

ORIGINAL INSTRUCTIONS

CX470B
Crawler Excavator

OPERATOR'S MANUAL

Part number 48004714
1st edition English
March 2016



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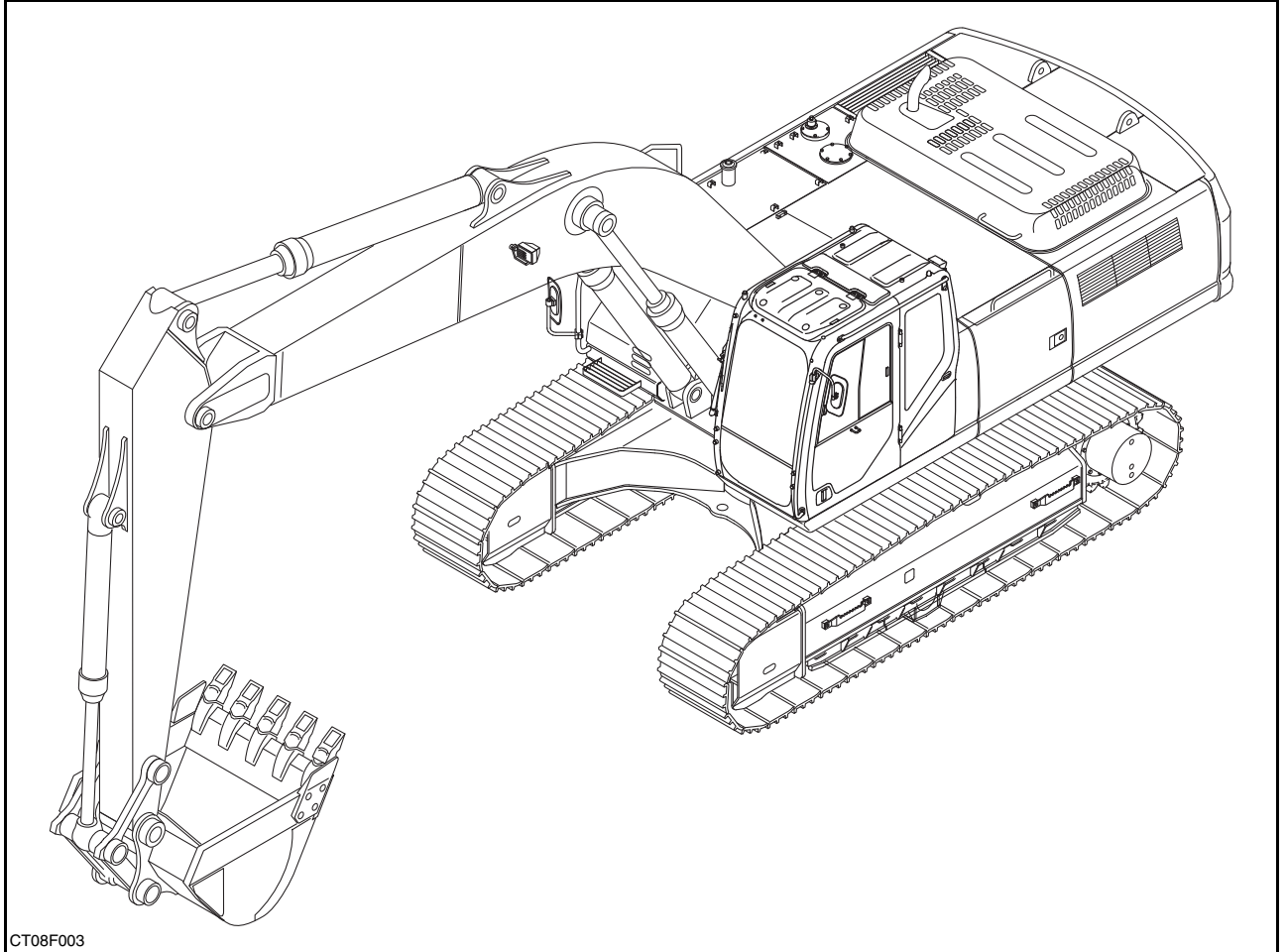
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SECTION 1

TO THE OWNER

CX470B HYDRAULIC CRAWLER EXCAVATOR



CT08F003

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Dealer's Stamp



SECTION 3 - SAFETY/DECALS/HAND SIGNALS

24. Work out a means of convenient escape from the machine (emergency exit via the windshield or the rear window glass) in the event of the machine turning over or tipping over or the cab door being jammed.
25. Make sure you are perfectly familiar with traffic regulations and special safety equipment requirements before transporting this machine on a public highway.
26. When loading trucks, never swing the load over the truck cab.
27. Before undertaking any travel on the job site, make sure the itinerary to be followed is completely safe. If bridges are to be crossed, make sure they are perfectly capable of supporting the weight of the machine.
28. Always steer round large obstacles such as boulders, big trees, etc.
5. Before starting the engine, check the direction of travel (in forward drive, the reduction gears should be to the rear of the machine).
6. Do not work near overhead high-voltage electric lines without checking beforehand that all necessary measures have been taken to respect the minimum distances:
 - Less than 57 000 volts: 3 metres.
 - More than 57 000 volts: 5 metres.
7. Study the position of any existing pipelines or conduits before starting work. Electrical cables, gas and water pipes and other underground installations can cause serious injury.
8. Always make allowance for working conditions (sloping or rough ground), the site and weather conditions when driving the machine.
9. Do not allow anyone to stand in the machine working area. Accidental operation of the upper-structure swing control or of an attachment control could cause an accident. Stop all operations until everyone has moved away.

QUICK COUPLER (optional)

1. It is mandatory for the switch to be in the locked position when operating the machine.
2. Every day, check that the locking bar functions correctly and that it is not fouled by foreign matter. Clean the locking system if necessary.
3. If you are obliged to use the quick coupler with buckets not manufactured by CASE, make sure the diameter of the pins and the width between the bucket lugs meet the dimensions needed to fit the quick coupler (pins, washers, bushings, etc.). Consult your CASE Dealer.
10. Operate all controls gradually to ensure smooth machine operation.
11. Whenever load handling operations are to be carried out, it is imperative to adhere strictly to the instructions given in this manual and local legislation.
12. It is forbidden to use the machine to carry out tasks other than those for which it is intended. Never use the equipment for sweeping the ground to level out rubble or push objects (transversal stress on the attachment).

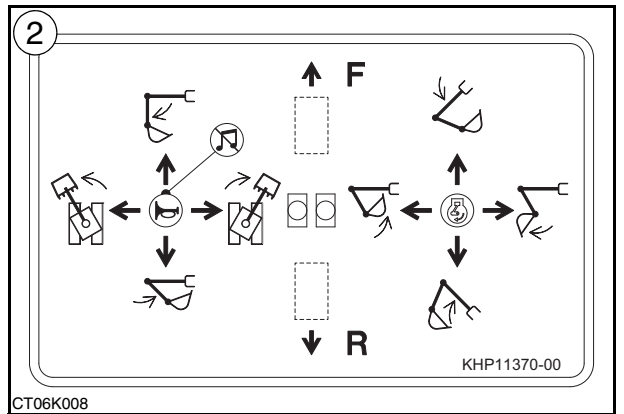
OPERATING THE MACHINE

1. When working on a public highway, use standard traffic signs and take into consideration the working range of the upperstructure and its attachments. Local or national regulations stipulate the number, type and location of reflector strips.
2. Avoid running the engine in a confined space. If there is no alternative, proper ventilation must be provided at all times.
3. Do not allow anyone else on the machine. The passenger could fall or cause an accident.
4. Never operate the working or travel controls unless you are properly seated in the operator's seat with the seat belt correctly fastened.
13. Stop the engine, remove the starter switch key, wait one minute minimum and place the key of the battery master switch in "O" (Off) position when the machine is not in use, even for short periods of time.
14. In some configurations, the working range of the attachment allows the tool to interfere with the machine. Always maintain a safe minimum distance between the tool and the machine (swaying of the tool or incorrect operation).
15. To access or exit the operator's compartment, the LH control arm must be in the raised position. Never forget this basic requirement.

FUNCTION OF THE CONTROL LEVERS

Part number: KHP11370

This decal shows the function of the left-hand and right-hand control levers.



