

Product: EXCAVATOR

Model: 312C L EXCAVATOR CBA

Configuration: 312C & 312C L Excavators CBA01201-UP (MACHINE) POWERED BY 3064 Engine

## Operation and Maintenance Manual

### 312C Excavator

Media Number -SEBU7424-06

Publication Date -01/04/2007

Date Updated -04/04/2007

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## Specifications

SMCS - 7000

## Transportation

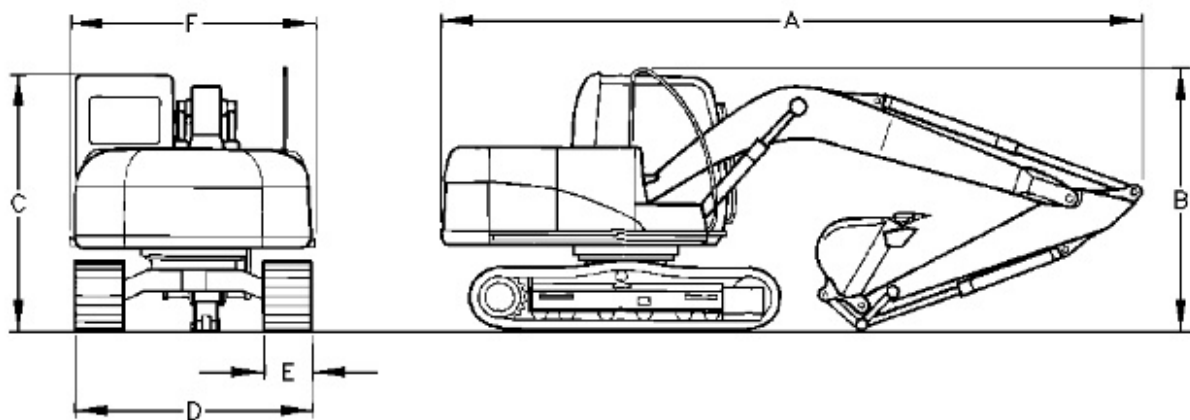


Illustration 1

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Table 1

312C Excavator <sup>(1)</sup>	
Approximate Weight	12550 kg (27668 lb)
Overall Length (A)	7570 mm (24 ft 10 inch)
Overall Height (B)	2650 mm (8 ft 8 inch)

Height of Cab (C)	2760 mm (9 ft)
Overall Width (D)	2490 mm (8 ft 2 inch)
Track Shoe Width (E)	500 mm (1 ft 7 inch)
Width of Upper Structure (F)	2490 mm (8 ft 2 inch)

<sup>(1)</sup> These specifications are for a machine that has a 4.65 m (15 ft 3 inch) boom, a 3.0 m (9 ft 10 inch) stick, a 0.62 m (0.68 yd) bucket, and a 10 percent full fuel tank.

Table 2

<b>312C L Excavator <sup>(1)</sup></b>	
Approximate Weight	13050 kg (28750 lb)
Overall Length (A)	7570 mm (24 ft 10 inch)
Overall Height (B)	2650 mm (8 ft 8 inch)
Height of Cab (C)	2760 mm (9 ft)
Overall Width (D)	2510 mm (8 ft 3 inch)
Track Shoe Width (E)	600 mm (2 ft)
Width of Upper Structure (F)	2490 mm (8 ft 2 inch)

<sup>(1)</sup> These specifications are for a machine that has a 4.65 m (15 ft 3 inch) boom, a 3.0 m (9 ft 10 inch) stick, a 0.62 m (0.68 yd) bucket, and a 10 percent full fuel tank.

Table 3

<b>312C Excavator <sup>(1)</sup></b>	<b>312C Excavator (S/N: CAE1-UP)</b>	<b>312C Excavator(Demolition) (S/N: CAE1-UP)</b>
Approximate Weight	12200 kg (26896 lb)	13050 kg (28750 lb)
Overall Length (A)	7570 mm (24 ft 10 inch)	7570 mm (24 ft 10 inch)
Overall Height (B)	2650 mm (8 ft 8 inch)	2650 mm (8 ft 8 inch)
Height of Cab (C)	2760 mm (9 ft)	2760 mm (9 ft)

Overall Width (D)	2490 mm (8 ft 2 inch)	2490 mm (8 ft 2 inch)
Track Shoe Width (E)	500 mm (1 ft 7 inch)	500 mm (1 ft 7 inch)
Width of Upper Structure (F)	2490 mm (8 ft 2 inch)	2600 mm (8 ft 6 inch)

<sup>(1)</sup> These specifications are for a machine that has a 4.65 m (15 ft 3 inch) boom, a 2.5 m (8 ft 2 inch) stick, a 0.62 m<sup>3</sup> (0.68 yd<sup>3</sup>) bucket, and a 10 percent full fuel tank.

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### Boom/Stick/Bucket Combinations

SMCS - 6000; 6700

This machine can be equipped with a large variety of boom-stick-bucket combinations in order to meet the needs of various applications.

