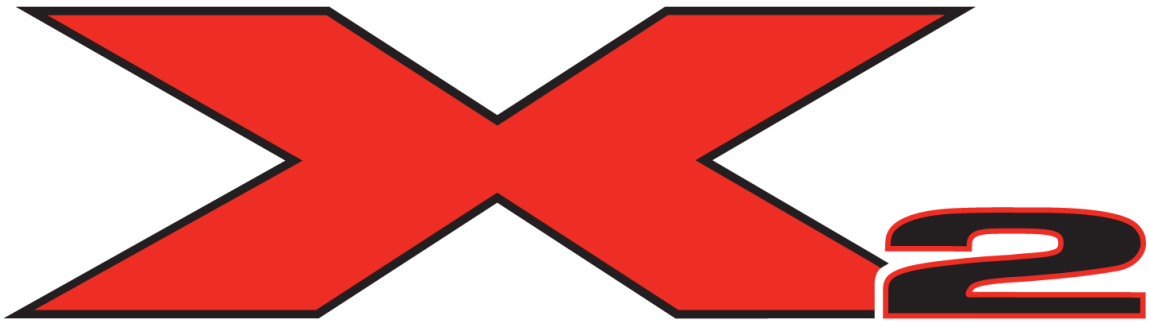
-

700 X2
HYDRAULIC EXCAVATOR
OPERATOR'S MANUAL



LINK-BELT TECHNICAL MANUALS

Manuals are available from the Dealer for the operation, service, and repair of the excavator. For prompt convenient service, contact the Dealer for assistance in obtaining the manuals for the excavator.

The Dealer can expedite orders for Operator's Manuals, Parts Manuals, Service Manuals, and Maintenance records.

Always give the model number, excavator serial number, and manufacturer's number of your excavator so your Dealer can provide the correct manuals for your excavator.

Book Number 2110

NOTE: *LBX COMPANY LLC reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.*

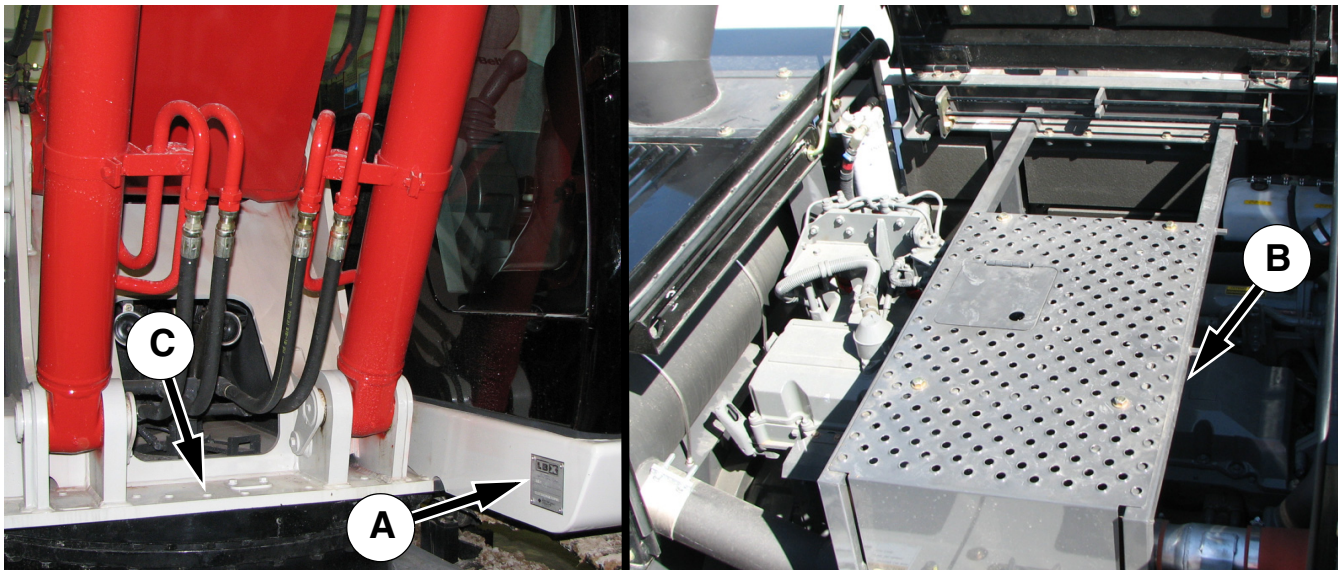
IDENTIFICATION NUMBERS

TYPE, SERIAL NUMBER AND YEAR OF MANUFACTURE

When ordering parts, obtaining information or assistance, always supply your LBX Link-Belt dealer with the type and serial number of your excavator or accessories.

Write the following in the spaces below: The model number, serial number, and manufacturer's number of your excavator, and the make/model and serial numbers of the engine.

Excavator Identification Locations

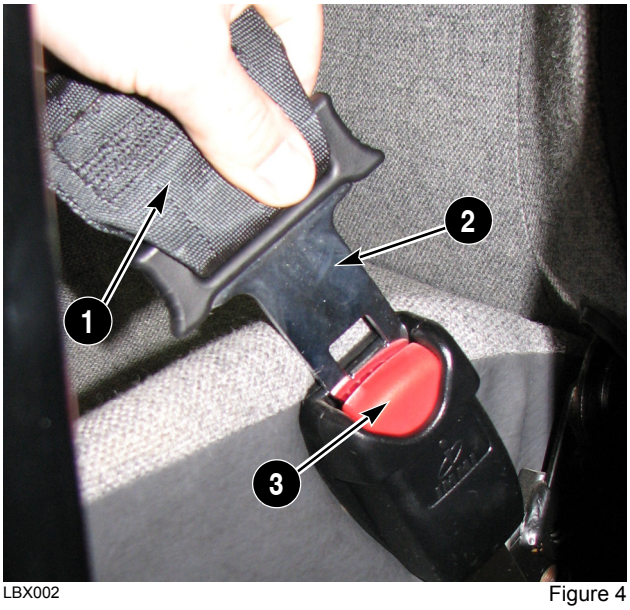


EXCAVATOR SERIAL NUMBER AND ENGINE SERIAL NUMBER

A - Model Number	
A - Serial Number	
A - Manufacturer's Number	
B - Engine Make and Model	
B - Engine Serial Number	

IMPORTANT: *If the excavator serial number plate is missing or unreadable the manufacturer's number is stamped on the frame (C) of the machine.*

SEAT BELT PRECAUTIONS



LBX002 Figure 4

1. RIGHT BELT STRAP
2. LATCH MECHANISM
3. RELEASE LEVER

1. To latch the seat belt, pull the right belt strap to the latch mechanism.
2. Insert the metal end into the latch mechanism on the left side of the seat.
3. To unlatch the seat belt, press the release lever on the right belt strap.
4. The seat belt will come apart.

