PART NO. EM16A-1-1

Operator's Manual

EX400-3C
EX400LC-3C
EX450H-3C
EX450LCH-3C

Excavator

Serial No. 06001 and up

HITACHI

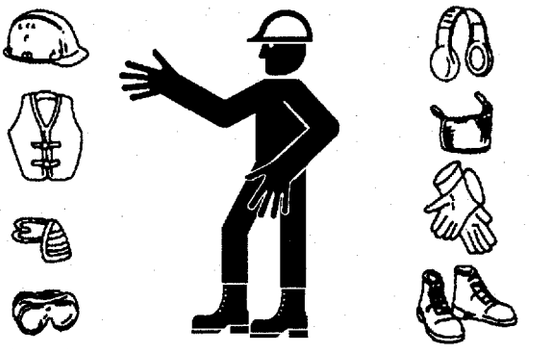
WEAR PROTECTIVE CLOTHING

- Wear close fitting clothing and safety equipment appropriate to the job.

  You may need:
  A hard hat
  Safety shoes
  Safety glasses, goggles, or face shield
  Heavy gloves
  Hearing protection
  Reflective clothing
  Wet weather gear
  Respirator or filter mask.
  Be sure to wear the correct equipment and clothing for the job. Do not take any chances.

  · Avoid wearing loose clothing, jewelry, or other items that can catch on control levers or other parts of the machine.

- Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.



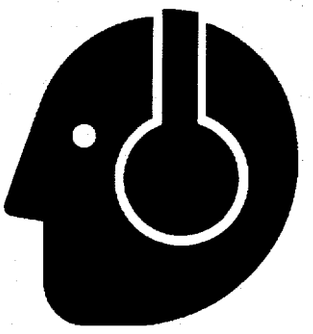
SA-438

005-E01A-0438-4

PROTECT AGAINST NOISE

- Prolonged exposure to loud noise can cause impairment or loss of hearing.

  · Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortably loud noises.



006-E01A-0434-2

SA-434

INSPECT MACHINE

- Inspect your machine carefully each day or shift by walking around it before you start it to avoid personal injury.

  · In the walk-around inspection be sure to cover all points described in the "PRE-START INSPECTION" chapter.

007-E01A-0435-2

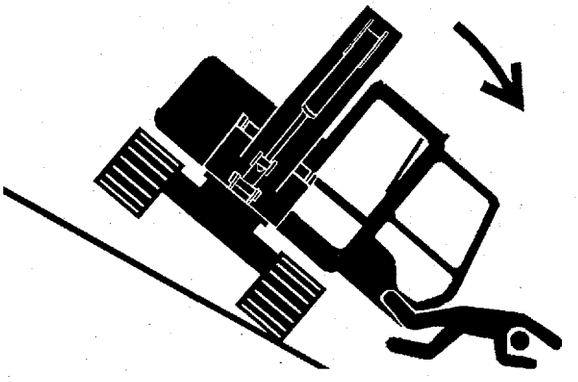
SA-435

AVOID TIPPING

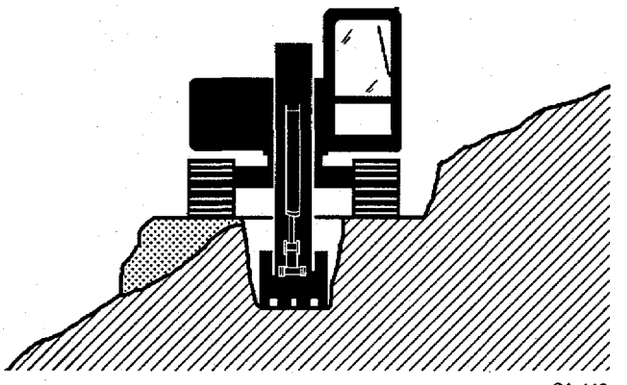
- DO NOT ATTEMPT TO JUMP CLEAR OF TIPPING MACHINE---SERIOUS OR FATAL CRUSHING INJURIES WILL RESULT
- MACHINE WILL TIP OVER FASTER THAN YOU CAN JUMP FREE
- FASTEN YOUR SEAT BELT
- The danger of tipping is always present when operating on a grade, possibly resulting in serious injury or death.

To avoid tipping:

- Be extra careful before operating on a grade.
  - · Prepare machine operating area flat.
  - · Keep the bucket low to the ground and close to the machine.
  - · Reduce operating speeds to avoid tipping or slipping.
  - · Avoid changing direction when traveling on grades.
  - · NEVER attempt to travel across a grade steeper than 15 degrees if crossing the grade is unavoidable.
  - · Reduce swing speed as necessary when swinging loads.
- Be careful when working on frozen ground.
  - · Temperature increases will cause the ground to become soft and make ground travel unstable.



SA-012

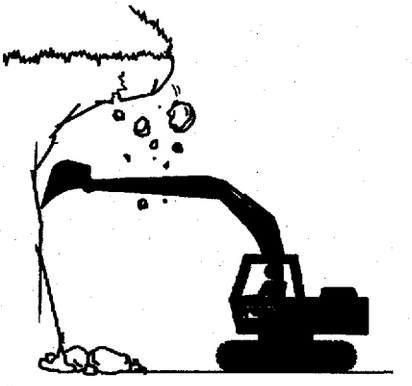


SA-440

025-E01B-0495-5

NEVER UNDERCUT A HIGH BANK

- The edges could collapse or a land slide could occur causing serious injury or death.



026-E01A-0489-2

SA-489

PREVENT FIRES

Check for Oil Leaks:

- Fuel, hydraulic oil and lubricant leaks can lead to fires.

  · Check for missing or loose clamps, kinked hoses, lines or hoses that rub against each other, damage to the oil-cooler, and loose oil-cooler flange bolts for oil leaks.
  · Tighten, repair or replace any missing, loose or damaged clamps, lines, hoses, oil-cooler and oil-cooler flange bolts.
  · Do not bend or strike high-pressure lines.
  · Never install bent or damaged lines, pipes, or hoses.

SA-019

Check for Shorts:

- Short circuits can cause fires.

  · Clean and tighten all electrical connections.
  · Check before each shift or after eight (8) to ten (10) hours operation for loose, kinked, hardened or frayed electrical cables and wires.
  · Check before each shift or after eight (8) to ten (10) hours operation for missing or damaged terminal caps.
  · DO NOT OPERATE MACHINE if cable or wires are loose, kinked, etc..

Clean up Flammables:

- Spilled fuel and oil, and trash, grease, debris, accumulated coal dust, and other flammables may cause fires.

  · Prevent fires by inspecting and cleaning the machine daily and by removing spilled or accumulated flammables immediately.

Check Key Switch:

- If a fire breaks out, failure to stop the engine will escalate the fire, hampering fire fighting.

  · Always check key switch function before operating the machine every day:
    1) Start the engine and run it at slow idle.
    2) Turn the key switch to the OFF position to confirm that the engine stops.

  · If any abnormalities are found, be sure to repair them before operating the machine.

