver	1
C	5P-0960	Molybdenum Grease	

<sup>(1)</sup> **8S-8033** Electric Hydraulic Pump (230 Volt) is available.

**Note:** Cleanliness is an important factor. Before assembly, all parts should be thoroughly cleaned in cleaning fluid. Allow the parts to air dry. Wiping cloths or rags should not be used to dry parts. Lint may be deposited on the parts which may cause later trouble. Inspect all parts. If any parts are worn or damaged, use new parts for replacement.

1. Make sure that the bores for the sleeve bearings are free of paint and grease prior to the installation of the sleeve bearings. Coat the sleeve bearings and the bearing bores with Tooling (C) prior to the installation of the sleeve bearings in the bores. Sleeve bearings must be installed with the identification numbers toward the outside of the boom.

**Note:** Make sure that the bearings are installed in the bore so that the identification numbers of the bearings are facing outward.

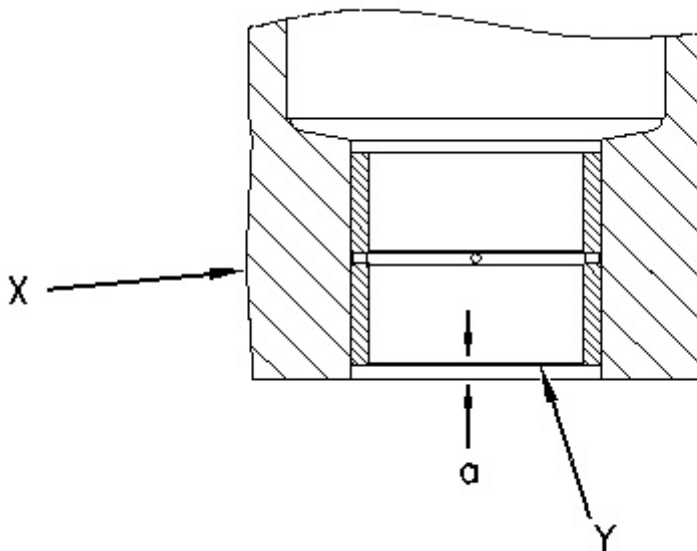


Illustration 3

g01351220

(X) Boom

(Y) Bearing

2. Lower the temperature of the sleeve bearings. Use Tooling (B) to install the sleeve bearing in the pin bore at the foot of the boom. Install the sleeve bearing until Dimension (a) is  $9.5 \pm 0.8$  mm ( $0.37 \pm 0.03$  inch) below the outside surface of the boom.

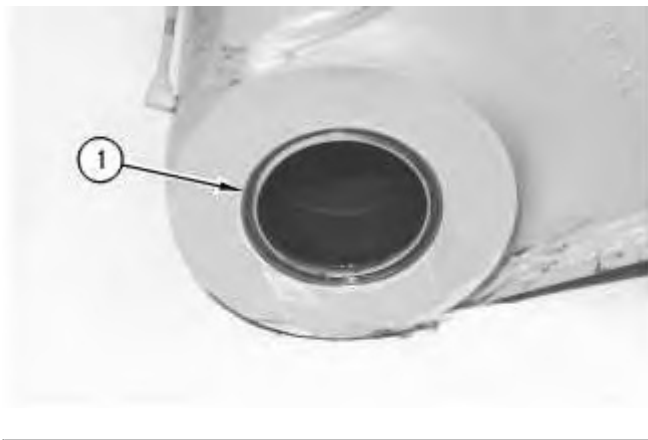


Illustration 4

g01351222

3. Use Tooling (A) to install lip seal (1) in the pin bore at the foot of the boom. Install the seal with the sealing lip toward the outside of the boom. Install the lip seal until the lip seal makes contact with the sleeve bearing.
4. Repeat Steps 2 through 3 in order to install the sleeve bearing and the lip seal on the other side of the boom.
5. Put a thin coat of Tooling (C) on the sleeve bearings. Put a thin coat of Tooling (C) on the lips of lip seals (1) .