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WINDSHIELD LOCKING

Part number: KHP12540

This decal shows that the windshield must be correctly locked in open position, in order to prevent it from tipping.

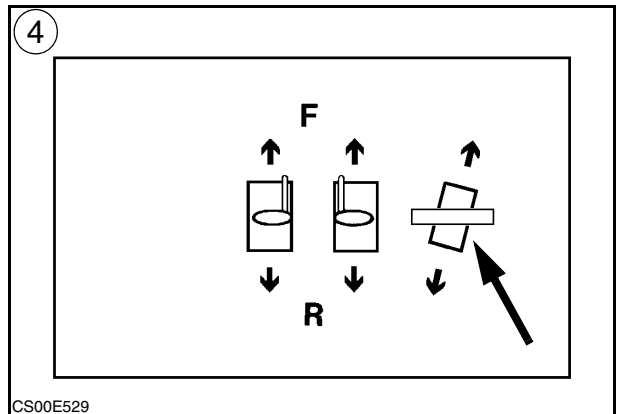


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FUNCTION OF THE LEVERS AND PEDALS

Part number:
 KHP1498 (standard)
 KHP1484 (with right-hand option)
 KHP1510 (with left-hand option)
 KHP1511 (with right and left-hand options)

This decal shows the function of the travel control levers and pedals.

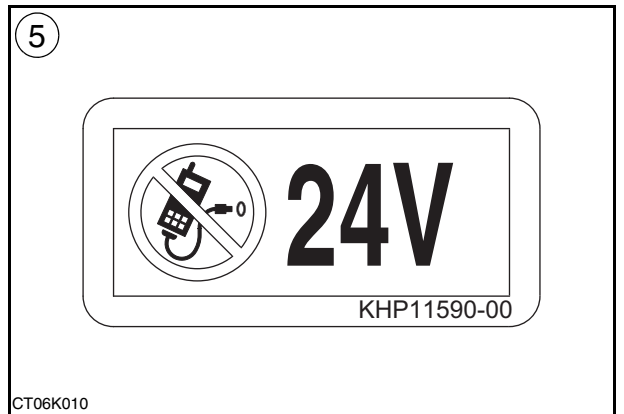


14

CIGARETTE LIGHTER SOCKET (24 volts)

Part number: KHP11590

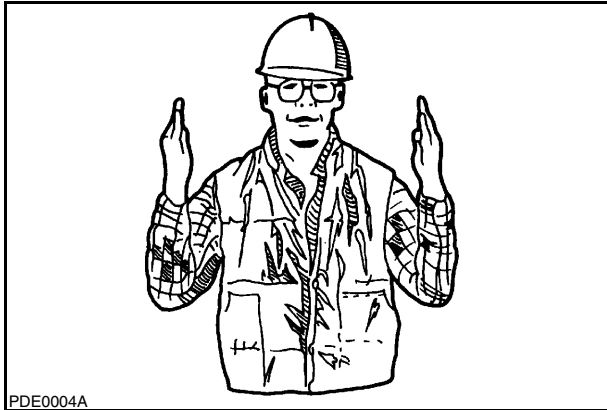
This decal shows the location and the voltage of the cigarette lighter socket. It is strictly prohibited to connect devices of a different voltage.



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SECTION 3 - SAFETY/DECALS/HAND SIGNALS

GO THIS FAR

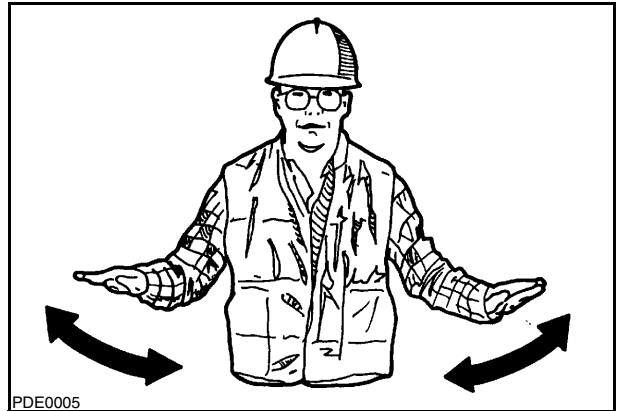


PDE0004A

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EMERGENCY STOP

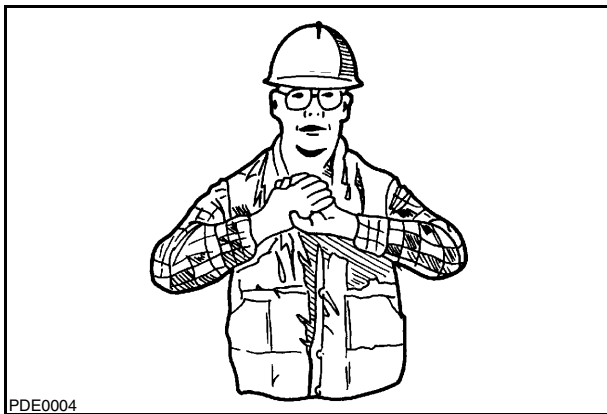
Wave hands back and forth.



PDE0005

47

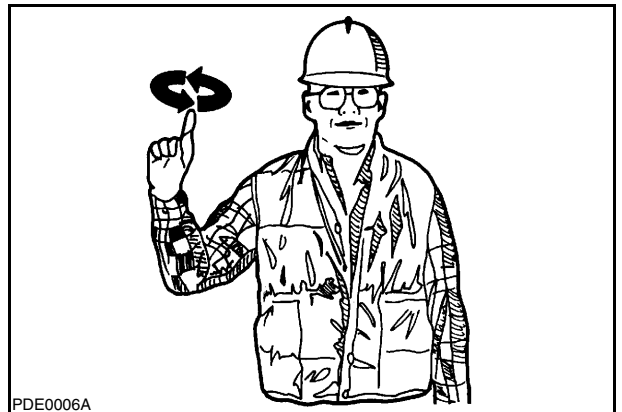
ALL STOP AND HOLD



PDE0004

45

RAISE LOAD OR TOOL

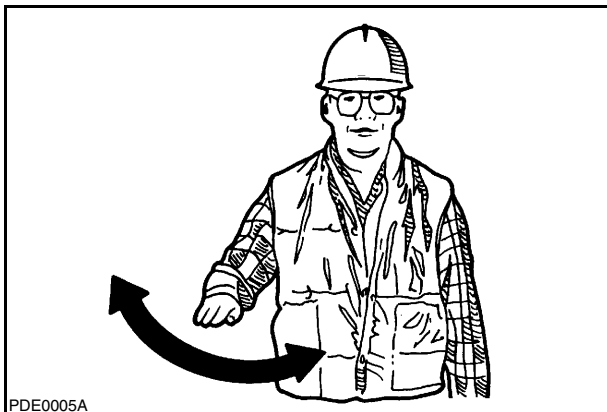


PDE0006A

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STOP

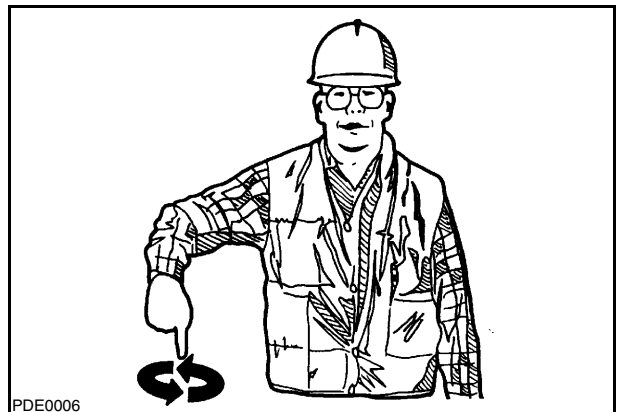
Wave one hand back and forth.



