Kubota

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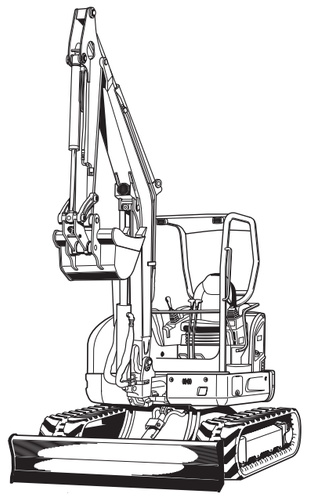
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KX033-4

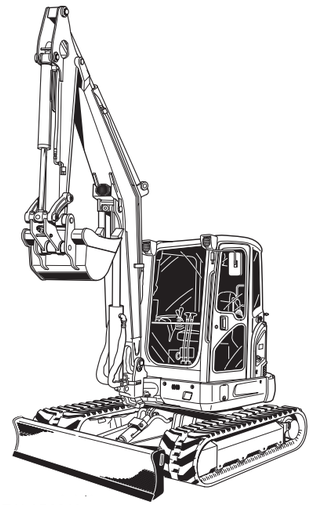
OPERATOR'S MANUAL

KUBOTA EXCAVATOR

MODEL KX033-4



1BAAEALAP0230



1BAAEALAP0240

READ AND SAVE THIS MANUAL

PRINTED IN JAPAN

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Kubota

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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.)

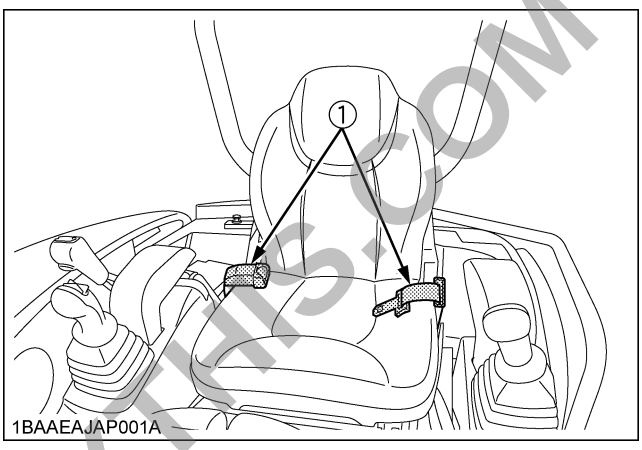
1. BEFORE OPERATION

1. Know your equipment and its limitations. Read and understand this entire manual before attempting to start and operate the excavator.
2. Pay special attention to and obey the danger, warning and caution labels on the machine.
3. For your safety, a ROPS/OPG (Top Guard Level I) with a seat belt is installed by KUBOTA.
   - ROPS: Roll-Over Protective Structure
   - OPG (Top Guard Level I): Operator Protective Guards of Top Guard Level I

   OPG (Top Guard Level I) in accordance with ISO10262 is equivalent in definition to FOPS (Falling Object Protective Structure).

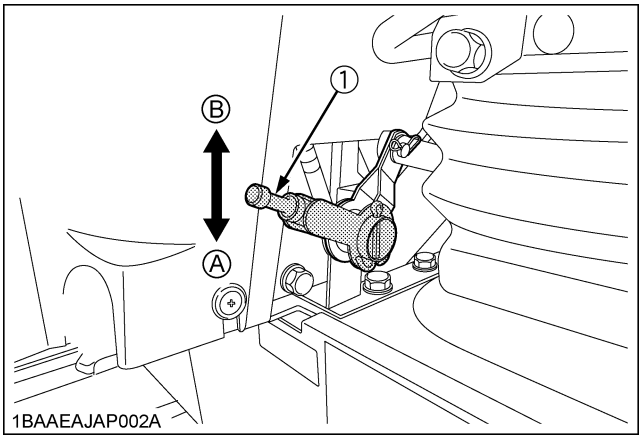
   Always use the seat belt when the machine is equipped with a ROPS/OPG (Top Guard Level I) as this combination will reduce the risk of serious injury or death, should the excavator be upset or falling objects occur.

   Do not modify any structural members of the ROPS/OPG (Top Guard Level I) 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/OPG (Top Guard Level I) is loosened or removed for any reason, make sure all parts are reinstalled correctly. Tighten mounting bolts to proper torque.
4. ROPS meets requirements of ISO 3471.
   OPG (Top Guard Level I) meets requirements of OSHA 1926･1003/ISO 10262.
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.



