OPERATING INSTRUCTIONS

BEFORE OPERATING THE MACHINE

> ⚠ *Warning: Do not attempt to operate this machine unless you have first read and perfectly understand the safety messages and instructions appearing in this manual.*

Before operating this machine, be sure to do the following :

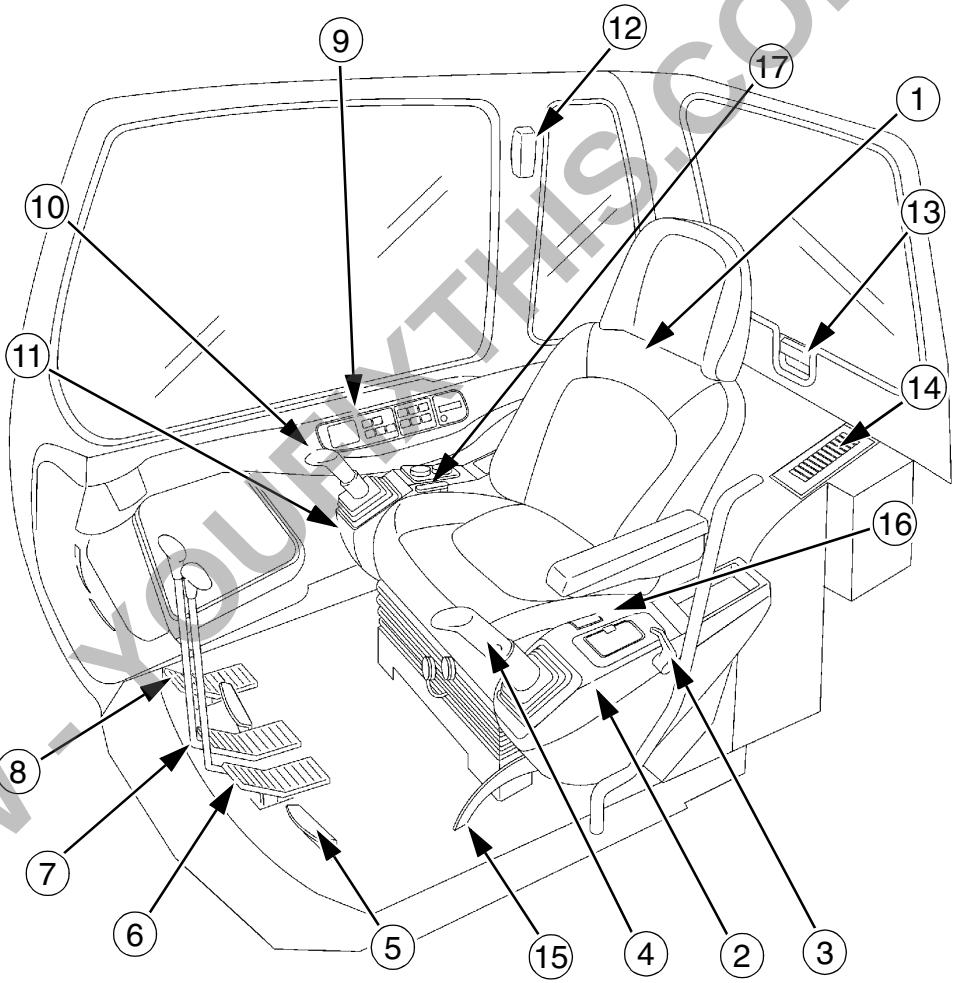
- Check the level of all fluids (engine oil, hydraulic fluid and coolant) and make sure that the fluids and lubricants are suitable for the operating conditions. See “Fluids and Lubricants” in the “Lubrication/Filters/Fluids” Section and “Operating the machine in cold weather”.
- Carry out the daily maintenance operations. See the “Servicing Intervals” Section.
- Inspect the machine, look for any signs of leakage and check the hoses. Tighten or replace as necessary. See the “Maintenance/Adjustments” Section.
- Check the track assemblies. See “Tracks” in the “Maintenance/Adjustments” Section.
- Before undertaking any travel or working operations during hours of darkness, make sure the lighting and signalling equipment is fully operational.
- Clean the steps and access handles. Grease, oil, mud or (in winter) ice on the steps and access handles can cause accidents. Make sure they are kept clean at all times.
- Clean or replace any decals which are illegible. See “Decals” in the “Safety/ Decals/Hand Signals” Section.
- Make sure all hoods, side doors and lower panels are properly closed.
- Secure the cab door in either fully closed or fully opened position.
- Remove any obstructions which hinder visibility. Clean the windshield, the rear view mirror and the windows.
- Check that no tools or other items have been left on the machine (be it on the undercarriage or the upperstructure) or in the operator’s compartment.
- Work out a convenient means of escape from the machine (emergency exit via the windshield, the rear window glass) in the event of the cab door being jammed or the machine turning over.
- Make sure nobody is on or under the machine. The operator must be alone on the machine.
- Make sure nobody is standing in the machine working area.
- Find out about current safety measures in use on the work site.