**End By:** Install the boom. Refer to Disassembly and Assembly, "Boom - Install".

[Previous Screen](#)

Product: EXCAVATOR

Model: 321D LCR EXCAVATOR KBZ

Configuration: 321D LCR Excavator KBZ00001-UP (MACHINE) POWERED BY C6.4 Engine

## Disassembly and Assembly

### 321D LCR Excavator Machine Systems

Media Number -KENR6012-03

Publication Date -01/04/2010

Date Updated -20/04/2010

i02684363

## Boom - Install

SMCS - 6501-012

## Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	8S-7640	Stand	2
	8S-7631	Tube	2
	8S-8048	Saddle	2
	8S-7615	Pin	2
B	3S-6224	Electric Hydraulic Pump (115 Volt) <sup>(1)</sup>	1
	141-1785	Receiving Sleeve	1
	137-8460	Puller Stud	1
	9U-5346	Nut	1
	6V-3175	Hydraulic Cylinder	1
C	4C-9485	Pin Driver Cap	1
D	5P-0960	Molybdenum Grease	1

<sup>(1)</sup> 8S-8033 Electric Hydraulic Pump (230 Volt) is available.

**Note:** Cleanliness is an important factor. Before assembly, all parts should be thoroughly cleaned in cleaning fluid. Allow the parts to air dry. Wiping cloths or rags should not be used to dry parts. Lint may be deposited on the parts which may cause later trouble. Inspect all parts. If any parts are worn or damaged, use new parts for replacement.

**Note:** Make sure that the pin bores in the boom and the pin bores in the upper frame are clean and free of dirt and debris prior to installing the boom in the upper frame.

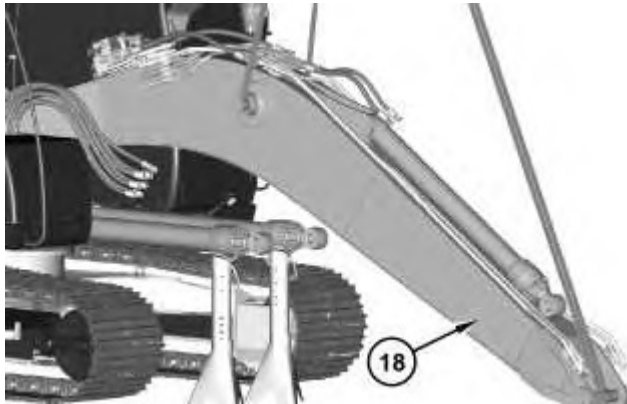


Illustration 1

g01348695

1. Attach a suitable lifting device to boom (18), as shown. The weight of the boom and the stick cylinder is approximately 1635 kg (3600 lb).

**Note:** Apply a thin coat of Tooling (D) to the bores in the upper frame and in the bore for the boom foot pin. Apply a thin coat of Tooling (D) to the lip of lip type seals.

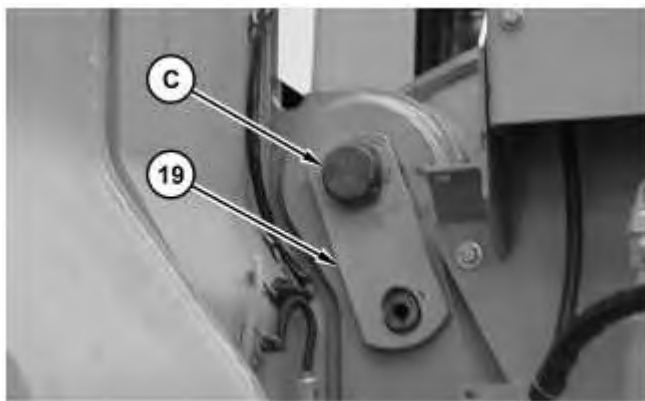


Illustration 2

g01349055

2. Apply a thin coat of Tooling (D) to pin (19) .
  3. Install Tooling (C) in pin (19) .
  4. Position boom (18) and install pin (19). Remove Tooling (C) .
-