508-E02A-0019-9

CAB FEATURES

1 — Left Control Lever / Horn Switch (On Top of Lever)

2 — Right Control Lever / Power Boost Switch (On Top of Lever)

3 — Pilot Control Shut-Off Lever

4 — Monitor Panel and Switch Panels

5 — Rear Console

6 — Left Console

7 — Left Travel Lever

8 — Left Travel Pedal

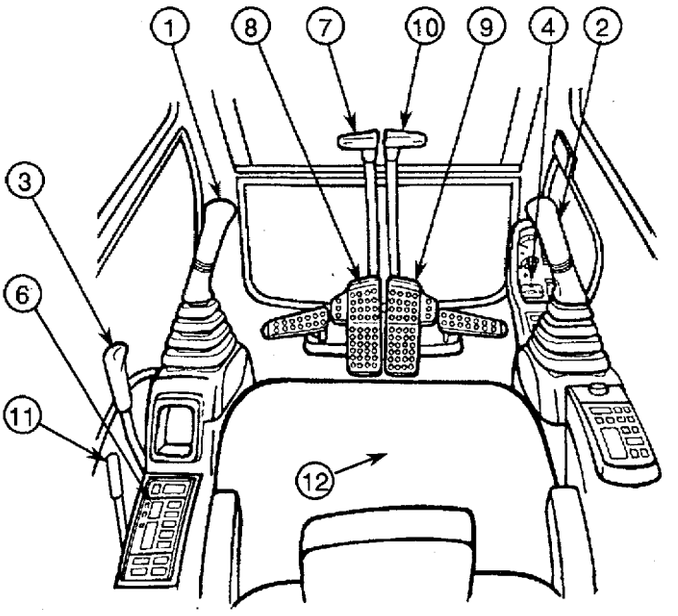
9 — Right Travel Pedal

10 — Right Travel Lever

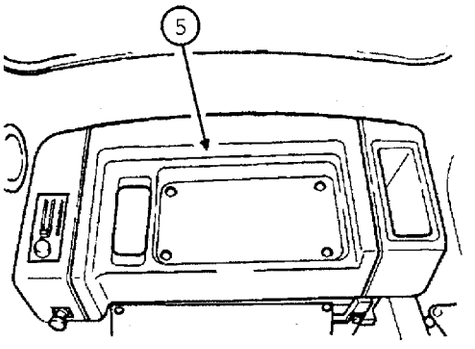
11 — Cab Door Release Lever

12 — Operator's Seat

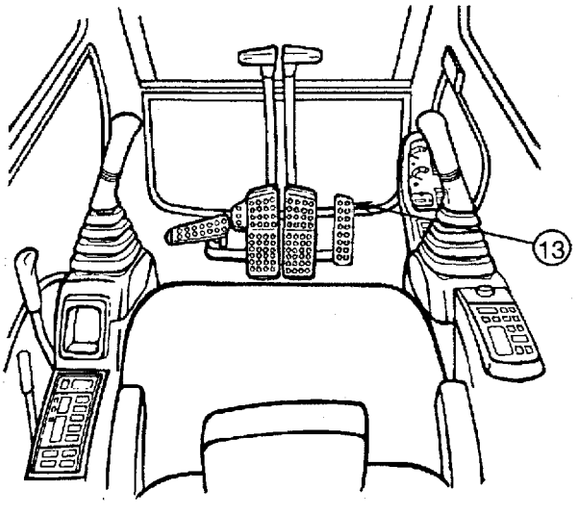
13 — Attachment Pedal --- If equipped



M104-01-001



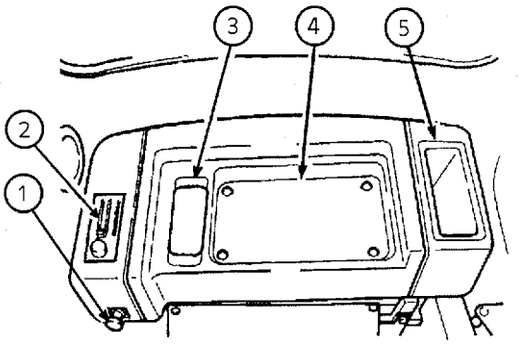
M104-01-043



M107-01-001

REAR CONSOLE

1 — Cigar Lighter
2 — Cab Heater Control Panel
3 — Fuse Box
4 — Rear Tray
5 — Compartment 1

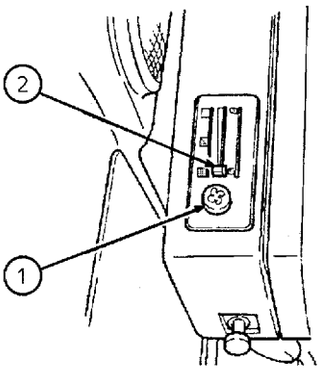


M104-01-021

CAB HEATER

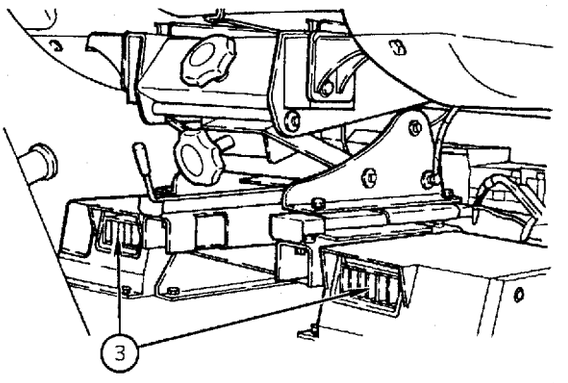
Adjust cab inside temperature in the following manner:

1. Move heat control lever ② rearward to increase amount of heat.
2. Turn blower control switch ① to desired setting (low, medium and high).



M104-01-022

Manipulate vent ③ to adjust wind direction.

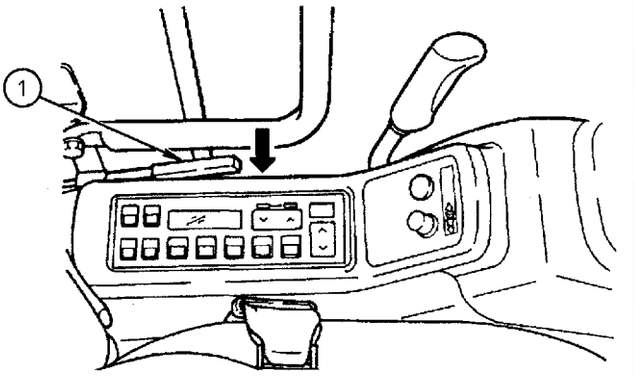


M111-01-004

CAB DOOR RELEASE LEVER

CAUTION: Open the cab door all the way until it securely locks in the latch on the side of the cab.

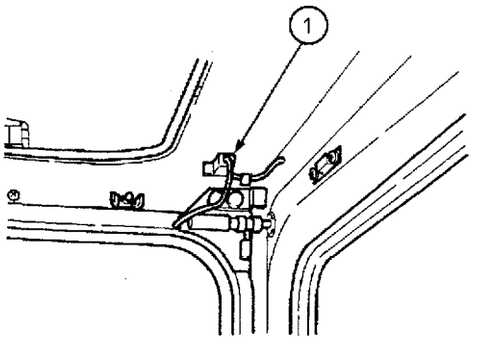
To unlock the door from this position, push down on lever ①.



M111-01-008

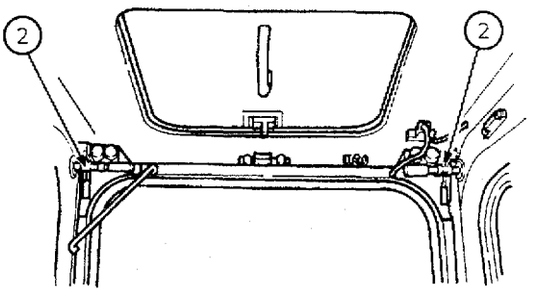
OPENING UPPER FRONT WINDOWS

1. Unplug windshield wiper ①.



M104-01-027

2. Move lock pins ② toward center of window.

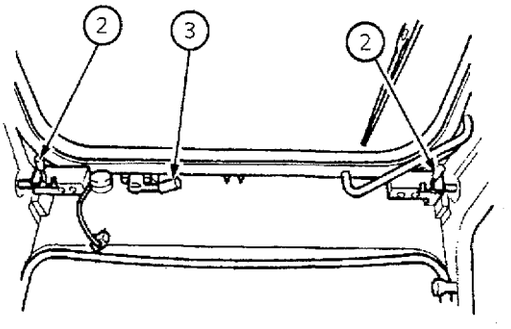


M104-01-028

3. Pull window up and back until it catches in lever ③ latch.

CAUTION: Prevent possible injury from closing window. DO NOT rely on lever ③ alone to hold the window in the position. Always secure lock pins ② into the cab frame boss holes.

