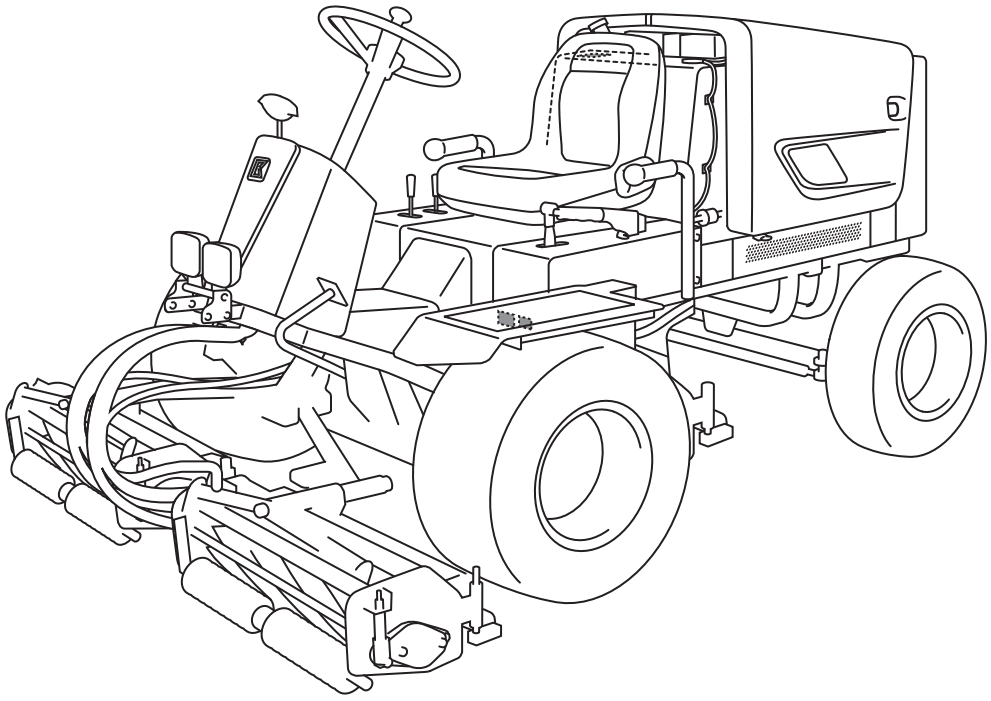
LM283

3-Unit Reel Mower

Owner's operating manual



"Required reading" Read this manual and the owner's manual for the engine before using the machine.