PREVIEW - YOUFIXTHIS

OPERATOR'S COMPARTMENT CONTROLS

Warning: Before starting the engine, make sure that you are fully aware of the location of and the function of each control. Incorrect operation of the controls can cause serious injuries.

Location of controls and associated components



CS00E501

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LUBRICATION

BEFORE OPERATING THE MACHINE

Warning: Do not attempt to operate this machine unless you have first read and perfectly understood the safety messages and instructions appearing in this manual.

FLUIDS AND LUBRICANTS

Lubricants must have the correct properties for each application.

Warning: The conditions of use for individual fluids and lubricants must be respected.

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 starter switch. It is preferable to wait for all circuits to cool down before starting work. Wear suitable clothing and remember to use the necessary safety equipment.

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.

Warning: 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.

Warning: There is a risk of serious injury if maintenance or repairs are not performed correctly. If you do not understand the maintenance procedures, consult your authorized LBX Link-Belt distributor.

PREVIEW - YOU FIX THIS

SPECIFICATIONS

ENGINE

Make and model ..... ISUZU BB-4BG1T
Firing order .....
Air induction ..... Turbocharged
Number of cylinders 4
Bore/stroke ..... 105 x 125 mm (4.13 x 4.92 in)
Displacement ..... 4,330 cc (264 cu in)
SAE net, horsepower - rated ..... 66 kW (89 hp) @ 2,100 min-1 (2 100 rpm)
Engine speeds
    Full throttle - full load .....
    Idle speed .....
Cooling
    Radiator cap .....
    Thermostat .....
Electrical System
    Batteries ..... (2) 12 volt, 120 ampere
    System voltage ..... 4.5 kW (24 volts)
Valve clearance - engine cold
    Intake valves .....
    Exhaust valves .....

HYDRAULIC SYSTEM

130 LX

Main pumps
  Variable displacement - axial piston
    Quantity 2
    Flow each ..... 123 L/min (32.4 gpm)
Pilot pump
  Fixed displacement - gear type
    Quantity 1
    Flow ..... 23 L/min (6.0 gpm)

160 LX

Main pumps
Variable displacement - axial piston
    Quantity 2
    Flow each ..... 137 L/min (36.2 gpm)
Pilot pump
    Quantity 1
    Flow each ..... 22 L/min (5.8 gpm)

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TORQUE AND SPECIFICATIONS PER COMPONENT

Component	Bolt Size	Torque (Ft.Lbs)	Torque (Nm)
Travel reduction gear (*)	M16	196-230	267-312
Drive sprocket (*)	M16	196-230	267-312
Idler wheel (*)	M16	196-230	267-312
Upper roller (*)	M20	384-448	521-608
Lower roller (*)	M18	273-318	371-432
Chain guide	M18	280-326	380-443
Track shoe	M20	260-275	350-370
Counterweight	M27 M30	780-910 983-1142	1058-1235 1333-1549
Turntable bearing (undercarriage)	M20 M24	345-401 577-673	468-545 783-913
Turntable bearing (upperstructure)	M20 M24	345-401 577-673	468-545 783-913
Swing reduction gear (*)	M20 M24	384-448 577-673	521-608 783-913
Engine (*)	M16	195-230	265-313
Engine mounts (*)	M10	47-53	64-73
Radiator	M16	108-129	147-176
Hydraulic pump (*)	M10 M20	47-54 270-365	64-74 367-496
Hydraulic reservoir (*)	M16	171-203	232-276
Fuel tank (*)	M16	171-203	232-276
Control valve (*)	M16	196-230	267-312
Hydraulic swivel (*)	M12	80-93	109-127
Cab	M16	57-59	78-80

Note: Use Loctite 262, or the equivalent, on bolts marked (*).