(1) Pattern selector lever (Two Pattern Selection System:TPSS)
(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				KX033-4	
Type				Canopy	CAB
Operating weight (including operator's)			kg	3368	3514
Engine	Type			Water cooled 4 cycle diesel engine with 3 cylinder	
	Model name			D1703-M-DI-E4-US1	D1703-M-DI-E4-US2
	Total displacement		cc	1647	
	Engine power	SAE gross	kW (HP)	18.5 (24.8)	
		SAE net	kW (HP)	17.8 (23.9)	
	Rated speed		rpm	2200	
	Low idle speed		rpm	1300 ~ 1350	
Performance	Unit swing speed		rpm	8.5	
	Travel speed	Fast	km/h (mph)	4.6 (2.9)	
		Slow	km/h (mph)	3.0 (1.9)	
	Ground pressure (With operator)		kPa (kgf/㎠)	30.8 (0.31)	32.2 (0.33)
	Climbing angle		% (deg)	*58 (30)	
	Angle in case of crossing slope		% (deg)	*27 (15)	
Dozer	Width x Height		mm	1550 x 341	
	Max swing angle	Left	deg	---	
		Right	deg	---	
Boom swing angle		Left	rad (deg)	1.22 (70)	
		Right	rad (deg)	0.83 (48)	
Pressure connection for attachments	Max.displacement (Theoretical)		L/min	60.5 (AUX1 port) 39.6 (Thumb port)	
	Max. pressure		MPa (kgf/㎠)	17.2 (175)	
Fuel tank capacity			L	45.1	

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

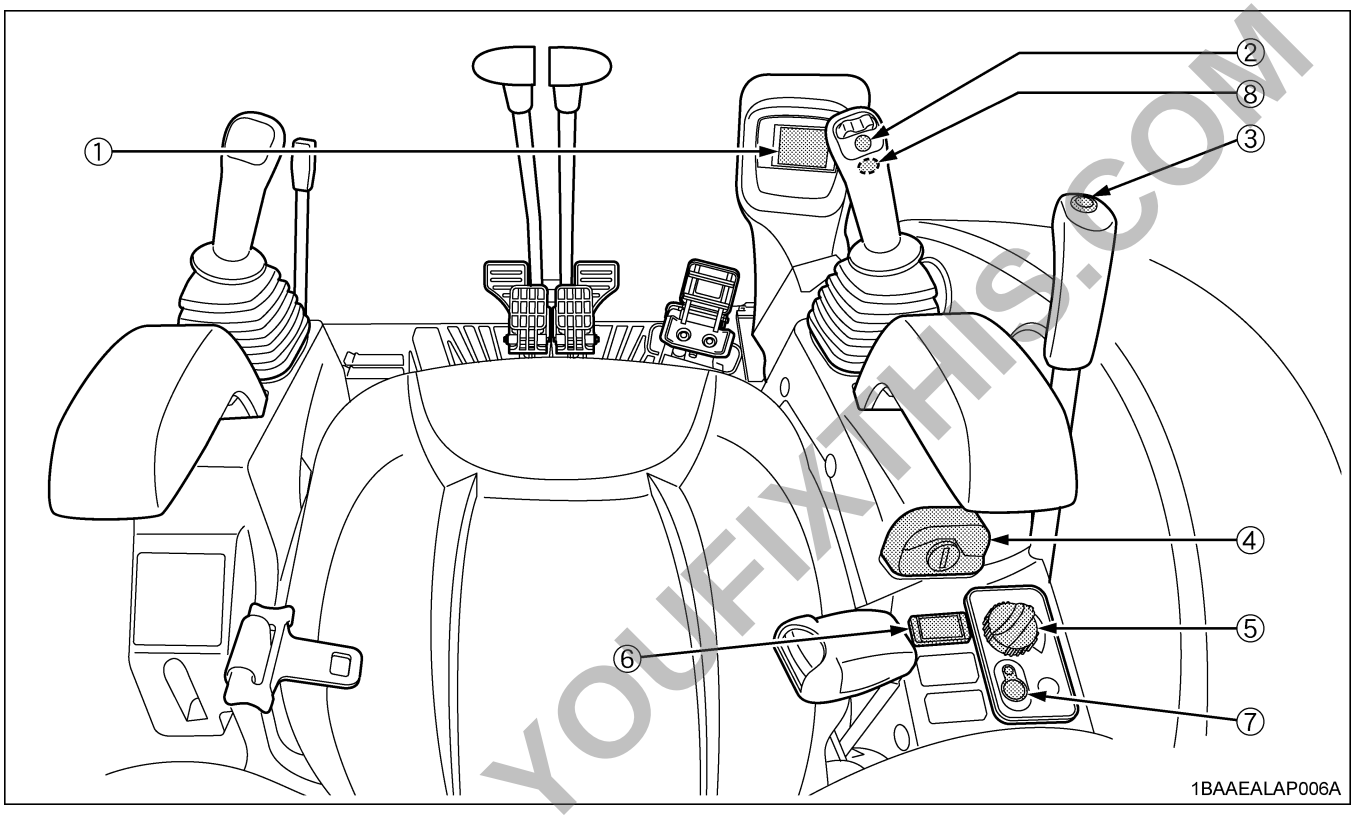
* With unloaded digging bucket. (Q/C BUCKET)
* Firm compacted soil.
* Operators must exercise extra caution and follow instructions in the operator's manual.
* Worse condition or heavier attachment to the above will decrease climbing angle.