WARNING: *Before starting the engine ensure seat belts are securely fastened. The seat belt can help ensure your safety if it is used and properly maintained. Never wear a seat belt loosely or with slack in the belt system. Never wear the belt in a twisted condition or pinched between the seat structural members.*

M422A

QUICK COUPLER PRECAUTIONS

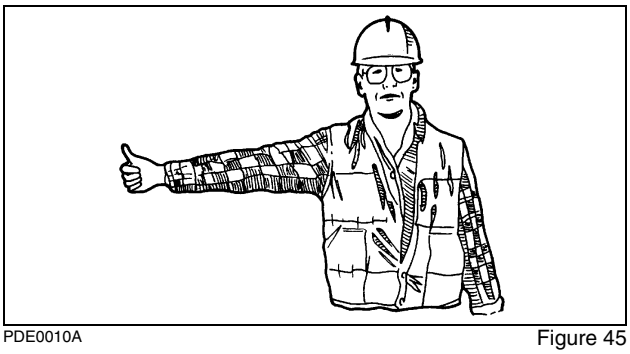
- Always follow the safety procedures of the quick coupler manufacturer if you have one on your machine. See Quick Coupler Operation.

ENGINE PRECAUTIONS

- The fuel system on the engine is under heavy PSI. Do Not open the high pressure fuel lines with the engine running.

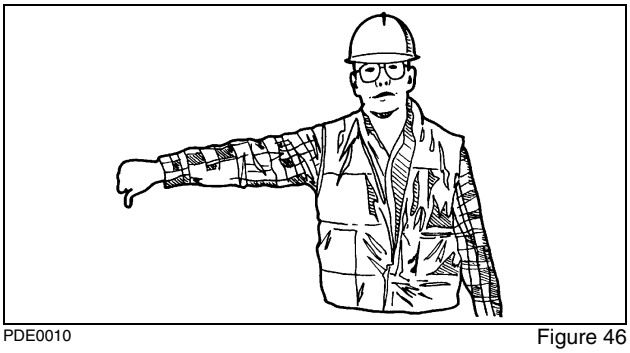
SPECIFIC PRECAUTIONS TO THIS EXCAVATOR

- Keep the load or tool as low as possible while moving the excavator around the jobsite.
- Never smoke while refueling.