PDE0005A

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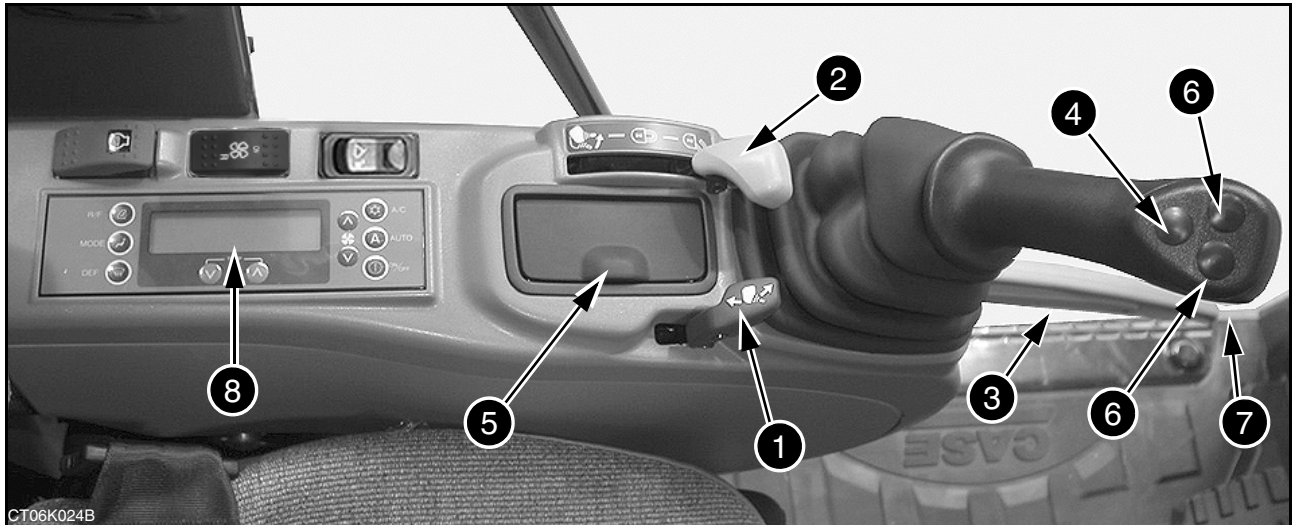
LOWER LOAD OR TOOL



PDE0006

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LEFT-HAND CONTROL ARM



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1. ARM ANGLE ADJUSTMENT LEVER

This lever is used to adjust the control arm tilt in four different positions to suit the operator. Pull the lever to the right and hold it in this position, select the required position and then release the lever.

When the lever is lowered, the control arm is automatically placed in the selected position.



The adjustment of the control arm must be done with the engine stopped.

2. FUNCTION CANCELLATION LEVER AND LIFTING THE CONTROL ARM

This lever is used to cancel the functions without having to raise the control arm. It is also used to operate the safety bar (3). See "Function cancellation lever and safety bar". This lever also makes it possible to raise the control arm completely, which also cancels all machine functions.

3. SAFETY BAR

The purpose of this safety bar is to prevent the operator leaving the operator's compartment without first operating the function cancellation lever (2). See "Function cancellation lever and safety bar".

4. HORN

To sound the horn, press the end of the LH control lever.

IMPORTANT: Always sound the horn before operating the machine.

5. ASHTRAY

Pull the ashtray upwards to empty it.

6. OPTION CONTROL (if equipped)

7. CAR RADIO MUTE CONTROL (if equipped)
 Located below the control lever, this control is used to mute the sound without having to operate the car radio. Press and release the control to mute the sound. Press once again on the control and release, the sound is restored.

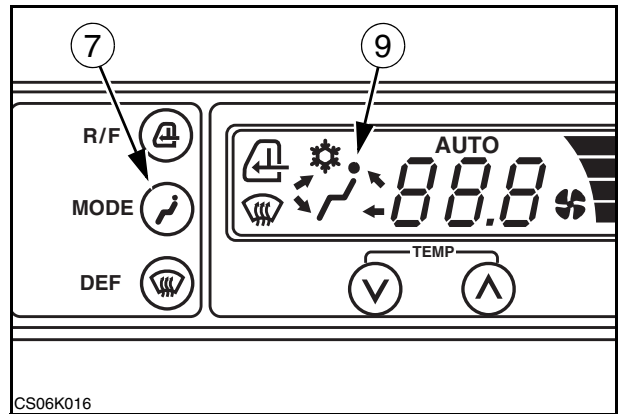
NOTE: With the engine stopped, if the sound is muted, it will still be active when the engine is restarted.

8. See "Heating and ventilation or air conditioning controls".

AIR FLOW DIRECTION

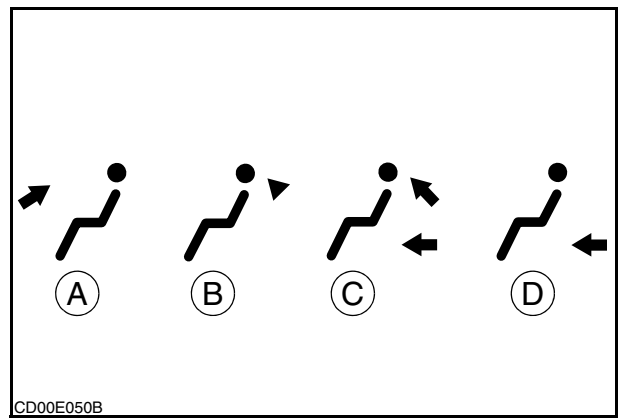
This button (7) allows four different types of air flow direction to be selected.

To select the type of air flow direction, press the button (7) successively until the type of flow direction required is obtained. Indication of the type of flow direction selected will appear on the display screen (9).



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- (A) Upper front distribution.
- (B) Upper rear distribution.
- (C) High force upper distribution and low force rear distribution.
- (D) Lower rear distribution (feet) and windshield.

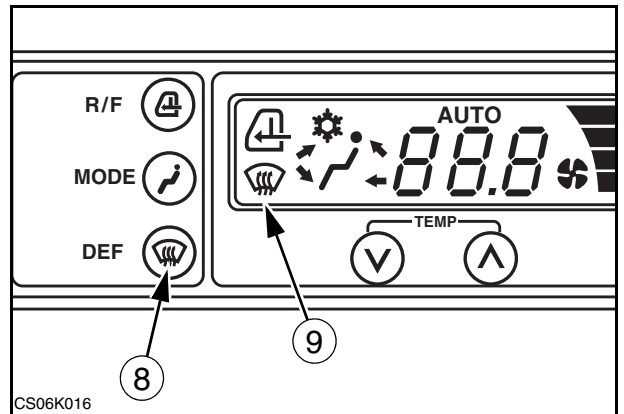


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WINDSHIELD DEFROSTER

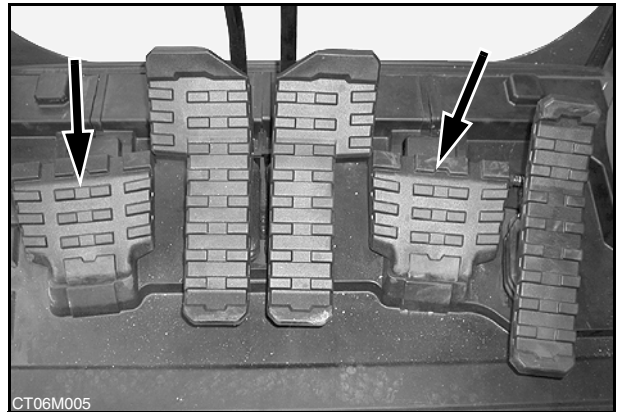
This button (8) allows the windshield to be defrosted. Press the button to defrost the windshield. The display screen will show that the defroster is working (9). To turn the defroster off, press the button again and the indication on the display screen will disappear.

NOTE: When this button is used, the control (7) is deactivated.



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FOOTREST



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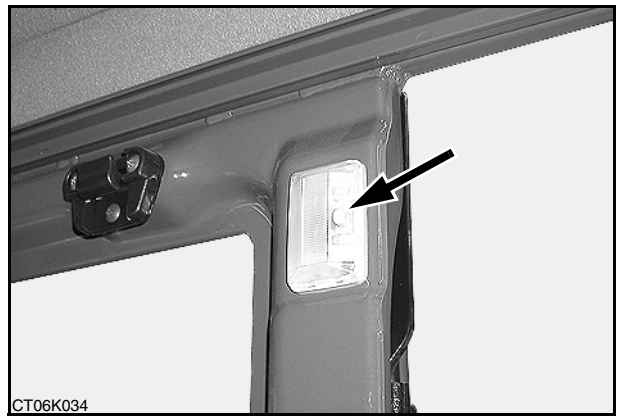
CAB LIGHT

The light is located on the left-hand cab upright and is controlled by a three position switch set in the lamp base.