4. Slide lock pins ② into boss holes and turn to lock.



M104-01-029

SEAT BELT

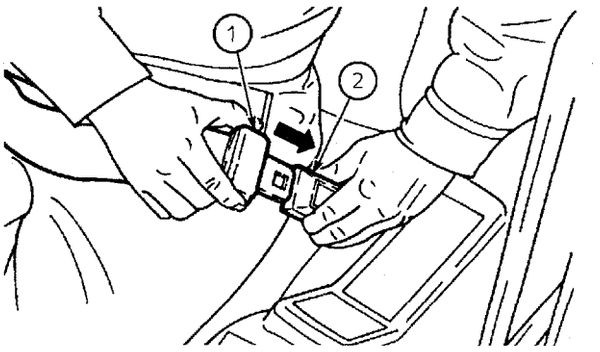
CAUTION: At all times when the machine is in operation, the operator must remain seated with seat belt securely fastened.
If the machine tips over, do not unfasten seat belt until the machine comes to a complete stop and after operator determines it is safe to unfasten the seat belt and exit the machine.

When fastening the seat belt, confirm that belt ① is not twisted or obstructed.

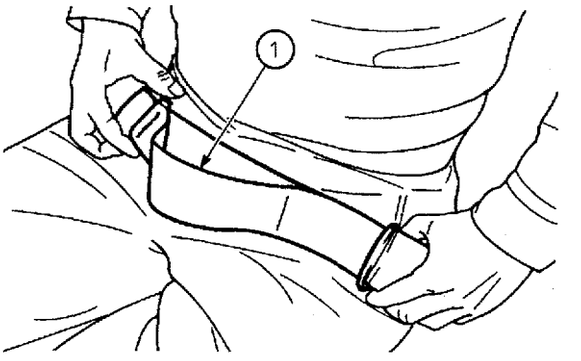
Insert end of belt ① into buckle ② and pull the belt lightly to confirm that the belt and buckle are securely latched.

Adjust the seat belt so that belt is snug around operator's waist but comfortable.

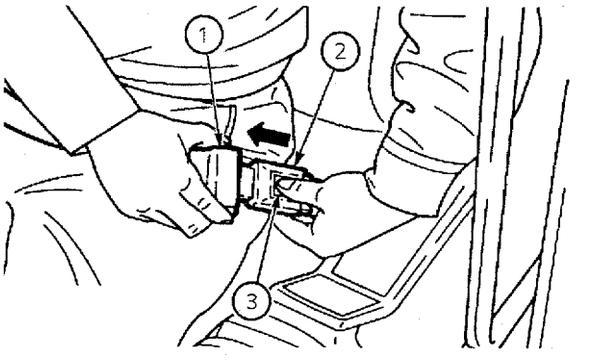
To unfasten, push button area ③ in middle of buckle ② and pull belt ① away to disengage.



M107-01-044



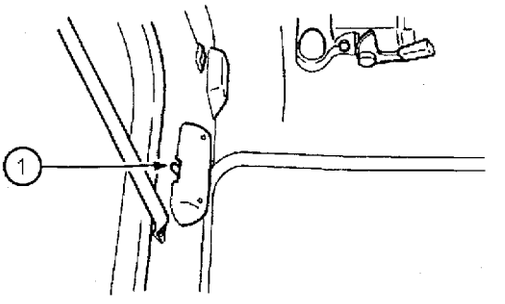
M107-01-045



M107-01-046

DOME LIGHT

Move switch ① to turn the inside cab light on or off.



M104-01-037

STEERING THE MACHINE USING LEVERS

CAUTION: In the standard travel position, the idlers are positioned at the front of the machine and the travel motors at the rear. If the travel motors are positioned at the front of the machine, the control actions of the travel levers will be reversed. Be sure to confirm the position of the travel motors before traveling.

FORWARD TRAVEL
Push both levers forward Ⓐ.

REVERSE TRAVEL
Pull both levers rearward Ⓑ.

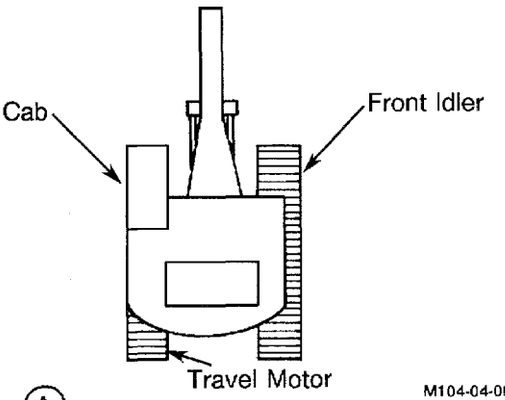
NEUTRAL POSITION Ⓒ
When the travel levers are placed in neutral, travel brakes automatically will stop and/or hold the machine.

RIGHT TURN
Push left lever forward.

LEFT TURN
Push right lever forward.

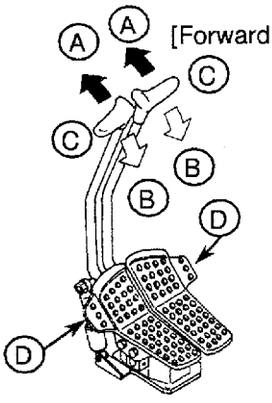
SHORT TURN (Spin turn)
Push one lever forward and pull the other rearward.

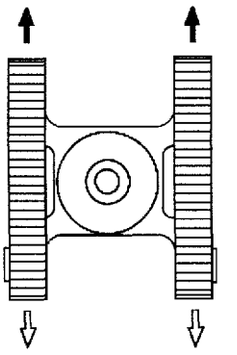
NOTE: For long-term traveling, push down on pedal tabs Ⓓ and rest feet on footrests.
Travel lever dampers are provided for smooth control. In extremely cold weather lever effort will increase. Operate levers several times with pilot control shut-off lever in the LOCK position.



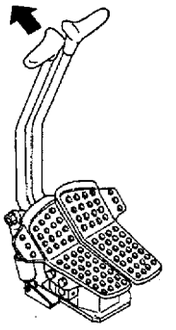
M104-04-001

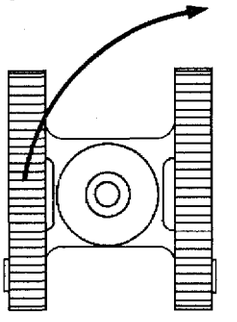
[Forward and Reverse]



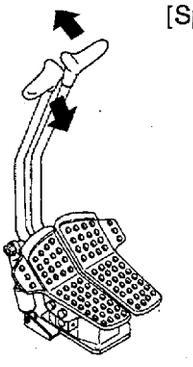

M104-04-002
M104-04-003

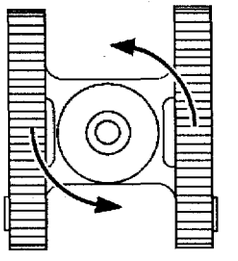
[Pivot Turn]




M104-04-004
M104-04-005

[Spin Turn]



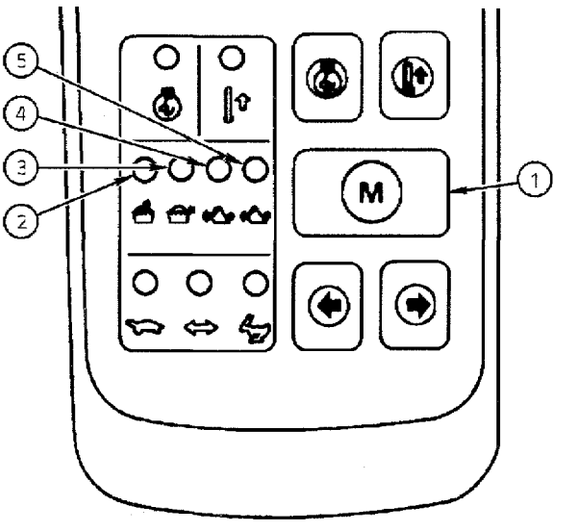

M104-04-006
M104-04-007

WORK MODE SELECTOR

Four work modes can be selected for the most appropriate operating speeds of the boom, arm, bucket and swing functions for the work to be done.