As a general rule, use a bucket with a smaller capacity when you are using a longer stick. Conversely, use a bucket with a larger capacity when you are using a shorter stick and/or a shorter boom. This rule ensures better machine stability and protection against structural machine damage.

The following tables show various compatible boom-stick-bucket combinations. Select an optimum combination according to the working conditions and according to the type of work that is being done.

Table 1

Application	SAE Capacity of Bucket	Width of Bucket	312C			312C L		
			Reach Boom = 4.65 m (15 ft 3 inch)					
			Stick					
			3.0 m (9 ft 10 inch)	2.5 m (8 ft 2 inch)	2.1 m (6 ft 10 inch)	3.0 m (9 ft 10 inch)	2.5 m (8 ft 2 inch)	2.1 m (6 ft 10 inch)
Excavation	0.36 m (0.39 yd)	610 mm (24 inch)	(1)	(1)	(1)	(1)	(1)	(1)
	0.48 m <sup>3</sup> (0.52 yd <sup>3</sup> )	762 mm	(1)	(1)	(1)	(1)	(1)	(1)

	(30 inch)						
0.62 m <sup>3</sup> (0.68 yd <sup>3</sup> )	914 mm (36 inch)	(1)	(1)	(1)	(1)	(1)	(1)
0.75 m <sup>3</sup> (0.82 yd <sup>3</sup> )	1067 mm (42 inch)	(2)	(2)	(2)	(2)	(1)	(1)
0.89 m <sup>3</sup> (0.97 yd <sup>3</sup> )	1219 mm (48 inch)	(3)	(2)	(2)	(3)	(2)	(2)

<sup>(1)</sup> 1800 kilogram per cubic meter (3400 pound per cubic yard) is the maximum density of material.

<sup>(2)</sup> 1500 kilogram per cubic meter (2500 pound per cubic yard) is the maximum density of material.

<sup>(3)</sup> 1200 kilogram per cubic meter (2000 pound per cubic yard) is the maximum density of material.

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### Plate Locations and Film Locations

SMCS - 1000; 7000

The Product Identification Number (PIN) will be used to identify a powered machine that is designed for an operator to ride.

Caterpillar products such as engines, transmissions and major attachments that are not designed for an operator to ride are identified by Serial Numbers.

For quick reference, record the identification numbers in the spaces that are provided below the illustration.

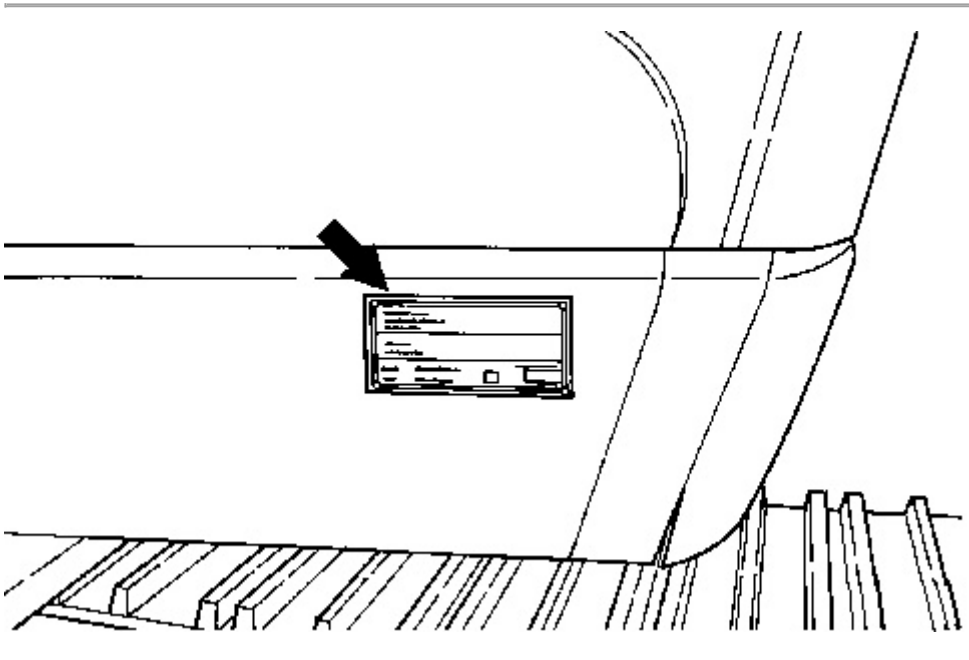
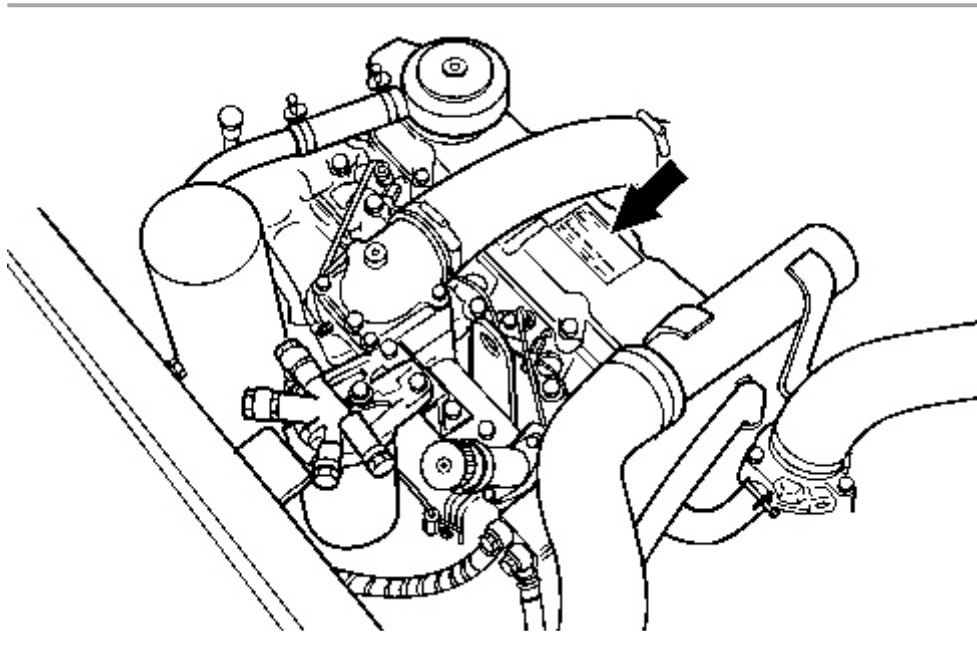


