ORIGINAL INSTRUCTIONS - *according to Directive 2006/42/EC, Annex I 1.7.4.1*

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CX250C
Crawler Excavator

OPERATOR'S MANUAL

Part number 47510043
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CASE CONSTRUCTION

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1 - GENERAL INFORMATION

Safety rules

Personal safety



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

Throughout this manual you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

⚠ DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury.

⚠ WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠ CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

Machine safety

NOTICE: *Notice indicates a situation that, if not avoided, could result in machine or property damage.*

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

Information

NOTE: *Note indicates additional information that clarifies steps, procedures, or other information in this manual.*

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

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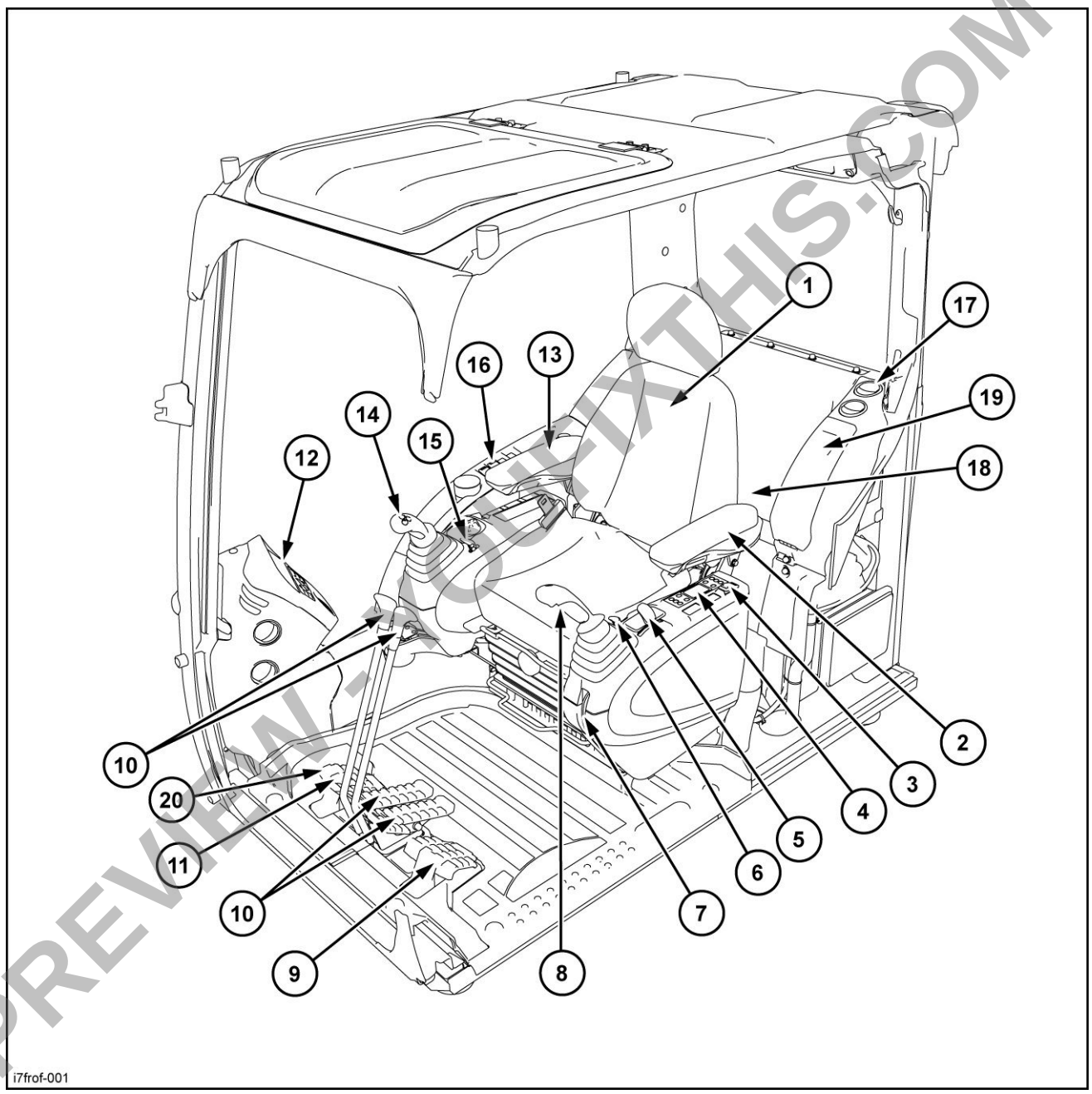
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Position of the operator’s compartment controls and accessories