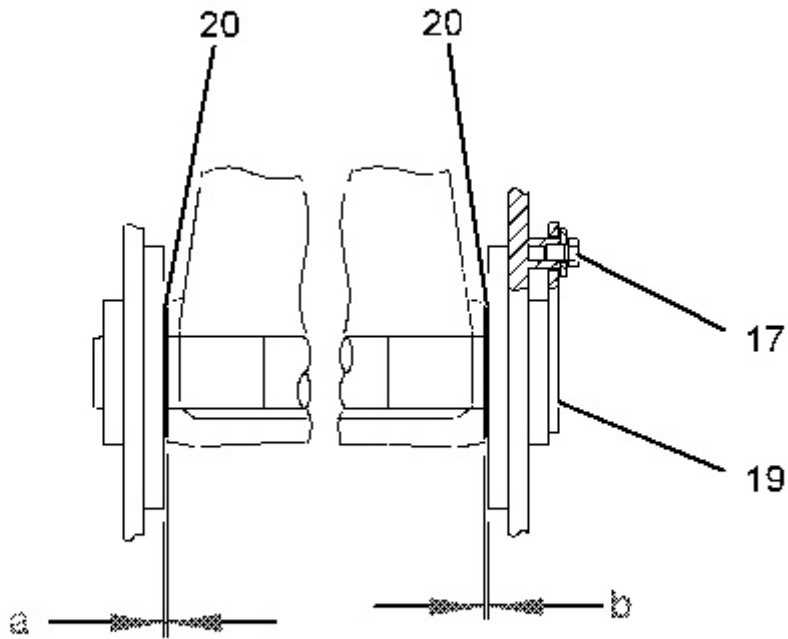


Illustration 3

g01349007

5. Measure the total clearance between the boom and the upper frame at the bore for the boom foot pin. The total clearance of Dimension (a) plus Dimension (b) must not be more than 1.0 mm (0.04 inch). If the total clearance is less than 1.0 mm (0.04 inch), the addition of shims between the boom and the upper frame will not be required. If the total clearance is more than 1.0 mm (0.04 inch), add the correct thickness of shims in order to obtain the required clearance.
6. Use the following table to determine the correct shims (20).

Table 2

Table for Shims (30)	
Shim	Thickness (mm)
212-2838	2.0 <sup>(2)</sup>
113-2127	0.5
093-0084	1.0
093-0116	2.0

<sup>(2)</sup> This shim is required to be used. This shim must be next to the boom.

