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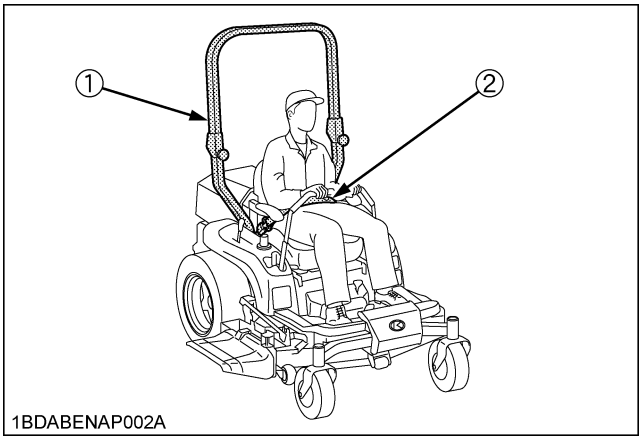
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⚠ SAFE OPERATION

Careful operation is your best insurance against an accident. The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people or property. Read and understand this manual carefully before operating the machine. All operators, no matter how much experience they may have had, must read and understand this and other related manuals before operating the machine or any implement attached to it. It is the owner's obligation to instruct all operators in safe operation.
If the operator(s) or mechanic(s) cannot read English it is the owner's responsibility to explain this material to them.
This mowing machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

1. BEFORE OPERATING

1. The ZERO TURN MOWING MACHINE has different steering characteristics than other machines with a steering wheel and does not have a service brake pedal (but, has a parking brake pedal that can be used to stop the machine in an emergency). Normal slowing down and stopping is done with the motion control levers. Read and understand the operators manual before operating the machine. Practice operating machine at low engine speed without mower engaged in an unobstructed area.
2. Know your equipment and its limitations. Read all instructions in this manual and machine safety labels before attempting to start and operate the machine.
3. Pay special attention to the safety labels on the machine itself.
4. The ROPS is an integral and effective safety device.
   KUBOTA recommends the use of a Roll Over Protective Structures (ROPS) and seat belt in almost all applications. This combination will reduce the risk of serious injury or death, should the machine be upset.
   The machine is equipped with a Foldable ROPS, which may be temporarily folded down only when absolutely necessary for areas with height constraints. There is no operator protection provided by the ROPS in the folded position. For operator safety you must set the ROPS in the upright and locked position and put on the seat belt for all other operations.
   DO NOT remove the ROPS.
   If the ROPS is loosened or removed for any reason, make sure that all parts are reinstalled correctly before operating the machine.
   Never modify or repair a ROPS because welding, bending, drilling, grinding, or cutting may weaken the structure.
   If any structural member of the ROPS is damaged, replace the entire structure at your local KUBOTA Dealer. Any alterations to a ROPS must be approved by the manufacturer.
   Check the area to be mowed and never fold down a foldable ROPS in areas where there are slopes, drop offs or water.
   Check carefully for overhead clearances (i.e. branches, doorways, electrical wires) before driving under any objects and do not contact them.
   Keep the ROPS in safe operating condition by periodically thoroughly inspecting for damage and keeping all mounting fasteners tight.