Positions: "ON" (continuous operation), "OFF" (shut-down) and intermediate position goes off 30 seconds after closing the door.

IMPORTANT: Make sure that the lights are switched off after use, otherwise the batteries may become discharged.

NOTE: To replace bulbs, see "Replacing a bulb" in section 9.

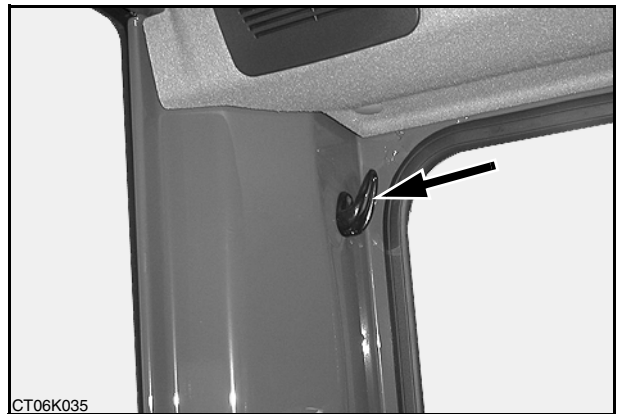


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COAT HANGER HOOK

This hook is on the rear right-hand cab upright.

IMPORTANT: Take care not to obscure the view by clothes that are too bulky.

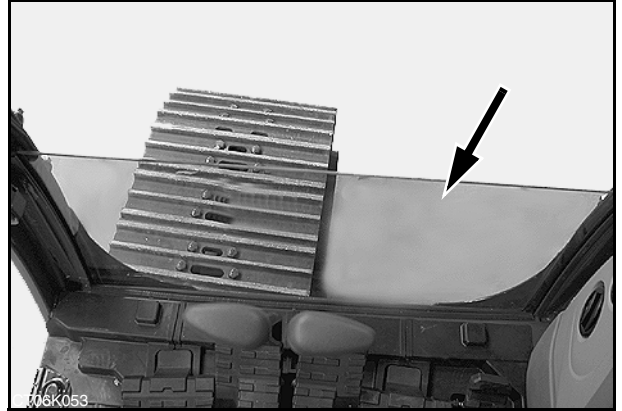


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LOWER FRONT WINDOW

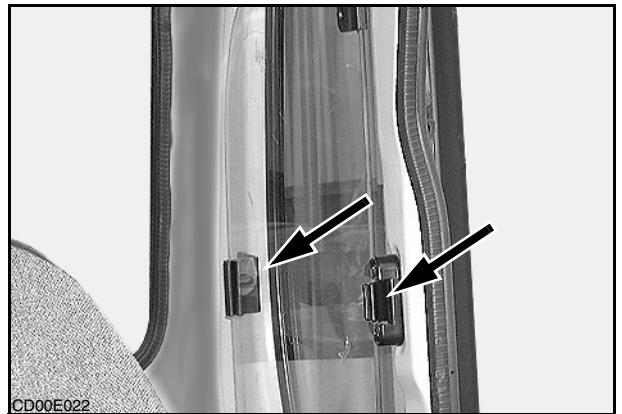
The lower front window may only be removed when the windshield is open.

1. Remove the window from its housing by sliding it upwards.



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2. Place the window in the storage position provided to the left of the operator's seat and then engage it correctly.



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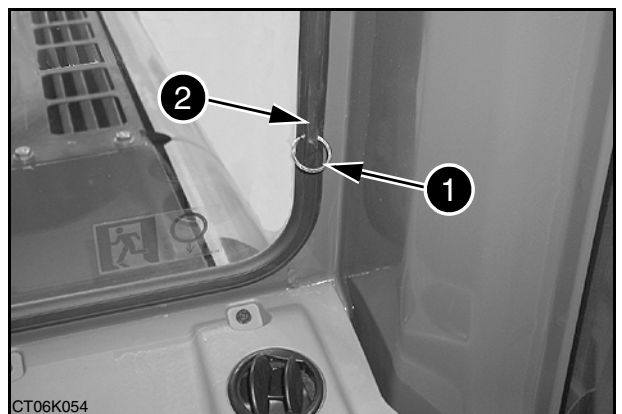
REAR WINDOW (EMERGENCY EXIT)



Remove the rear window only in case of absolute necessity resulting from an emergency. Do not place any object in front of the window, which may constitute an obstacle in case of evacuation.

Pull on the ring (1), release the seal (2) completely from the frame of the rear window then push it firmly so that it is projected outwards.

To install the window, consult your CASE Dealer.



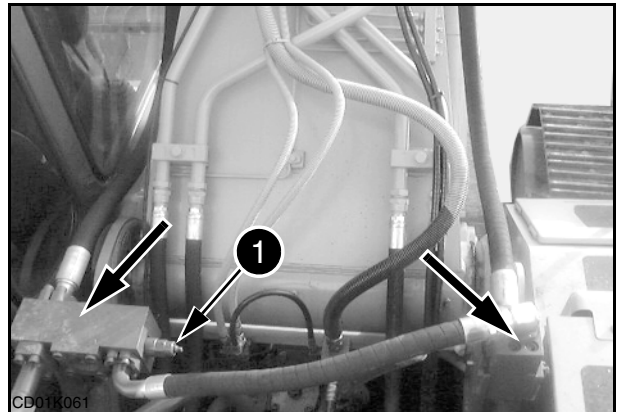
67

OPTIONAL TOOL FLOW SELECTOR BLOCKS (optional)

These blocks, located on the upperstructure at the bottom of the boom, make it possible to select the correct hydraulic circuit for the optional tool to be mounted. See "Hydraulic hammer or high flow circuits" in section 5.

IMPORTANT: Never alter the main relief valve (1) setting unless you first consult your CASE Dealer, otherwise you could damage the machine.

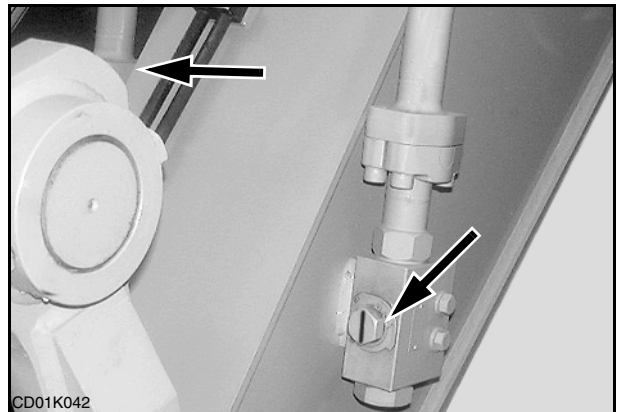
IMPORTANT: Consult your CASE Dealer before mounting optional tools.



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OPTIONAL TOOL SUPPLY VALVES (optional)

Located on the end of the dipper, these two valves are used to ensure oil supply to optional tools, for example, hydraulic breakers, etc. These valves have two positions, open/closed.



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STARTING THE ENGINE

NOTE: If the machine has been out of use for some time, see "Starting up after storage" in section 10.

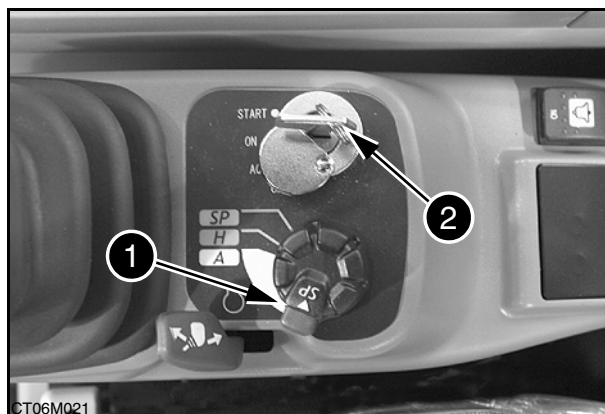
NOTE: See "Connecting booster batteries" in section 9, if you have to start the engine using booster batteries.