When the engine is started, the general purpose mode is automatically selected.
Push switch ① as many times as necessary to select desired work mode. Indicators ② to ⑤ show the work mode selected.

1 – Work Mode Selector Switch
2 – General Purpose Mode Indicator
3 – Trenching Mode Indicator
4 – Grading Mode Indicator
5 – Precision Mode Indicator



M111-05-006

Use the following table to make the best choice:

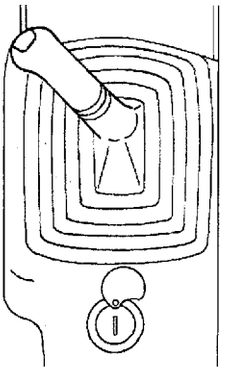
Work Mode Selection

	General Purpose Mode	Arm roll-in functions receive same priority. Designed for general digging and truck loading.
	Trenching Mode	During combined operation of boom and swing, swing is given priority.
	Grading Mode	Boom raise, arm and bucket functions are slow when operated with arm roll-in function only. Travel and swing functions operated general purpose mode setting.
	Precision Mode	Swing, boom raise, arm and bucket functions are slower. Travel and boom lower functions operate at general purpose mode setting.

POWER BOOST SWITCH

The power boost switch is used to gain maximum digging power, and is located at the top of the right control lever.

When the power boost switch is pushed with the power selector in the P or E mode, increased front attachment power will be supplied for about 10 seconds.



M107-05-001

OPERATING HYDRAULIC BREAKER --- IF EQUIPPED

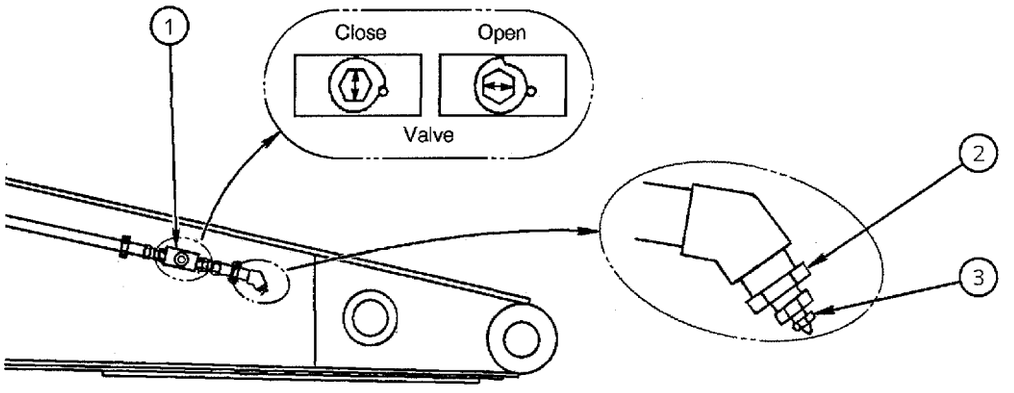
Select a breaker that is the correct size and weight for your machine. See your authorized dealer for correct breaker information.

Carefully study the operation manuals of the machine and breaker, and perform the required checks and/or inspection before connecting the breaker to the arm.

Precautions for connecting breaker piping.

(1) Do not allow contamination to enter into the system when switching the breaker with the bucket.

(2) Before attaching the hydraulic breaker, be sure to loosen air breather plug ③, located on the top of cap assembly ②, to release internal pressure and to drain the trapped hydraulic oil.
Then, remove cap assembly ②.
Install the breaker fitting and the breaker rubber hose before opening valve ①.



M111-05-008

(3) When the breaker is not used, apply the Cap Assembly to the pipe opening on the arm top and install the plug into the hose end of the breaker to prevent entry of contamination into the system. Be sure to provide spare Cap Assemblys and plugs in the tool box so that they will be available when needed.

(4) After connecting, check the connecting seal fitting for oil leakage, and pipe clamp bolts for looseness.

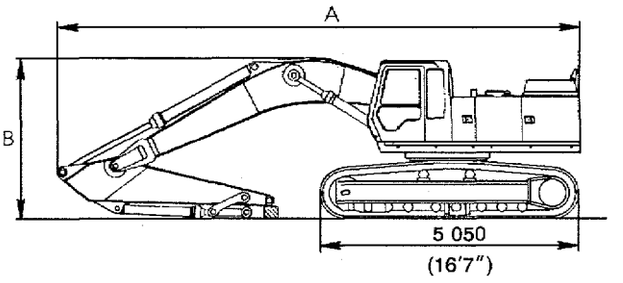
1. Perform the required checks and inspection daily before operation.

2. Operate the machine slowly, as the breaker is heavier than bucket.

Packing Dimensions and Weights for Transportation - 2

Basic Machine

Weight : 30 700 kg (67 700 lb)

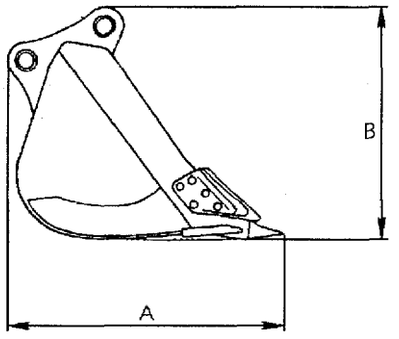


M111-06-003

Arm Length mm (ft·in)	A mm (ft·in)	B mm (ft·in)
2 900 (9'6")	11 100 (36'5")	3 300 (10'10")
3 400 (11'2")	11 050 (36'3")	3 350 (11'0")
3 900 (12'10")	11 060 (36'3")	3 380 (11'1")
4 900 (16'1")	11 030 (36'2")	4 380 (14'4")

Shoe Width mm (ft·in)	Overall Width mm (ft·in)	Weight kg (lb)
600 (2'0")	3 340 (11'0")	30 700 (67 700)
750 (2'6")	3 490 (11'5")	31 800 (70 100)

Bucket



M111-06-004

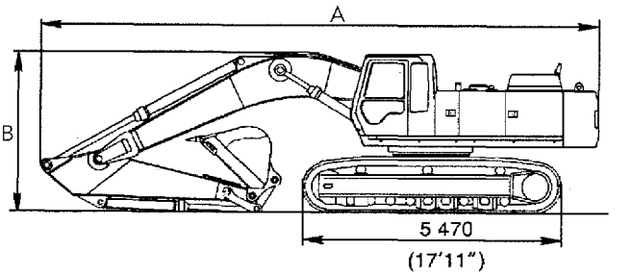
Bucket Capacity (PCSA heaped) m^3 (yd^3)	A mm (ft·in)	B mm (ft·in)	Width mm (ft·in)	Weight kg (lb)
1.36 (1.78)	1 800 (5'11")	1 350 (4'5")	1 410 (4'8")	1 170 (2 580)
1.60 (2.09)	1 940 (6'4")	1 570 (5'2")	1 360 (4'6")	1 460 (3 220)
1.82 (2.38)	1 940 (6'4")	1 570 (5'2")	1 500 (4'11")	1 550 (3 420)
2.07 (2.71)	1 940 (6'4")	1 570 (5'2")	1 630 (5'4")	1 630 (3 590)
2.28 (2.98)	1 950 (6'5")	1 650 (5'5")	1 660 (5'5")	1 780 (3 920)
1.82 (2.38) Rock	1 950 (6'5")	1 650 (5'5")	1 420 (4'8")	1 980 (4 370)

BACKHOE (EX450LCH-3C)

Packing Dimensions and Weights for Transportation - 1

Basic Machine (Arm : H front)

CAUTION: When performing combined operation of arm roll-in/bucket roll-in or when rolling in the bucket with the arm fully retracted, be careful not to hit the boom with the bucket teeth.