⚠ WARNING

Misuse hazard!
Before starting the engine, make sure you are fully aware of the location and the function of each control.
Failure to comply could result in death or serious injury.

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Machine operation

Operating instructions

⚠ WARNING

Misuse hazard!
Follow the operating instructions in this chapter. Any other practice that has not received the prior approval of the manufacturer is considered to be strictly forbidden.
Failure to comply could result in death or serious injury.

W0281A

Watch carefully and make sure you are aware of places where other people are working in your work area. Keep all other people away from the machine. Serious injury can result if these instructions are not followed.

Take note of the locations of pipes/cables before starting work. Electrical cables, gas and water pipes and other underground installations can cause serious injury.

Modify your driving to suit working conditions (sloping or rough ground), the nature of the ground and weather conditions.

On steeply sloping ground, keep engine at maximum speed.

When travelling at right angles to the slope, move on to the slope at low speed. Never reduce engine speed when travelling down slopes.

Holes, obstacles, debris and other danger risks in the working area can cause serious injury. Inspect and note all possible risks before driving the machine in a new working area.

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 m** (**9.8 ft**).
More than 57 000 volts: **5 m** (**16.4 ft**).

Never hit or push material with the sides of the bucket.

Never sweep the ground with the bucket to level rubble.

When operating the control levers, a whistling sound will be heard if the control lever is held in position while the corresponding cylinder is at the end of its stroke. In this case release the control lever.

If earth or mud stays stuck inside the bucket, open and close the bucket several times so as to loosen the earth or the mud.

After work, remove any mud and clean the machine.

When using the upperstructure swing, never change the direction of swing too suddenly.

When climbing up a slope, place the bucket about **40 cm** (**15.7 in**) above the ground. When travelling down a slope it is recommended to place the bucket on the ground to prevent the machine from sliding.

Avoid turning the machine on steep slopes.

Never swing the upperstructure on slopes of **15 °** in the direction of travel or **10 °** at right angles to the direction of travel.

The following operations are likely to damage the machine. You are therefore advised to avoid them:

- Excavation using the weight of the machine as a force of impact.
- Excavation using the machine's travel force.

Operation

ATTENTION: *Do not operate the engine with the machine at **35 °**. The engine or hydraulic devices may be damaged.*

The maximum slope climbing ability is **35 ° 70 %**. This value varies depending on the track type and the road surface, limit travelling to slopes of **30 °** or less.

1. Sit in the operator's seat and adjust it so that all the controls are readily accessible then fasten your safety belt.
2. Make sure the cab door is firmly latched in the open or closed position.
3. Sound the horn.
4. Start the engine, taking into consideration the prevailing weather conditions.
5. Check all indicator lamps and gauges are operating correctly.
6. Push the function cancellation lever forward (safety bar in outward position).
7. Try out all the controls in a safe, open area.

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6 - MAINTENANCE

GENERAL INFORMATION

Basic instructions

Servicing instructions

⚠ WARNING

Improper operation or service of this machine can result in an accident.
If you do not understand a maintenance procedure, or doubt your ability to perform a maintenance procedure correctly, see your authorized dealer.
Failure to comply could result in death or serious injury.