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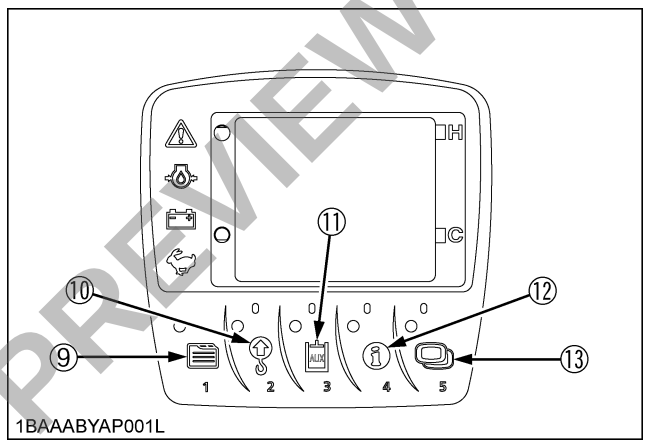
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INSTRUMENT PANEL AND CONTROL ELEMENTS

■ Instrument Panel, Switch



(1) LCD
(2) Horn switch
(3) Travel speed switch
(4) Starter switch
(5) Throttle potentiometer
(6) Light switch
(7) Auto idle control switch
(8) One way hold switch



(9) User setting switch (Switch 1)
(10) - (Switch 2)
(11) AUX port enable switch (Switch 3)
(12) Information switch (Switch 4)
(13) Display selector switch (Switch 5)

	Ref. page
Starter switch	7
Display selector switch	8
LCD	8
Fuel gauge	
Coolant temperature gauge	
Hour meter	
Engine tachometer	
Glow indicator	
Warning lamp	11
Information switch	11
User setting switch	13
Horn switch	18
Light switch	18
AUX port enable switch	18
Auto idle control switch	19
Throttle potentiometer	19
Travel speed switch	19

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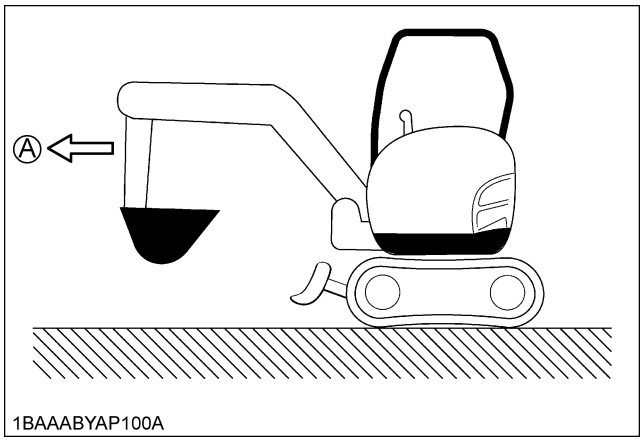
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DRIVING

WARNING

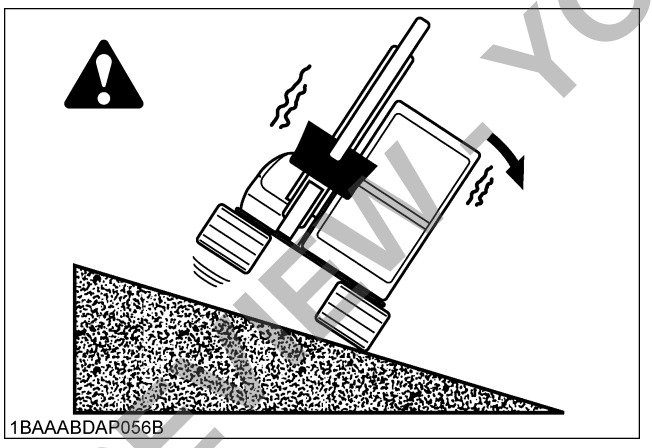
To avoid personal injury or death:

- **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).**

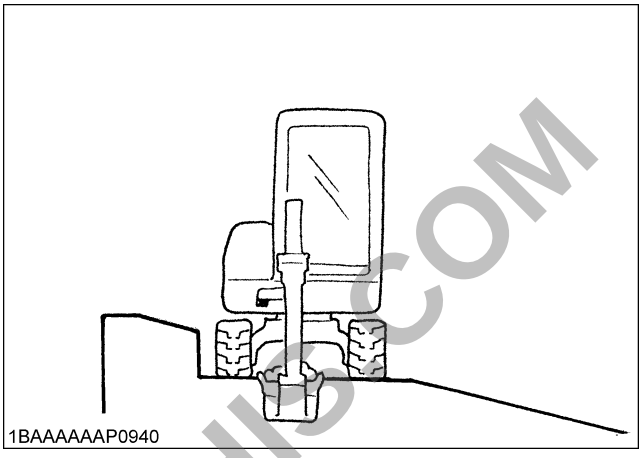


(A) "Front of the excavator"