M111-06-020

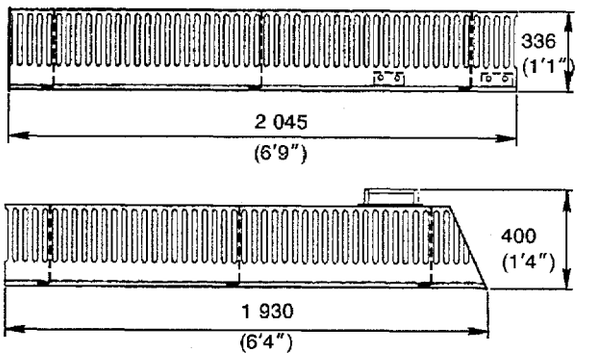
Weight : 46 200 kg (101 900 lb)

Arm Length mm (ft-in)	A mm (ft-in)	B mm (ft-in)
3 400 (11'2")	11 790 (38'8")	3 480 (11'5")

Shoe Width mm (ft-in)	Overall Width mm (ft-in)	Weight kg (lb)
600 (2'0")	3 156 (10'4")	46 200 (101 900)
750 (2'6")	3 178 (10'5")	47 300 (104 300)

Side Step

Weight : 30 kg (66 lb)
Maximum Height: 146 mm (6 in)



M111-06-002

NOTE: Lifting yokes must be in the forward position or highest point of the slot.

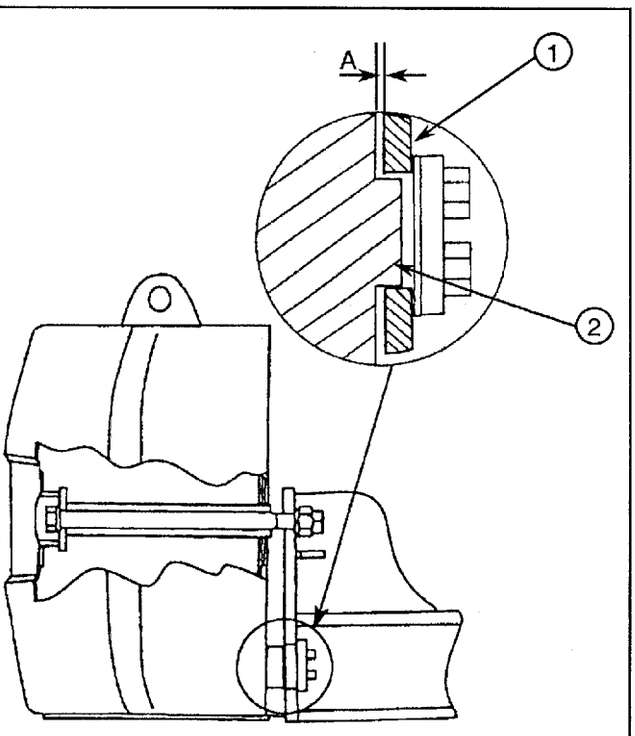
23. Slowly move the counterweight pilot valve lever UP until counterweight bottom bosses ② move away from machine mainframe ① approximately 5 mm (0.20 in.) (A). This will ensure that the weight of the counterweight is on the lift cylinder.

CAUTION: When the threads of tie bolt ⑦ disengage from nut ⑥, nut ⑥ and nut spacer may drop to the ground. Stay clear from under the machine when removing bolts ⑦.

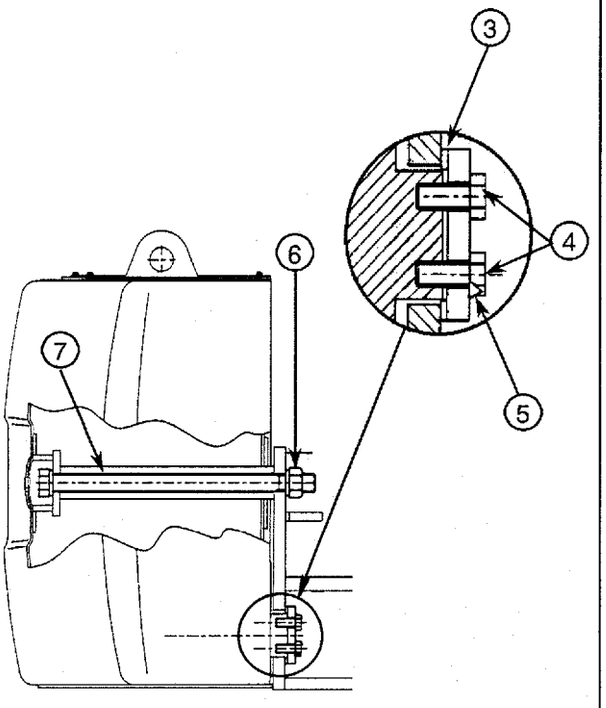
24. To avoid binding, loosen bolts ⑦ by alternately turning each bolt one turn at-a-time.

NOTE: It is not necessary to remove bolts ⑦ from the counterweight/frame holes. It is enough nuts ⑥ are dropped down. The bolts ⑦ will be removed from frame holes when the counterweight is lowered by the lift cylinder.

25. Remove bolts ④, lock plates ⑤, spacers and shims ③ from each countereweight boss. **To avoid binding, alternately loosen left hand and right hand bolts ④ 2 or 3 turns at-a-time.**



M116-06-028



M116-06-036

3 Swing Internal Gear --- every 500 hours

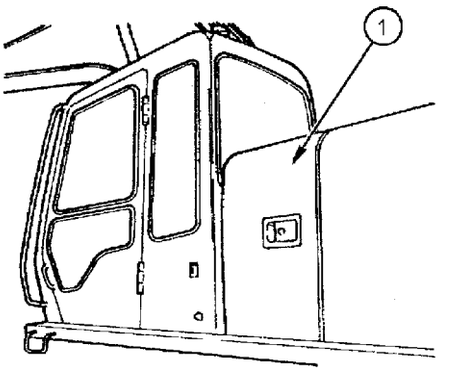
CAUTION: Adding or changing swing internal gear grease and rotating the upperstructure must be done by one person. Before you start, clear the area of all persons.

Each time you leave the cab
- **Lower the bucket to the ground.**
- **Stop the engine.**
- **Pull the pilot control shut-off lever to the LOCK position.**
- **Use handrails.**

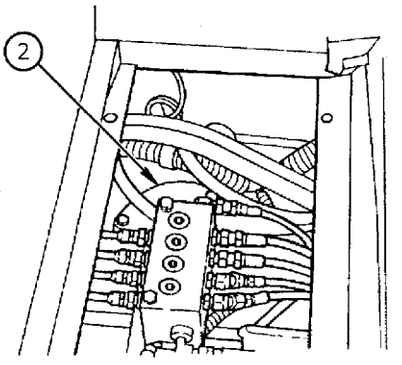
1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.

IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

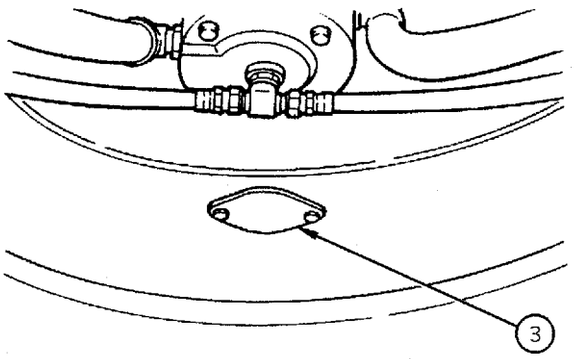
4. Run the engine at slow idle speed without load for three minutes.
5. Turn the key switch OFF. Remove the key from the switch.
6. Pull the pilot control shut-off lever to the LOCK position.
7. Open tool box cover ① on the upperstructure and remove cover ②.
8. Grease must be to the top of all internal gear teeth of the swing bearing and be free of contamination by dirt and water.
   Add approximately 0.5 kg (1.1 lb) of grease, if required. If the grease is contaminated, remove grease and replace with clean grease.
9. Install the cover.
10. If grease shows any sign of water of mud, replace all the grease on the internal gear.
    Remove cover ③ from the bottom of the swing gear housing, located near the center joint.
    Total amount of grease applied should be approximately 16 to 18 liter (4.2 to 4.8 US gal).



M111-07-100



M111-07-101



M111-07-017

2 Travel Reduction Gear

Check Oil Level --- every 250 hours

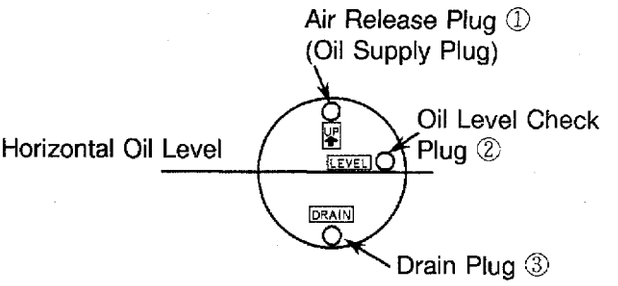
1. Park the machine on a level surface.
2. Rotate the travel motor until the bottom of oil level check plug ② is even with the horizontal oil level line.
3. Lower the bucket to the ground.
4. Turn the auto-idle switch off.

IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

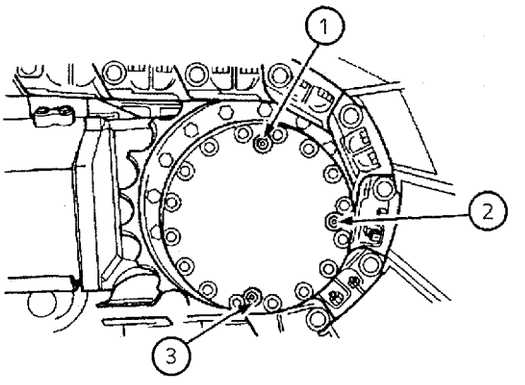
5. Run the engine at slow idle speed without load for three minutes.
6. Stop the engine. Remove the key from the key switch.
7. Pull the pilot control shut-off lever to the LOCK position.

CAUTION: Keep body and face away from the air release plug. Gear oil is hot. Wait for gear oil to cool and then gradually loosen the air release plug to release pressure.

8. After gear oil has cooled, slowly loosen air release plug ① to release pressure.
9. Remove oil level check plug ②. Oil must be up to the bottom of hole.
10. If necessary, add oil until oil flows out of the oil level check plug hole. (See gear oil chart).
11. Wrap the plug threads with sealing-type tape. Install the plug.
    Tighten the plug to 69 N·m (7 kgf·m, 51 lbf·ft).
12. Check the gear oil level in the other travel reduction gear.



M107-07-096



M107-07-020

7 Replace Pilot Oil Filter --- every 1 000 hours

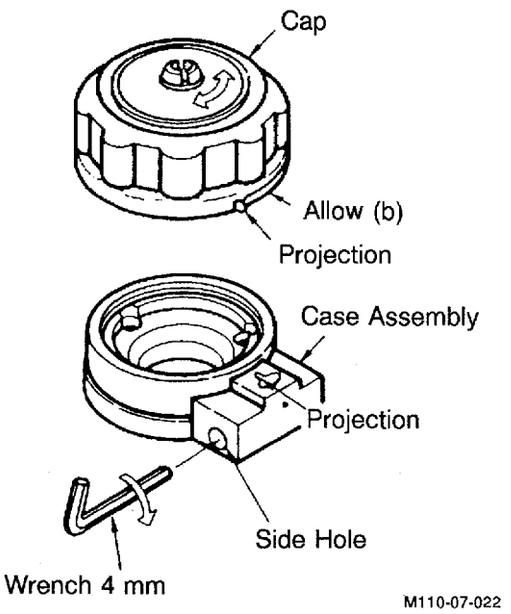
1. Park the machine on a level surface.
2. Lower the bucket to the ground.
3. Turn the auto-idle switch off.

IMPORTANT: The turbocharger may be damaged if the engine is not properly shut down.

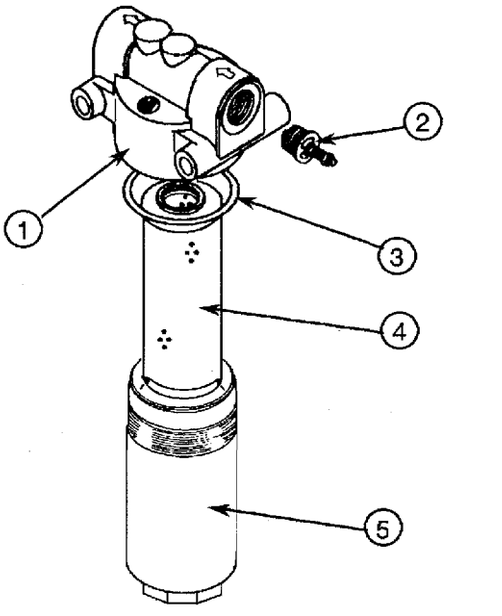
4. Run the engine at slow idle speed without load for three minutes.
5. Stop the engine. Remove the key from the key switch.
6. Operate the right and left control levers to release pressure from the pilot accumulator.
7. Pull the pilot control shut-off lever to the LOCK position.

CAUTION: Keep body and face away from cap. Turn cap slowly and remove the cap only after releasing the internal pressure completely.

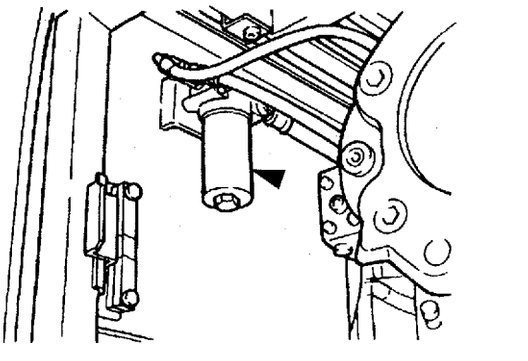
8. Insert the wrench as shown and turn the wrench clockwise and hold the wrench.
9. Turn the cap counter-clockwise about 30°, at which point stop cap to release the air.
10. Turn the cap further and remove cap.
11. Align the projected part of cap with the projected part of the case and install cap.
12. Remove filter case ⑤.
13. Remove element ④ by moving it back and forth while pulling down on it.
14. Remove and discard O-ring ③ and element ④.
15. Clean filter head ① of O-ring ③ and element ④ area.
16. Apply a thin film of clean oil to new O-ring ③ and install it in filter head ①. Be sure O-ring is correct position.
17. Apply a thin film of clean oil to ring of new element ④, that fits into filter head. Slowly install element ④ by moving it back and forth while pushing it upward.
18. Clean filter case ⑤.
19. Install filter case ⑤ onto filter head ① by turning it clockwise. Tighten case to 19.5 to 29.5 N·m (2 to 3 kgf·m, 14.5 to 21.5 lbf·ft).