Illustration 1

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Machine PIN \_\_\_\_\_



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Illustration 2

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Engine Serial Number \_\_\_\_\_

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## **Emissions Certification Film**

**SMCS - 1000; 7000; 7405**

**Note:** This information is pertinent in the United States, in Canada and in Europe.

Consult your Cat dealer for an Emission Control Warranty Statement.

This label is located on the engine.

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### Daily Inspection

SMCS - 1000; 6319; 6700; 7000



**Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.**

**At operating temperature, the engine coolant is hot and under pressure.**

**Steam can cause personal injury.**

**Check the coolant level only after the engine has been stopped and the cooling system pressure cap is cool enough to touch with your bare hand.**

**Remove the cooling system pressure cap slowly to relieve pressure.**

**Cooling system conditioner contains alkali. Avoid contact with the skin and eyes to prevent personal injury.**

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### NOTICE

**Accumulated grease and oil on a machine is a fire hazard. Remove this debris with steam cleaning or high pressure water, at least every 1000 hours or each time any significant quantity of oil is spilled on a machine.**

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For maximum service life of the machine, perform a thorough daily inspection before you mount the machine and before you start the engine.

Look around the machine and under the machine. Look for trash buildup, dirt buildup, loose bolts, oil leaks, coolant leaks, broken parts, cracked parts or worn parts.

**Note:** Watch closely for leaks. If you observe a leak, find the source of the leak and correct the leak. If you suspect a leak or you observe a leak, check the fluid levels more frequently.

Inspect the condition of the equipment and of the hydraulic components.

Check the condition of the tires. Adjust the inflation pressure, if necessary.

Check the oil levels, the coolant level, and the fuel level.

Remove any trash buildup and debris. Make all necessary repairs before you operate the machine.

Make sure that all covers and guards are securely attached.

Adjust the mirrors for the correct rear view of the machine.

Make sure that the engine air filter service indicator for the tractor is not in the red zone. Make sure that the engine air filter service indicator for the scraper is not in the red zone.

Grease all of the fittings that need to be serviced on a daily basis.

Daily, perform the procedures that are applicable to your machine:

- Operation and Maintenance Manual, "Blade Linkage - Lubricate"
- Operation and Maintenance Manual, "Boom and Stick Linkage - Lubricate"
- Operation and Maintenance Manual, "Bucket Linkage - Lubricate"
- Operation and Maintenance Manual, "Cooling System Level - Check"
- Operation and Maintenance Manual, "Engine Oil Level - Check"
- Operation and Maintenance Manual, "Fuel System Water Separator - Drain"
- Operation and Maintenance Manual, "Fuel Tank Water and Sediment - Drain"
- Operation and Maintenance Manual, "Hydraulic System Oil Level - Check"
- Operation and Maintenance Manual, "Indicators and Gauges - Test"
- Operation and Maintenance Manual, "Seat Belt - Inspect"
- Operation and Maintenance Manual, "Track (Rubber) - Inspect/Replace"
- Operation and Maintenance Manual, "Travel Alarm - Test"
- Operation and Maintenance Manual, "Undercarriage - Check"

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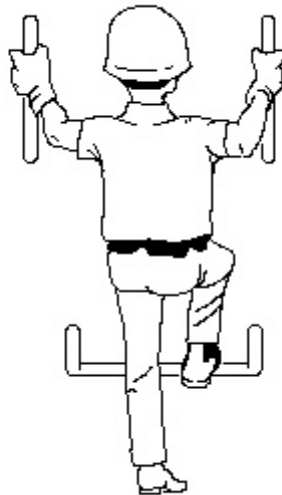
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## Mounting and Dismounting

SMCS - 6700; 7000

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Illustration 1

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Use steps and handholds whenever you mount the machine. Use steps and handholds whenever you dismount the machine. Before you mount the machine, clean the step and the handholds. Inspect the step and handholds. Make all necessary repairs.