1. Place the key on the battery master switch in "I" (On) position.
2. Take up position correctly in the operator's seat with the seat belt correctly fastened. See "Operator's seat" in section 4.
3. Make sure the function cancellation lever is in the central position (safety bar in inward position).



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4. Make sure the engine throttle button (1) is in low idle position. In cold weather, leave it in half-way position.
5. Turn the starter switch key (2) to the "ON" position.
6. If necessary, enter the anti-theft code. See "Anti-theft device".

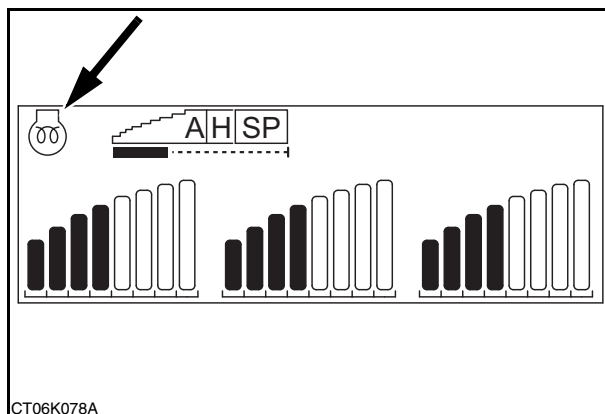


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In cold weather, the "Engine preheat" icon appears on the systems display panel. See "Control and function display console" in section 4.

7. When the icon disappears, turn the key (2) to the "START" position. Release the key as soon as the engine starts to turn. If the engine stops, wait about a minute and perform the operation again.

IMPORTANT: Do not operate the starter motor for more than ten seconds at one time. Do not operate the starter motor when the engine is running.



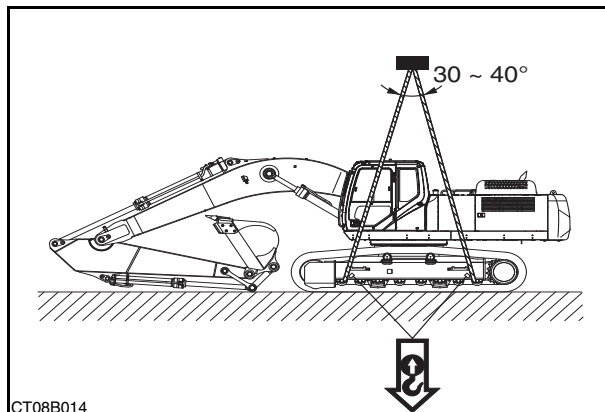
8

HANDLING THE MACHINE

Retract the attachment, bucket and dipper cylinders fully extended then place the attachment on the ground. Shutdown the engine and leave the operator's compartment.

IMPORTANT: Before handling the machine, make sure the slings are in perfect condition and that they are capable of supporting the weight of the machine. See "Weight" in section 11.

IMPORTANT: It is imperative to use the sling points indicated on the machine decals. See "Decals" in section 3.



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The machine must be handled very slowly and horizontally.



First of all, assign a person as supervisor to direct the operation and agree on the safety measures, procedures and suitable hand signals.



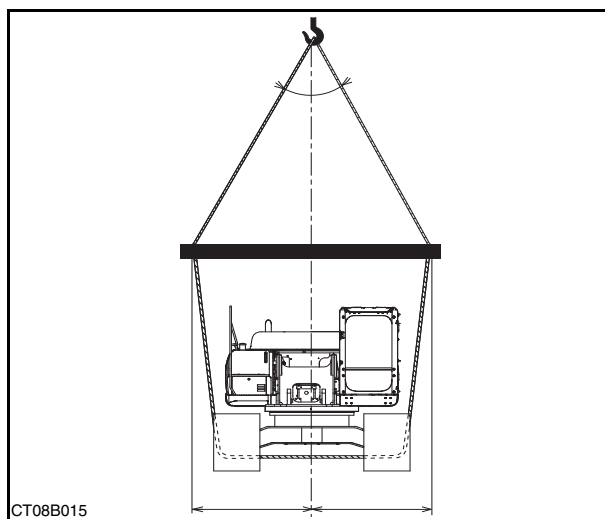
The use of lifting systems must be entrusted to qualified personnel. The operators and all the personnel assigned to this operation must be perfectly aware of the procedures to be followed. Check the lifting devices and cables and make sure that they are in good condition, suitable for lifting the load to be handled and fitted with safety type hooks that will not accidentally open.



Since this operation may be dangerous, you are advised to wear suitable clothing and to respect the relevant safety measures.



Make sure that there is nobody within the working area during handling operations.



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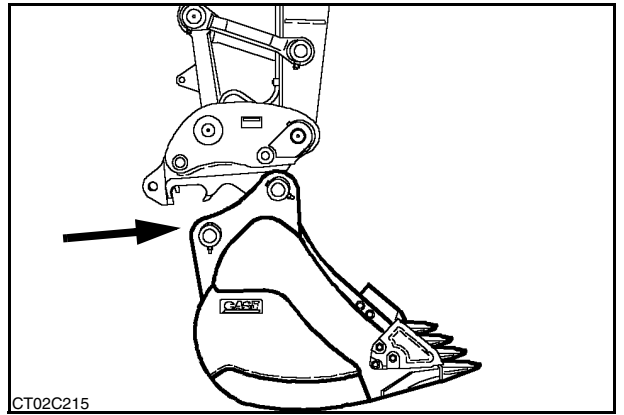


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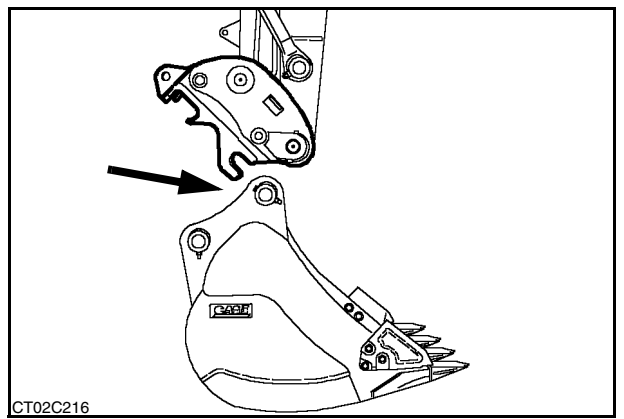
SECTION 5 - OPERATING INSTRUCTIONS

3. Operate the bucket control to lay the bucket safely on flat, level ground.



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4. Operate the dipper control to unhook the tool.

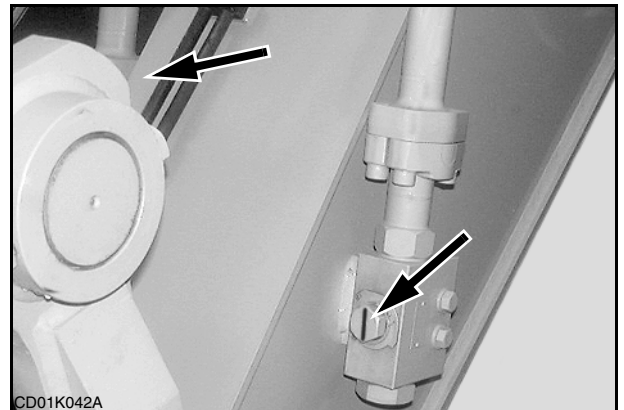


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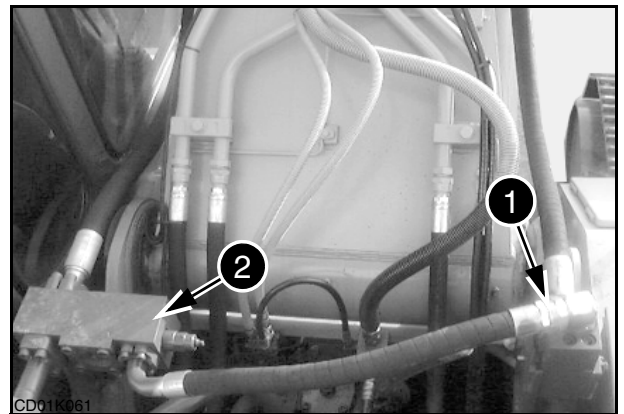
SECTION 5 - OPERATING INSTRUCTIONS

Double flow cutter crusher configuration

1. Make the necessary tool connections and then, using a hexagonal wrench, open the supply valves located at the tip of the dipper, LH and RH side.