M110-07-022



M104-07-030



M111-07-041

5 Check Fuel Hoses
--- daily
--- every 250 hours

CAUTION : Fuel leaks can lead to fires that may result in serious injury.
To avoid this hazard :

1. Park the machine on a solid, level surface. Lower the bucket to the ground. Stop the engines. Remove key from the key switch. Pull the pilot control shut-off lever to the LOCK position.

2. Check for kinked hoses, and hoses that rub against each other parts for leaks.

   Check hoses at the check points indicated below for leaks and other damage that may result in future leaks. If any abnormalities are found, replace or retighten them, as shown in Table 4.

3. Repair or replace any loose or damaged hoses. Never install bent or damaged hoses.

Table 4. Hoses

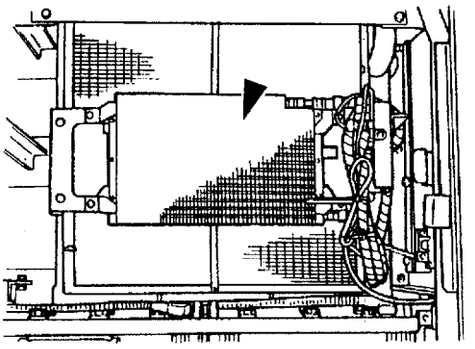
Interval(hours)	Check Points	Abnormalities	Remedies
Daily	Hose covers and fittings	Leak	Retighten or replace
Every 250 hours	Hose	Bend	Replace
	Hose	Collapse	Replace (Use proper bend radius)
	Hose fittings	Deformation	Replace

5 Clean Condenser Core --- every 500 hours

CAUTION: Always wear safety glasses or goggles when using compressed air to clean condenser core.

IMPORTANT: High-pressure air or water can damage condenser fins.

Condenser ① is located in front of the oil cooler. Clean the condenser core with water or steam.



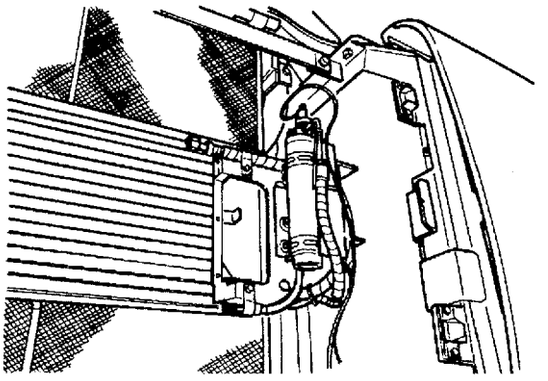
M111-07-103

6 Check Looseness at Each of Fastened Areas --- every 250 hours

Check tightness of mounting bolts, hose connections and fittings after first 50 hours then every 250 hours. Tighten to torque specifications if any are loose.

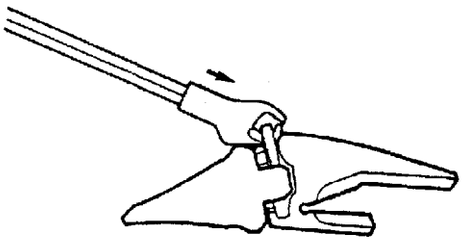
Torque Specifications for Hose Connections:

Wrench Size (mm)	Tightening Torque		
	N·m	kgf·m	lbf·ft
19	14.5 to 19.5	1.5 to 2.0	10.5 to 14.5
24	24.5 to 29.5	2.5 to 3.0	18.0 to 21.5
27	29.5 to 34.0	3.0 to 3.5	21.5 to 25.5



M111-07-098

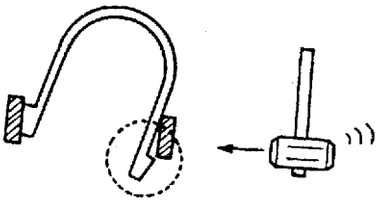
c. Removing the lock
While pulling the tool toward the tooth point, hit the right and lift lugs of the tooth point alternately so that the lock gradually comes off. When the lock appears, slide the auxiliary hook to the top end of the tool and pull the lock out again.



M110-07-064

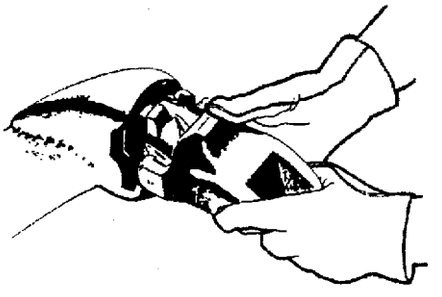
⚠ **CAUTION: When pulling out the lock, be sure to set the auxiliary hook in place to prevent the lock from popping out.**

If the lock is tilted when it comes off, the end of the lock which is tilted will become caught up in the lug of the tooth point and the lock will not be removed. If this occurs, lightly tap on the lug where the end of the lock is caught with a hammer and try to remove the lock smoothly.



M110-07-065

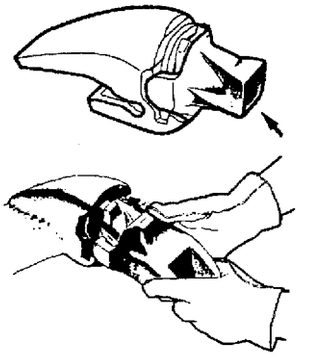
d. Removing the tooth point
Turn the tooth point to the left and pull it toward you to remove it.



M110-07-066

(2) Installing the tooth point

a. Installing the tooth point
Clean the top end of the adapter nose. If pebbles, dirt, etc., are stuck to the adapter nose, the tooth point will not be inserted properly and the pin cannot be driven in.
Insert the tooth point slowly while turning it to the right.



M110-07-067

Torque Specifications (continued)

No.	Descriptions		Bolt Dia mm	Q'ty	Wrench Size mm	Torque N·m	Torque kgf·m	Torque lbf·ft
15	Travel device mounting bolt		22	40	32	740	75	540
	Travel motor mounting bolt		18	8	27	390	40	290
	Sprocket mounting bolt		22	48	32	740	75	540
16	Upper roller mounting	STD, H	18	16	27	390	40	290
		LC, LCH	18	24	27	390	40	290
17	Lower roller mounting bolt	STD, H	22	64	32	740	75	540
		LC, LCH	22	72	32	740	75	540
18	Track shoe bolt	STD, H	24	392	32	1 370	140	1 010
		LC, LCH	24	424	32	1 370	140	1 010
19	Track guard mounting bolt	STD	22	28	32	740	75	540
		LC	22	36	32	740	75	540
		H	22	40	32	740	75	540
		LCH	22	40	32	740	75	540
20	Track mounting bolt	LC, LCH	33	36	50	1 720	175	1 270
21	Coupling and clamp of low pressure piping	Coupling	8		13	10.5 to 12.5	1.05 to 1.26	7.6 to 9.1
		Clamp	1/4-28 UNF		11	5.9	0.6	4.3
22	Counterweight mounting bolt		45	2	65	2 350	240	1 740
	Counterweight retaining bolt		24	4	36	440	45	330
23	Front Pin-Retaining bolt		20	15	30	390	40	290
	Front Pin-Retaining Nut		20	7	30	390	40	290

IMPORTANT: (1) Make sure bolt and nut threads are clean before installing.
(2) Apply lubricant (e. g. white zinc B solved into spindle oil) to bolts and nuts to stabilize their friction coefficient.