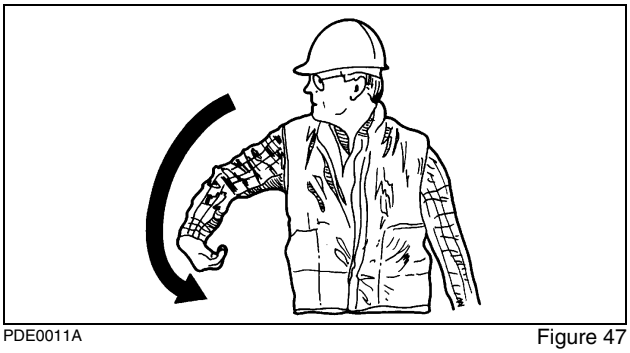
PDE0010A Figure 45

RAISE TOOL



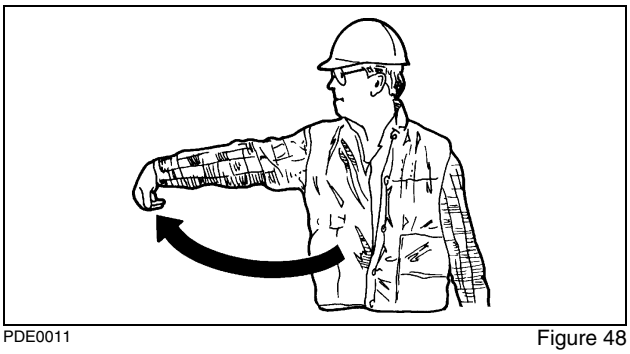
PDE0010 Figure 46

LOWER TOOL



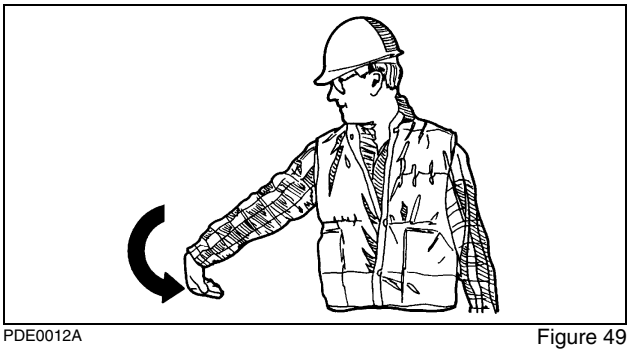
PDE0011A Figure 47

RETRACT ARM



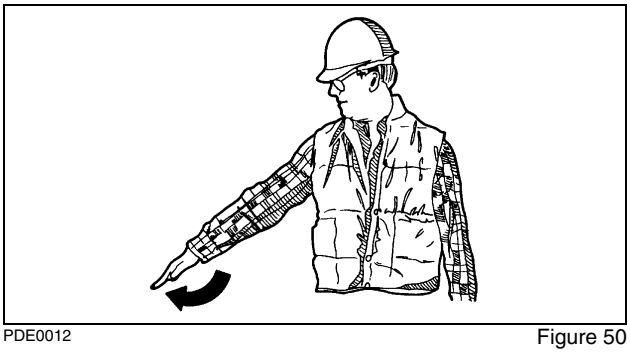
PDE0011 Figure 48

EXTEND ARM



PDE0012A Figure 49

FILL TOOL



PDE0012 Figure 50

EMPTY TOOL

INSTRUMENT PANEL

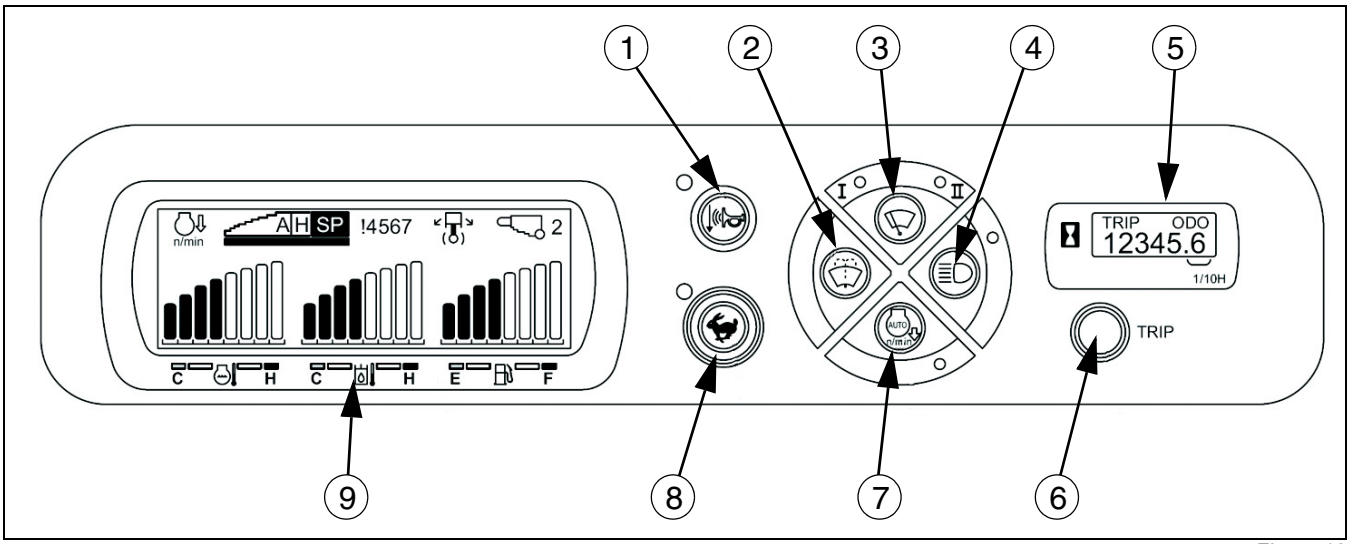


Figure 10

WARNING: *The role of the instrument panel is to indicate the state of the excavator and quickly warn the operator in case of any malfunction, through alarms.*

The instrument panel is not waterproof. Make sure that it does not get wet

1. HORN VOLUME CONTROL

   This button controls the volume of the horn. When you press the button a beep will occur and the light will illuminate. If the green light is on then horn is in low, if the light is not illuminated then it is normal volume.

   The horn volume will remain the same after the engine is shut down.

2. WINDOW WASHER CONTROL

   When pressed this button applies washer fluid to the windshield and turns the wipers on.

WARNING: *Do not use the window washer if the reservoir is empty. It can cause damage to the window washer pump.*

3. WINDOW WIPERS CONTROL

   This button controls the window wipers. There are three settings:

   I - Intermittent wipers
   II - Continuous wipers
   No lights - wipers are off.

IMPORTANT: *Do not run the window wipers on a dry window for it can cause damage to the wipers and window.*

4. WORKING LIGHT CONTROL

   This button controls the working lights on the machine. When the light is on the working lights are on.

5. HOURMETER

   This display shows the total elapsed operating time of the engine.

6. TRIP CONTROL

   The TRIP button when pressed will show the trip hours for one minute, then return to the hour meter. To reset the trip, hold the button down for two seconds.

7. AUTOMATIC AUTO-IDLE SWITCH

   When the button is pressed a beep will sound and the light will illuminate and it will be in auto-idle mode. The machine will run at idle when the controls are in the neutral position for 5 seconds. When the controls are re-engaged, the engine rpms will return to the previous setting. The machine will stay in the same mode when the engine is turned off.

8. TRAVEL MODE CONTROL

   This button toggles between Low speed travel and High speed travel. When the light is off it is in Low speed when the light is on it is in High speed travel. When the engine is shut down it resets to Low speed.

IMPORTANT: *It is best to change travel speeds while the machine is not moving, changing speeds while traveling may cause erratic movement of the machine.*

9. DISPLAY MONITOR

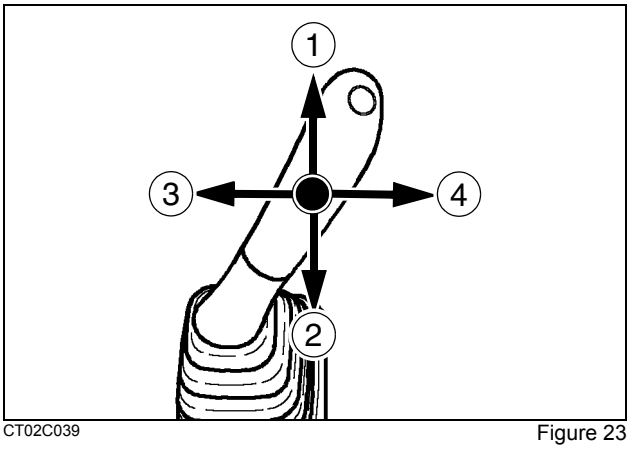
   For more details see Computer Monitor Display on the next page.

ARM AND UPPERSTRUCTURE SWING LEFT-HAND CONTROL LEVER IN PATTERN C

The speed of movement of the arm or the upperstructure swing depends on the control lever tilt angle. In the intermediate position both movements can be obtained simultaneously.

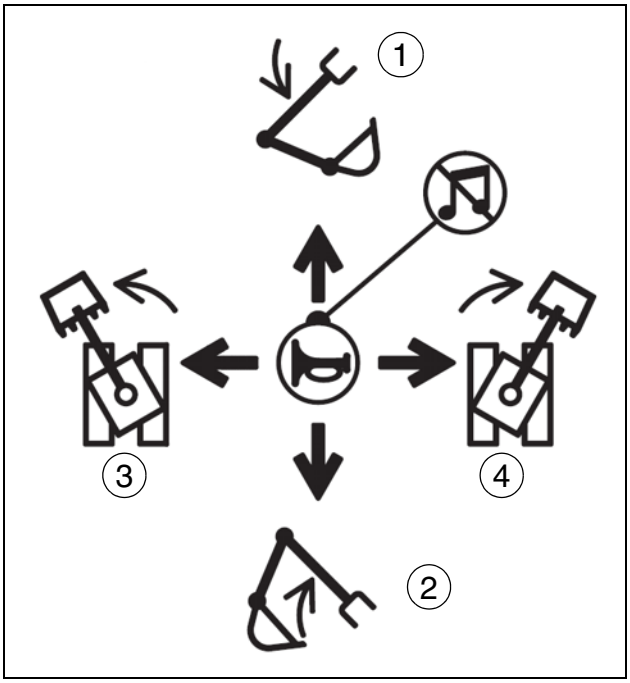
1. The boom lowers.
2. The boom raises.
3. The upperstructure turns towards the left.
4. The upperstructure turns towards the right.

