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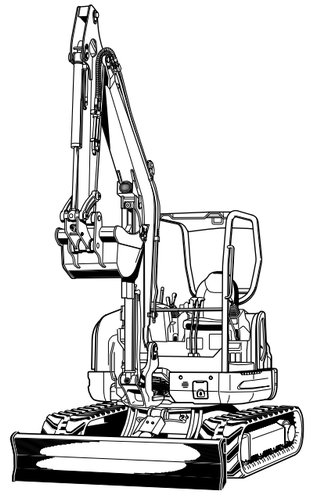
U48-4

# OPERATOR'S MANUAL

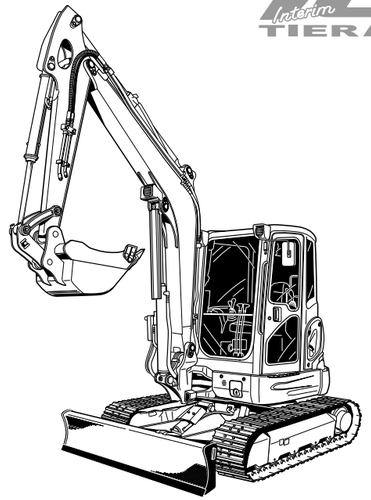
# KUBOTA EXCAVATOR

## MODEL U48-4

Interim TIER 4



1BAAABYAP2340



1BAAABYAP2350

*READ AND SAVE THIS MANUAL*

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PRINTED IN JAPAN

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# CONTENTS


⚠SAFE OPERATION ..... ⚠-1

DEALER SERVICE ..... 1

TECHNICAL DATA ..... 2

DESCRIPTION OF MACHINE PARTS ..... 3

INSTRUMENT PANEL AND CONTROL ELEMENTS ..... 4

CHECKS BEFORE START ..... 6
- DAILY CHECKS ..... 6
- CHECKING THE DEVICES ..... 6
  - Starter Switch ..... 6
  - Display Selector Switch ..... 7
  - LCD Display for Normal Operation ..... 7
  - Warning Lamp ..... 10
  - LCD Display for Warning ..... 10
  - Setting the Clock ..... 12
  - Reordering the year/month/day and Changing the AM/PM System to the 24-hour One 13
  - Log Record ..... 14
  - Periodic Check ..... 15
  - If All the Check Points are not Displayed at a Glance on a Single Screen ..... 15
  - When the Check-up is Completed ..... 17
  - Horn Switch ..... 17
  - Working Light Switch ..... 17
  - AUX Port Flow Rate Limit Switch ..... 17
  - Auto Idle Switch ..... 18
  - Throttle Potentiometer ..... 18
  - Travel Speed Switch ..... 18
- CAB TYPE MACHINES ..... 19
  - Wiper/Washer Switch ..... 19
  - Interior Lamp ..... 19
  - Cab Light Switch ..... 20
  - Heater Switch ..... 20
  - Opening/Closing of CAB Door ..... 20
  - Opening/Closing of Front CAB Window ..... 21
  - Opening/Closing of Side CAB Window ..... 21
  - Emergency Hammer ..... 21
- AIR CONDITIONER ..... 22
  - Air Flow ..... 22
  - Air Control Vent ..... 23
  - Control Panel ..... 23
  - Operation ..... 23
- HANDLING THE SAFETY DEVICES ..... 23
  - Pilot Control Lock Lever ..... 23

OPERATION OF THE ENGINE ..... 24
- STARTING THE ENGINE ..... 24
- STARTING THE ENGINE UNDER COLD CONDITIONS ..... 25


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# ⚠ SAFE OPERATION

Careful operation is your best insurance against an accident.

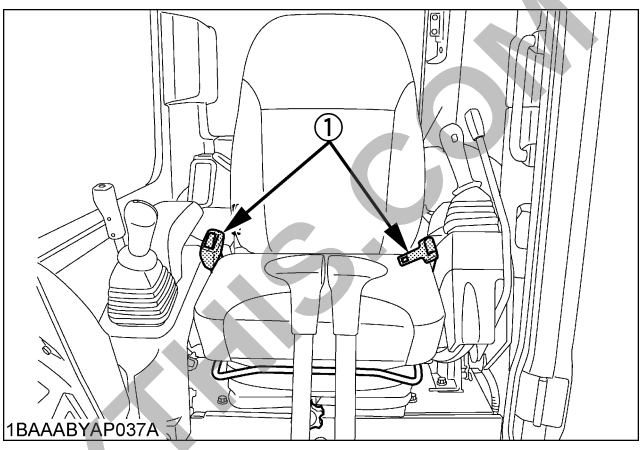
**Read and understand this manual carefully, before operating the excavator.**

Every user, however experienced, should carefully read and understand this manual and those of the attachments and accessories before operating the excavator. The owner is obliged to inform all operators of these instructions in detail.

Keep this manual in the storage location. (See "Where to keep Operator's Manual" in "MAINTENANCE" section.)