NOTE: Tightening torque required is shown in kgf·m.
For example, when tightening a bolt or nut with a wrench of 1 m length, turning the end of it with a force of 12 kgf, the torque produced will be:

1 m ×12 kgf = 12 kgf·m

To produce the same torque with a wrench of 0.25 m:

0.25 m × ☐ *kgf = 12 kgf·m*

Necessary force will be:

12 kgf·m ÷ 0.25 m = 48 kgf

STORAGE

STORING THE MACHINE

1. Inspect the machine. Repair worn or damaged parts. Install new parts if necessary.
2. Clean the primary air cleaner element.
3. Retract all hydraulic cylinders, if possible. If not, coat exposed cylinder rods with grease.
4. Lubricate all grease points.
5. Park the tracks on long stable blocks.
6. Wash the machine.
7. Remove the batteries and store them in a dry protected place after charging fully. If not removed, disconnect the negative battery cable from the (−) terminal.
8. Add an antirust agent to the coolant. In cold weather, add an antifreeze, or drain the coolant completely. Be sure to attach a "No Water in Radiator" tag on a clearly visible location if the system is drained.
9. Loosen the alternator belt and fan belt.
10. Paint necessary areas to prevent rust.
11. Store the machine in a dry, protected place. If stored outside, cover with a waterproof cover.
12. If the machine is stored for a long time, operate hydraulic functions for travel, swing and digging 2 to 3 times for lubrication, at least once a month.
    Be sure to check the coolant level and lubrication conditions before operating.

REMOVING THE MACHINE FROM STORAGE

⚠ **CAUTION: Start engine ONLY in a well-ventilated place.**

1. Remove grease from the cylinder rods if coated.
2. Adjust alternator and fan belt tension.
3. Fill the fuel tank. Bleed air from the fuel system. Check all fluid levels.
4. Start the engine.
   Run the engine at half speed for several minutes before full load operation.
5. Cycle all hydraulic functions several times.
6. Carefully check all systems before operating the machine at full load.

NOTE: When the machine has been stored for a long time, be sure to perform the following steps as also.

(a) Check condition of all hoses and connections.
(b) Warm up the engine.
(c) Stop the engine.
(d) Install new fuel filters. Replace the engine oil filter and fill the engine with oil.

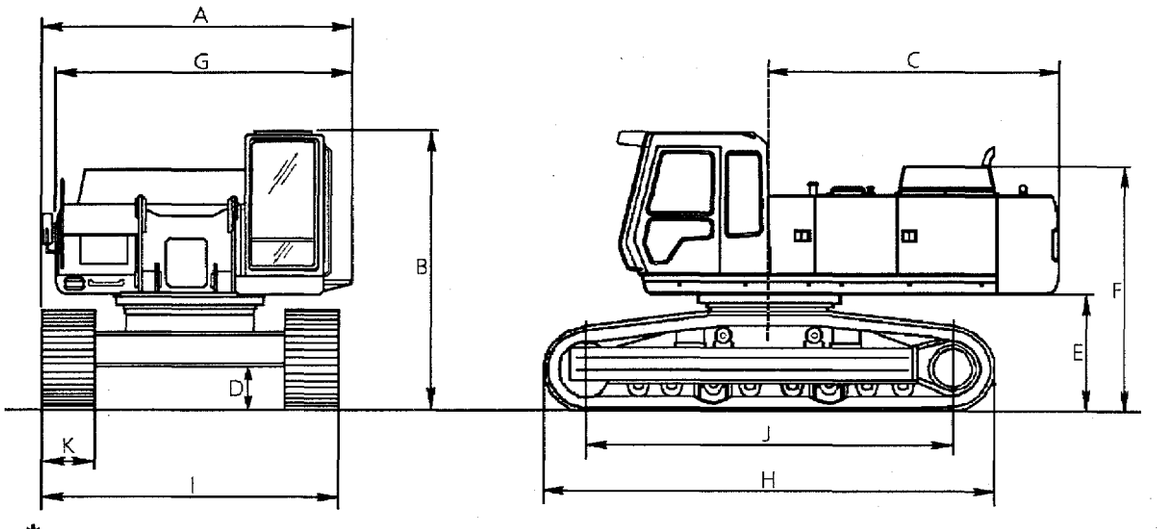
IMPORTANT: If the machine has not been used for a long time, oil films on sliding surfaces may have broken down. Cycling hydraulic functions for travel, swing and digging 2 to 3 times is necessary to lubricate the sliding surfaces.

ELECTRICAL SYSTEM

Problem	Cause	Solution
No Indicators in Gauge Panel Operate	Circuit board	See your authorized dealer.
	Wiring harness	See your authorized dealer.
	Fuse	Replace fuse.
Indicator Light in Gauge Panel is Inoperative	Bulb	Replace bulb.
	Fuse	Replace fuse.
	Sender	Do sender check.
	Wiring harness failure	See your authorized dealer.
Coolant Temperature Gauge Does Not Work	Fuse	Replace fuse.
	Gauge	See your authorized dealer.
	Gauge sender	Do coolant temperature gauge sender check.
	Wiring harness	See your authorized dealer.
Indicator Lights Do Not Operate (Auto-idle, Fast Speed Travel, Slow Speed Travel)	Fuse	Replace fuse.
	Bulb	Replace bulb.
	Auto-idle switch	See your authorized dealer.
	Travel switch	See your authorized dealer.
Fuel Gauge Does Not Work	Fuse	Replace fuse.
	Gauge	See your authorized dealer.
	Wiring harness	See your authorized dealer.

SPECIFICATIONS

Model	EX450H-3C Hydraulic Excavator	EX450LCH-3C Hydraulic Excavator
Type of Front-End Attachment	3.4 m (11 ft 2 in) HD Arm	
Bucket Capacity (Heaped)	PCSA 1.82 m^3 (2.38 yd^3), CECE 1.6 m^3	
Operating Weight	43 800 kg (96 600 lb)	46 200 kg (101 900 lb)
Basic Machine Weight	34 200 kg (75 400 lb)	36 600 kg (80 700 lb)
Engine	221 kW / 2 000 min^{-1} (300 PS / 2 000 rpm)	
A: Overall Width (Excluding Back Mirrors)	3 510 mm (11 ft 6 in)	3 580 mm (11 ft 9 in)
B: Cab Height	3 250 mm (10 ft 8 in)	3 370 mm (11 ft 1 in)
C: Rear End Swing Radius	3 470 mm (11 ft 5 in)	3 470 mm (11 ft 5 in)
D: Minimum Ground Clearance	*496 mm (20 in)	*735 mm (29 in)
E: Counterweight Clearance	*1 230 mm (4 ft 0 in)	*1 350 mm (4 ft 5 in)
F: Engine Cover Height	2 720 mm (8 ft 11 in)	2 840 mm (9 ft 4 in)
G: Overall Width of Upperstructure	3 470 mm (11 ft 5 in)	3 470 mm (11 ft 5 in)
H: Undercarriage Length	5 050 mm (16 ft 7 in)	5 470 mm (17 ft 11 in)
I: Undercarriage Width	3 340 mm (11 ft 0 in)	3 490 mm (11 ft 5 in)/ 2 990 mm (9 ft 10 in) (Extended/Retracted)
J: Sprocket Center to Idler Center	4 050 mm (13 ft 3 in)	4 470 mm (14 ft 8 in)
K: Track Shoe Width	600 mm (24 in) (Grouser shoe)	
Ground Pressure	81 kPa (0.83 kgf / cm^2, 11.8 psi)	78 kPa (0.80 kgf / cm^2, 11.4 psi)
Swing Speed	9.0 min^{-1} (rpm)	9.0 min^{-1} (rpm)
Travel Speed (Fast / Slow)	5.5 / 3.4 km/h (3.4 / 2.1 mph)	
Gradeability	35° (tanθ = 0.70)	



NOTE: * *The dimensions do not include the height of the shoe lug.*

M116-11-004