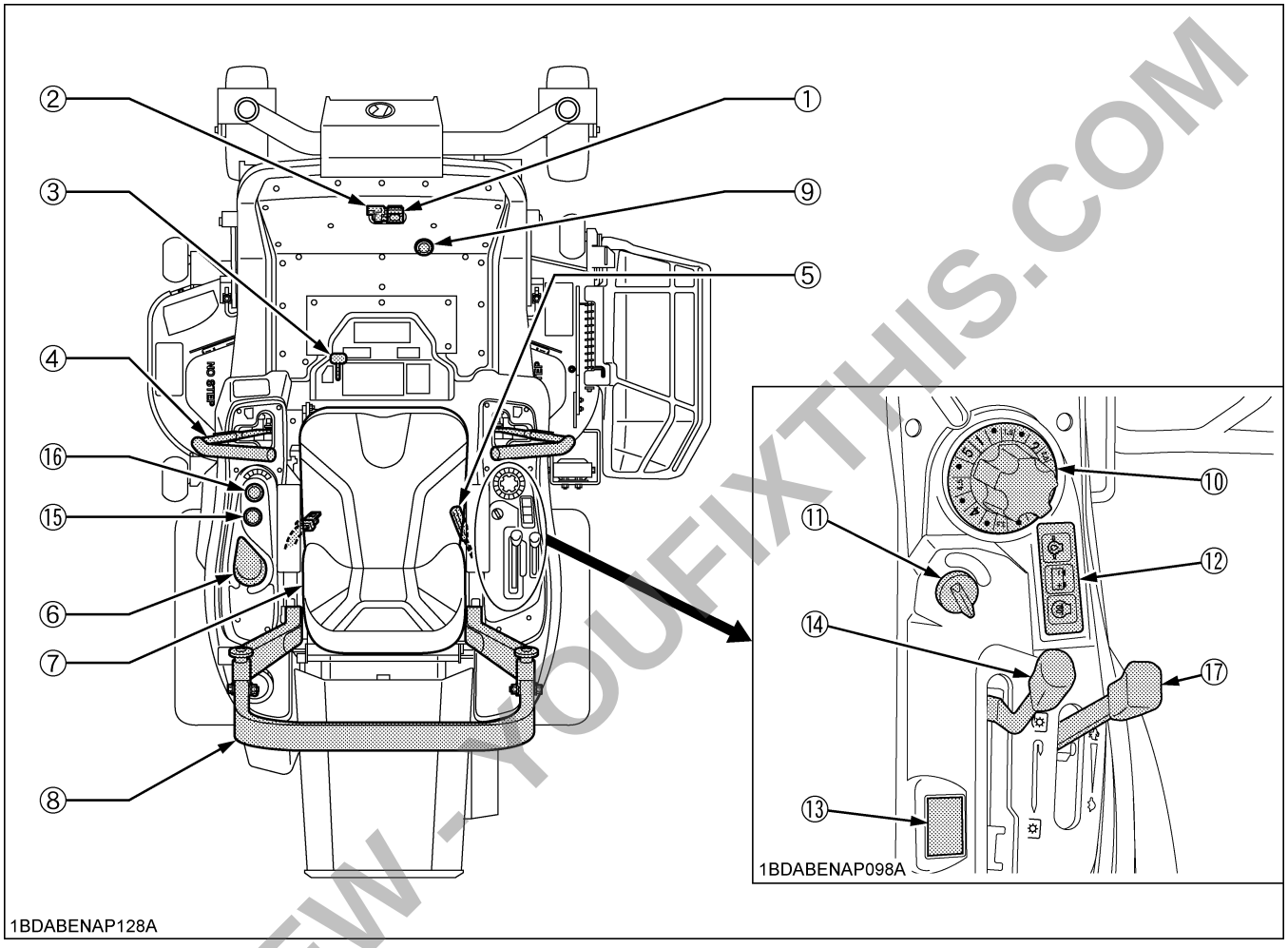


(1) ROPS
(2) Seat belt

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INSTRUMENT PANEL AND CONTROLS



ILLUSTRATED CONTENTS

(1)	Parking brake pedal	11, 22
(2)	Parking brake lock pedal	11, 22
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MOWER MOUNTING

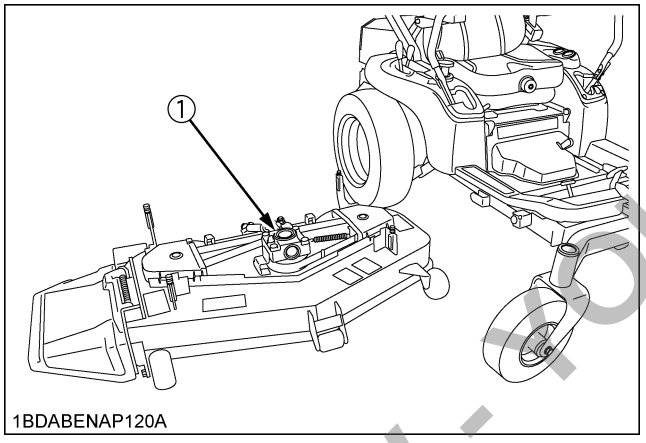
MOUNTING THE MOWER DECK

WARNING

To avoid serious injury or death:

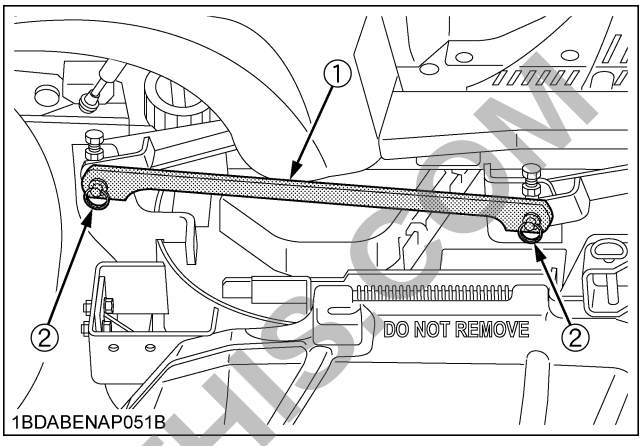
- **Park the machine on a firm and level surface.**
- **Apply the parking brake.**
- **Stop the engine and remove the key.**

1. Before mounting the mower deck, raise the lift links to the full up position. (See "STARTING" in "OPERATING THE MACHINE" section.)
2. Adjust the cutting height control dial to 1 in. position.
3. Change the direction of the front tires as shown in the figure.
4. Place the mower deck at the right side of the machine.



(1) Gear box

5. Slide the mower deck under the machine, and make sure that the mower gear box is placed properly in the center of the machine.
6. Adjust the lift pedal to the lowest position and pull down the lift links.
7. Attach the lift links to the mower deck with attaching hardwares.

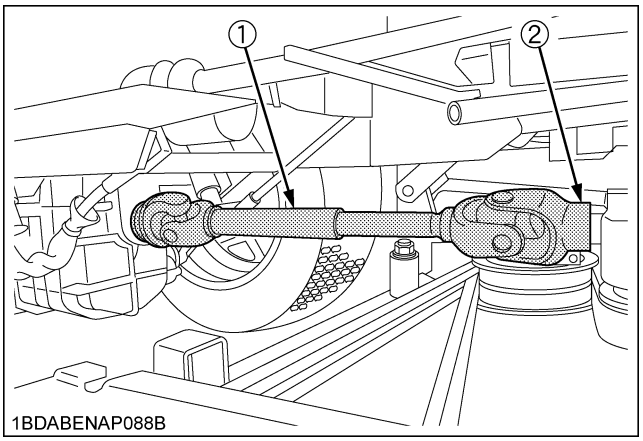


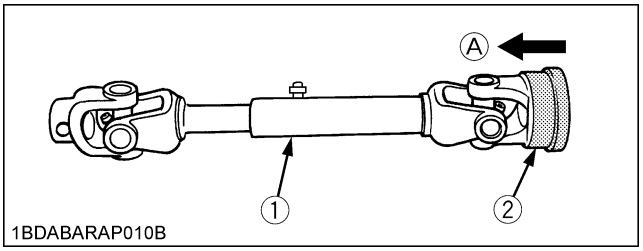
(1) Lift link
(2) Clevis pin, Plain washer, Snap ring

8. Install universal joint.
   Pull back the coupler of the universal joint.
   Push the universal joint onto the PTO shaft until the coupler locks.

IMPORTANT :

- Tug the universal joint backward and forward to make sure it is locked securely.





(1) Universal joint
(2) Coupler
(A) "PULL"

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OPERATING THE ENGINE

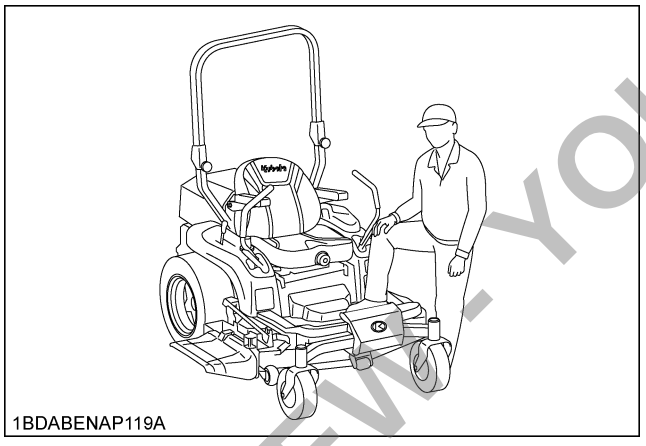
WARNING

To avoid serious injury or death:

- **Read and understand "SAFE OPERATION" in the front of this manual.**
- **Read and understand the danger and warning labels located on the machine.**
- **To avoid danger of exhaust fume poisoning, do not operate the engine in a closed building without proper ventilation.**
- **Never start the engine while standing on the ground. Start the engine only from operator's seat.**

GET ON AND GET OFF MACHINE SAFELY

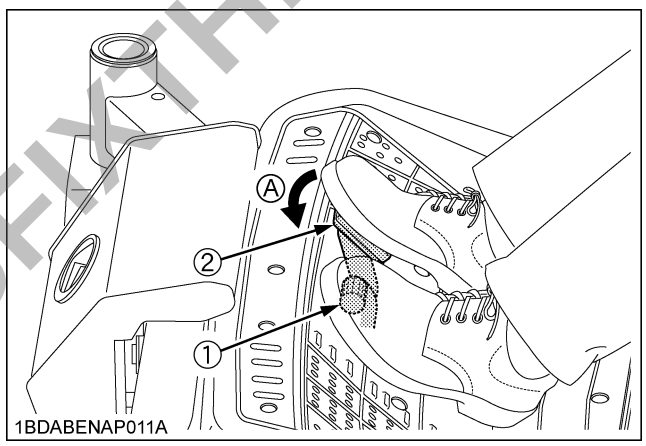
DO NOT step on either side of the mower deck when getting on and getting off the machine. When getting on the machine from either side, step over the mower deck.



STARTING THE ENGINE

1. **Sit on the operator's seat. Put on the seat belt.**
2. **Apply the parking brake.**

To apply the parking brake:
Depress the parking brake pedal firmly with your right foot and the parking brake lock pedal simultaneously with your left foot. Then release the parking brake pedal while holding the parking brake lock pedal down.



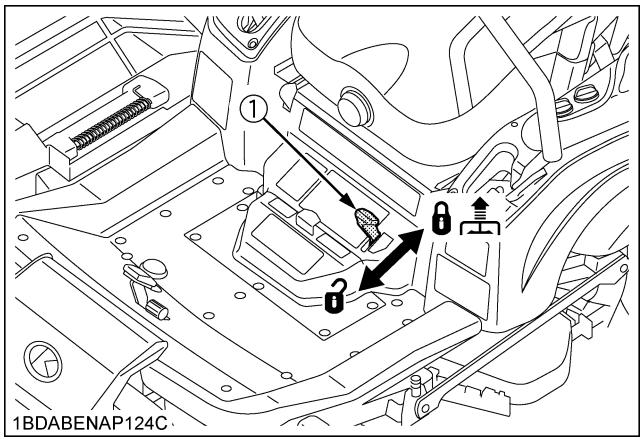
(1) Parking brake lock pedal *(A) "DEPRESS"*
(2) Parking brake pedal

To release the parking brake:
Depress the brake pedal and release slowly with your right foot without pressing the parking brake lock pedal.

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2. Do not attempt to tow this machine, or damage to the transmission may result.
3. When you drive the machine, for a long distance transit, make sure to lift the mower by the hydraulic lift control pedal and move the lift lock lever in the "TRANSPORT LOCK" position.



(1) Lift lock lever

: "LOCK"
: "UNLOCK"

4. Follow all federal and local regulations for securement.

OPTION

- For the operation and precautions of option kit, obey the instructions of the manuals attached in the option kit.

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LUBRICANTS, FUEL AND COOLANT

Place	Capacities **ZD1011-AU**	Lubricants
Fuel	23 L (6.1 U.S. gals.)	• No.2-D diesel fuel • No.1-D diesel fuel if temperature is below -10 ℃ (14 ℉)
Coolant	2.7 L (2.85 U.S.qts.)	Fresh clean water with anti-freeze
Recovery tank	0.25 L (0.26 U.S.qts.)	
Engine crankcase	3.5 L (3.7 U.S.qts.)*1	• Engine oil: API service Classification CF, CF-4, CG-4, CH-4 or CI-4 Above 25 ℃ ...SAE30, SAE10W-30 or 15W-40 (77 ℉) 0 to 25 ℃ .....SAE20, SAE10W-30 or 15W-40 (32 to 77 ℉) Below 0 ℃ .....SAE10W, SAE10W-30 or 15W-40 (32 ℉)
Transmission case with filter & hose Rear axle gear case (RH &LH)	7.5 L (7.9 U.S.qts.)	• KUBOTA SUPER UDT-2 fluid*2
Mower gear box	0.4 L (0.42 U.S.qts.)	Gasoline engine oil: API Service Category: SH or higher, SAE10W-30