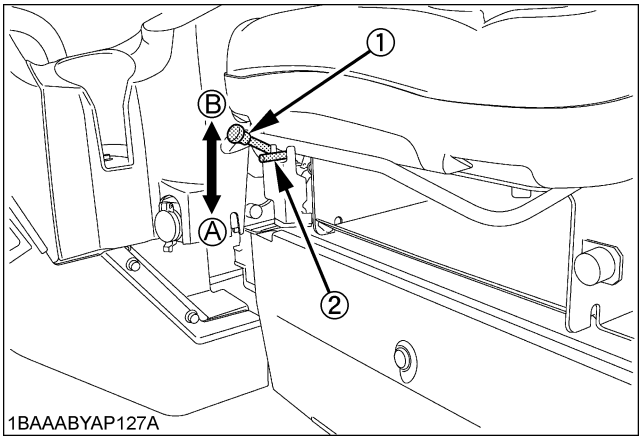
## 1. BEFORE OPERATION

1. Know your equipment and its limitations. Read and understand this entire manual before attempting to start and operate the excavator.
2. Obey the danger, warning and caution labels on the machine.
3. For your safety, a ROPS/FOPS (Roll-Over Protective Structure, Falling Objects Protective Structure.) with a seat belt is installed by KUBOTA. Always use the seat belt when the machine is equipped with a ROPS/FOPS as this combination will reduce the risk of serious injury or death, should the excavator be upset or falling objects occur.
   Do not modify any structural members of the ROPS/FOPS by welding, drilling, bending, grinding or cutting, as this may weaken the structure. If any component is damaged, replace it. Do not attempt repairs. If the ROPS/FOPS is loosened or removed for any reason, make sure all parts are reinstalled correctly. Tighten mounting bolts to proper torque.
4. ROPS/FOPS structure complies with ISO 3471, ISO 3449 and OSHA regulations.
5. The seat belt must be inspected regularly and replaced if frayed or damaged.




(1) Seat belt

6. Always sit in the operator's seat when starting engine or operating levers or controls.
7. Study control lever pattern A and pattern B. Then choose the one which is most familiar.
   Familiarize yourself with the pattern selected by operating the unit slowly and at low engine speed.
   - Engage the lever lock to prevent accidental pattern change.




(1) Pattern selector lever (Two Pattern Selection System:TPSS)
(2) Lever lock
(A) "Pattern A"
(B) "Pattern B"

8. Do not operate the excavator while under the influence of alcohol, medication, controlled substances or while fatigued.

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# TECHNICAL DATA

| | | | | | |
|---|---|---|---|---|---|
| | | | KUBOTA EXCAVATOR | | |
| Model name | | | U48-4 | | |
| Type | | | Canopy | CAB | |
| Operating weight (including operator's) | | kg | 4685 | 4775 | |
| Engine | Type | | Water cooled 4 cycle diesel engine with 4 cylinder | | |
| | Model name | | (No air conditioner type) V2607-DI-E3-BH-6 (Air conditioner type) V2607-DI-E3-BH-4 | | |
| | Total displacement | cc | 2615 | | |
| | Engine power SAE J1955 gross | kW | 31.2 | | |
| | Rated speed | rpm | 2200 | | |
| | Low idling speed | rpm | 1050 to 1200 | | |
| Performance | Unit swing speed | rpm | 9.3 | | |
| | Travel speed Fast | km/h | 4.9 | | |
| | Travel speed Slow | km/h | 2.8 | | |
| | Ground pressure (With operator) | kPa (kgf/cm²) | 27.3 (0.278) | 27.9 (0.285) | |
| | Max. climbing angle | % (deg) | *36 (20) | | |
| | Angle in case of crossing slope | % (deg) | *27 (15) | | |
| Dozer | Width x Height | mm | 1960 x 410 | | |
| Boom swing angle | Left | rad (deg) | 1.20 (70) | | |
| | Right | rad (deg) | 0.96 (55) | | |
| Pressure connection for attachments | Max. displacement | L / min | 65 (AUX 1 port) 37 (AUX 2 port) | | |
| | Max. pressure | MPa (kgf/cm²) | [AUX1 port] 20.6 (210) | [AUX 2] 17.2 (175) | |
| Fuel tank capacity | | L | 68 | | |

**NOTE :**

- Above dimensions are based on the machine with rubber track.
- Specifications subject to change without notice.

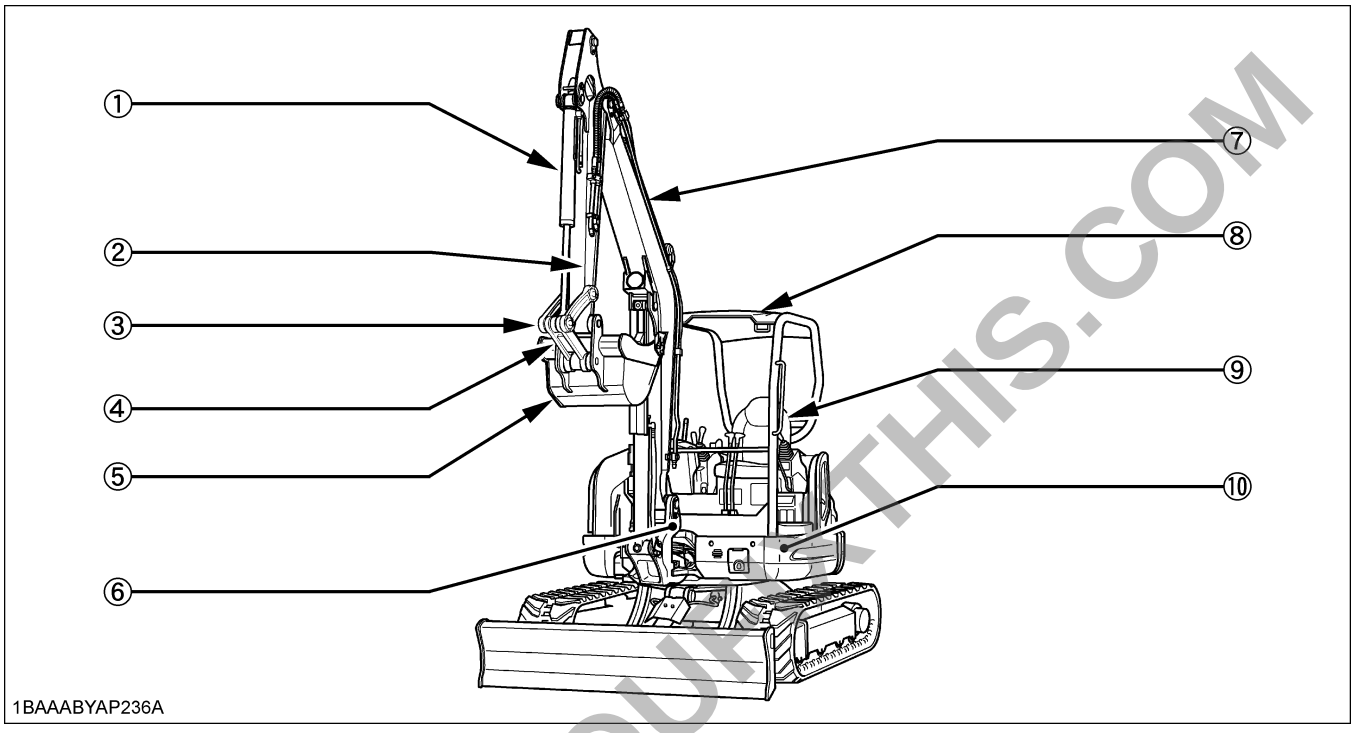
* With unloaded digging bucket. (JPN STD Bucket)
* Firm compacted soil.
* Operators must exercise extra caution and follow instructions in the operator's manual.
* Worse condition or heavier attachment to the above will decrease climbing angle.