NOTE: *The movements of the excavator are shown in the Control functions decal. See Decals.*



CT02C039

Figure 23



CS98M554

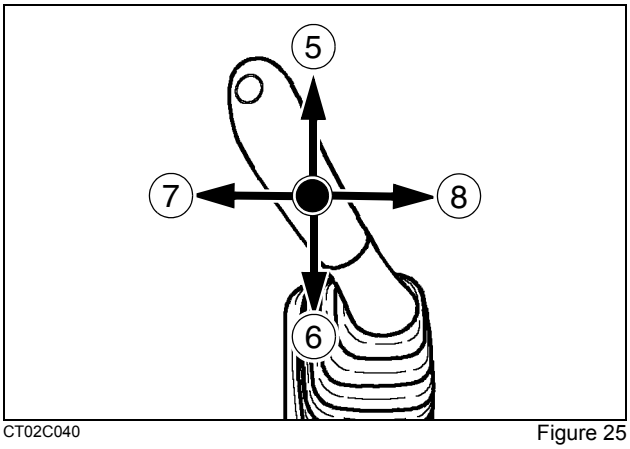
Figure 24

BOOM AND BUCKET RIGHT-HAND CONTROL LEVER IN PATTERN C

The speed of movement of the boom or the tool depends on the control lever tilt angle. In the intermediate position both movements can be obtained simultaneously.

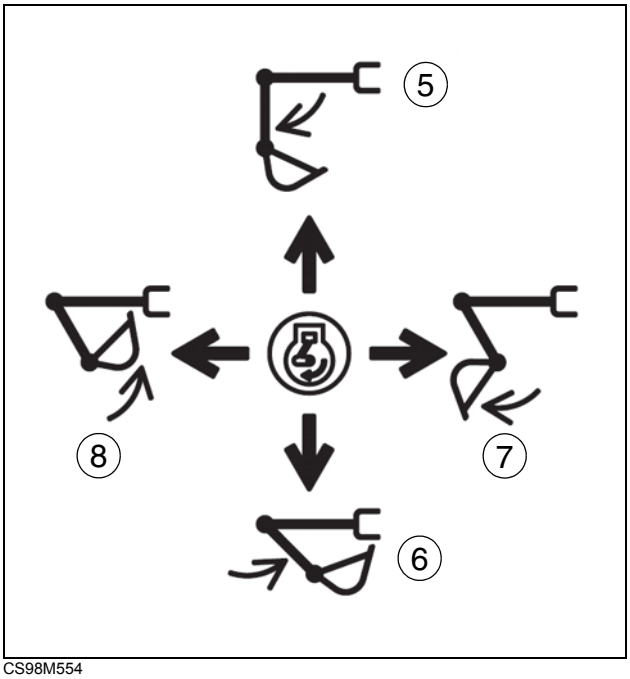
5. The arm extends
6. The arm retracts.
7. The bucket retracts (filling).
8. The bucket extends (dumping).

NOTE: *The movements of the excavator are shown in the Control functions decal. See Decals.*