Face the machine whenever you mount the machine and whenever you dismount the machine. Maintain a three-point contact with the step and with handholds.

**Note:** Three-point contact can be two feet and one hand. Three-point contact can also be one foot and two hands.

Do not mount a moving machine. Do not dismount a moving machine. Never jump off the machine. Do not try to mount the machine when you carry tools or supplies. Do not try to

dismount the machine when you are carrying tools or supplies. Use a hand line to pull equipment onto the platform. Do not use any controls as handholds when you enter the operator compartment or when you exit the operator compartment.

## **Machine Access System Specifications**

The machine access system has been designed to meet the intent of the technical requirements in "ISO 2867 Earth-moving Machinery – Access Systems". The access system provides for operator access to the operator station and to conduct the maintenance procedures described in Maintenance section.

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### Alternate Exit

SMCS - 7310

### Hammer (If Equipped)

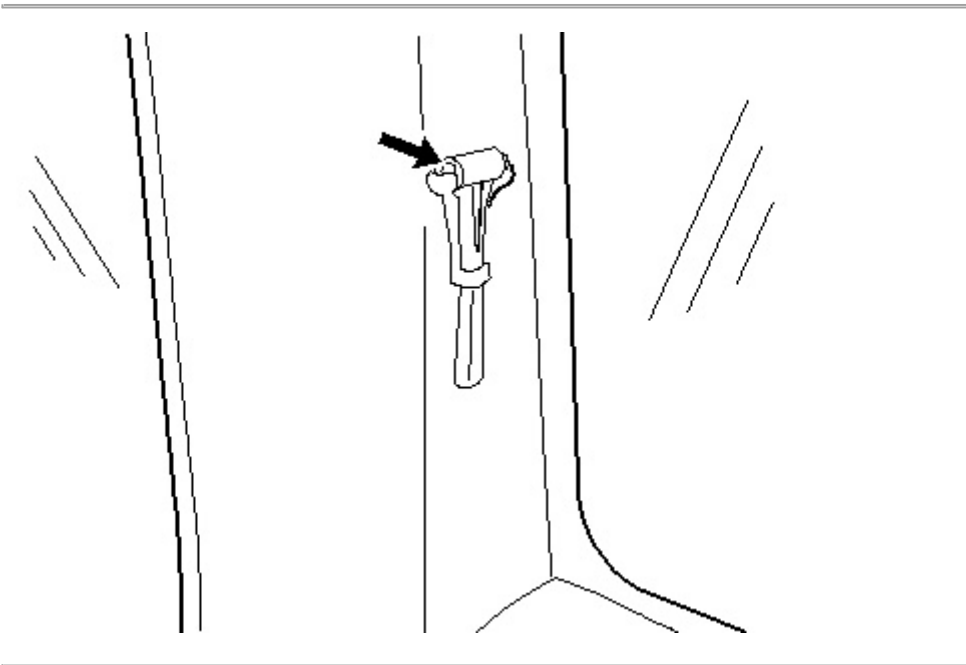


Illustration 1

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**Alternate Exit** - The rear window serves as an alternate exit.

**Break Glass** - Perform the following procedure in order to exit through the



rear window. A hammer is mounted on the right side of the cab. Strike the rear window with the hammer in order to break the glass. Climb through the opening of the rear window in order to exit the cab.