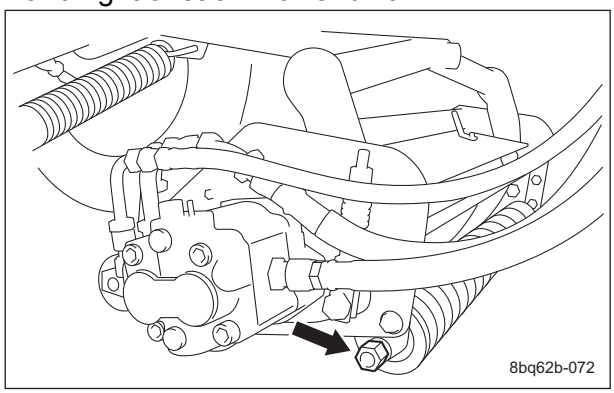
BARONESS®

Quality on Demand

Serial No.10137-

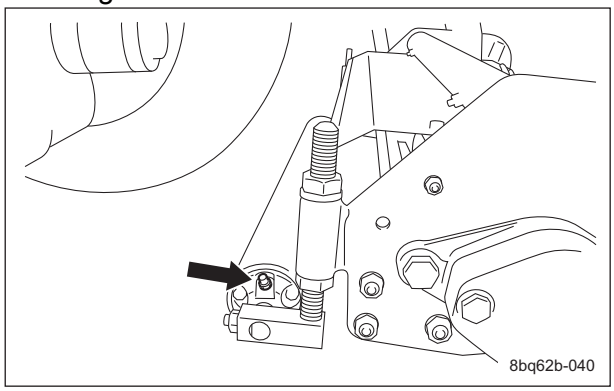
Original Instructions Ver.1.1

1. Front roller
   There is one greasing point each on the left and right of each mower unit.



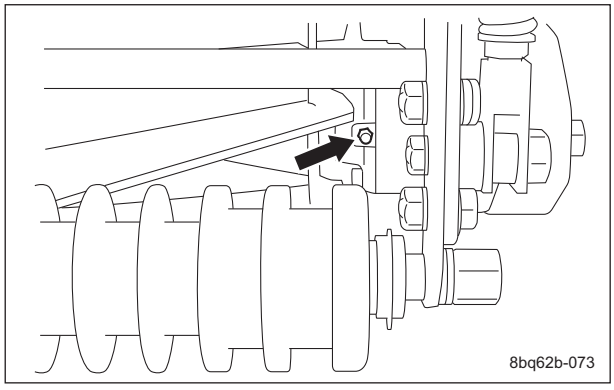
Greasing Points_002

2. Rear roller
   There is one greasing point each on the left and right of each mower unit.



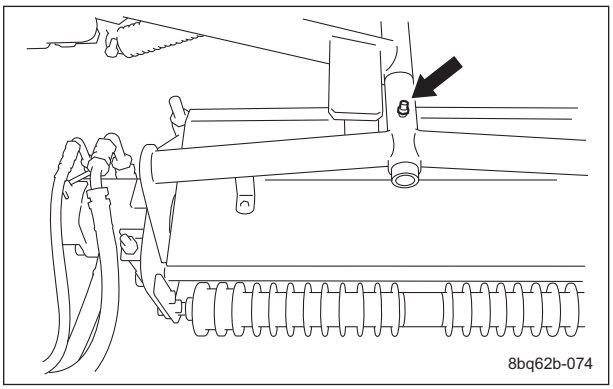
Greasing Points_003

3. Reel housing
   There is one greasing point on each mower unit.



Greasing Points_004

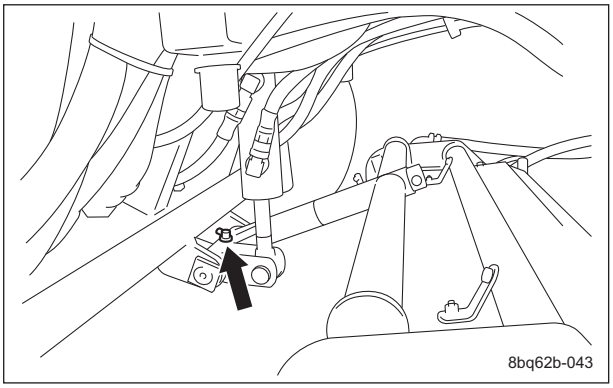
4. Mower frame fulcrum
   There is one greasing point on each mower unit.



Greasing Points_005

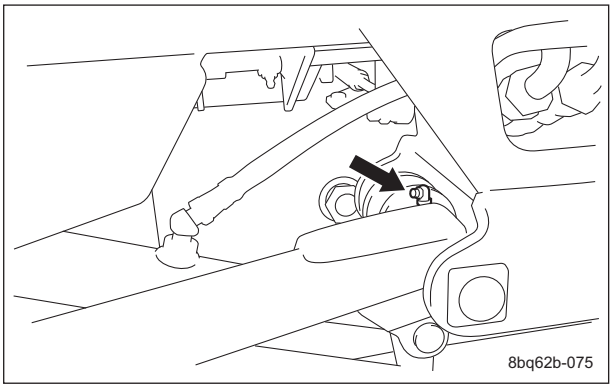
5. Lift arm fulcrum
   There is one greasing point each on the left and right mower units.