7. Install the correct shims.

8. Repeat Steps 2 through 4.

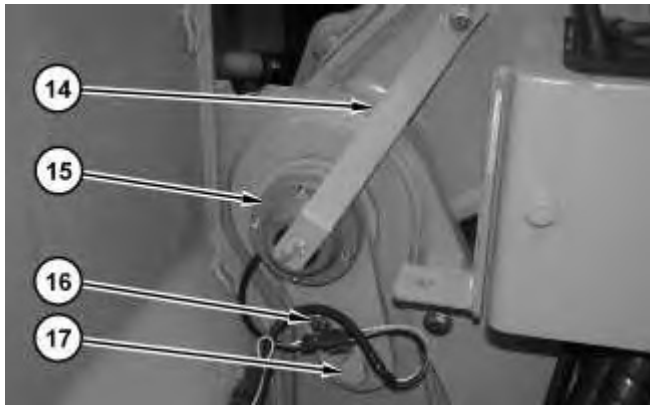


Illustration 4

g01349064

9. Install bolt (17) .
10. Install sensor (15) and install support (14) .
11. Install bolt (16) .

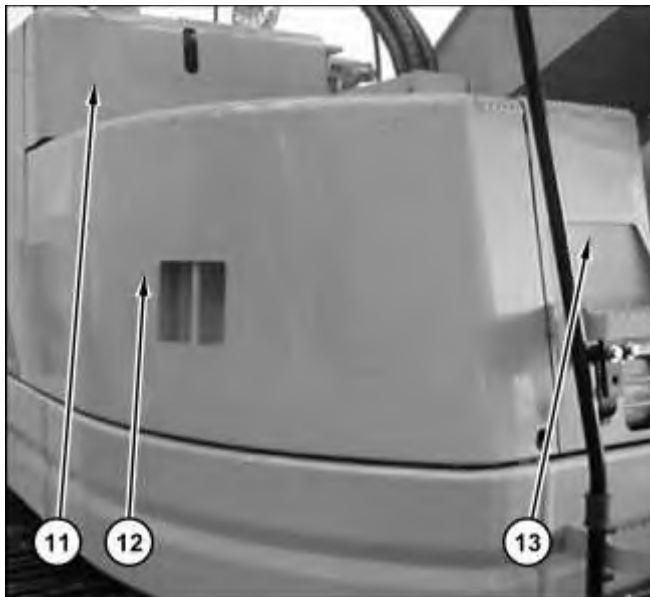
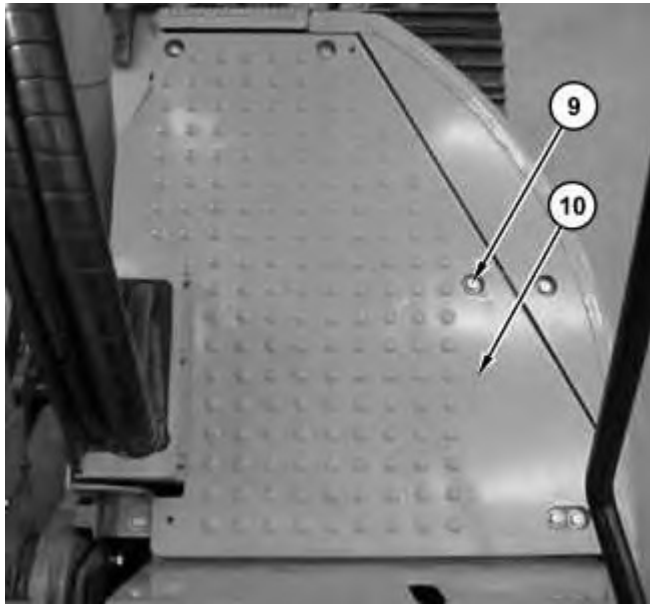


Illustration 5

g01348675

12. Install panels (11), (12) and (13) .
-



---

Illustration 6

g01349070

13. Position panel (10) and install bolts (9) .



---

Illustration 7

g01348645

14. Apply a thin coat of Tooling (D) to the pin.
  15. Partially install the pin and install shim (8) .
-

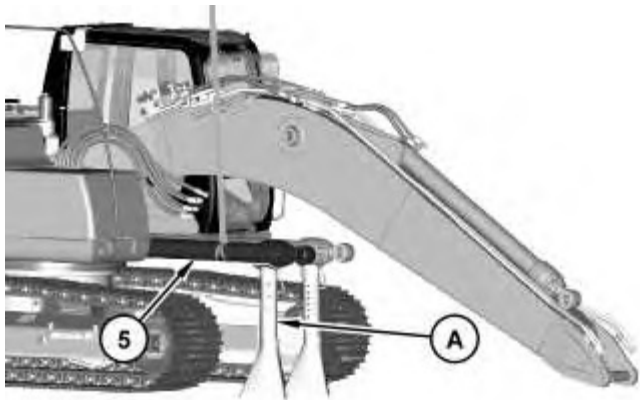


Illustration 8

g01348639

16. Attach a suitable lifting device to boom cylinder (5). The weight of boom cylinder (5) is approximately 285 kg (628 lb).