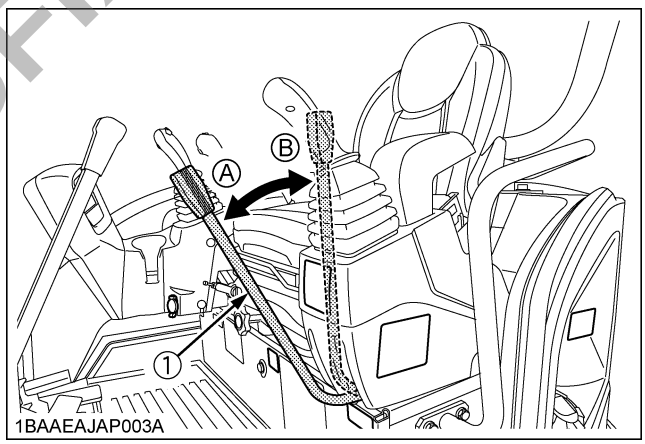
- **Use extra caution when traveling across a slope or working sideways on a slope.**



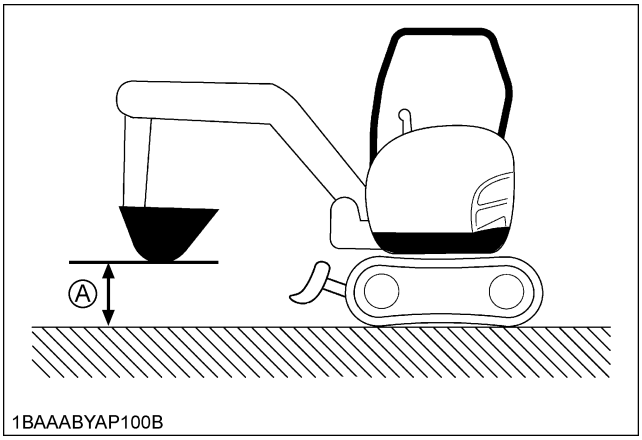
- **Recommended technique for working on a slope.**



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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MAINTENANCE