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⚠ WARNING

Improper operation or service of this machine can result in an accident.
Raised equipment or machine movement without an operator can cause serious injury. Always do the following before performing any maintenance:
Park the machine on flat, level ground.
Lower the attachment to the ground.
Shut down the engine and remove the ignition key.
Lock the tracks.
Failure to comply could result in death or serious injury.

W0944D

NOTICE: *Be sure all the service operations in this section are carried out punctually at the intervals given, in order to ensure optimum performance levels and maximum safety when using the machine.*

- Respect the maintenance intervals by checking the hourmeter every day. Before starting maintenance, park the machine on flat, firm ground, away from any obstacles, with the arm retracted and the bucket on the ground. Unless otherwise specified, all maintenance operations must be carried out with the engine stopped, and the key removed from the ignition key. It is preferable to wait for all circuits to cool down before starting work.
- Clean the grease fittings before lubrication. Clean around plugs and filler holes before adding fluid. No dust or dirt must enter the components or the circuits. Wear suitable clothing and remember to use the necessary safety equipment.
- When carrying out service work on the machine, place a "Do not operate" tag on the instrument panel. Never climb down from the operator's compartment leaving the engine running.
- Remove the necessary lower panels during maintenance of certain machine components.

⚠ WARNING

Moving parts!
Make sure the lower panels are properly closed before driving the machine.
Failure to comply could result in death or serious injury.

W0910A

Any modification to this machine without prior authorization could cause serious injury. Do not make any modifications without authorization. Consult your CASE CONSTRUCTION Dealer.

NOTICE: *If you use your machine in particularly harsh conditions (dusty or corrosive atmosphere, etc.), the servicing intervals should be reduced accordingly.*

NOTICE: *Take particular care to replace all filters regularly. Clean filters mean longer engine running life.*

ATTENTION: *Oil and fluid should not be thrown on the ground. They must be stored and removed by a company which is responsible for their recycling or their disposal.*

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7 - TROUBLESHOOTING

FAULT CODE RESOLUTION

Engine troubleshooting

NOTE: *This chapter 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 CONSTRUCTION Dealer.*

PROBLEM	POSSIBLE CAUSE	SOLUTION
Engine does not start. Starter does not rotate or rotation is weak.	Battery master switch in **"O"** (Off) position (if equipped)	Place the battery master switch in **"I"** (On) position (if equipped)
	Battery is running out	Charge or replace
	Disconnection, looseness, or corrosion of the battery terminals	Repair the corroded area, and then tighten securely
	Starter ground wire terminal detached, loose, or corroded	Repair the corroded area, and then tighten securely
	Engine oil viscosity is too high	Replace it with oil with appropriate viscosity
	Starter or electrical system faulty	Consult your CASE CONSTRUCTION Dealer
Engine does not start. Starter turns over.	Battery master switch in **"O"** (Off) position (if equipped)	Place the battery master switch in **"I"** (On) position (if equipped)
	No fuel in fuel tank	Check that there is no fuel leakage and refuel
	Air intrusion in the fuel system	Remove the air
	Clogging of the fuel filter	Remove moisture and replace the element
	Fuel is frozen	Warm up the fuel pipe with hot water, or wait until the air temperature rises
	Failure of the supply pump	Consult your CASE CONSTRUCTION Dealer
	Clogging of the supply pump strainer	Clean the strainer
	Failure of the engine control system	Consult your CASE CONSTRUCTION Dealer
	Preheating system faulty	
	Overflow valve remains open	Clean or replace the supply pump, fuel filter or fuel port overflow valve
The engine starts, but stops immediately.	Clogging of the fuel filter	Remove moisture and replace the element
	Clogging of the pre-fuel filter	Clean or replace the element
	Failure of the engine control system	Consult your CASE CONSTRUCTION Dealer
	Clogging of the air cleaner	Clean or replace the element
	Failure of the supply pump	Consult your CASE CONSTRUCTION Dealer
	Clogging of the supply pump strainer	Clean the strainer
Engine revolution is unstable.	Failure of the fuel system	Consult your CASE CONSTRUCTION Dealer
	Water or air intrusion in the fuel system	Remove the air
	Failure of the engine control system	Consult your CASE CONSTRUCTION Dealer
Engine rotation does not increase.	Clogging of the fuel filter	Remove moisture and replace the element