## Ring (If Equipped)

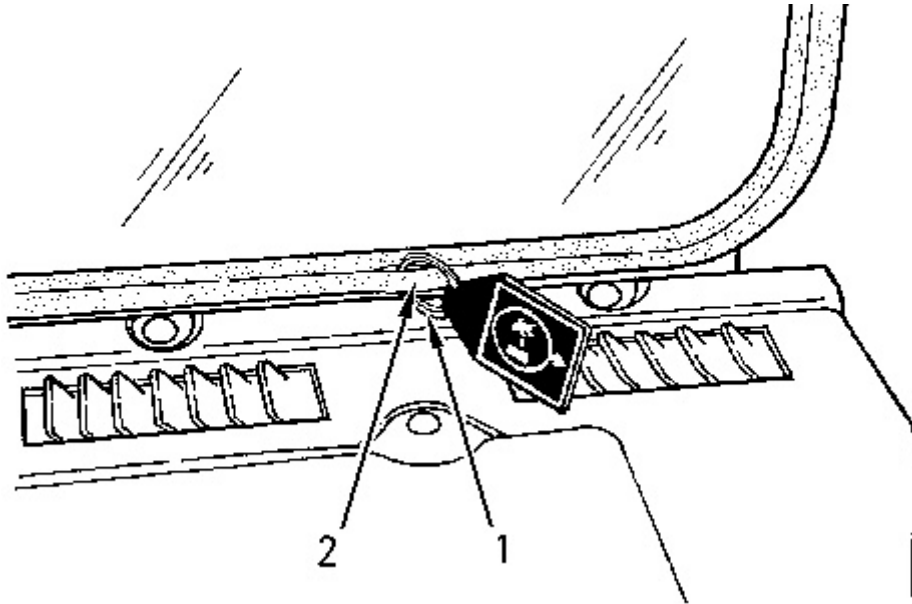


Illustration 2

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(1) Ring

(2) O-ring seal

The rear window serves as an alternate exit.

To remove the rear window, pull ring (1) and push out the glass.

Completely remove O-ring seal (2) from the seal that supports the glazing support seal. This will provide enough clearance so that the seal can hinge and the glazing can pass outward.

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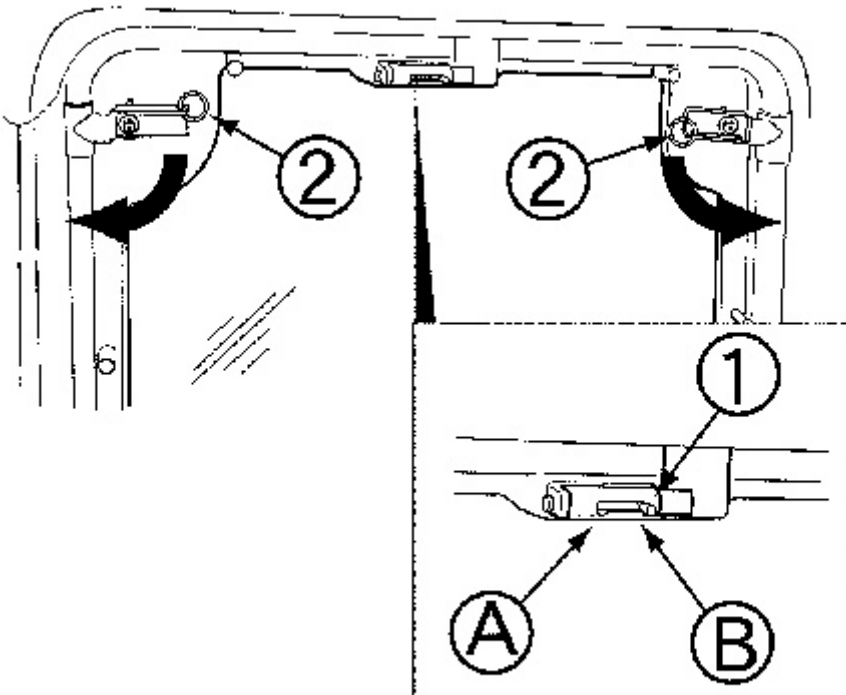
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### Alternate Exit - If Equipped

SMCS - 7310

The rear window serves as an alternate exit. The rear window can be removed from the inside of the cab or from the outside of the cab.

### Removing Rear Window from the Inside

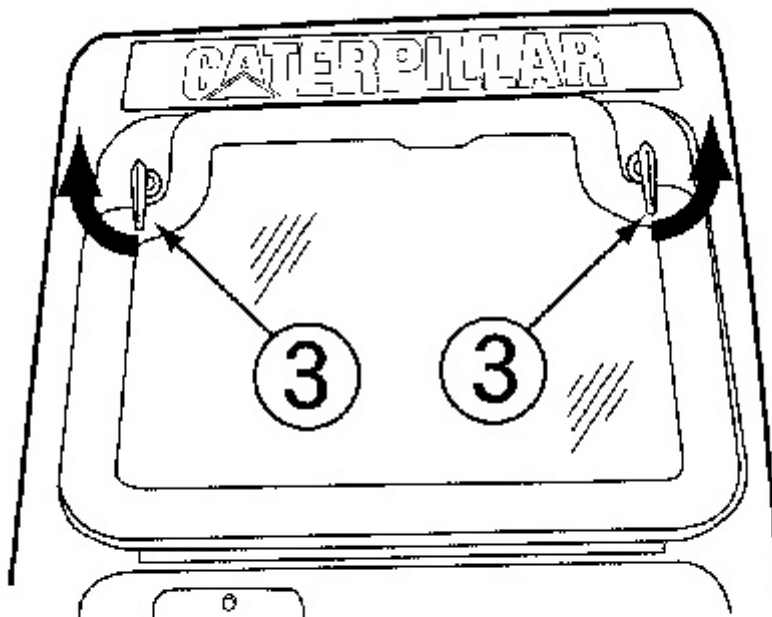


- (1) Lock pin
- (2) Lever
- (A) Unlocked position
- (B) Locked position

1. Place lock pin (1) in unlocked position (A) .
2. Grip left and right levers (2). Fully turn the levers in the direction of the arrow and push the rear window outward.