MAINTENANCE INTERVALS

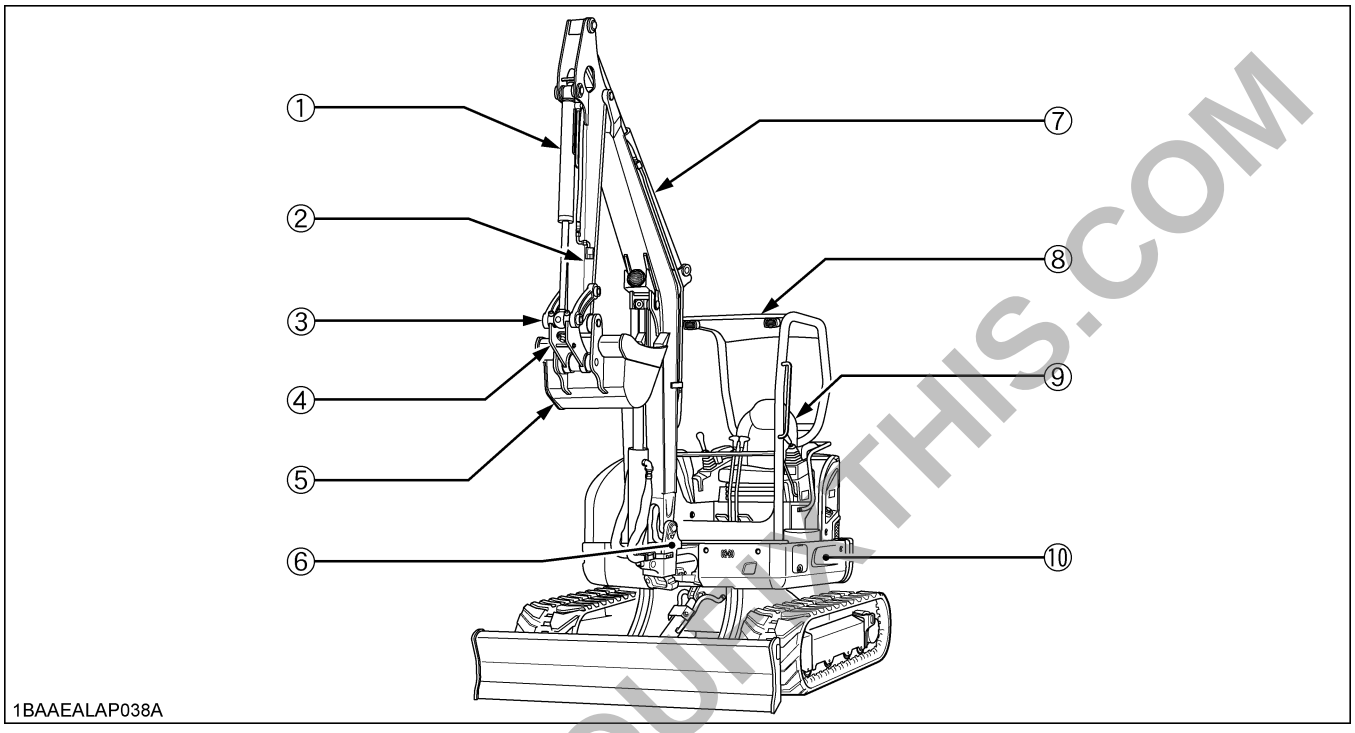
No.	Check points		Measures	Hour meter indicator									Interval	Ref. page		
				50	100	150	200	250	300	350	400	450				
1	Coolant		check	Daily check										58		
			change										every 2 years	76		
2	Fuel		check	Daily check										58		
3	Engine oil		check	Daily check										59		
			change	◉				○					every 250 hrs	70		
4	Hydraulic oil		check	Daily check										59		
			change										every 1000 hrs	73	*1	
5	Grease front attachments	Bucket and bucket link pin	-	Daily check										61		
		Boom swing fulcrum	-	Daily check										62		
		Others	-	Daily check										61		
6	Radiator and oil cooler		check	Daily check										60		
7	Washer liquid		check	Daily check										61		
8	Engine and electrical wiring		check	Daily check										61		
9	Fuel tank, Water separator		drain	○	○	○	○	○	○	○	○	○	every 50 hrs	63,63		
10	Battery condition		check	○	○	○	○	○	○	○	○	○	every 50 hrs	64		
11	Greasing swing bearing teeth		-	○	○	○	○	○	○	○	○	○	every 50 hrs	65		
12	V-belt tension		check	Daily check										60		
			adjust				○				○		every 200 hrs	66		
			replace										every 500 hrs	72		
13	Radiator hoses and clamps		check				○				○		every 200 hrs	67		
			replace										every 2 years	76		
14	Air filter element	Outer element	clean				○				○		every 200 hrs	67	*2	
			replace										every 1000 hrs	75	*2	@
		Inner element	replace										every 1000 hrs	75	*2	
15	Greasing swing ball bearing		-				○				○		every 200 hrs	67		
16	Fuel filter cartridge		replace										every 500 hrs	72		@
17	Engine oil filter		replace	◉				○					every 250 hrs	71		
18	Drive unit oil		change	◉									every 500 hrs	71		
19	Breather filter		replace										every 500 hrs	72		
20	Hydraulic return filter element		replace					◉					every 500 hrs	72		
21	Engine valve clearance		check										every 800 hrs	73	*4	
22	Hydraulic suction filter element		replace										every 1000 hrs	73		
23	Filter in the pilot hydraulic system		replace										every 1000 hrs	73		
24	Fuel injection nozzle injection pressure		check										every 1500 hrs	75	*4	@
25	Front idler and track roller oil		change										every 2000 hrs	75		
26	Alternator and starter motor		check										every 2000 hrs	75		
27	Injection pump		check										every 3000 hrs	75	*4	@
28	Radiator system		rinse										every 2 years	76		
29	Fuel line and Intake air line		check				○				○		every 200 hrs	68		@
			replace										every 2 years	77	*3	

∗ 500 thru 1000 continued to the following table.