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8 - SPECIFICATIONS

General specification

Engine

NOTICE: *All specifications are given according to SAE Standards or Recommended Practices where the specification applies.*

Make and type	ISUZU AL-4HK1X
Common rail, turbocharger with air cooled intercooler, diesel particulate diffuser system, fuel cooler	yes
Injection	electric control
Number of cylinders	4
Bore/stroke	**115 mm** (**4.5 in**) x **125 mm** (**4.9 in**)
Displacement	**5193 cm³/rev** (**316.9 in³/rev**)
Maximum displacement	**621 N·m** (**458.026077 lb ft**) at **1800 RPM**
Cooling	by water
Battery starting	2 x **12 V 92 A·h**
Voltage	**24 V**
Alternator	**50 A**
Starter	**24 V 5.0 kW**

Working conditions

Speed	**2000 RPM**
Power	**132.1 kW** (**179.6 Hp**)
Engine oil capacity (with remote oil filter)	**29.6 l** (**7.8 US gal**)
Fuel tank capacity	**410 l** (**108.3 US gal**)
Fuel filler pump	if equipped
Engine/pump assembly mounted on flexible mountings	
Filtration in dusty conditions	
Electronically controlled governor	

Hydraulic system

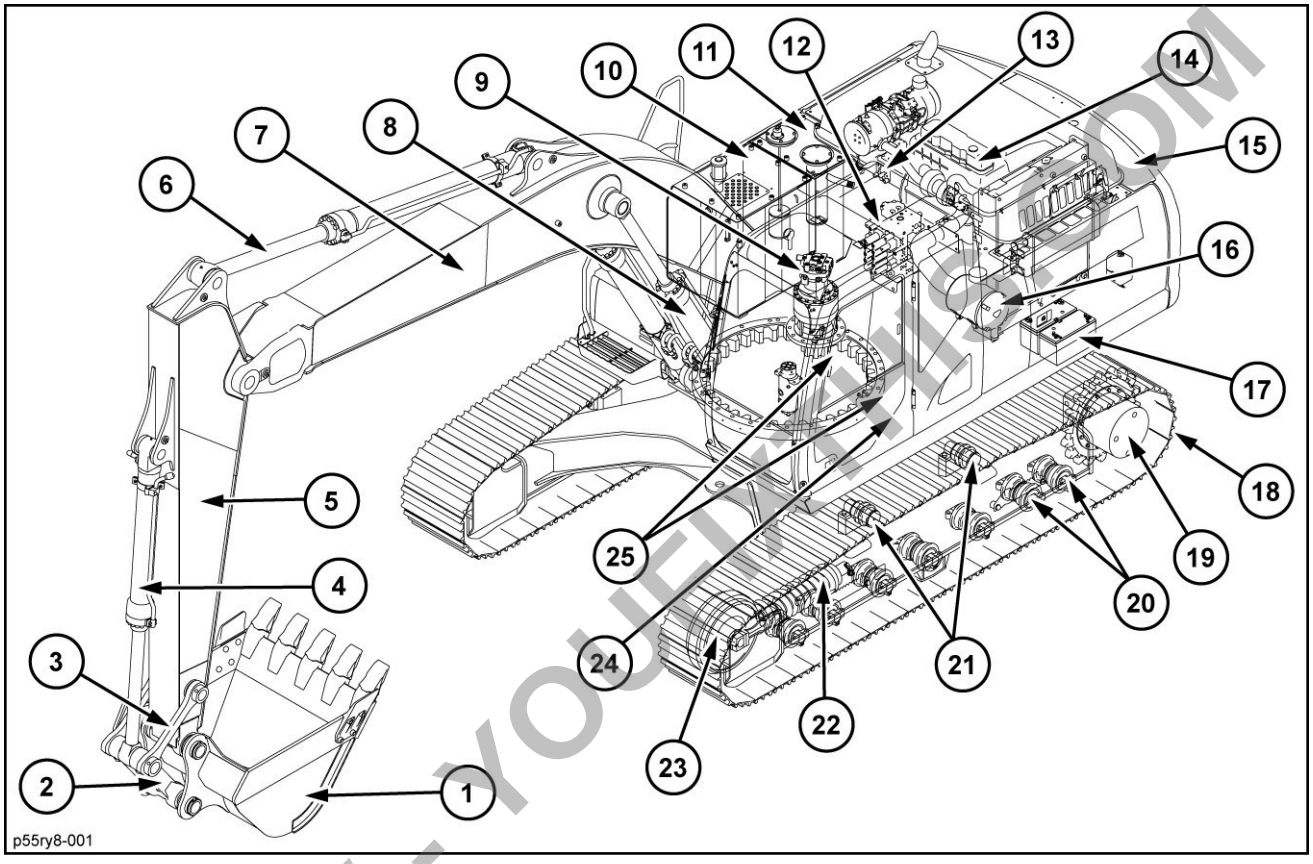
Variable flow piston-type double pump.Main pump max flow (at **2000 RPM**)	2 x **234 l/min** (**61.8 US gpm**)
Fixed flow pump (pilot circuit).Max. flow:	**20 l/min** (**5.3 US gpm**)
Working pressure.Attachment/power boost	**343 - 368 bar** (**4973.5 - 5336.0 psi**)
Oil cooler with air cooling from engine	
High pressure multispiral hoses minimum safety factor	2 to 4 times the working pressure
Self-lubricating hydraulic swivel	
Hydraulic reservoir capacity	**147 l** (**38.8 US gal**)
Total hydraulic system capacity	**250 l** (**66.0 US gal**)