CT02C040

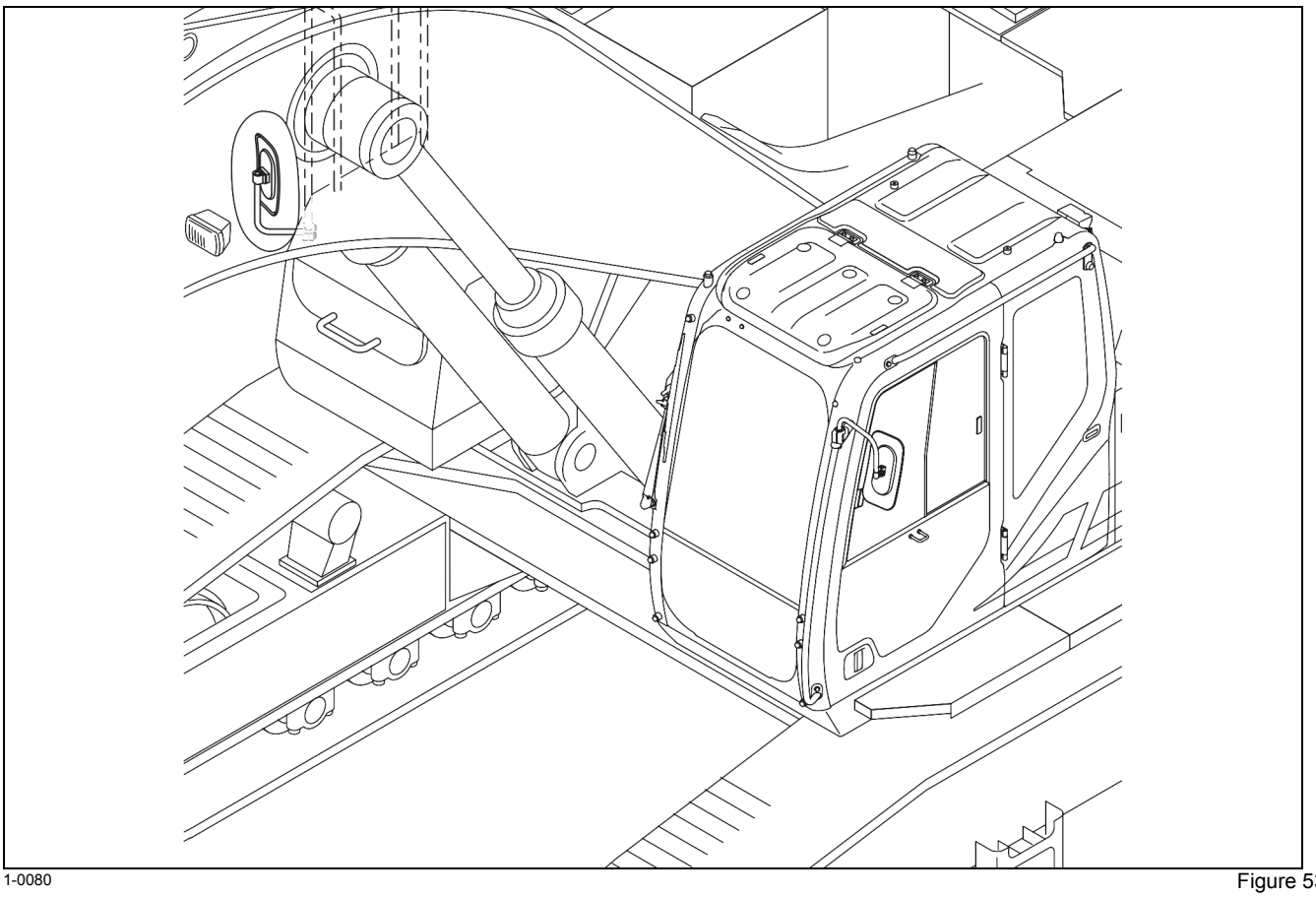
Figure 25



CS98M554

REAR VIEW MIRRORS

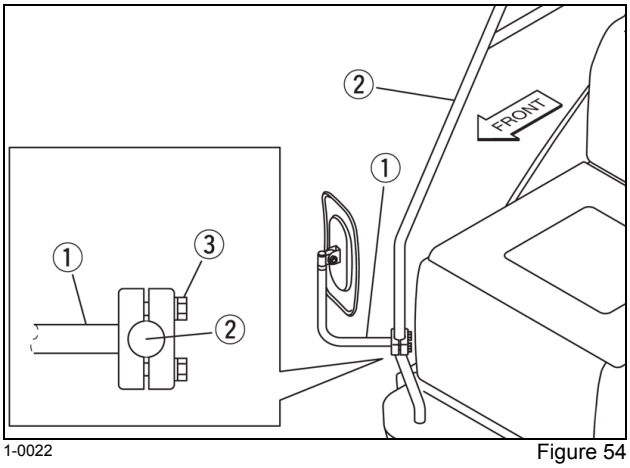
IMPORTANT: *Before any travel operation, make sure that the rear view mirrors are correctly adjusted.*



1-0080 Figure 53

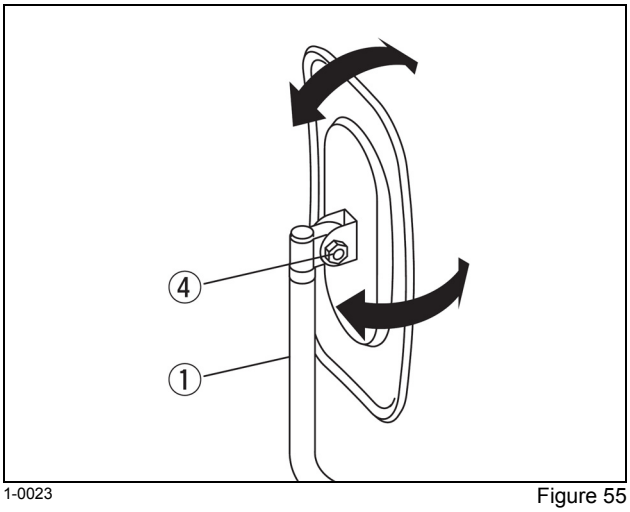
TO INSTALL THE MIRRORS

1. Install the rear view mirror stay (1) to the right front access handle (2) with the two bolts (3).



1-0022 Figure 54

2. Loosen the bolt (4) and attach the mirror to the stay(1).



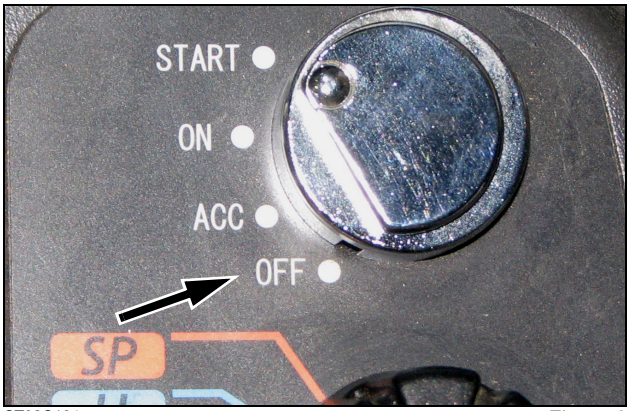
1-0023 Figure 55

WARNING: *When transporting the machine make sure the mirrors are not protruding from the machine. Fold the mirrors inward to avoid an accident.*

STOPPING THE ENGINE

1. Park the excavator on flat, solid ground and lower the attachment to the ground
2. Turn the engine throttle button to low idle position and let the engine run for 5 minutes.

IMPORTANT: *Always let the engine run at idle before switching off completely, except in emergency situations.*



CT02C194 Figure 6

3. Turn the starter switch key to the OFF position then remove it.

IMPORTANT: *When the engine is to be shut down for a considerable length of time, see Parking the Excavator section.*

IN THE EVENT OF AN EMERGENCY

This switch, located on the left hand control arm, enables the engine to be shut down in case of an emergency or when it is not possible to shut it down using the starter switch key. When the button is pressed the engine shuts down, the audible alarm device sounds, ENGINE STOP is displayed in the monitor, and the button lights up.

To restart the engine, push the button and turn the starter switch key.

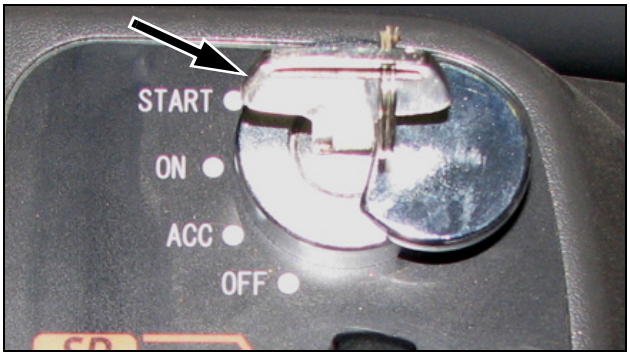
IMPORTANT: *This switch should only be used in case of an emergency. Do not use it on a day-to-day basis.*