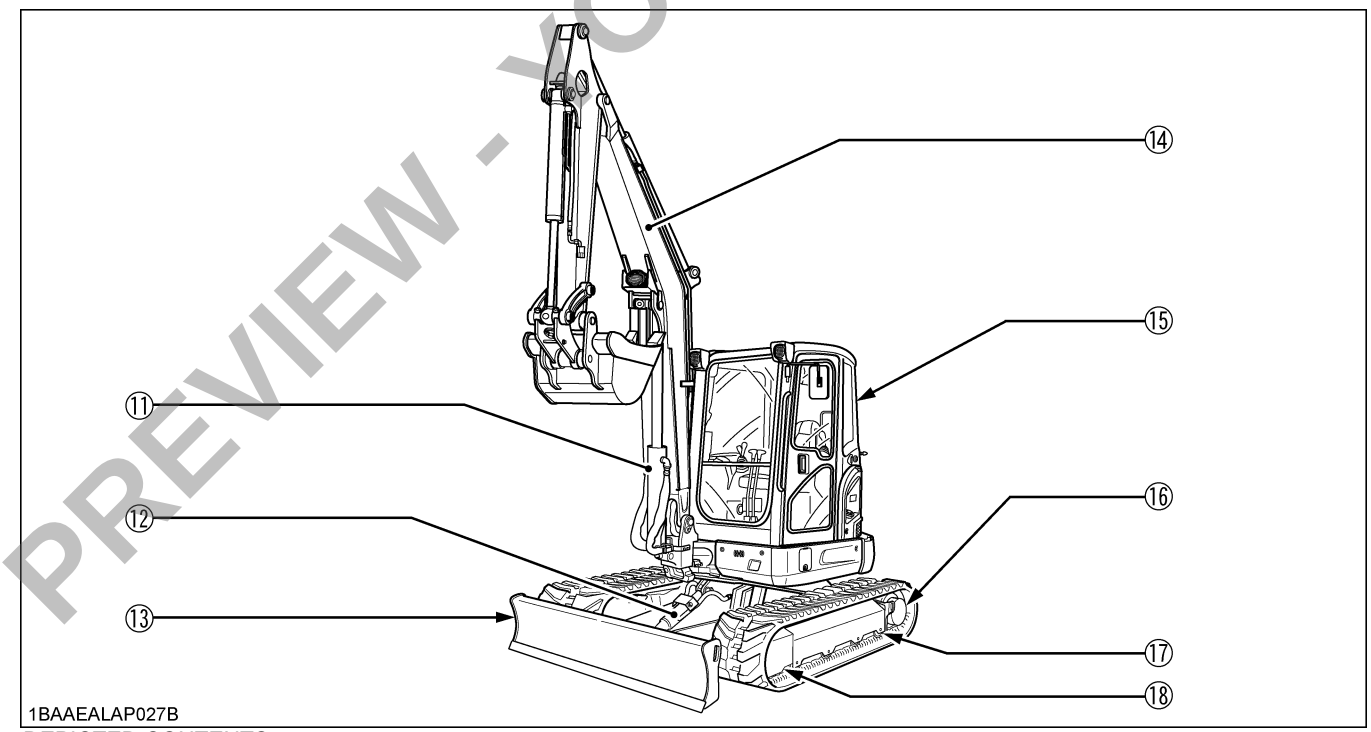
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DESCRIPTION OF MACHINE PARTS



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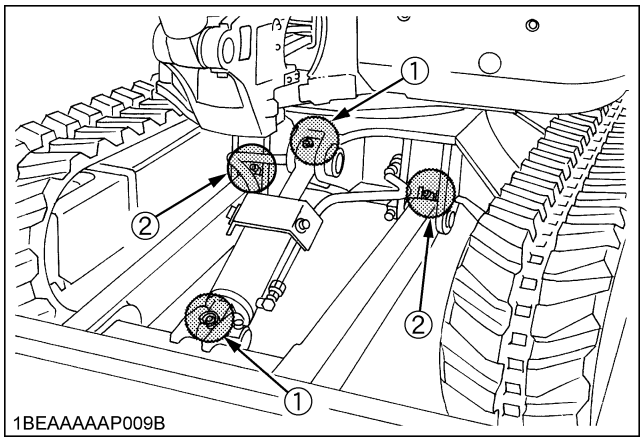
1BAAEALAP027B

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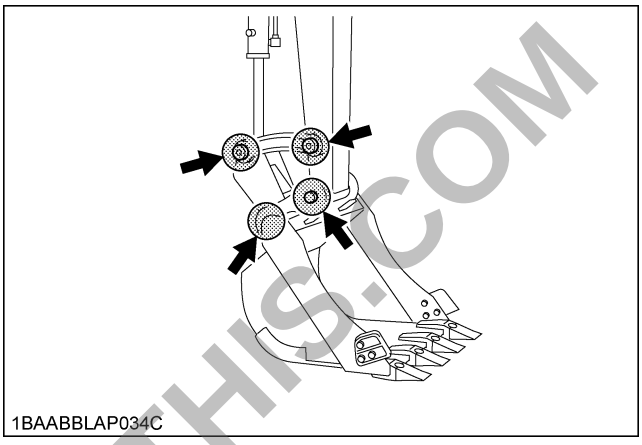
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(1) Dozer cylinder boss
(2) Dozer linkage pin