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Description of the main components

The **CX250C** is a totally hydraulic excavator. It consists of an undercarriage fitted with tracks and a turntable bearing which supports the upperstructure frame. The upperstructure frame supports the attachment, at the front end of the machine, plus the engine, hydraulics and cab. When the operator works the controls, the engine-driven pump delivers hydraulic fluid to the control valves. The control valves distribute the hydraulic fluid to the various cylinders and hydraulic motors employed. A cooling system maintains the hydraulic fluid at normal operating temperature.



P55RY8-001 1

1. Backhoe bucket
2. Connecting rod
3. Yokes
4. Backhoe bucket cylinder
5. Arm
6. Arm cylinder
7. Boom
8. Boom cylinders
9. Swing reduction gear
10. Fuel tank
11. Hydraulic reservoir
12. Control valve
13. Hydraulic pump
14. Engine compartment
15. Counterweight
16. Air filter
17. Batteries
18. Tracks
19. Travel reduction gears
20. Lower rollers
21. Upper rollers
22. Tension shock absorbers
23. Idler wheels
24. Cab/Operator's compartment
25. Swing components

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Safety decals

⚠ WARNING

Avoid injury!
An illegible or missing decal can have far-reaching consequences. Inspect decals daily.
Failure to comply could result in death or serious injury.

W0228A

⚠ WARNING

Avoid injury!
Make sure decals are perfectly legible. Clean decals regularly. Replace all damaged, missing, painted over, or illegible decals. See your dealer for replacement decals. When replacing parts bearing decals, be sure to put new decals on each new part.
Failure to comply could result in death or serious injury.