Greasing	No. of greasing points	Capacity	Type of grease
Front axle	2	Until grease overflows	• Multi purpose EP2 Grease (NLGI Grade No. 2)
Front wheel	2		
Parking brake lock pedal	1		
Front lift arm	2		
Universal joint	3		
Seat adjuster	2		
Mower link bushing	3		
Cable (throttle cable, mower lift cable)	3	Moderate amount	• Oil
[MOWER]			
Universal joint	3	Until grease overflows	• Multi purpose EP2 Grease (NLGI Grade No. 2)
Three spindle shafts	3		
Belt tension pulley	1		
Belt tension pivot	1		
Anti scalp roller	1		
Front anti scalp roller pivot boss	2		

Note *1 Oil amount when the oil level is at the upper level of the oil level gauge.
*2 The product name of KUBOTA genuine UDT fluid may be different from that in the Operator's Manual depending on countries or territories. Consult your local KUBOTA Dealer for further detail.

IMPORTANT :
- To prevent serious damage to hydraulic systems, use only KUBOTA genuine fluid or its equivalent.

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MAINTENANCE

SERVICE INTERVALS

You must do the following servicing jobs on the machine at the stated running-time intervals.

No.	Items		Indication hour meter (Hr)													Ref. Page		
			50	100	150	200	250	300	350	400	450	500	550	600	After since			
1	Engine start system	Check	○	○	○	○	○	○	○	○	○	○	○	○	every 50Hr	51		
2	OPC system	Check	○	○	○	○	○	○	○	○	○	○	○	○	every 50Hr	52		
3	Mower gear box oil	Check	○	○	○	○	○	○	○	○	○	○	○	○	every 50Hr	52		
		Change			○			○			○			○	every 150Hr	60		
4	Greasing (except mower and mower link bushings)	-	○	○	○	○	○	○	○	○	○	○	○	○	every 50Hr	53		
5	Throttle Cable	Oil	○	○	○	○	○	○	○	○	○	○	○	○	every 50Hr	54		
6	Greasing (mower link bushings, pivot)	-		○		○		○		○		○		○	every 100Hr	58		
7	Air cleaner primary element	Clean		○		○		○		○		○		○	every 100Hr	55	*2	@
		Replace													every 1000Hr or 1 year	64	*3	
	Secondary element	Replace													every 1000Hr or 1 year	64	*3	
8	Fuel filter element	Check		○		○		○		○		○		○	every 100Hr	55		@
		Replace								○					every 400Hr	64	*6	
9	Fan belt	Adjust		○		○		○		○		○		○	every 100Hr	56		
10	Parking brake	Adjust		○		○		○		○		○		○	every 100Hr	57	*9	
11	Battery condition	Check		○		○		○		○		○		○	every 100Hr	58	*7	
12	Engine oil	Change	◎			○				○				○	every 200Hr	61	*1	
13	Engine oil filter	Replace	◎			○				○				○	every 200Hr	61	*1	
14	Transmission oil filter [HST]	Replace	◎			○				○				○	every 200Hr	62	*1	
15	Front axle pivot	Adjust		◎		○				○				○	every 200Hr	62	*8	

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■Adjusting Parking Brake

If you feel you are unable to make the following service correctly and safely, contact your local KUBOTA Dealer.

WARNING

To avoid serious injury or death:

- **Park the machine on a firm and level surface.**
- **Stop the engine and chock the wheels before checking or adjusting.**

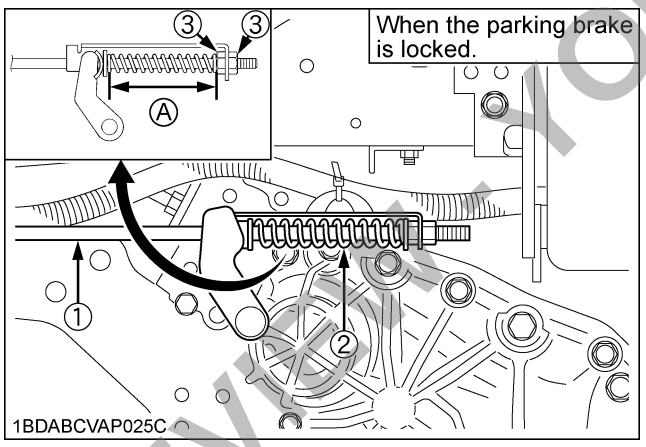
IMPORTANT :

- Wrong adjustment may cause machine damage.