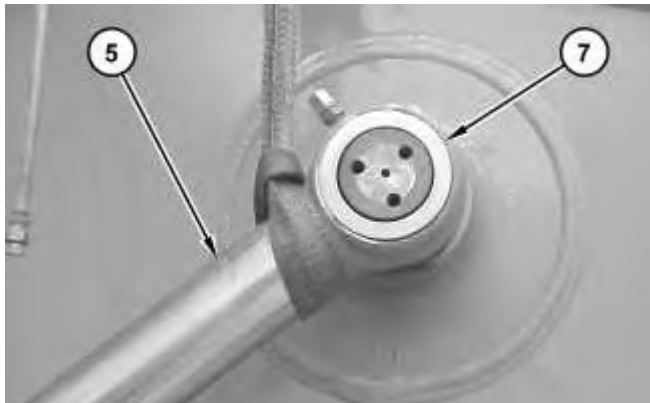


Illustration 9

g01349131

17. Position boom cylinder (5) and fully install pin and spacer (7) .

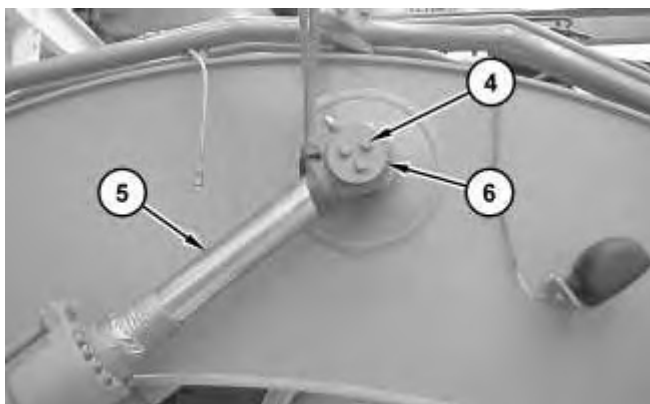


Illustration 10

g01348630

18. Position retainer plate (6) and install bolts (4) .
19. Remove the suitable lifting device from boom cylinder (5) .

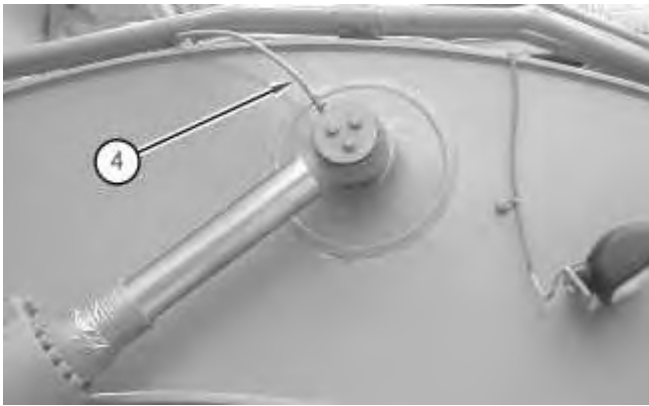


Illustration 11

g01348621

20. Connect lubrication hose assembly (4) .

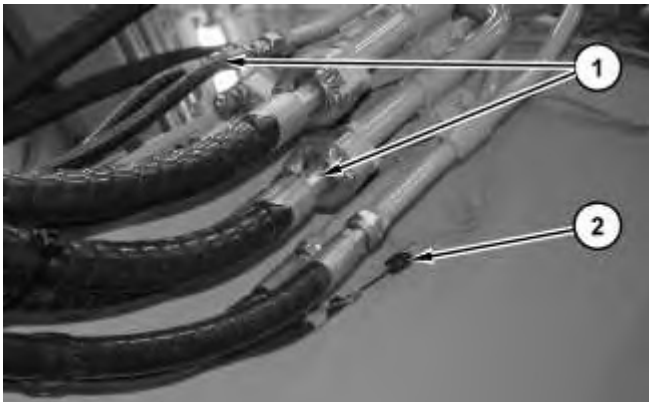


Illustration 12

g01348609

21. Connect all hose assemblies (1) and connect harness assembly (2) .
22. Fill the hydraulic tank. Refer to Operation and Maintenance Manual, "Hydraulic System Oil - Change".

**End By:** Install the stick. Refer to Disassembly and Assembly, "Stick - Remove".

[Previous Screen](#)