## Removing Rear Window from the Outside

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1. Make sure that lock pin (1) is in the unlocked position (A) .
2. Grip right and left levers (3). Fully turn the levers in the direction of the arrow and pull backward in order to remove the window.



**Note:** When lock pin (1) is in the locked position (B), the rear window cannot be removed.

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### **Seat**

**SMCS - 5258-025; 7312-025; 7324; 7327**

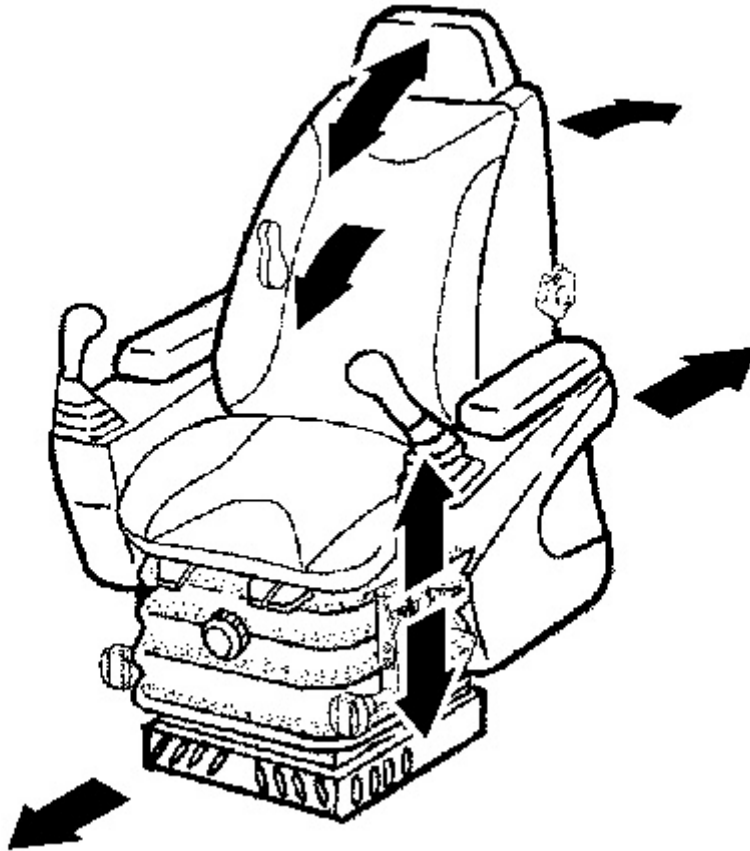
Put the lever for the hydraulic lockout control in the LOCKED position. For further details on this procedure, refer to Operation and Maintenance Manual, "Hydraulic Lockout Control". Do this procedure before adjusting the seat and adjusting the console. This will prevent any possibility of unexpected movement of machine.

Adjust the seat at the beginning of each work period and adjust the seat when you change operators.

Always use the seat belt when you operate the machine. For further details on this procedure, refer to Operation and Maintenance Manual, "Seat Belt".

The seat should be adjusted so that full pedal travel is allowed.

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Illustration 1

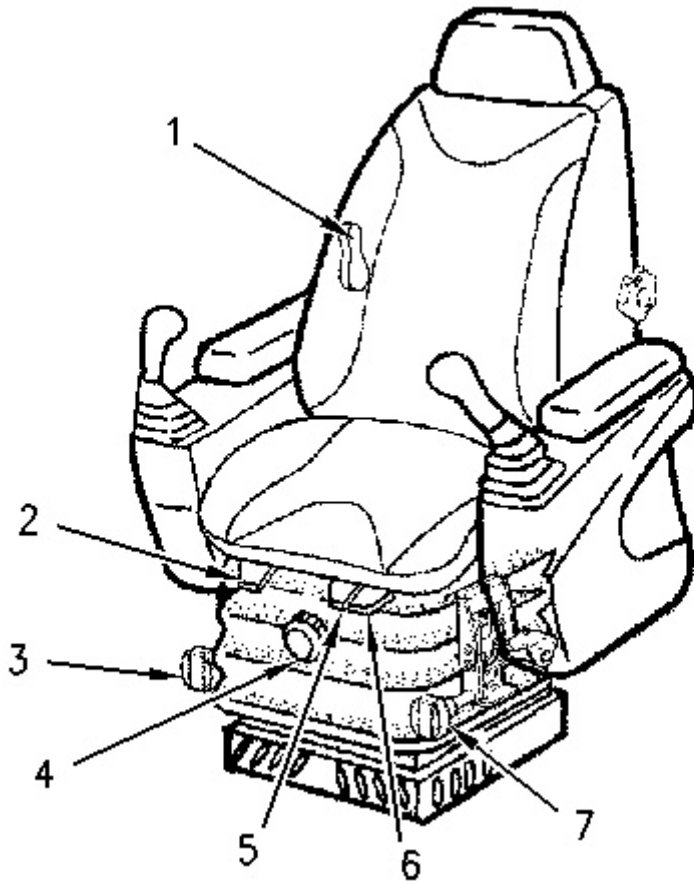
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The operator can adjust the seat position forward or backward. The seat position can be adjusted up and down. The operator may also adjust the seat back tilt. Select the desired position in order to allow full pedal travel and full lever travel.