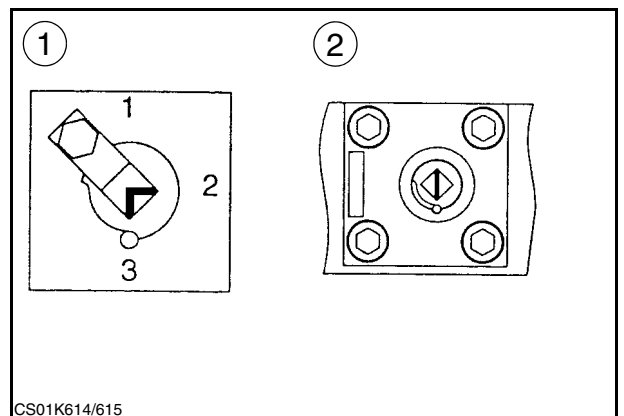


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2. Move the selector blocks (1) and (2) located on the upperstructure to position them as shown opposite.



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TRANSPORTING THE MACHINE

IMPORTANT: For transporting the machine without attachment, the counterweight must be removed, see "Removal and installation of the counterweight".

NOTE: (If equipped), set the adjustable undercarriage into the transport position. See "Setting the adjustable undercarriage into the transport position".

REMOVING THE ATTACHMENT FROM THE MACHINE

The use of lifting systems is necessary for removal and installation of the machine attachment and counterweight. Consult your CASE Dealer.

See "Overall dimensions and weight of the main components for machine transport" in section 11 to find out the weight and dimensions of the attachment installed on the machine.



First of all, assign a person as supervisor to direct the operation and agree on the safety measures, procedures and suitable hand signals.



Before removing the attachment from the machine, make sure that the air pressure and hydraulic oil pressure are at zero.



The use of lifting systems must be entrusted to qualified personnel. The operators and all the personnel assigned to this operation must be perfectly aware of the procedures to be followed. Make sure that the devices and lifting cables are in good condition.



Prevent dust and contamination entering open circuits. Any contamination of circuits can cause malfunction of the machine.



Since this operation may be dangerous, you are advised to wear suitable clothing and to respect the relevant safety measures.

AFTER STARTING THE ENGINE

- Did the engine start correctly? Are the exhaust fumes normal? Any strange noises?
- Check for abnormal noise on the hydraulic components.
- Check the components for signs of leaking oil or water.
- Check the audible alarm devices, working lights and windshield wipers.
- Check that all circuits (travel, swing and tool) are functioning correctly.

IMPORTANT: *If the slightest defect is found, repair it immediately before using the machine or consult your CASE Dealer.*

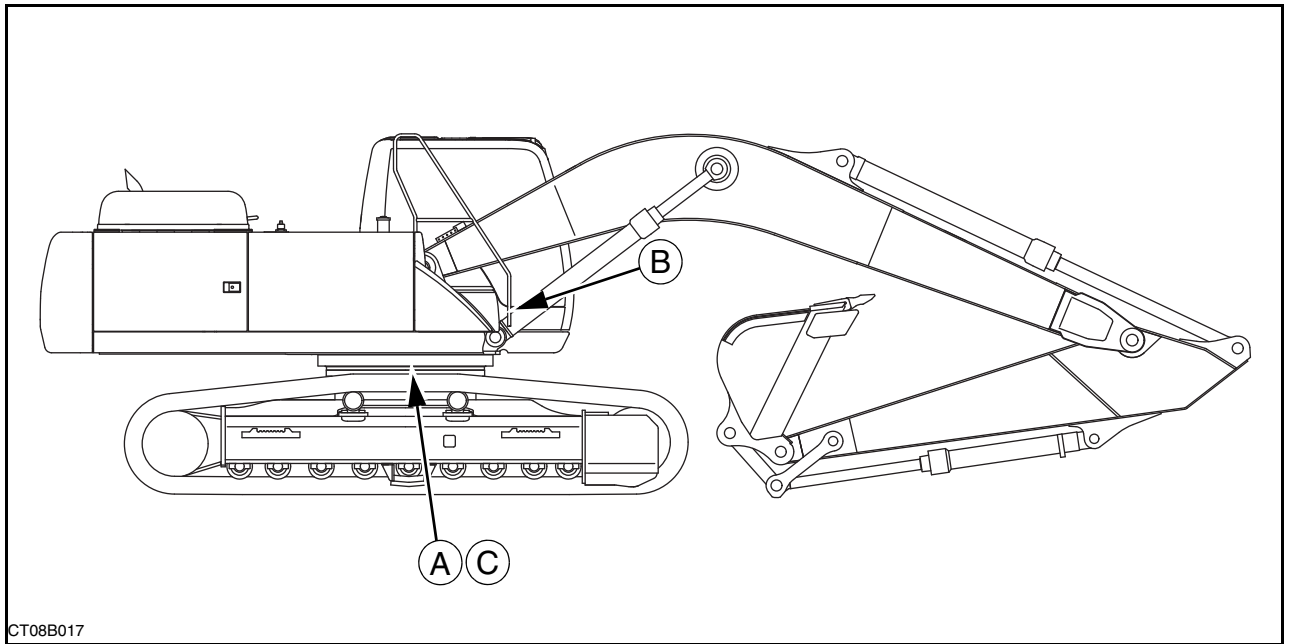
GREASE POINTS

Type of grease See "Fluids and lubricants"

NOTE: The numbers within brackets mentioned on the right of the description indicate the number of lubrication points.

NOTE: After lubrication, refit the protective and indicating plastic caps to the grease fittings.

MACHINE

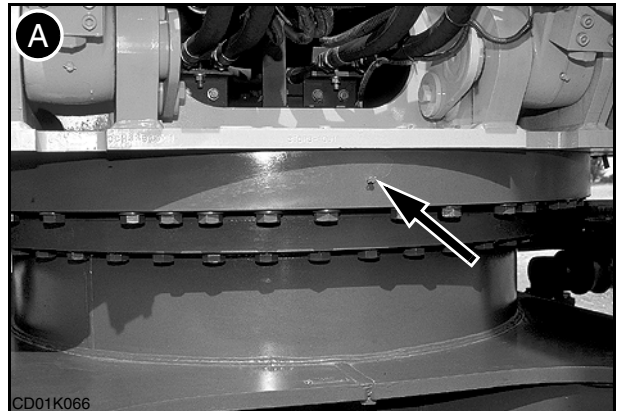


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Every 500 hours

Turntable..... (2)



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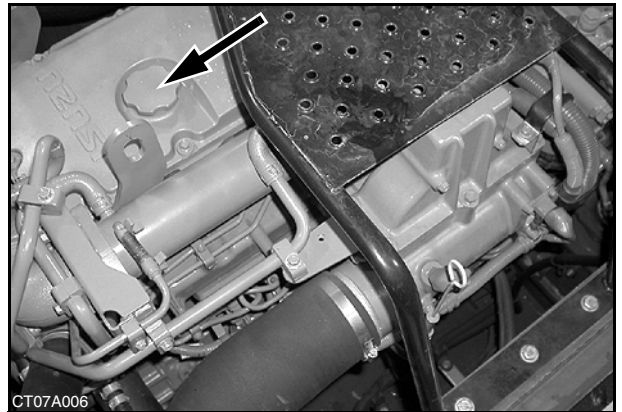
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DRAINING, CHANGING THE OIL FILTERS AND FILLING

NOTE: Change the oil while the engine is still warm.
The oil will flow more easily.

Use the extension drain hose from the front boot.

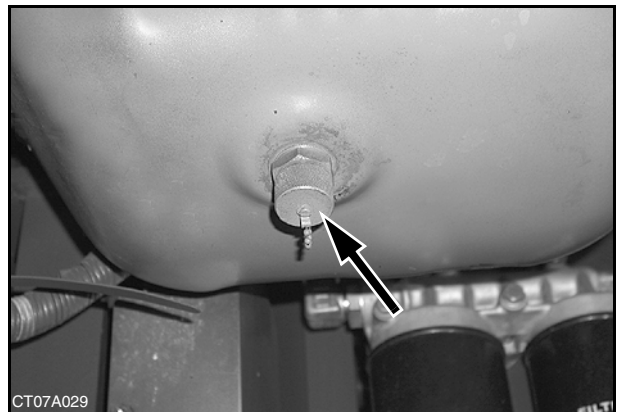
1. Park the machine on flat, horizontal ground. Stop the engine, remove the starter switch key and open the panel below the engine.
2. Raise and lock the engine hood, remove the filling plug.