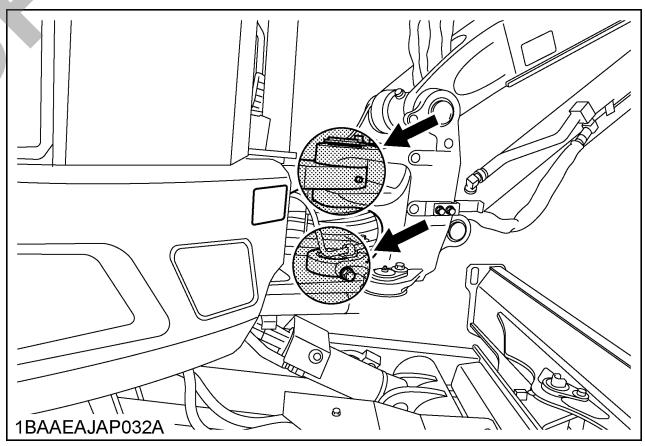
■Greasing Bucket Pin

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



■Greasing Boom Swing Fulcrum

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



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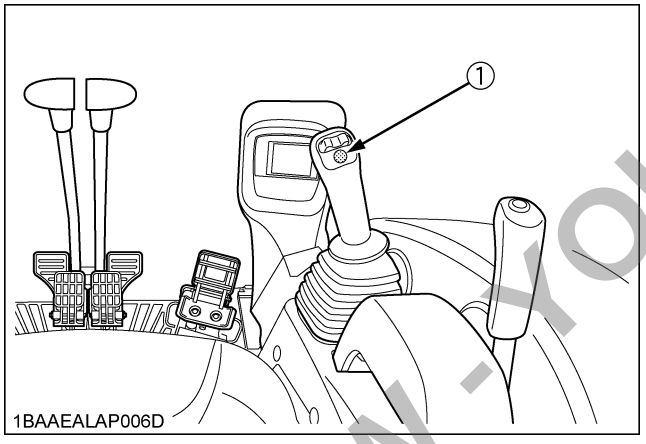
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OPERATION OF THE ENGINE

WARNING

To avoid personal injury or death:

- **Read "SAFE OPERATION" at the beginning of this operator's manual.**
- **Obey the danger, warning and caution labels on the excavator.**
- **To avoid the danger of exhaust fume (carbon monoxide) poisoning, do not operate the machine in a closed building without proper ventilation.**
- **Always start the engine from the operator's seat. Do not start the engine while standing next to the excavator. Before starting the engine, sound the horn to get the attention of persons standing nearby.**



(1) Horn switch

IMPORTANT :

- Do not use starting fluid or ether.
- In order not to overload the battery and starter, avoid engaging the starter for more than 10 sec.
- If the engine does not start in 10 sec., please wait 20 sec. or more, before attempting to restart.

STARTING THE ENGINE

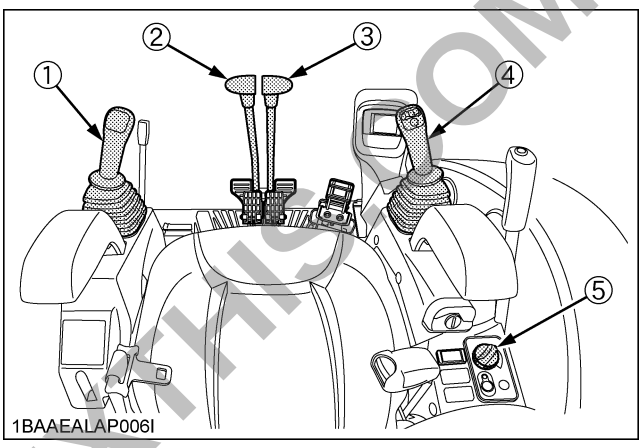
WARNING

To avoid personal injury or death:

- **The operator should not depend solely on the warning lamps, but should always conduct the routine checks (see "MAINTENANCE").**

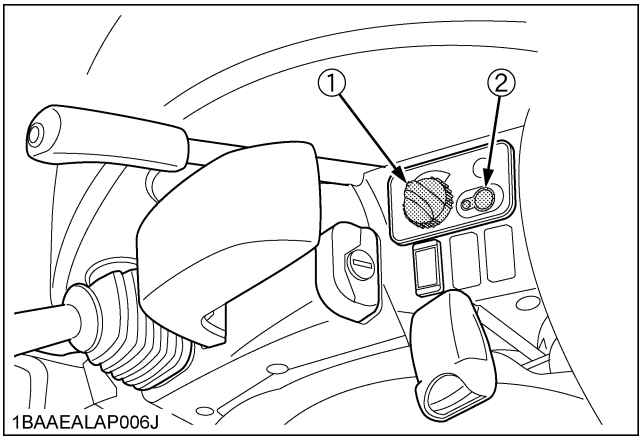
Start the engine in the following manner:

1. Before starting the engine, make sure that all control levers are in the neutral positions.



(1) Attachment control lever (left)
(2) Drive lever (left)
(3) Drive lever (right)
(4) Attachment control lever (right)
(5) Throttle potentiometer

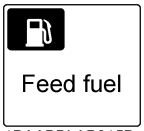
2. Pull the pilot control lock lever all the way back. (**"LOCKED"** position)
3. Put the throttle potentiometer in the middle between "🐇" and "🐢" symbols. The auto idle control switch is in the OFF position.
   (See "AUTO IDLE (AI) OPERATION" in the Excavator operation.)