(1) Check brake spring

1. Place the motion control levers to the "NEUTRAL LOCK" position.
2. Be sure to chock the rear wheels.
3. Apply the parking brake to the lock position.
4. Check the length of the brake springs on both sides.

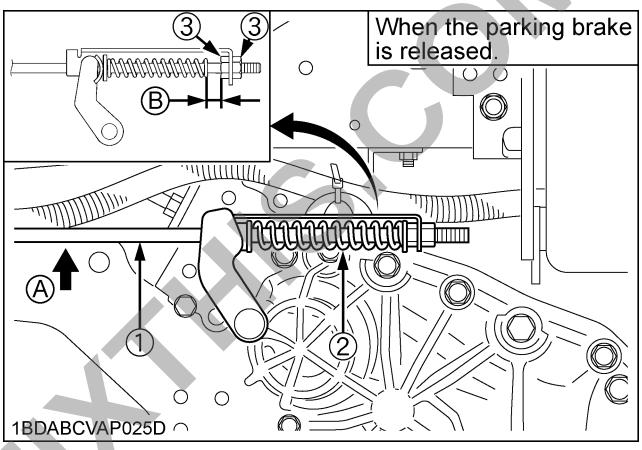
(A): Proper brake spring length with the brake applied to the lock position	115 to 117 mm (4.53 to 4.61 in.)



(1) Brake rod
(2) Brake spring
(3) Lock nut
(A) "Parking brake spring length"

5. If the length of the brake spring is not correct, adjust it. (See "Adjustment of brake spring length" below.)
6. Release the parking brake completely.
7. Hold the brake rod lightly.
8. Check the brake spring play.

(B): Proper brake spring play	Reference: 0.5 to 1.0 mm (0.02 to 0.04 in.)



(1) Brake rod
(2) Brake spring
(3) Lock nut
(A) "Hold the brake rod"
(B) "Parking brake spring play"

9. If the brake spring play is not correct, adjust it. (See "Adjustment of brake spring play" below.)

◆ **Adjustment of brake spring length**

1. Place the motion control lever to the "NEUTRAL LOCK" position.
2. Apply the parking brake to the lock position.
3. Loosen the lock nuts.
4. Adjust the spring length to the recommendation.
5. Lock the nuts.
6. Check the brake spring play to the recommendation. If there is no play, adjust the brake spring play again. (See "Adjustment of brake spring play" below.)
7. Adjust the other side spring to the same dimension.

◆ **Adjustment of brake spring play**

1. Place the motion control lever to the "NEUTRAL LOCK" position.
2. Be sure to chock the rear wheels.
3. Release the parking brake completely.
4. Loosen the lock nuts.
5. Hold the brake rod by hand.
6. Tighten the nut to the correct space between the end of the spring and the nut.
7. Lock the nuts.
8. Adjust the other side spring to the same dimension.

(2) Check on the slope

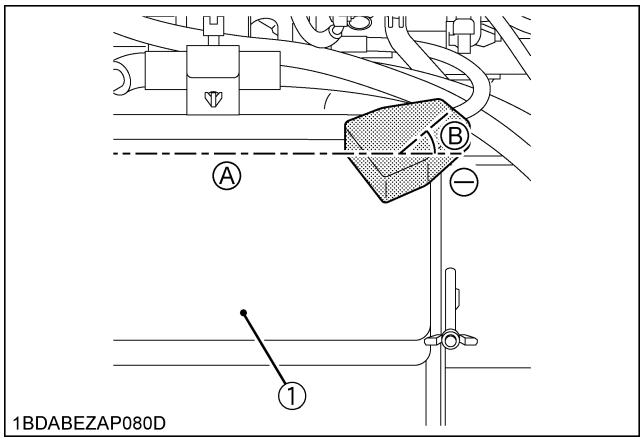
1. Place the machine on a 17° ramp.
2. Apply the parking brake.
3. Place the motion control levers in "NEUTRAL LOCK" position and shut off the engine.