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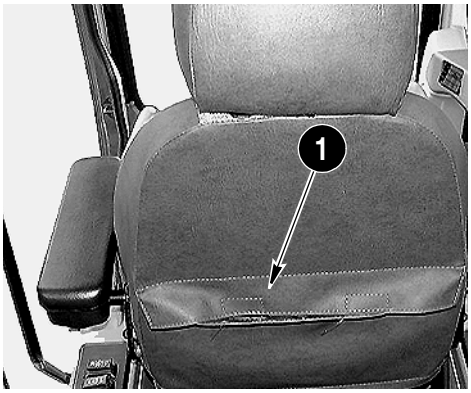
ENGINE TROUBLESHOOTING

Problem	Possible cause	Solution
Engine does not start.	Defective starter switch (starter does not run)	Check switch
	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	*See your authorized LBX Link-Belt distributor*
	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
Improper 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	*See your authorized LBX Link-Belt distributor*
	Incorrect functioning of oil pump	

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⚠ SAFETY RULES ⚠

Most accidents involving machine operation and maintenance can be avoided by following basic rules and precautions. Read and understand all the safety messages in this manual, the Safety Manual, and the safety decals on the machine before you operate or service the machine. See your Authorized LBX Link-Belt dealer if you have questions.



CD00E001

1. OPERATOR'S MANUAL STORAGE

Safety messages in this section point out situations which can be encountered during the normal operation and maintenance of your machine. These safety messages also give possible ways of dealing with these conditions.

Additional safety messages appear in the manual to indicate specific safety hazards.

READ THIS MANUAL COMPLETELY and make sure you understand the characteristics of speed, stability, steering, and operation of this machine.

Do not remove this manual or the safety manual from this machine. See your LBX Link-Belt dealer for additional manuals. Also see the inside of the rear cover of this manual for detailed information for ordering manuals.

The safety information given in this manual does not replace safety codes, insurance regulations, or federal, state/provincial, or local laws. Make sure your machine has the correct equipment according to these rules or laws.

IMPORTANT: *The safety messages in this section point out situations which can happen during the normal operation and maintenance of your machine. These safety messages also give possible ways of dealing with these conditions.*

⚠ **WARNING:** *This safety alert symbol indicates important safety messages in this manual. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury or death.*

M171B

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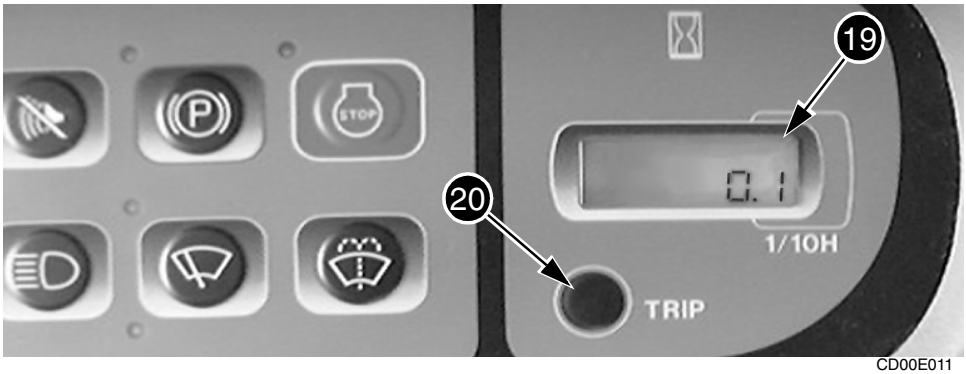
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SYSTEMS DISPLAY AND CONTROL PANEL



CD00E011

19. HOURMETER -The hourmeter displays the total time that the engine has been operated, in hours and tenths of an hour. It also enables service operations to be scheduled (see the “Servicing Intervals” Section).

Note: The hourmeter can be read even when the engine is switched off.