CT02C052 Figure 7

LOWERING THE ATTACHMENT IN THE EVENT OF AN EXCAVATOR FAILURE

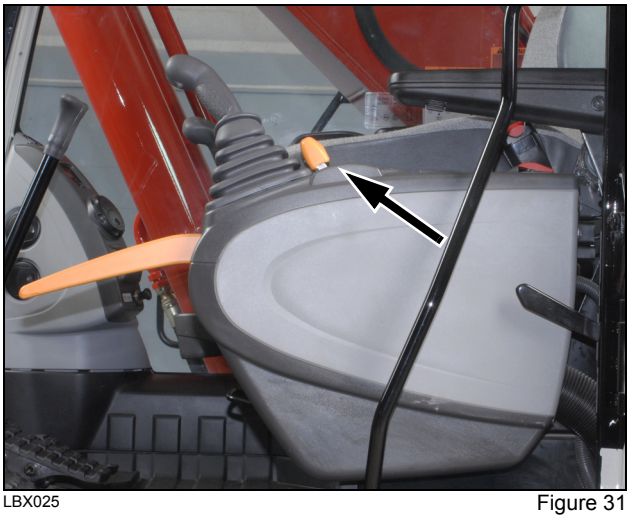
If the engine fails, use the following procedure to lower the attachment:

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



LBX052 Figure 30

2. Lower the gate lock lever.



LBX025 Figure 31

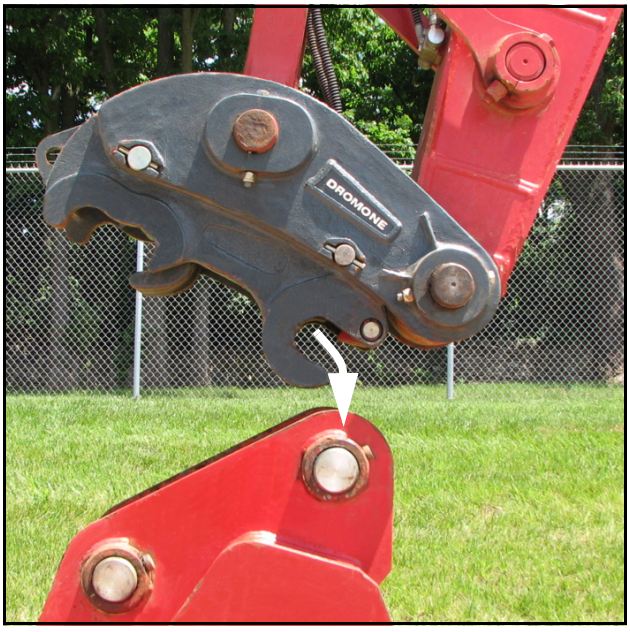
3. Place the control lever in the position corresponding to the downward movement required.

LBX025 Figure 32

5. Carefully roll the attachment outwards and prepare to disengage from the bucket. Ensure that a suitable drop off location has been selected.

Figure 54

6. Continue to roll the attachment out away from the excavator to disengage the bucket or tool.



7. The next step is to set the activation switch to the "LOCKED" position, the indicator light will go out and the audible buzzer will stop sounding in the machine cab. The quick coupler cylinder will extend and lock the latching jaws. This procedure will also activate the automatic latching system.

NOTE: *Exercise caution when the coupler & bucket is employed on the excavator. The geometry of the curl in action has increased with the likelihood of striking the cab in the event of curling the bucket or attachment within close proximity to the cab.*

WARNING *Exercise caution when the coupler & bucket is employed on the excavator. The geometry of the curl in action has increased with the likelihood of striking the cab in the event of curling the bucket or attachment within close proximity to the cab.*

- Good flow properties in lower temperatures
- Low sulfur content
- Low carbon residue content

FUEL STANDARDS

Standard	Recommendation
ASTM	D 975
JIS	No. 2
SIN	SDIN 51601
SAE - Based on SAE-J-313C	NO. 2-D
BS - Based on BS/2869-197	Class A-1

OTHER REQUIREMENTS FOR DIESEL FUEL

There are other requirements that have a big influence on service durability and service life are:

- Sulfur content - 2500 ppm or less
- HFRR (High-Frequency Reciprocating Rig: an index showing lubricating properties of the fuel) - 460 Nm or less.
- Water content -.05 wt% or less.

Sulfur content reacts to moisture to change into sulfuric acid after combustion. Too much sulfur in the fuel will accelerate internal corrosion and wear. Sulfur also deteriorates the engine oil allowing its cleaning dispersive property to weaken which results in acceleration of wear of sliding portions of the engine. HFRR is an index that indicates the lubricating property of the fuel. A large number means poor lubrication so that seizure of the engine may result if the fuel is used.

Since a fuel with a high HFRR also has a lower viscosity it can be leaked out easily. If the fuel is mixed with the engine oil, the oil lubricating properties are lowered resulting in acceleration of wear on the engine.

Water content allows the inside of the fuel tank to rust which can block the fuel line and the fuel filters which will cause a loss of power. if the temperature goes below the freezing point the water can jell the fuel and restrict and or block the fuel line.

IMPORTANT: *In cold weather, fill the fuel tank at the end of the day's work, in order to prevent the formation of condensation.*

FUEL STORAGE

Long storage can lead to the accumulation of impurities and condensation in the fuel. Engine trouble can often be traced to the presence of water in the fuel.

The storage tank must be placed outside and the temperature of the fuel should be kept as low as possible. Drain off water and impurities regularly.

COOLANT SOLUTION

Use only ethylene-glycol coolant solution in the cooling system. Use good quality ethylene-glycol with a high boiling point, and no additives to prevent leakage. Do not use non-approved anti-rust additives. Anti-rust additives and ethylene-glycol can mix and work against each other, thereby reducing anti-corrosion protection, forming deposits in the cooling system and causing damage to the cooling system and radiator.

Contact your LBX Link-Belt dealer who will supply you with the suitable coolant solution.

ANTI-FREEZE/ANTI-CORROSION

Use anti-freeze in all seasons to protect the cooling system from corrosion and all risk of freezing.

For areas where the ambient temperature is over -33°F (-36°C), use a blend of 50% ethylene-glycol based anti-freeze.

For areas where the temperature is below -33°F (-36°C), it is advisable to use a blend of 40% water and 60% anti-freeze.

ENVIRONMENT

Before carrying out any maintenance operation on this excavator and before disposing of used fluids or lubricants, always think of the environment. Never throw oil or fluid on the ground and never place it in leaking receptacles.

Contact your local ecological recycling center or your LBX Link-Belt dealer to obtain information on the correct method of disposing of these lubricants.