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◆ **Battery for storage**

1. When storing the machine for a long period, remove the battery from machine, adjust the electrolyte to the proper level and store in a dry place out of direct sunlight.
   When disconnecting the cables from the battery, start with the negative terminal first.
   When connecting the cables to the battery, start with the positive terminal first.
   Tighten the negative terminals with the angle 45° to the base line (A) as shown below.



(1) Base battery *(-) Negative terminal*
(A) Base line
(B) 45°

2. The battery self-discharges while it is stored. Recharge it once every 3 months in hot seasons and once every 6 months in cold seasons.

EVERY 150 HOURS

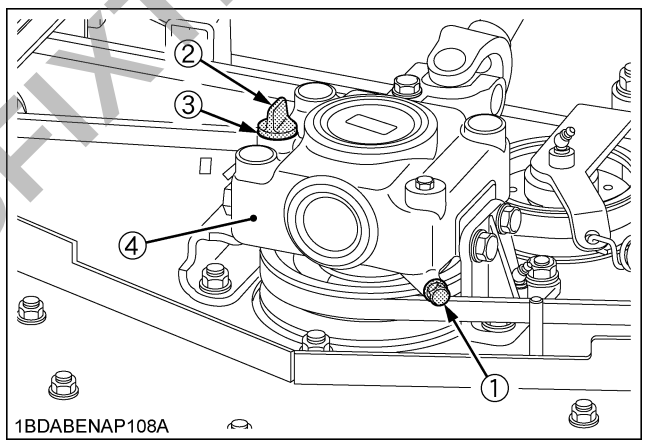
■Changing Gear Box Oil

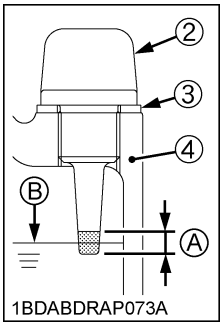
WARNING

To avoid serious injury or death:

- **Be sure to stop the engine and remove the key before changing the oil.**

1. To drain the used oil, remove the drain plug and oil inlet plug with gauge at the gear box and drain the oil completely into the oil pan.
2. After draining reinstall the drain plug.
3. Remove the oil level check plug.
4. Fill with the new oil up to the check plug port. (See "LUBRICANTS, FUEL AND COOLANT" in "PERIODIC SERVICE" section.)
5. After filling reinstall the check plug and oil inlet plug with gauge securely.





(1) Drain plug
(2) Oil inlet plug with gauge
(3) Seal washer
(4) Gear case
(A) Oil level is acceptable within this range.
(B) Oil level

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SPECIFICATIONS

Model				ZD1011-AU
Engine	Model			D782-E4
	Max. engine power (Gross)		kW (HP)	14.4 (19.3) (*1)(*2)
	Type			Indirect injection, Liquid-cooled
	Number of cylinders			3
	Bore and stroke		mm (in.)	67 x 73.6 (2.64 x 2.90)
	Total displacement		cm^3 (cu. in.)	778 (47.5)
	Rated revolution		rpm	3200
	Low idling revolution		rpm	1400 to 1500
	Fuel			Diesel fuel No. 2 Diesel fuel No. 1 [below -10 ℃ (14 ℉)]
	Starter			Electric starter with battery, glow plug, 12 V, 1.2 kW
	Lubrication			Forced lubrication by trochoidal pump
	Cooling			Liquid with pressurized radiator
	Battery			51R (12 V, RC: 80 min, CCA: 430 A)
Capacities	Fuel tank		L (U.S.gals.)	23 (6)
	Engine crankcase (with filter)		L (U.S.qts.)	2.8 (3.0)
	Engine coolant		L (U.S.qts.)	2.7 (2.85)
	Recovery tank		L (U.S.qts.)	0.25 (0.26)
	Transmission case including Rear axle gear case		L (U.S.qts.)	7.5 (7.9) (*3)
Dimensions	Overall length		mm (in.)	2230 (87.8)
	Overall width w/o mower deck		mm (in.)	1210 (47.7)
	Overall height	With ROPS upright	mm (in.)	1890 (74.4)
		With ROPS folded	mm (in.)	1430 (56.3)
	Wheelbase		mm (in.)	1380 (54.3)
	Min. ground clearance		mm (in.)	130 (5.12) with 54"
	Tread	Front	mm (in.)	890 (35.0)
		Rear	mm (in.)	930 (36.6)
Weight (W/MOWER DECK)			kg (lbs.)	600 (1323) with 54"

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