20. TRIP METER (specific number of hours) - This control enables the operator to record a specific number of operating hours. Press the control for the hourmeter to read zero and for the message “Trip” to be displayed. Then release the control. After approximately one minute the message “Trip” disappears and the normal hourmeter reading is restored. To consult the specific number of hours reading, press the control and release it immediately. To cancel the specific number of hour reading, press the control for about 2 seconds and the specific number of hours reading will return to zero

Auto Power Up

Your Link-Belt excavator is equipped with a power up function that will work “automatically” on demand. During work operations if normal pressure and load settings are “exceeded” a signal is sent to “boost” pressure for a period of 8 seconds.The display monitor will show “Power Up” during boost to inform the operator that normal operating conditions have been “exceeded”.

PREVIEW - YOU FIX THIS

PARKING THE MACHINE

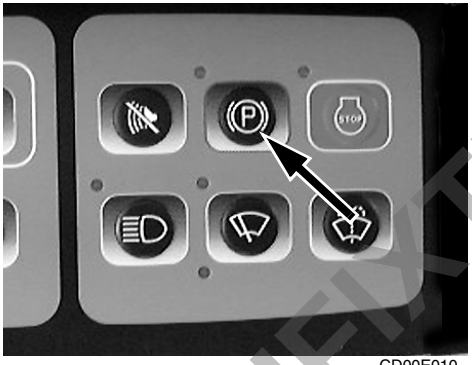
STEP 1

Place the machine on flat, level ground, away from soft ground excavations and badly shored cavities.

STEP 2

Place the upperstructure frame in line with the undercarriage, retract the attachment and dig the bucket into the ground to anchor it.

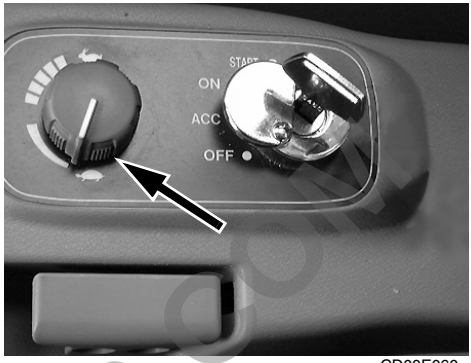
STEP 3



CD00E010

Use the upperstructure swing locking switch on the systems display and control panel and make sure the locking indicator lamp lights up on the display panel.

STEP 4



CD00E060

Turn the engine throttle button to low idle position and let the engine run for approximately five minutes.

STEP 5

If necessary, activate the anti-theft device. See “Anti-theft protection”.

STEP 6



CD00E080

Stop the engine and remove the starter switch key.

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STEP 3

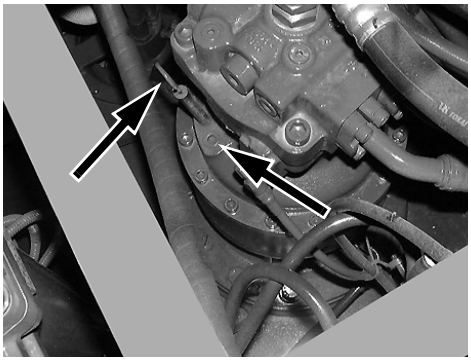
Install the dipstick

Draining and refilling

STEP 1

Park the machine on flat, horizontal ground. Stop the engine and remove the starter switch key.

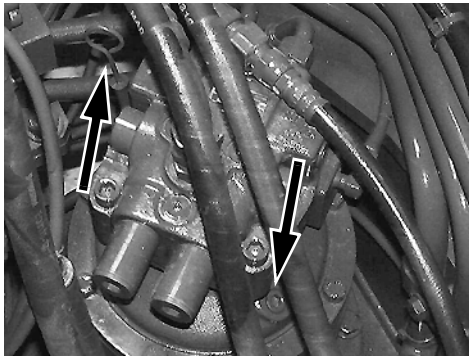
STEP 2



CD00E093

Remove the dipstick and the filler plug.

STEP 3



CD00E1177

Place a receptacle of a suitable capacity under the upperstructure and remove the drain plug.

STEP 4

Allow the oil to drain.

Note: The oil takes a relatively long time to drain.

IMPORTANT: Check the condition of the drained oil. If it contains metal filings or foreign matter, see your authorized LBX Link-Belt distributor.

STEP 5

Install the drain plug.

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