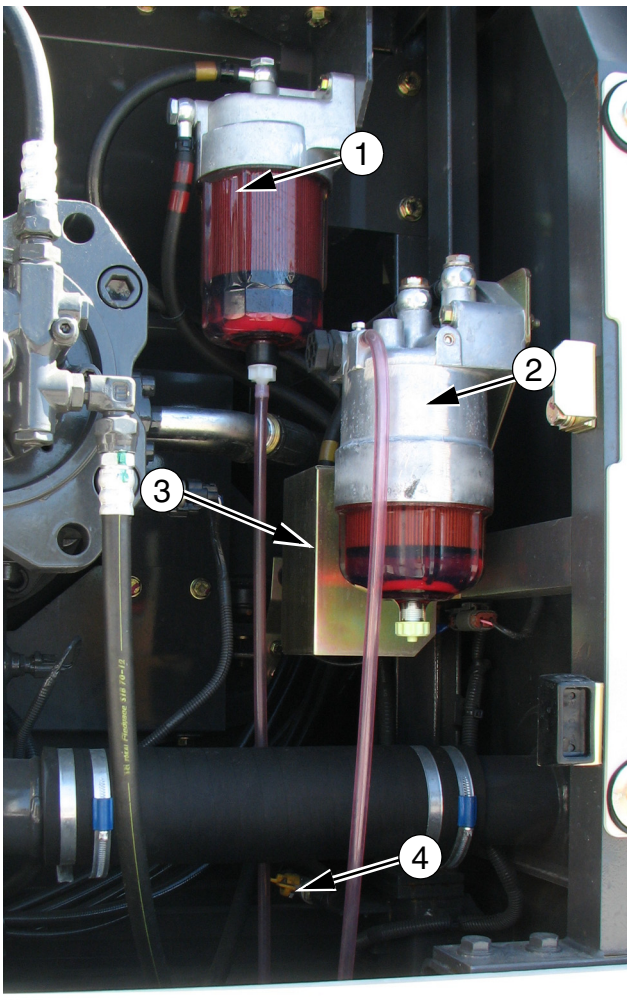
FUEL SYSTEM

SERVICE SPECIFICATIONS

Fuel reservoir bleeding ..... Every 50 hours or every week
Draining water from the fuel main filter ..... Every 50 hours or every week
Draining water from the fuel pre-filter ..... Every 50 hours or every week
Fuel main filter replacement ..... Every 500 hours
Fuel pre-filter replacement ..... Every 250 hours
Replacing the fuel hoses ..... Every 2 years or every 4000 hours (whichever comes first)
Fuel tank capacity ..... 118.9 gal (450 liters)
Fuel type ..... See Fluids and Lubricants

IMPORTANT: *With the Tier III engine, proper fuel maintenance and service is vital to the machine.*

FUEL SYSTEM COMPONENTS



LBX065 Figure 25

1. Fuel Pre-Filter
2. Electronic Fuel Transfer Pump
3. Fuel Main Filter
4. Fuel Shut-Off Valve

FUEL SYSTEM AIR BLEED

It is necessary to bleed the system when:

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

1. Loosen the air bleeding plug (2) on the fuel main filter.

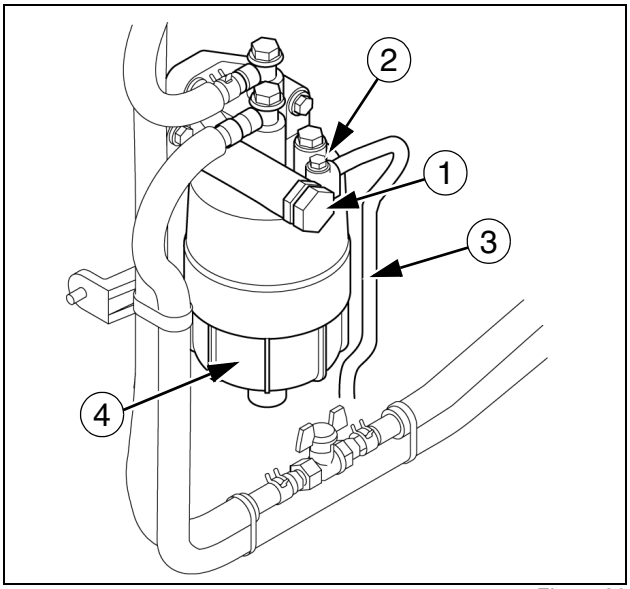
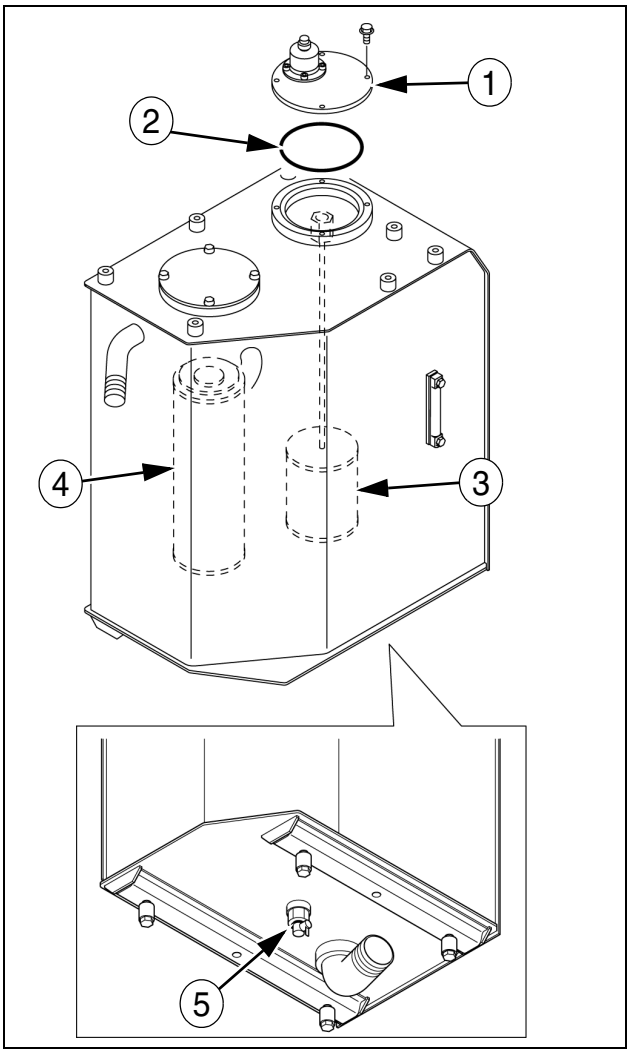


Figure 26

2. Turn the key to the ON position. This engages the electronic fuel priming pump.
3. Turn the mechanical priming pump (1) counterclockwise until it springs out.
4. Press the pump (1) inwards a few times until air bubbles are loose in the fuel flow line (3).