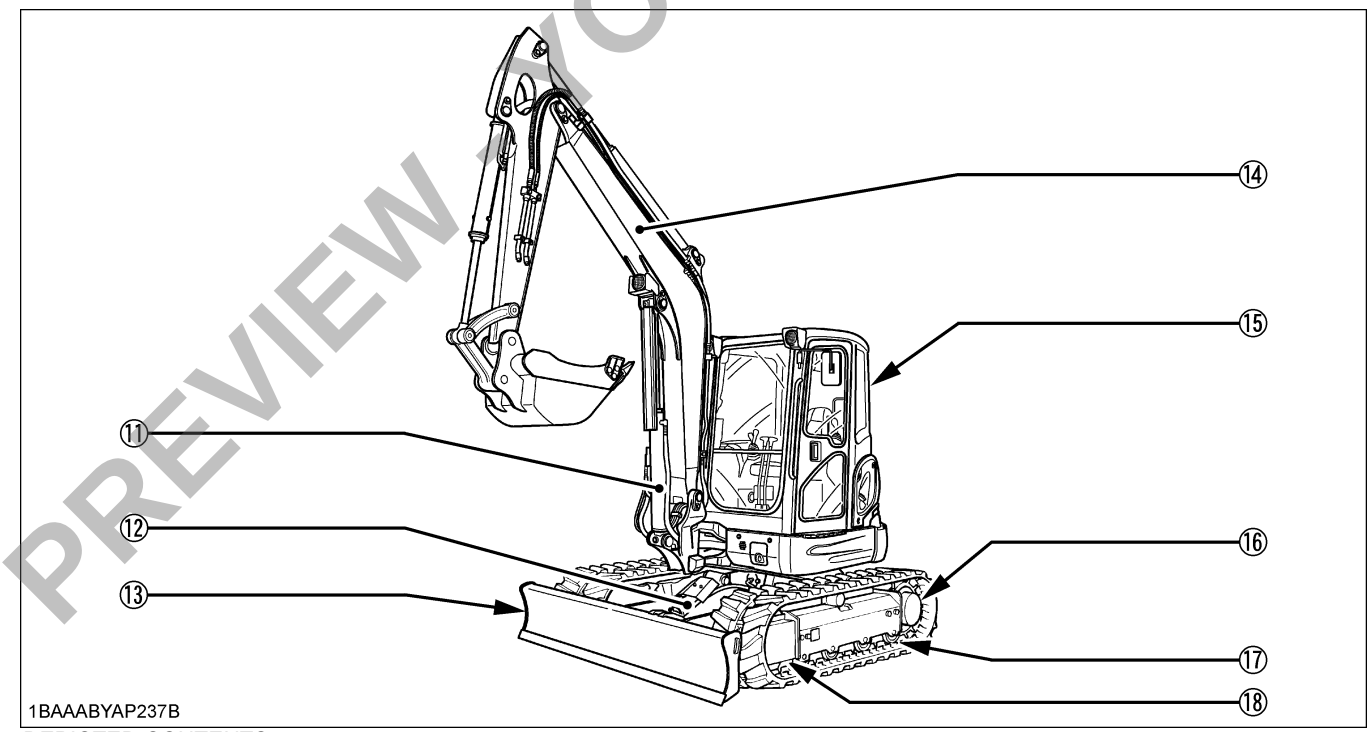
- ROPS/FORS structure complies with standards ISO 3471, ISO 3449 and OSHA regulations

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# DESCRIPTION OF MACHINE PARTS