The right console and the left console can be adjusted vertically.

The seat and the consoles can also slide as one unit.

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Illustration 2

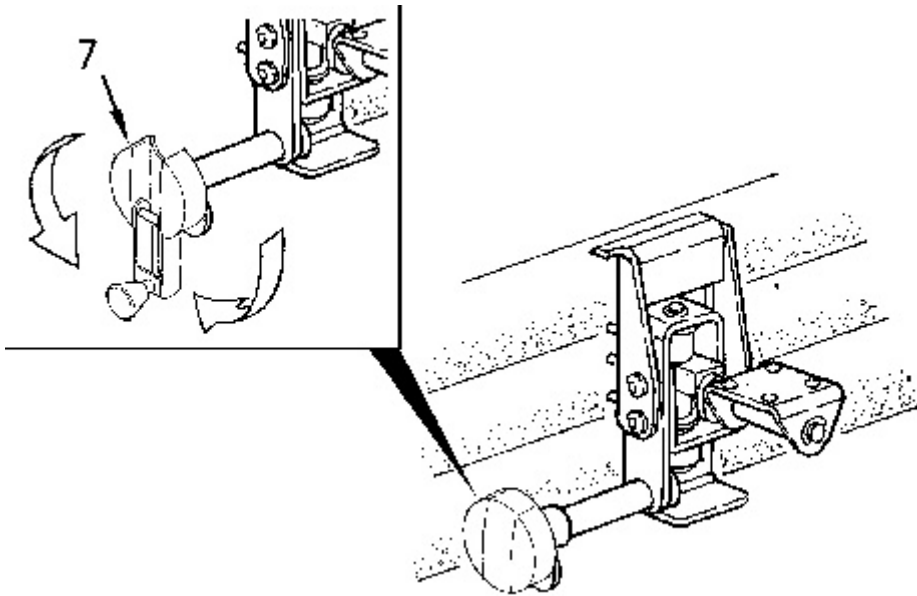
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- (1) Seat back tilt
- (2) Move the seat and the consoles forward or backward.
- (3) Adjust height of console.
- (4) Seat suspension
- (5) Move the seat forward or backward.
- (6) Adjust height of seat.
- (7) Adjust height of console.

To adjust the seat back tilt to the desired position, pull lever (1).

To move the seat, the left console, and the right console forward or backward as one unit, pull up lever (2) and hold the lever. Hold the seat in the desired position. Release the lever in order to lock the seat, the left console, and the right console.

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Illustration 3

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Turn knob (7) (if equipped) in order to tilt the left console to the desired height.

Turn knob (3) (if equipped) in order to tilt the right console to the desired height.

To adjust the seat suspension, turn operator weight adjustment knob (4) (if equipped) until the dial indicator shows the approximate weight of the operator. The adjustment knob has a range of 50 kg to 120 kg (110 lb to 265 lb). Turning the adjustment knob clockwise increases the reading. Turning the adjustment knob counterclockwise decreases the reading.

To adjust the seat forward or backward, pull up lever (5) and hold the lever. Move the seat to the desired position. To lock the seat in the selected position, release the lever.

Use the two-position adjustment lever (6) in order to adjust the height of the seat. Pull up lever (6) into the first position. The angle of the seat can now be changed. Only the rear of the seat will tilt. Hold the seat in the desired position. Release the lever. To adjust the height of the seat, pull up lever (6) through the first position and into the second position. The front of the seat and rear of the seat will raise simultaneously. The front of the seat and rear of the seat will lower simultaneously. Hold the seat in the desired position. Release the lever.

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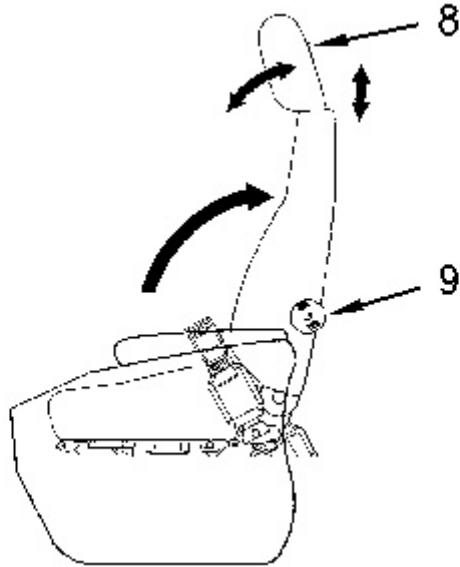