Product: EXCAVATOR

Model: 321D LCR EXCAVATOR KBZ

Configuration: 321D LCR Excavator KBZ00001-UP (MACHINE) POWERED BY C6.4 Engine

## Disassembly and Assembly 321D LCR Excavator Machine Systems

Media Number -KENR6012-03

Publication Date -01/04/2010

Date Updated -20/04/2010

i01849410

# Window Wiper Motor - Remove and Install

SMCS - 7305-010-MQ

## Removal Procedure

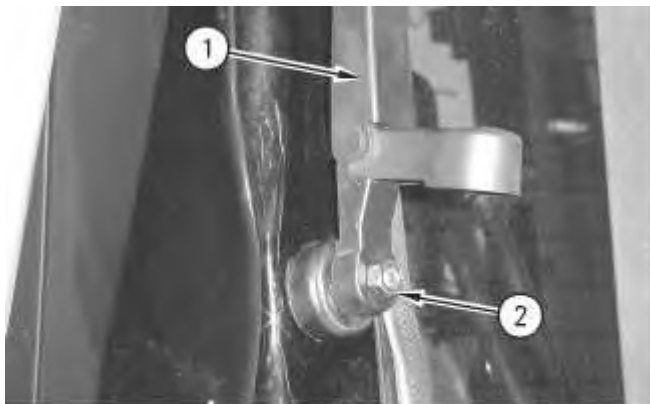
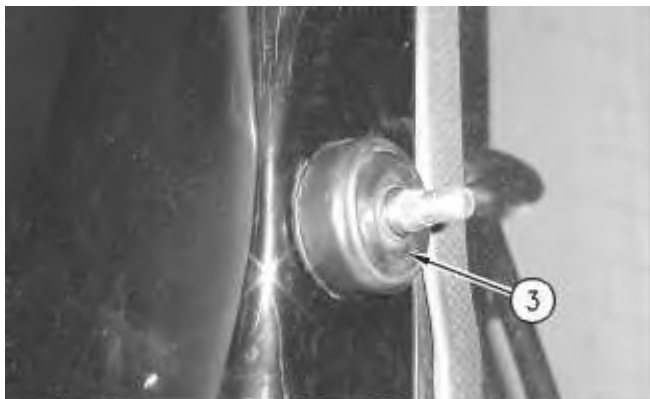


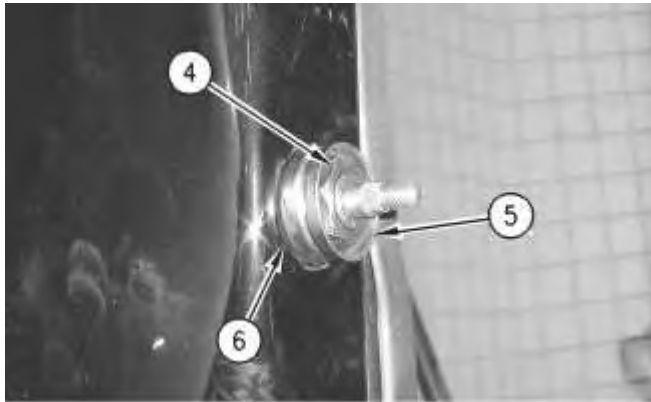
Illustration 1

g00942136

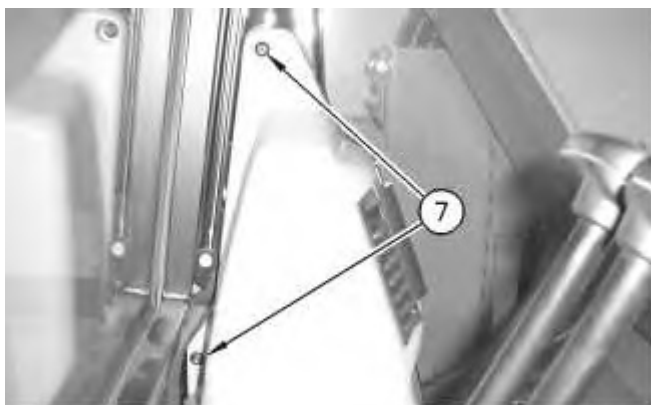
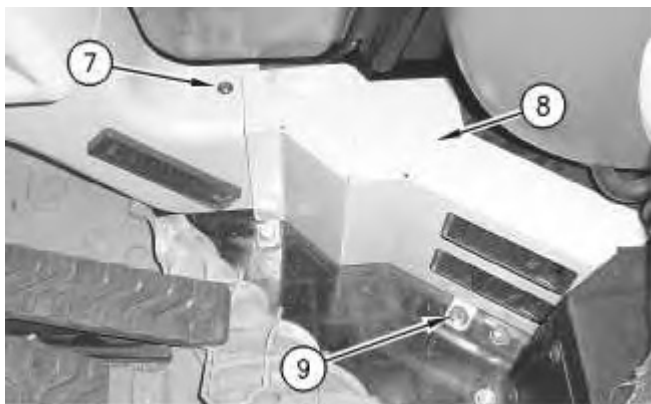
1. Raise the cover. Remove nut (2) and wiper arm (1).