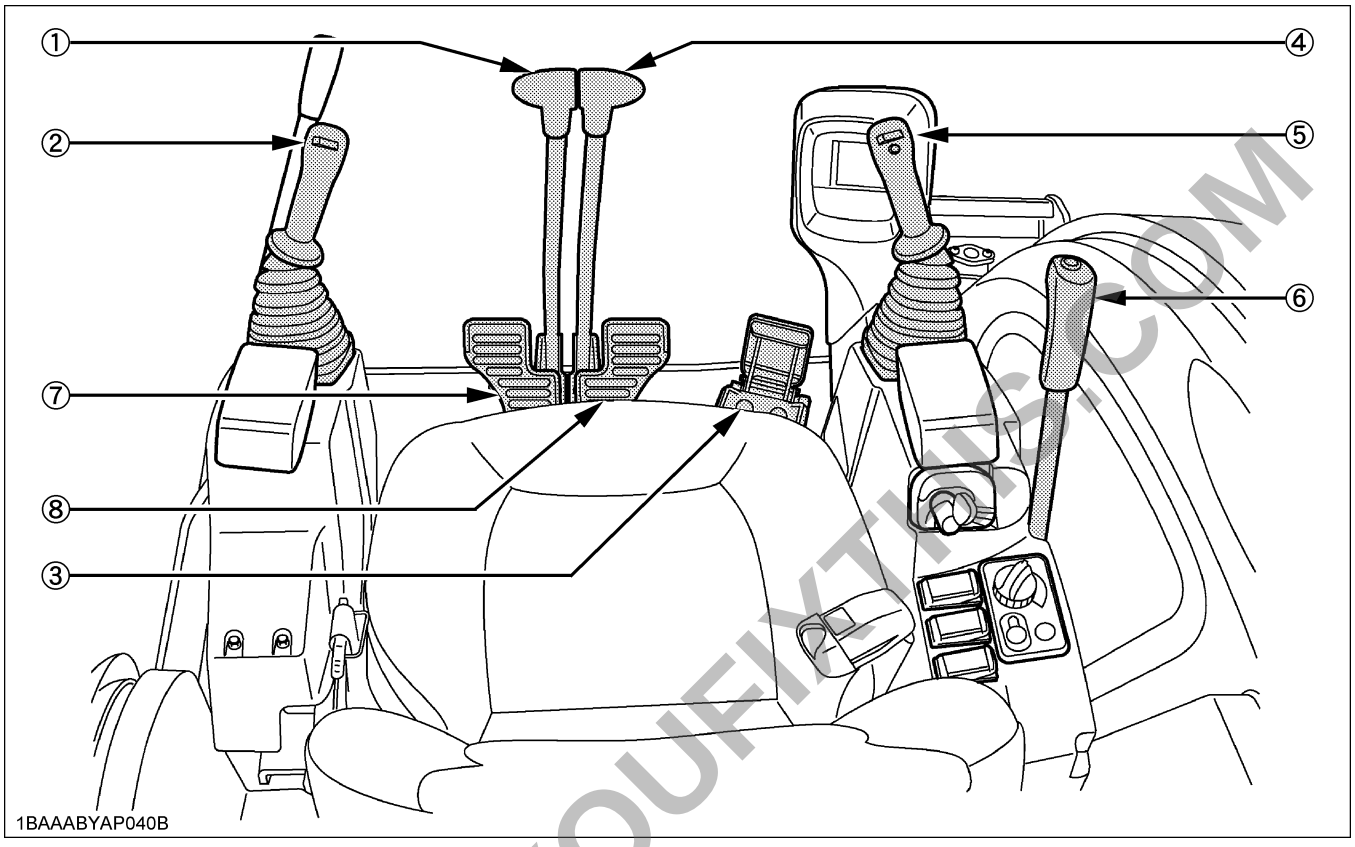

DEPICTED CONTENTS

(1) Bucket cylinder
(2) Arm
(3) Bucket link 2 and 3
(4) Bucket link 1
(5) Bucket
(6) Swing bracket
(7) Arm cylinder
(8) Canopy
(9) Seat
(10) Swing frame
(11) Boom cylinder
(12) Dozer cylinder
(13) Dozer blade
(14) Boom
(15) Cab
(16) Drive sprocket
(17) Track roller
(18) Front idler

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## ■ Control Pedals and Levers




(1) Drive lever (left)
(2) Attachment control lever (left)
(3) Boom swing pedal
(4) Drive lever (right)
(5) Attachment control lever (right)
(6) Dozer control lever
(7) Drive pedal (left)
(8) Drive pedal (right)

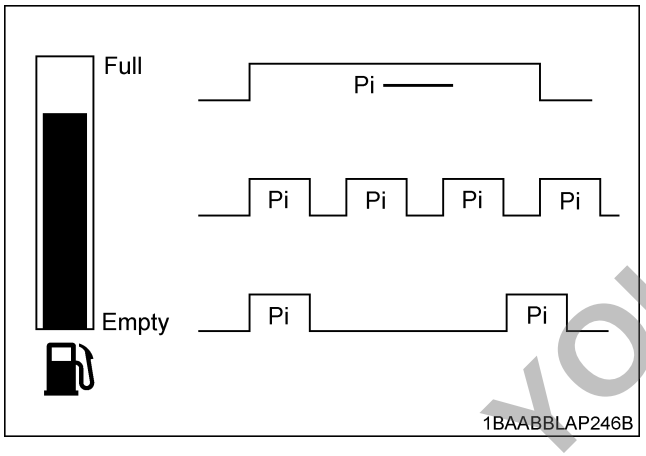
| | Ref. page |
|---|---|
| Drive lever (left) | 31 |
| Attachment control lever (left) | 35, 36 |
| Boom swing pedal | 36 |
| Drive lever (right) | 31 |
| Attachment control lever (right) | 35, 36 |
| Dozer control lever | 33 |

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◆ **Fuel level audible indication switch (when refueling)**

1. With the starter key at the **"OFF"** position, press the fuel level audible indication switch, and the fuel level can be checked by the buzzer.
2. Start refueling the machine. The buzzer beeping intervals vary according to how much fuel is poured into the tank. As the fuel tank is filled up, the buzzer will sound almost continuously.
3. While refueling the machine, listen to the buzzer to know how much the fuel tank is filled.
4. If fuel is poured too slowly, the buzzer will stop beeping. When resumed normally, the buzzer will start beeping.
5. To stop refueling halfway (before filling up), press the fuel level audible indication switch or simply stop refueling for a while. The buzzer will stop sounding.