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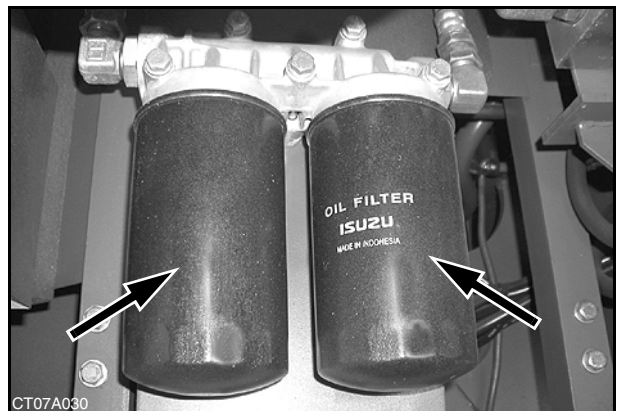
3. Remove the protective cap from the engine housing drain valve.
4. Screw the end of the extension drain hose onto the engine check valve, place the other end in a container of suitable capacity and allow the oil to flow out.
5. Remove the extension drain hose and install the protective cap on the housing check valve. Place the extension drain hose in the front storage compartment.



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6. Clean the area around the filters and remove them, using a filter wrench.



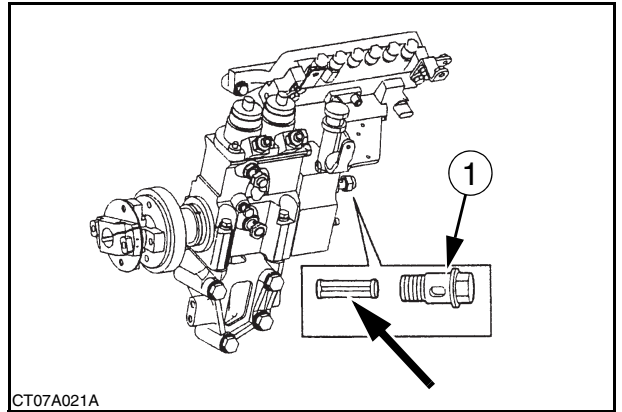
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CLEANING THE SUPPLY PUMP SCREEN

IMPORTANT: Always protect your face before using compressed air.

The screen is placed in the socket-head screw (1). Remove the screen, clean it with compressed air then rinse it in clean fuel.



FUEL SYSTEM AIR BLEED

It is necessary to bleed the fuel system when:

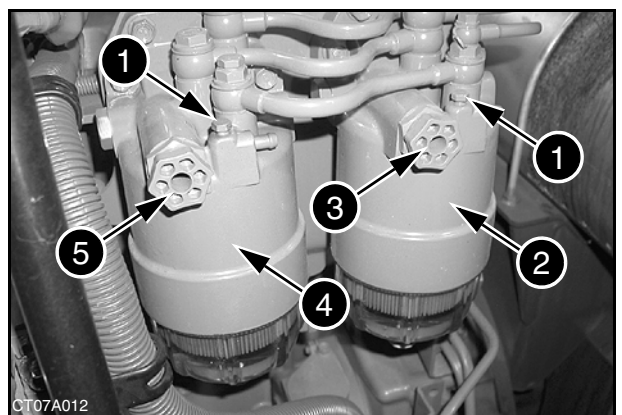
- The tank has been completely emptied.
- The fuel pre-filter has been replaced.
- The fuel filters have been replaced.
- Parts of the fuel system have been removed for servicing or repair work.
- The machine has been in storage for a fairly long period.

1. Turn the starter switch key to the "ON" position.



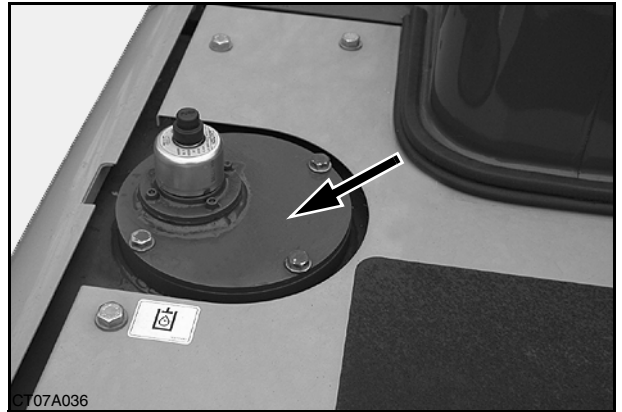
Do not leave the starter switch key in the "ON" position for more than five minutes unless bleeding has been performed. It may damage the fuel supply pump.

2. Loosen the bleed screw (1) on the fuel filter (2).
3. Turn the priming pump piston (3) of the fuel filter (2) to the left in order to release the spring.



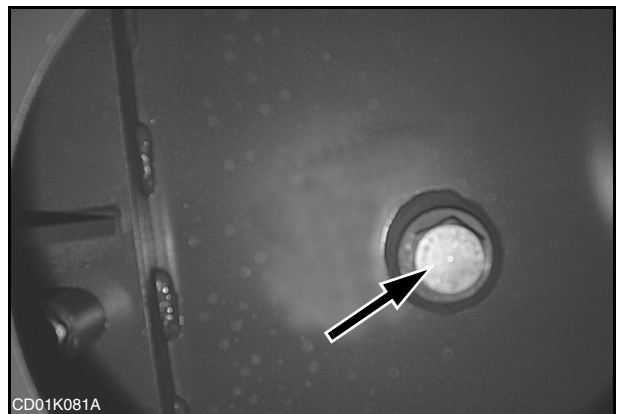
CHANGING THE HYDRAULIC FLUID

1. Release all pressure in the hydraulic reservoir. See "Releasing pressure in the hydraulic system".
2. Remove the reservoir cover plate.
3. Using a pump, remove the fluid from the hydraulic reservoir. Have a container with a suitable capacity ready.



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4. Place a receptacle of a suitable capacity under the reservoir drain plug, remove the reservoir drain plug and allow the remainder of the fluid to flow out.
5. Change the inlet filter and the return filter. See "Cleaning and replacement of the inlet filter" and "Return filter replacement".
6. Install the reservoir drain plug.
7. Fill the reservoir with new hydraulic fluid. See "Filling the reservoir".
8. Replace the cover plate seal if required and install the cover plate on the reservoir.



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IMPORTANT: Before you start the engine, it is very important that you bleed air from all the hydraulic components. See "Bleeding air from the hydraulic components".

9. Start and run the engine with no load for approximately five minutes.
10. Move each control several times to remove any air in the system.
11. Swing the upperstructure evenly left to right two complete turns or more.
12. Place the machine in position and then stop the engine.
13. Check the oil level in the hydraulic reservoir and add oil as required and check that there are no air bubbles in the hydraulic reservoir.

SECTION 8

MAINTENANCE/ADJUSTMENTS

TRACKS

MAINTENANCE SPECIFICATIONS

Clean Periodically and when the machine has been working in mud
Check tension Periodically
Check steel pad screw torques Every 250 hours
(after the first 50 hours during the run-in period)

IMPORTANT: *If the tracks are too tight, they wear quickly. If tracks are not tight enough, they wear quickly and the links can catch on the sprocket wheel or slide off the idler wheel or the sprocket wheel. Clean the tracks after work.*

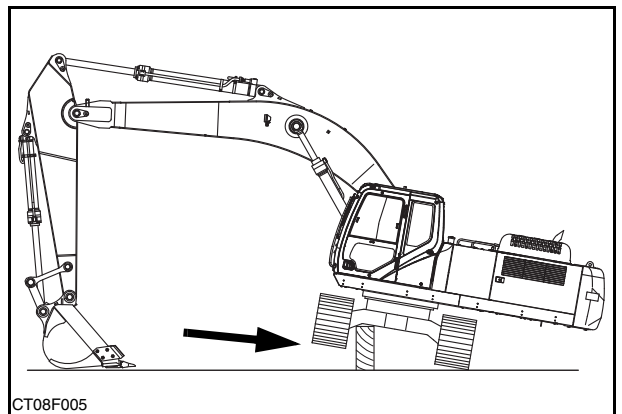
CLEANING

When the machine has been working in mud, a reduction in temperature can cause the mud to solidify.