   Mower #1



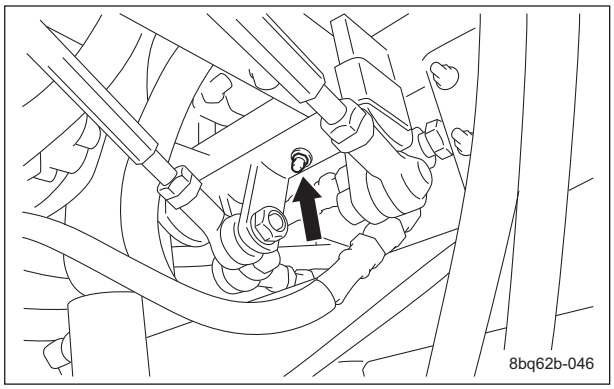
Greasing Points_006

   Mower #2 and #3



Greasing Points_007

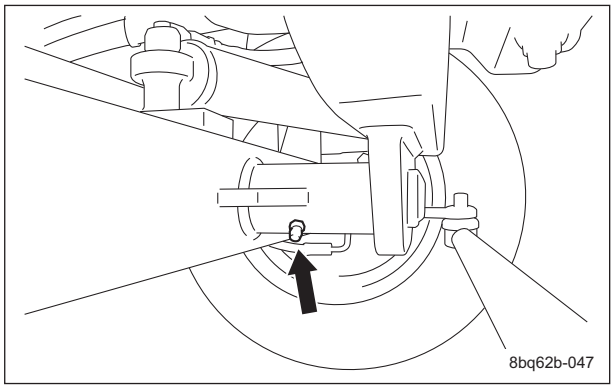
6. Idle lever fulcrum



Greasing Points_008

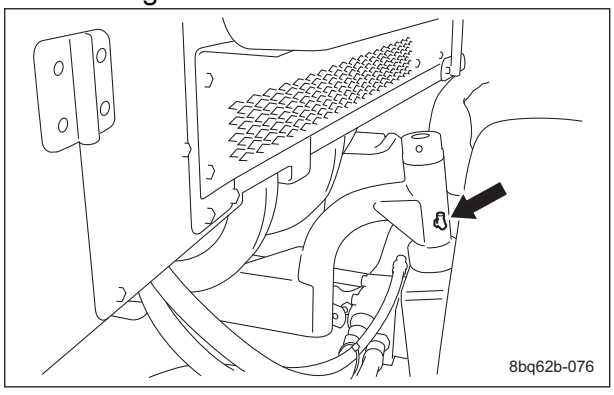
7. Pivot
Use jack stands to support the machine and apply grease.