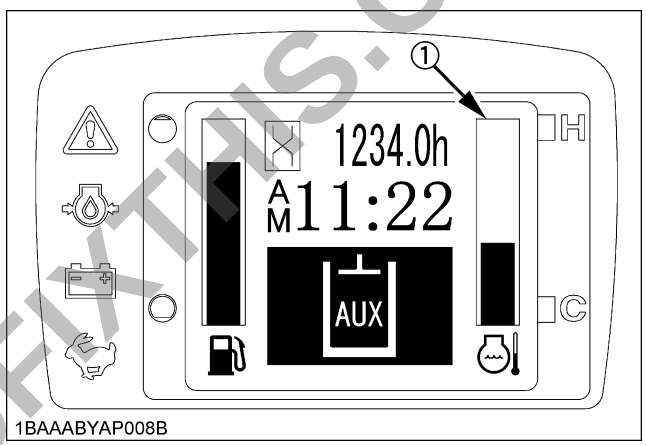

◆ **Coolant Temperature Gauge**

**CAUTION**

**To avoid personal injury:**

- **Do not open the radiator cap during or just after operation. Hot coolant may gush out and scald you. Wait for the coolant to cool down before opening the cap.**

With the starter key at the "**RUN**" position, the coolant temperature is indicated.




(1) Coolant temperature gauge

If the coolant temperature indicator is near "**H**", take the steps below.

Depending on the coolant temperature, the warning message **"Water temp. is rising"** or **"Overheat Engine to idle for cooling"** appears. In either case too, follow the same procedure below.

1. Discontinue the job.
2. Reduce engine rpm's to idle and keep it at idle for 5 minutes.
3. Stop the engine and check the following points (1)-(4).
   (1) Low coolant level or leak
   (2) Fan belt tension
   (3) Mud or dust deposits on radiator
   (4) Hydraulic oil leak

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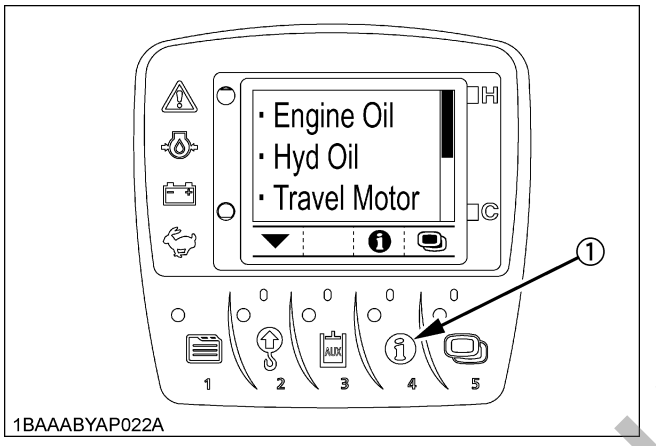
## ■Periodic Check

The following message appears on the LCD display 10 hours before a periodic check.




1BAABBLAP265B

Press the switch 4 to see the check results.




1BAAABYAP022A

(1) Switch 4

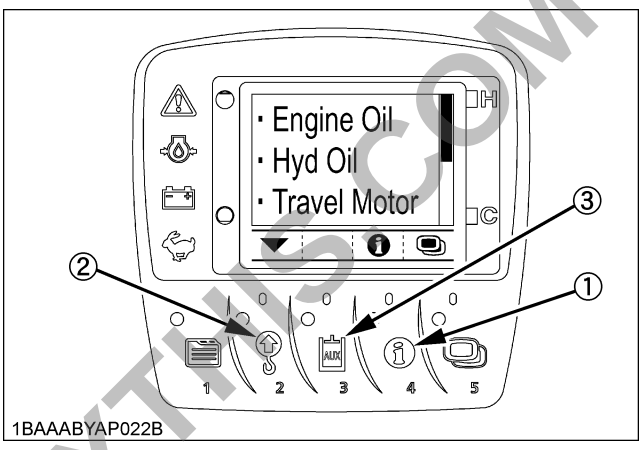
Do the following servicing listed below.

**IMPORTANT :**

- When the servicing has been completed, turn the key switch ON and OFF 10 times or more and the check screen automatically disappears.
- When the periodic check interval has passed, the message **"Periodic Check Passed"** shows up. Immediately perform the specified servicing.
- The periodic check screen can also be preset to be made to disappear manually only. To do this, it is necessary to select **"Periodic Check"** on the user setting menu.
  For make this setting, contact your local dealer.

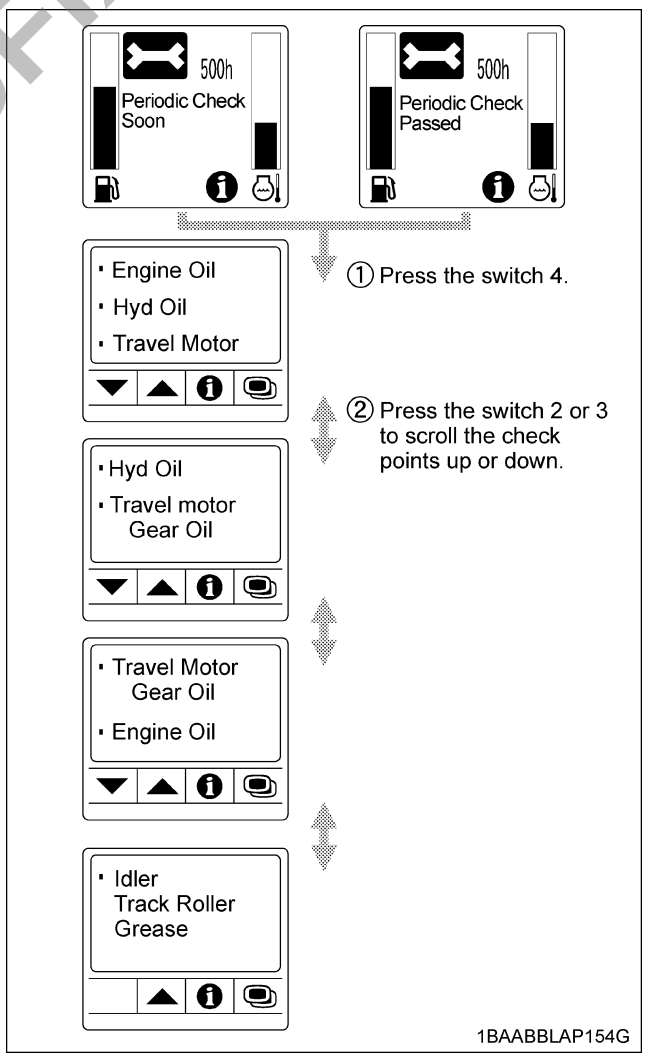
## ■If All the Check Points are not Displayed at a Glance on a Single Screen