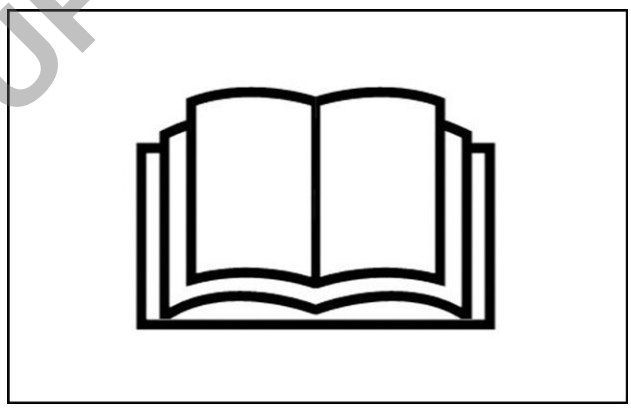
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The following safety decals are placed on your machine as a guide for your safety and for those working with you. Walk around the machine and note the content and location of these safety decals before operating your machine.

Keep safety decals clean and legible. Clean safety decals with a soft cloth, water, and a gentle detergent. Do not use solvent, gasoline, or other harsh chemicals. Solvents, gasoline, and other harsh chemicals may damage or remove safety decals.

Replace all safety decals that are damaged, missing, painted over, or illegible. If a safety decal is on a part that is replaced, make sure the safety decal is installed on the new part. See your CASE CONSTRUCTION Dealer for replacement safety decals.

Safety decals that display the “Read Operator’s Manual” symbol are intended to direct the operator to the operator’s manual for further information regarding maintenance, adjustments, or procedures for particular areas of the machine. When a safety decal displays this symbol, refer to the appropriate page of the operator’s manual.



OM 1

NOTE: *This chapter only covers decals relating to safety and machine operation and servicing. For information on all decals on the machine, consult the spare parts catalogue.*

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MAINTENANCE CHART

Maintenance Chart

Interval	Page no.	Maintenance Action	No. of pts.	Clean	Drain	Check	Grease	Replace	Bleed
Every 10 hours or daily	**6-23**	Engine oil level	1			X			
	6-26	Coolant level	1			X			
	6-30	Fuel tank	1		X				
	6-38	Hydraulic reservoir level	1			X			
	6-59	Radiators and oil coolers	2						X
	6-61	Fan and alternator belt tension	1			X			
Every 50 hours	**6-10**	Tool quick coupler (except LR type) (optional) (Note A)	4				X		
	6-38	Hydraulic system lines	—			X			
	6-72	Air conditioning (Note B)	1	X					
Every 250 hours	**6-10**	Bucket linkages (Note C)	2				X		
	6-26	Tightening of clamps and radiator hoses (Note D)	—			X			
	6-30	Fuel pre-filter filter element	1					X	
	6-38	Hydraulic reservoir sediment	1		X				
	6-47	Primary air filter element (Note E)	1	X		X			
	6-51	Swing reduction gear level	1			X			
	6-53	Travel reduction gears level	2			X			
	6-55	Pad screw torque (Note F)	—			X			
	6-58	Track rollers and idler wheels	—			X			
	6-61	Fan and alternator belt tension	1			X			
	6-65	Cab protection (ROPS and FOPS) (optional) (Note F)	1			X			
	6-78	Screw and nut tightening torque (Note F)	—			X			
	6-81	Batteries state	2			X			
	6-81	Batteries electrolyte level	2			X			
Every 500 hours	**6-10**	Turntable bearing	2				X		
	6-10	Turntable bearing teeth	1				X		
	6-23	Engine oil	1					X	
	6-23	Engine oil filter	1					X	
	6-30	Fuel filter element	1					X	
	6-59	Radiators and oil coolers	2	X					
Every 1000 hours	**6-10**	Attachment (except bucket linkages) (Note G)	15				X		
	6-26	Cooling system (Note H)	1		X				
	6-38	Hydraulic fluid condition (Note W)	1			X			
	6-38	Hydraulic reservoir breather	1					X	
	6-47	Primary air filter element (Note J)	1					X	
	6-47	Secondary air filter element (Note K)	1					X	
	6-51	Swing reduction gear (Note L)	1		X				
	6-53	Travel reduction gears (Note L)	2		X				
	6-62	Engine valve rocker clearances (Note M)	—			X			
	6-85	Alternator (Note M)	1			X			
	6-85	Starter motor (Note M)	1			X			