(1) Throttle potentiometer
(2) Auto idle control switch

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No.	Message	Problem or failure (What happened)	Machine behavior (Provisional measure)	Correction
7	Not equipped with overload warning function  1BAAABYAP036A	This message appears if the overload warning switch is pressed on machines not equipped with overload warning system.	-	-
8	Out of fuel  1BAABBLAP215B	Fuel is running out.	-	Add fuel.
9	Fuel sensor error  1BAABBLAP139B	The fuel sensor system is in trouble.	The fuel level indicator does not appear on the meter.Press the display selector switch, and the normal display is switched back.The machine's other functions are still operative.	Immediately contact your local dealer.
10	Charging system error  1BAABBLAP136B	Charging system is in trouble. The battery is not charging.	The machine works until the battery goes dead.	Immediately contact your local dealer.
11	Engine oil pressure error  1BAABBLAP137B	The engine lubricating system oil pressure is too low. Stop the engine.	The engine may get burnt out. Immediately stop the engine.	Immediately contact your local dealer.
12	Overvoltage  1BAABBLAP138B	This message appears if a jumper cable is connected to a 24V battery or improper device to get the engine started or if the alternator is in trouble.	Immediately interrupt the engine if with a 24V battery. When the engine gets restarted and is running with no message appearing, it means there is no problem.	If this message still appears, immediately ask for repair.
13	Overheat advance warning Water temperature rising  1BAABBLAP140B	Water temperature is rising somewhat higher than specified.	Operate with the load a little lessened. Check the radiator and other components for clog. Immediately clean them up.	

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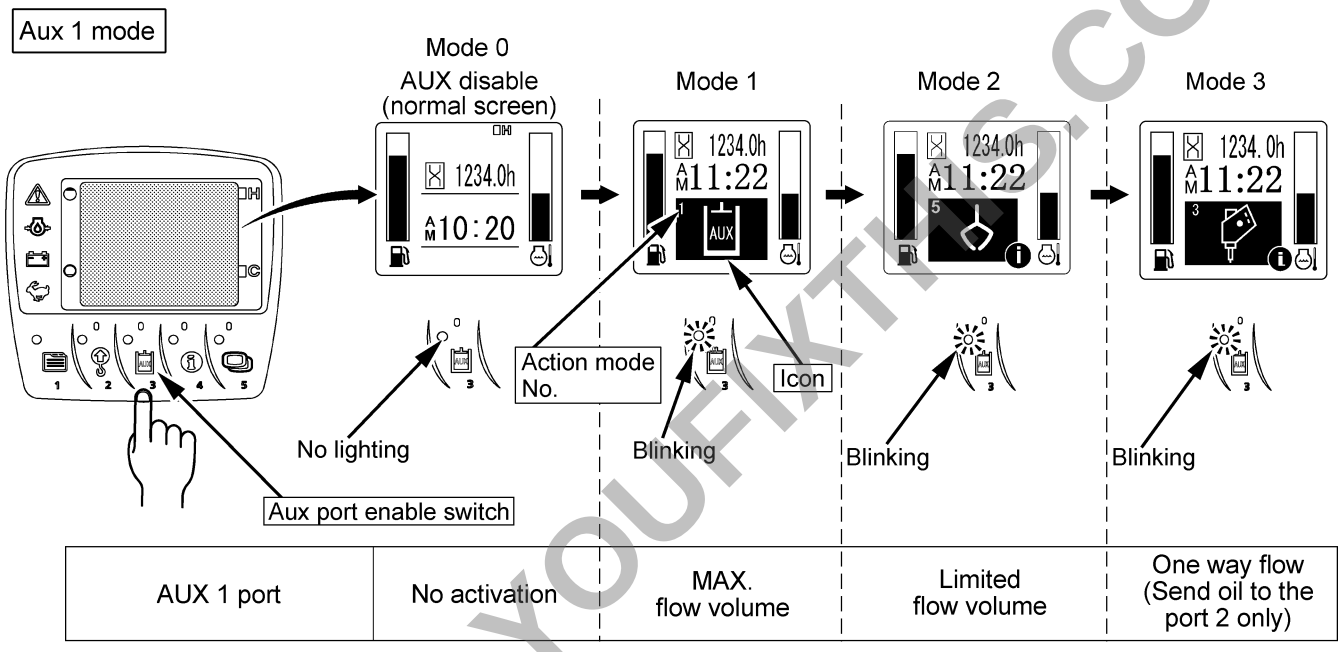
AUXILIARY PORT OPERATION

The auxiliary port enable switch is used to operate hydraulic attachment such as hammers.

■Selecting the Action Modes

The AUX port has been factory-set to three action modes. You can select one of them. Up to five action modes can be preset.

Each time the AUX port enable switch (switch 3) is pressed, the action modes change over one after another. And the icon and action mode number on the screen change accordingly.



1BAAABYBP015C

NOTE :

- When turning the starter key to the "RUN" position, the action mode will return to the last action mode used.

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