1. Press the switch 4.
2. Each time the switch 2 or 3 is pressed, the check points scrolled up or down.




1BAAABYAP022B

(1) Switch 4
(2) Switch 2
(3) Switch 3




1BAABBLAP154G

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# STARTING WITH AN AUXILIARY BATTERY

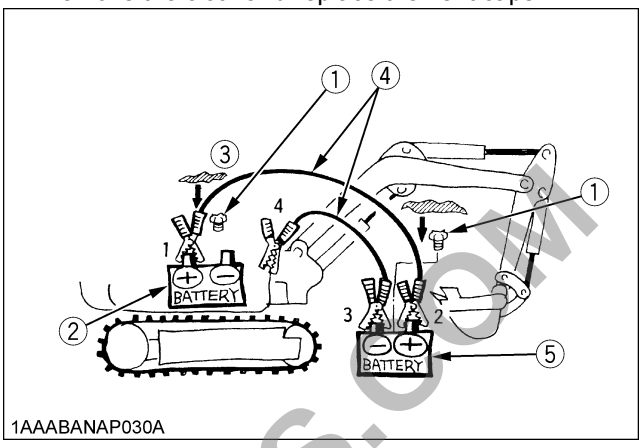
## CAUTION

**To avoid personal injury:**

- **Battery gases can explode.**
  **Do not smoke and keep sparks and flames away.**
- **Do not start the engine with an auxiliary battery if excavator battery is frozen.**
- **Do not connect the black jumper cable to the negative (-) terminal of the excavator battery.**

### ■Observe Following Guidelines when Starting with an Auxiliary Battery

1. Bring the helping machine with the same battery voltage as near as possible to the excavator.
   THE MACHINES MUST NOT COME IN CONTACT WITH EACH OTHER.
2. Bring the levers and pedal of both vehicles in the neutral position and put the lock lever in the "Lock" position.
3. Wear eye protection and rubber gloves.
4. Open the side cover. (See "Opening / closing of the Side Cover" in "MAINTENANCE" section.)
5. Ensure the vent caps are securely in place (if equipped).
6. Cover the battery opening with a cloth. Make sure that the cloth does not touch the battery terminals.
7. Connect the terminal of the red jumper cable with the plus (+) terminal of the low battery and connect the other end of the cable to the plus (+) terminal of the auxiliary battery.
8. Connect the black negative cable to the minus (-) terminal of the auxiliary battery.
9. Connect the other end of the black cable (coming from the auxiliary battery) to the excavator frame as far away as possible from the low battery.
10. Start the engine of the helping machine and let it run for a while. Start the excavator with the low battery.
11. Disconnect the jumper cables in the reverse sequence (Steps 8, 7, 6).
12. Remove the cloth and replace the vent caps.



1AAABANAP030A

(1) Lay a damp rag over the vent caps
(2) Low battery
(3) Put a cloth over the battery openings
(4) Jumper cables
(5) Auxiliary battery

**IMPORTANT :**

- This excavator has a negative (-) ground 12 Volt starting system.
- Use only the same voltage when using an auxiliary battery.
- Using a higher voltage will cause serious damage to the electrical system. When using an auxiliary battery, only the compatible (same) voltage is permissible.

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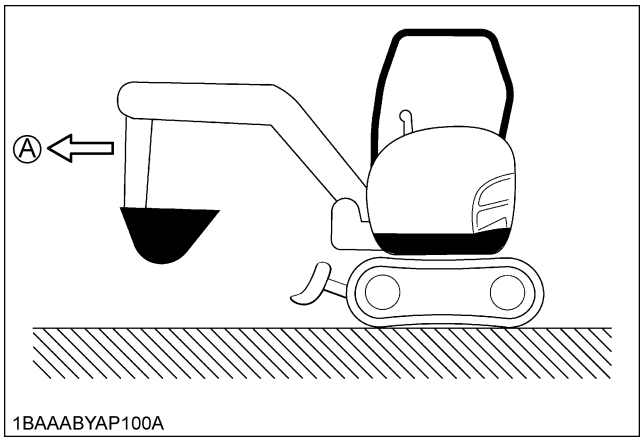
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# DRIVING

## WARNING

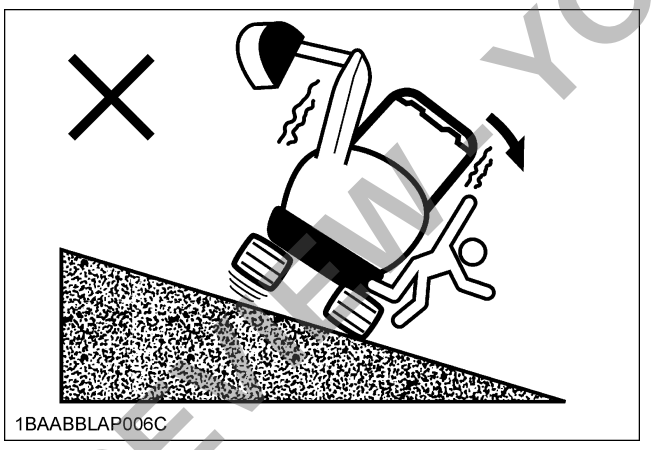
**To avoid personal injury or death:**

- **Before starting the engine, make sure that no one is near the excavator.**
- **Before operating the excavator, check the track direction. (Front idler and dozer blade to the front of the excavator).**