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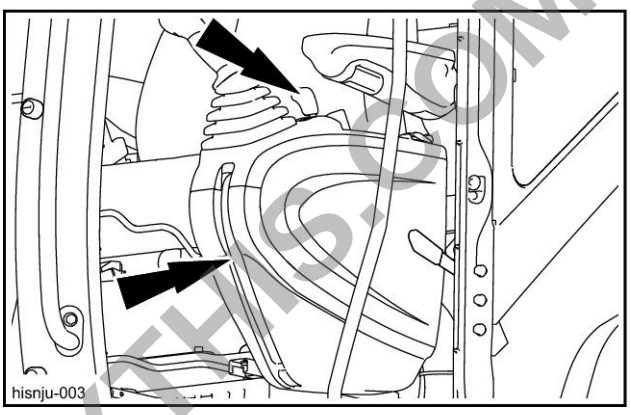
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Starting the engine

NOTE: *If the machine has been out of use for some time. (Refer to page **6-94**).*

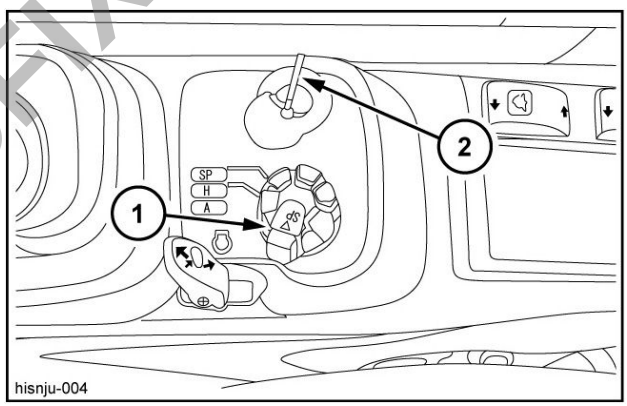
NOTE: *Refer to page **6-81** if you have to start the engine using booster batteries.*

1. Take up position correctly in the operator's seat with the seat belt correctly fastened. (Refer to page **3-5**).
2. Make sure the function cancellation lever is in the central position (safety bar in inward position).



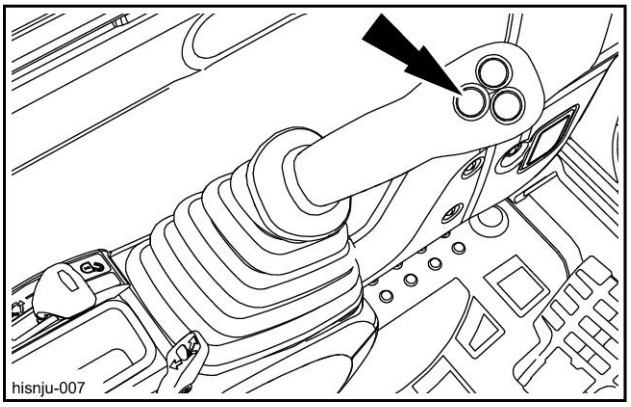
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3. Make sure the engine throttle button **(1)** is in low idle position. In cold weather, leave it in half-way position.
4. Turn the ignition key **(2)** to **"On"** position.
5. If necessary, enter the anti-theft code. (Refer to page **4-4**).
   In cold weather, the "Engine pre heat" icon appears on the systems display panel.



HISNJU-004 2

6. Sound the horn button on the left-hand control lever to give warning of your intention to start the machine.



HISNJU-007A 3

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