Illustration 4

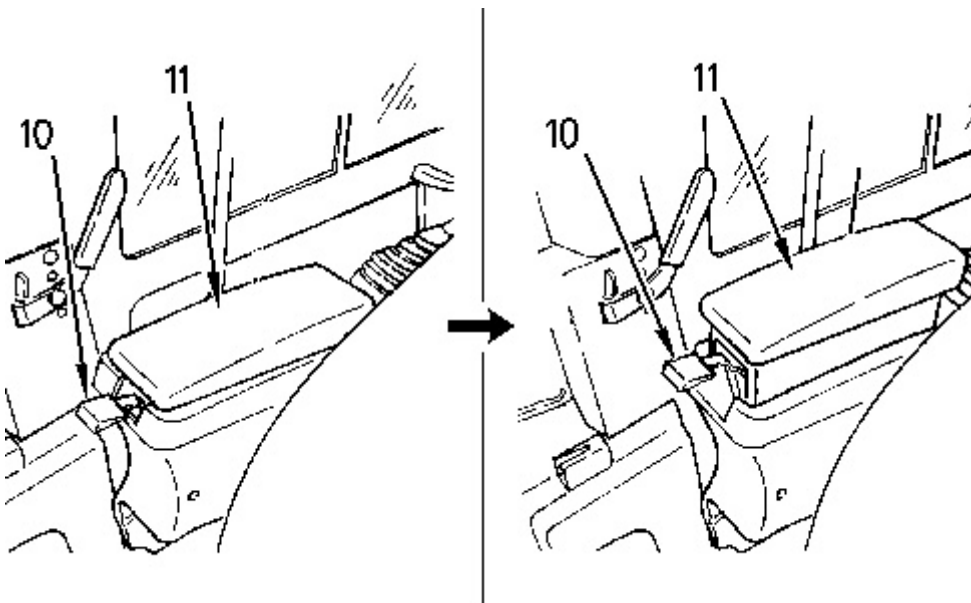
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(8) Adjust height of the headrest.

(9) Adjust lumbar support.

The operator can adjust the height of headrest (8) (if equipped) and the angle of the headrest. To adjust the headrest, hold the headrest with both hands. Move the headrest forward or backward and move the headrest up and down. Release the headrest when the desired position is attained. The headrest will remain in the desired position.

The lumbar support is located in the back of the seat. Turn knob (9) (if equipped) counterclockwise in order to increase the force of the lumbar support. Turn the knob clockwise in order to decrease the force of the lumbar support.



To raise armrest (11), lift lever (10). To lower armrest (11), lift lever (10) and apply downward pressure.

Table 1

Callout	Function	Type of Seat		
		KAB-T8P	KAB-528P	KAB-527P
(1)	Seat back tilt	(1)	(1)	(1)
(2)	Move the seat and the consoles forward or backward.	(1)	(1)	(1)
(3)	Adjust height of console.			(1)
(4)	Seat suspension		(1)	(1)
(5)	Move the seat forward or backward.	(1)	(1)	(1)
(6)	Adjust height of seat.	(1)	(1)	(1)
(7)	Adjust height of console.			(1)
(8)	Adjust height of the headrest.	(2)	(2)	(1)
(9)	Adjust lumbar support.			(1)

(1) Standard

(2) Optional

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### Seat Belt

SMCS - 7327

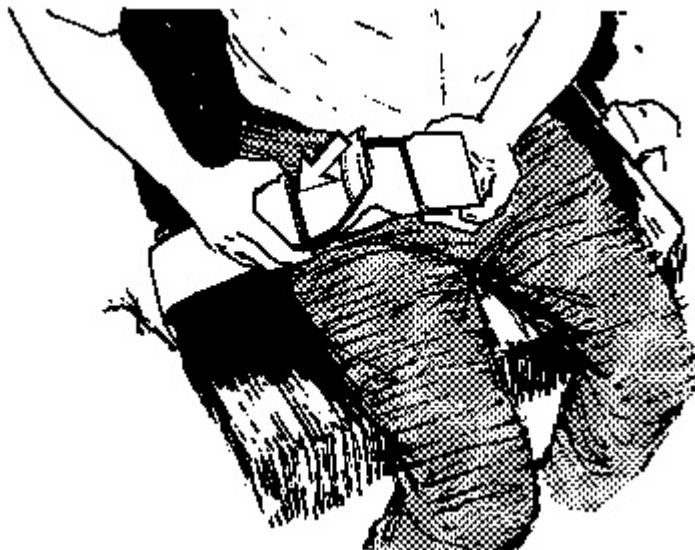
**Note:** This machine was equipped with a seat belt when the machine was shipped from Caterpillar. At the time of installation, the seat belt and the instructions for installation of the seat belt meet the SAE J386 and ISO 6683 standards. Consult your Cat dealer for all replacement parts.

Always check the condition of the seat belt and the condition of the mounting hardware before you operate the machine.

### Seat Belt Adjustment for Non-Retractable Seat Belts

Adjust both ends of the seat belt. The seat belt should be snug but comfortable.

### Lengthening the Seat Belt





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