REPLACING THE HYDRAULIC FLUID

1. Release all pressure in the hydraulic reservoir. See Releasing Pressure in the Hydraulic System.
2. Using a pump, remove the fluid from the hydraulic reservoir. Have a container with a suitable capacity ready.
3. Remove the cover (1) and the o-ring (2).
4. Remove the drain plug (5) to remove the remaining fluid from the reservoir.



3-0007 Figure 44

5. Replace the suction filter (3) and the return filter (4). See Cleaning and replacement of the suction filter and Return filter replacement on the previous page.
6. Install the reservoir drain plug (5).
7. Put new hydraulic fluid into the reservoir. See Filling the Reservoir.
8. Install a new o-ring(2).
9. Install the cover plate (1).
10. 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.
11. Start and run the engine with no load for approximately five minutes. Move each control several times to remove any air in the system. Swing the upperstructure evenly left to right two complete turns or more.
12. Place the excavator in the hydraulic oil check 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.

TRACKS

MAINTENANCE SPECIFICATIONS

Clean ..... Periodically and when the excavator has been working in mud
Check tension ..... Periodically
Check Shoe Bolt 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 excavator 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.

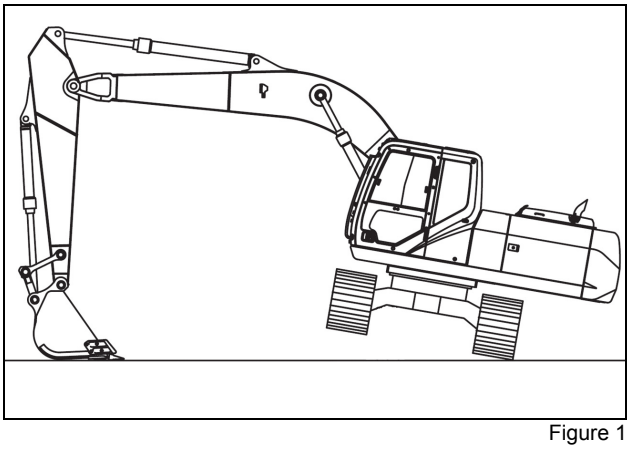


Figure 1

2. Put the engine throttle button in the SP (1) mode and select the High speed travel(2).

Figure 2

3. Operate the travel control lever for the raised track forwards and then in reverse, to remove the mud.
4. Repeat Steps 1 to 4 for the other track.

CHECKING THE TENSION

1. Park the excavator on flat, horizontal ground.
2. Clean the tracks.
3. 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.
4. Place a block under the undercarriage to keep the excavator from drifting down.

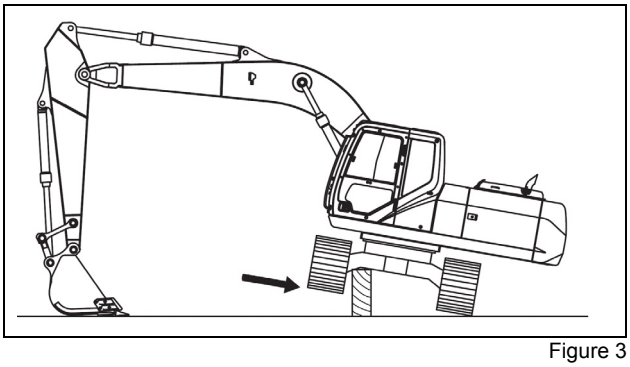


Figure 3

5. Use the travel control lever to operate the raised track in reverse for a few moments.
6. Stop the engine and remove the starter switch key.

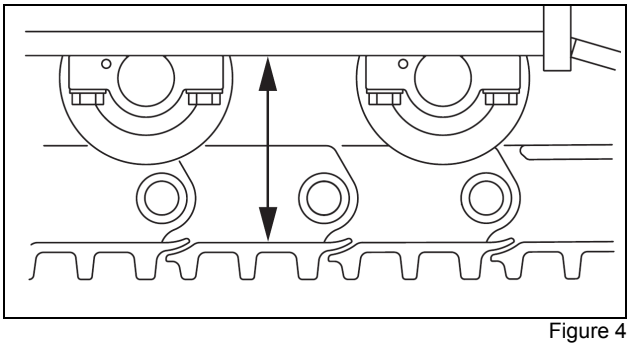


Figure 4

7. Measure the slack between the base of the undercarriage and the upper part of the track tread. See Track Tension Value on the next page.

HARDWARE TORQUE INSPECTION

MAINTENANCE SPECIFICATION

Check .....Every 250 hours
(after the first 50 hours during the run-in period)
At the end of each working day, check all mounting nuts and screws for tightness and tighten if necessary. Make sure no hardware items are missing. Replace them, if necessary.

Component	Screw (Ø)	Wrench (mm)	Torque setting (Nm)
Travel reduction gear (*)	M24	36	900-1051
Drive sprocket (*)	M20	30	521-608
Idler wheel (*)	M16	24	267-312
Upper roller (*)	M20	30	521-608
Lower roller (*)	M24	36	902-1049
Track shoe	M24	32	1373+/- 137
Counterweight	M33	50	1862-2058
Turntable (undercarriage)	M24	36	900-1050
Turntable (upperstructure)	M24	36	900-1050
Swing reduction gear (*)	M24	36	900-1050
Engine (*)	M10/M12	17/19	64-74/109-127
Engine mounts (*)	M20	30	289-337
Radiator	M16	24	147-177
Hydraulic pump (*)	M10 M20	17 Male	63-73 367-496
Hydraulic reservoir (*)	M16	24	232-276
Fuel tank (*)	M16	24	232-276
Control valve (*)	M16	24	267-312
Hydraulic swivel (*)	M12/M20	19/24	109-127/267-312
Cab	M16	24	157
Batteries	M10	17	16-20

NOTE: *Use Loctite 262, or the equivalent, on screws marked (*).*

Chapter 8
SPECIFICATIONS

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