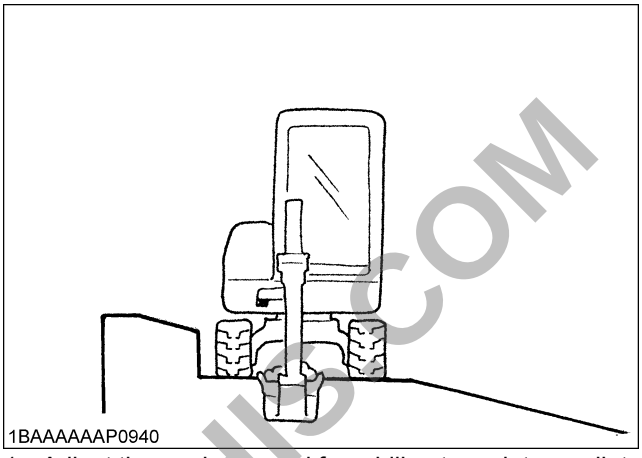



(A) "Front of the excavator"

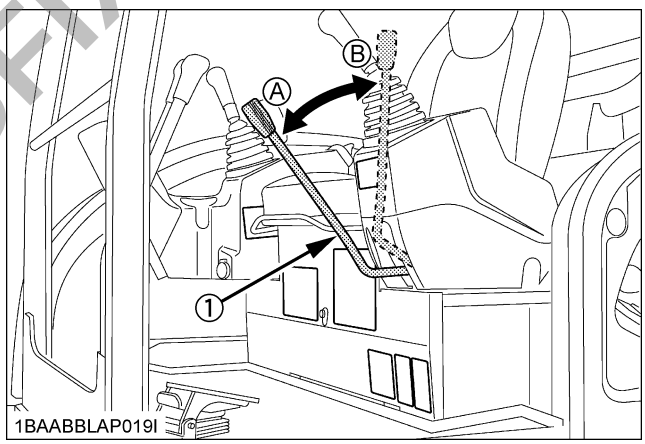
- **Use extra caution when traveling across a slope or working sideways on a slope.**



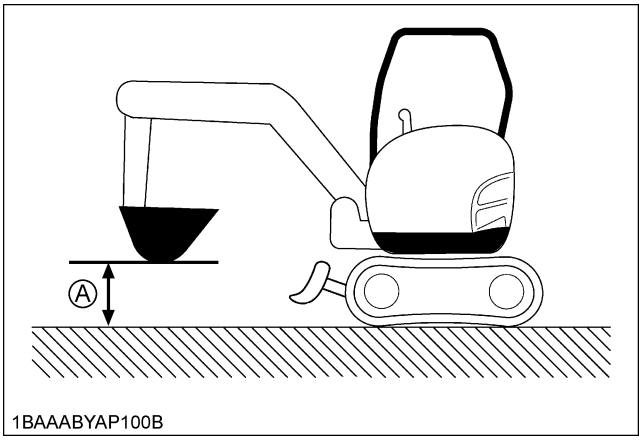

- **Recommended technique for working on a slope.**




1. Adjust the engine speed from idling to an intermediate speed.
2. Unlock the pilot control lock lever and pull in the bucket and hold the bucket about 20 to 40 cm above the ground.




(1) Pilot control lock lever (A) "Unlock" (B) "Locked"




(A) 20 to 40 cm

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## ■Greasing Front Attachments (without Bucket Pin and Boom Swing Fulcrum)

**CAUTION**

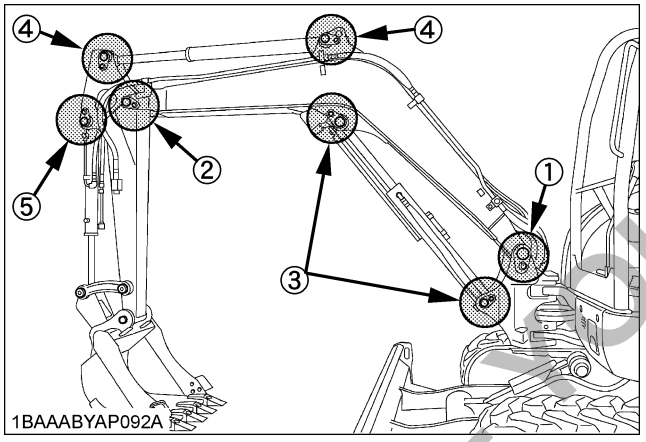
**To avoid personal injury:**

- **First lower all attachments on the ground then stop the engine and remove the key.**
- **While greasing, take care not to step on the bucket teeth.**

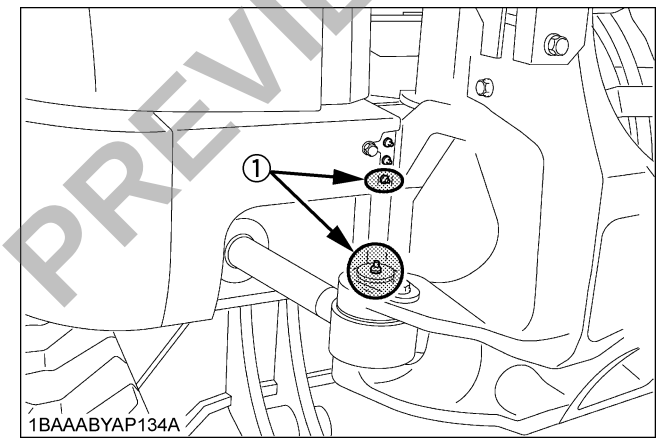
**IMPORTANT :**

- When doing excavation work in water, generously grease the following points. After ending work, grease again.