Middle between the rear wheels



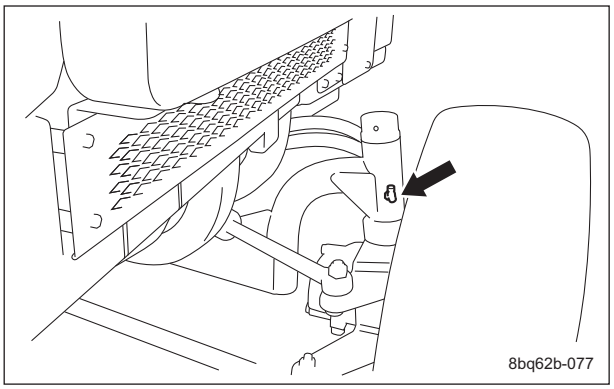
Greasing Points_009

Rear right wheel



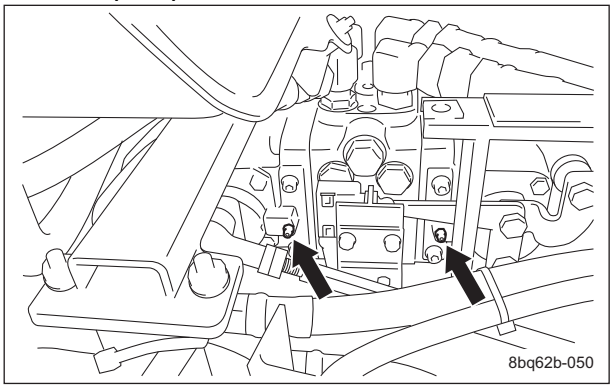
Greasing Points_010

Rear left wheel



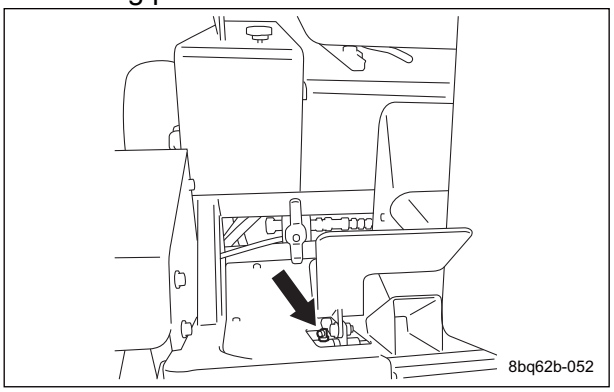
Greasing Points_011

8. Piston pump



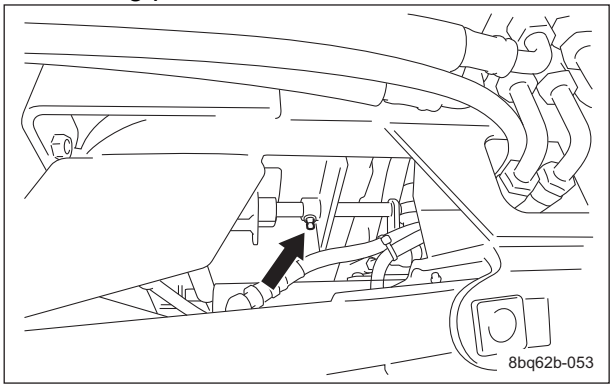
Greasing Points_012

9. Traveling pedal fulcrum



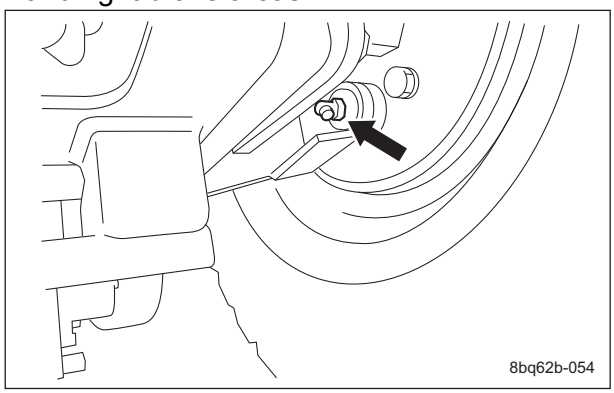
Greasing Points_013

10. Traveling pedal shaft fulcrum



Greasing Points_014

11. Brake lever shaft
    There is one greasing point each in the left and right brake areas.



Greasing Points_015

Maintenance (Mower)

Back Lapping of Reel Cutter (Cutting Cylinder)

Back lapping is work similar to sharpening a cooking knife. If the edges of the reel cutter (cutting cylinder) and the bed knife (bottom blade) become blunt and make cutting difficult, both the reel cutter (cutting cylinder) and the bed knife (bottom blade) should be simultaneously sharpened by reversing the reel cutter (cutting cylinder) with an abrasive paste applied.
However, back lapping is a temporary measure and would not restore the sharpness completely.
If the edges of the reel cutter (cutting cylinder) and the bed knife (bottom blade) become blunt and make cutting difficult, follow the steps below to perform back lapping.

Caution

Both the reel cutter (cutting cylinder) and the bed knife (bottom blade) are edged tools. Handle them carefully, since they could cut your hands or legs.

Caution

Be careful not to inhale exhaust gas during back lapping.

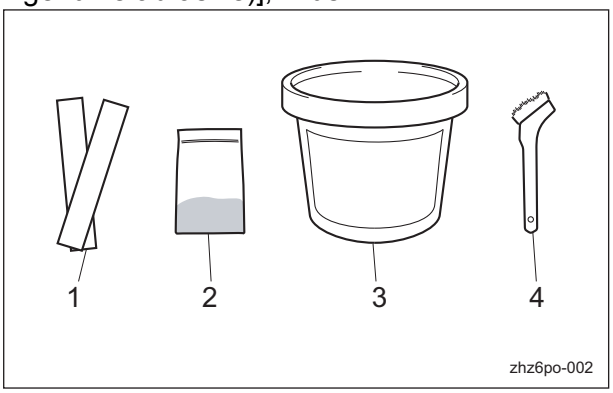
Caution

During back lapping, the reel cutter (cutting cylinder) rotates.
Keep hands and feet away from moving parts.

Caution

Do not perform lapping with any other persons.

1. Have the following items ready: Strips of newspaper, Abrasive [Back lapping powder mixed with oil; or gel compound (Baroness genuine abrasive)], Brush.



Back Lapping of Reel Cutter (Cutting Cylinder)_001

1	Newspaper
2	Back lapping powder
3	Gel compound
4	Brush

Note:
The mixing ratio for the abrasive, in volume, is one part back lapping powder to three or four parts oil.

Caution

Before cutting newspaper as a test, be sure to stop the engine and wear gloves to protect your hands.
Pay attention not to let the reel cutter (cutting cylinder) catch your gloves. Otherwise, you may injure your hand or fingers.