1. Place the upperstructure at right angles to the undercarriage. Use the attachment to press on the ground and lower the boom until the track is raised off the ground. Then place a block beneath the undercarriage to relieve the attachment.

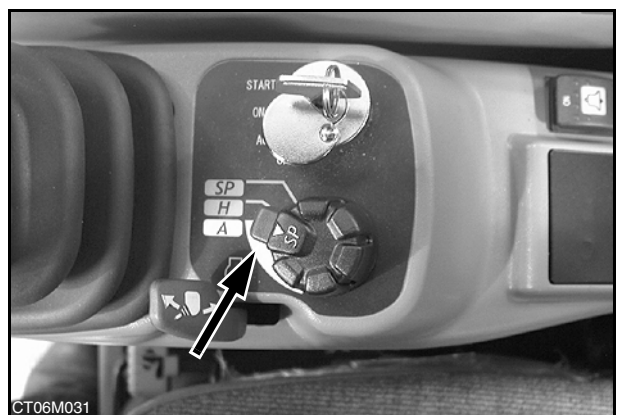


Only raise the track as little as necessary. Raising it too much can cause the machine to tip over.



1

2. Turn the engine throttle button to maximum speed position.



2

CHECKING FOR CYLINDER LEAKAGE

A cylinder rod should be slightly oily. Check that there are no leaks after a period of work, when the whole hydraulic system is at normal operating temperature.

1. Wipe clean the rod and bearing on the cylinder to be cleaned.
2. Operate normally for five or ten minutes.
3. Extend the cylinder rod.
4. Carry out the leak test.

ROD APPEARANCE	TEST	CONCLUSION
Dry	Slight traces of oil when a piece of paper is wiped over 20 cm of the rod.	Normal
Slightly greasy	Paper remains stuck to rod when run over rod.	Normal
Oily	Paper remains stuck when placed on rod.	Normal
Very oily or weeping	Each time the cylinder rod is extended, a ring of oil can be seen on the rod.	<i>Consult your CASE Dealer</i>
Leakage	Each time the rod retracts, the excess oil drips from the gland.	

PLASTIC AND RESIN PARTS

When cleaning the plastic windows, the console, the instrument panel, the indicators, etc. do not use gasoline, kerosene, paint solvents, etc. Only use water, soap and a soft cloth.

The use of gasoline, kerosene, paint solvents, etc. will cause discoloration, cracks or deformation of these parts.

SECTION 8 - MAINTENANCE/ADJUSTMENTS

ENGINE TROUBLESHOOTING

NOTE: This section shows how to easily diagnose problems relating to the engine and describes the solutions to be adopted. If you are unable to determine the cause of the failure, or if the latter is difficult to rectify, consult your CASE Dealer.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Engine does not start.	Defective starter switch (starter does not run) or battery master switch in "O" (Off) position	Check starter switch/Place the battery master switch in "I" (On) position
	Defective rotation of starter (starter rotates slowly)	Discharged batteries, starter problems, contaminated or loose wiring connectors
	Incorrect viscosity of engine oil	Inspect and replace as necessary
	Incomplete air bleeding of fuel system	Completely bleed air
	Engine too cold (cold weather)	Preheat the intake air or warm up the coolant
	No fuel in fuel tank	Refill
	Poor fuel quality	Inspect and replace as necessary
	Fuel filter clogged	Clean or replace
	Possible seizure in engine	<i>Consult your CASE Dealer</i>
	Low compression	
	Defective fuel injection pump	
Engine stops during operation.	No fuel in fuel tank	Refill
	Fuel filter clogged	Clean or replace
	Air in the fuel system	Retighten fuel in line connections
Incorrect oil pressure.	Low oil	Refill
	Oil filter clogged	Replace oil filter
	Low oil viscosity	Replace with oil of viscosity to match temperature
	Oil leakage from connections	Tighten connections
	Defective oil pressure switch	<i>Consult your CASE Dealer</i>
	Incorrect functioning of oil pump	
Exhaust from engine is white or blue.	Excessive oil	Disassemble and clean/replace parts
	Excessively low oil viscosity	Replace with oil that has correct viscosity
	Excessive cooling by radiator	Adjust
	Incorrect fuel injection timing	<i>Consult your CASE Dealer</i>
	Low compression	

ALTERNATOR

MAINTENANCE SPECIFICATION

Check Every 1000 hours

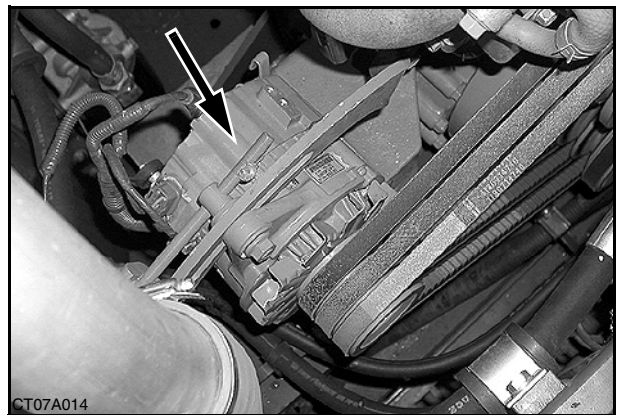


Whenever carrying out a welding operation on the machine (authorised by the manufacturer and in accordance with his instructions) or any repairs on the electrical system, disconnect the B+ and D+ wires from the alternator. When reconnecting, check the markings on the wires.

IMPORTANT: Do not use steam cleaning equipment or a cleaning solvent to clean the alternator.

Ask your CASE Dealer to check the alternator.

NOTE: Make sure that the terminal protectors are correctly installed.



10

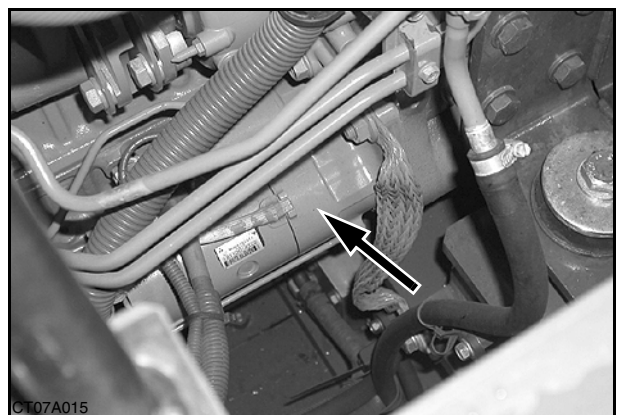
STARTER MOTOR

MAINTENANCE SPECIFICATION

Check Every 1000 hours

Ask your CASE Dealer to check the starter motor.

NOTE: Make sure that the terminal protectors are correctly installed.



11

SECTION 11 - SPECIFICATIONS

BACKHOE BUCKETS

ABBREVIATIONS:

GP: General Purpose Bucket

HD: Heavy Duty Bucket

R: Rock Bucket

SYMBOLS:

⊙ : Suitable for materials with density up to 2000 kg/m³ or less

▲ : Suitable for materials with density up to 1800 kg/m³ or less

○ : Suitable for materials with density up to 1600 kg/m³ or less

■ : Suitable for materials with density up to 1400 kg/m³ or less

CAPACITY: SAE

Model		Capacity [m ³]	Width [mm]		Weight [kg]	Number of teeth	Combination		
			with side cutter	without side cutter			2.53 m arm	3.13 m arm	3.38 m arm
CX470B CX470B LC	HD	1.8	1508	1400	1813	5	⊙	⊙	▲
	HD	2.0	1638	1530	1907	5	▲	○	○
	R	2.0	1444	1574	2218	5	▲	○	■
	R	2.2	-	1644	2280	5	○	■	x
	R	2.4	1664	1758	2378	5	■	x	x
	R	2.6	-	1874	2514	6	■	x	x

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