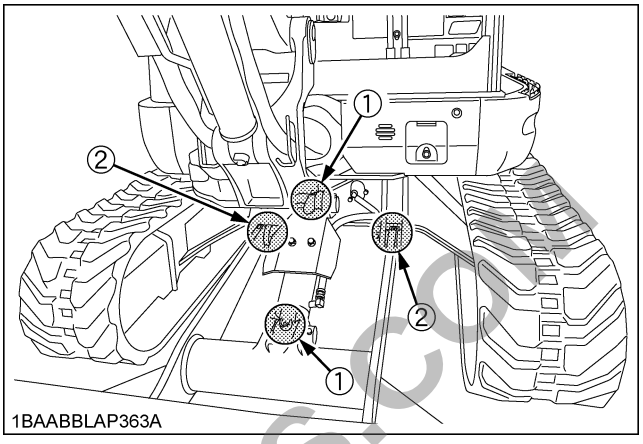
Grease the marked grease nipples shown by arrows in the illustration below.




(1) Boom bottom linkage
(2) Arm bottom linkage
(3) Boom cylinder boss
(4) Arm cylinder boss
(5) Bucket cylinder boss




(1) Swing cylinder boss




(1) Dozer cylinder boss
(2) Dozer linkage pin

## ■Greasing Bucket Pin and Bucket Link Pin

**CAUTION**

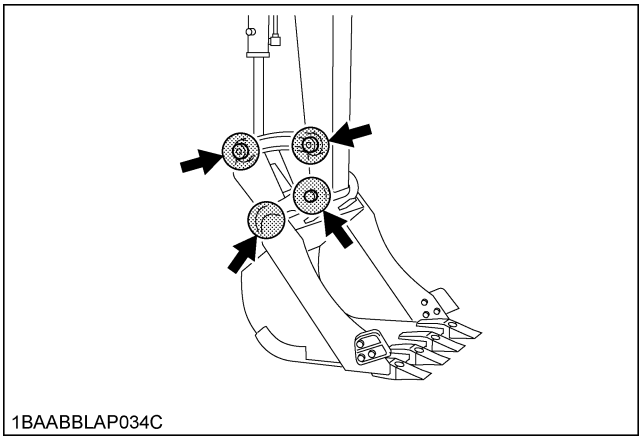
**To avoid personal injury:**

- **First lower all attachments on the ground then stop the engine and remove the key.**
- **While greasing, take care not to step on the bucket teeth.**

**IMPORTANT :**

- When doing excavation work in water, generously grease the following points. After ending work, grease again.

Grease the marked grease nipples shown by arrows in the illustration below.




(1) Bucket link pin
(2) Fixing pin between arm and bucket

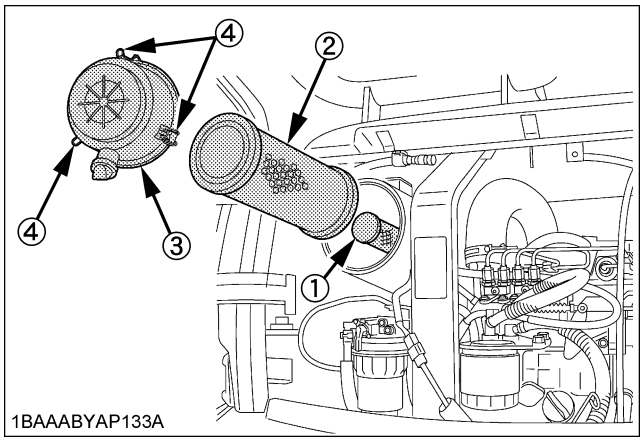
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# EVERY 1000 SERVICE HOURS OR ONCE A YEAR

## ■Replacing Air Filter Element

Open the engine hood and remove the dust-cover. Remove and replace the outer element and inner element with new elements.
When reassembling, install the dust-cover so that its TOP mark (arrow) faces up-wards.




(1) Inner element
(2) Outer element
(3) Dust-cover
(4) Clamps

**IMPORTANT :**
- Shorten the replacement period if the machine is used in dusty or sandy areas.

# EVERY 1500 SERVICE HOURS

## ■Checking Fuel Injection Nozzle(Injection Pressure)

Consult your local KUBOTA Dealer for this service.

# EVERY 2000 SERVICE HOURS

Do all 50, 100, 200, 250, 500 and 1000 hour servicing at the same time.

## ■Changing Front Idler and Track Roller Oil

**NOTE :**
- Contact your KUBOTA dealer for details.

## ■Checking the Alternator and Starter Motor

**NOTE :**
- Contact your KUBOTA dealer for details.

# EVERY 3000 SERVICE HOURS

## ■Checking Injection Pump

Consult your local KUBOTA Dealer for this service.

# ANNUAL SERVICING

## ■Electrical Wiring and Fuses

Check the terminals periodically for proper connections. Loose wiring or damaged cables can cause improper functioning or short circuiting of the electrical system. Check wiring and replace damaged components immediately. If a fuse blows out soon after having been replaced, contact your nearest KUBOTA dealer. Never use a fuse other than specified.

## ■Checking the Electrical Circuit

Check the electrical circuitry for disconnections, shorts or loose terminals.

## ■Checking Air-Conditioner Pipes and Hoses

**CAUTION**

**To avoid personal injury:**
- **Do not touch the coolant hoses or the heater with your hand. You may get burned.**

1. Check to see that all lines and hose clamps are tight and not damaged.
2. If hoses and clamps are found worn or damaged, replace or repair them at once. (Consult your local KUBOTA Dealer for this service.)

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