2. Remove cap (3).



3. Remove nut (4) and washers (5). Remove packing (6).





**Suggest:**

**If the above button click is invalid.**

**Please download this document**

**first, and then click the above link**

**to download the complete manual.**

**Thank you so much for reading**

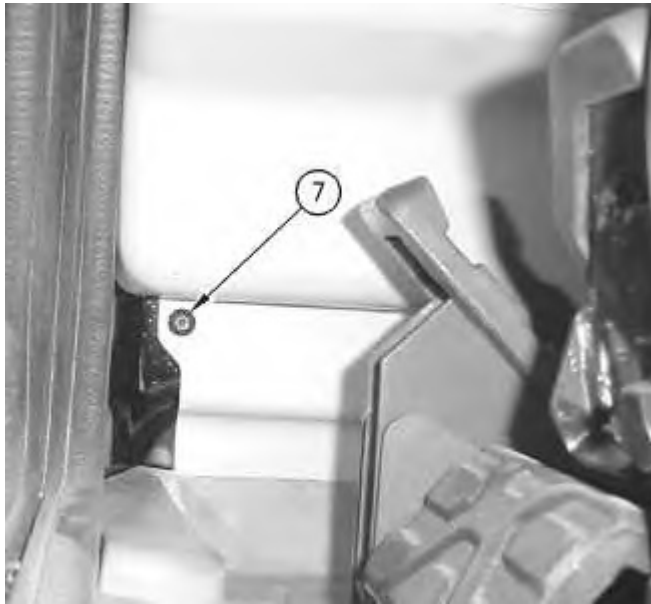


Illustration 6

g00942141

4. Remove bolts (7) and bolts (9). Remove panel assembly (8).

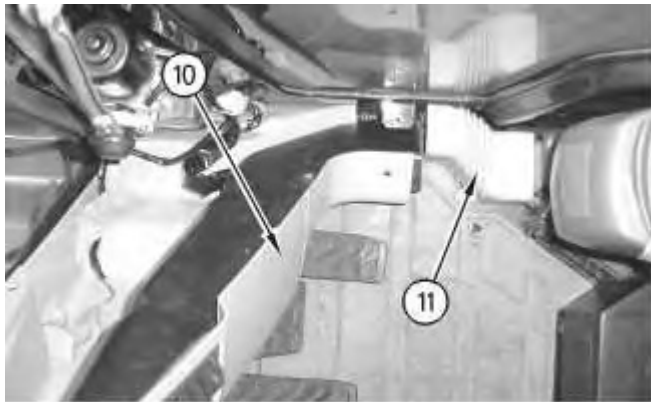


Illustration 7

g00942147

5. Remove panel assembly (10) from duct assembly (11).

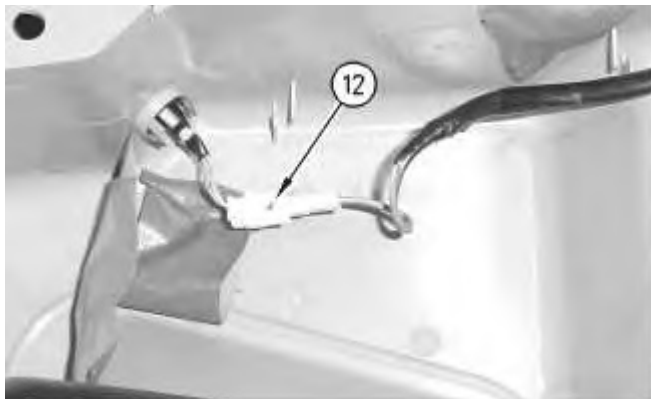


Illustration 8

g00942152

**<https://www.ebooklibonline.com>**

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

**<https://www.ebooklibonline.com>**