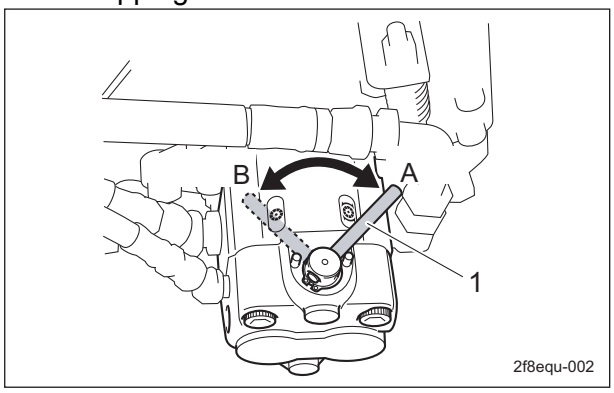
Caution

Before adjusting the blade engagement, be sure to set the reel rotation/stop switching lever for the reel motor (attached to the mower unit) to the "Stop" position.

Important

For checking the sharpness of the blade, adjust the blade engagement after cutting grass.

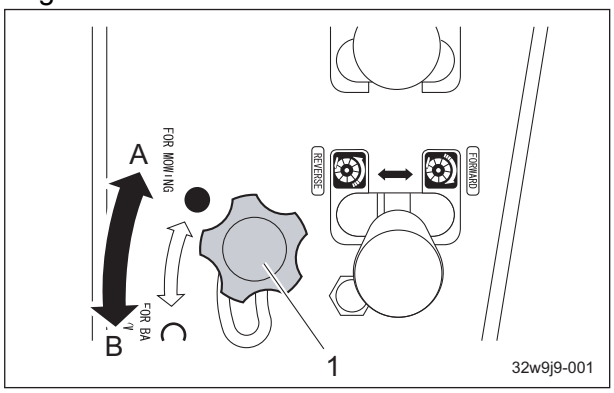
2. Insert two or three strips of newspaper into the space between the reel cutter (cutting cylinder) and the bed knife (bottom blade) at an angle of 90 degrees. Then, rotate the reel cutter (cutting cylinder) counter-clockwise (when you face the mower unit from the left) by hand to check the sharpness of the blades.
3. Check the sharpness at entire range (three or four points from left edge to right one) of the reel cutter (cutting cylinder).
4. Using a piece of chalk, mark locations on the blade that are sharp.
5. Shift only the reel rotation/stop switching levers of the hydraulic motors in the mower units to be used for back lapping to the "Rotate" position.
   Shift the levers to the "Stop" position for the mower units for which you will not perform back lapping.



Back Lapping of Reel Cutter (Cutting Cylinder)_002

1	Reel rotation/stop switching lever
A	Rotate
B	Stop

6. Loosen the anti-reverse reel rotation stopper knob, shift the stopper all the way to the "FOR BACKLAPPING" position, and then tighten the knob.



Back Lapping of Reel Cutter (Cutting Cylinder)_003

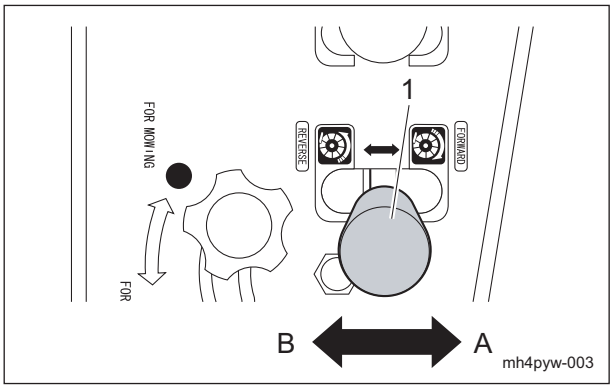
1	Anti-reverse reel rotation stopper
A	FOR MOWING
B	FOR BACKLAPPING

7. Start the engine, and run it at a low rpm.

Important

If you shift the reel rotation lever to the "REVERSE" position while the anti-reverse reel rotation stopper knob is not completely shifted to the "FOR BACKLAPPING" position, the safety device will be activated and will stop the engine.

8. Shift the reel rotation lever to the "REVERSE" (back lapping motion) position to rotate the reel cutter (cutting cylinder) in reverse.



Back Lapping of Reel Cutter (Cutting Cylinder)_004

1	Reel rotation lever
A	Cutting motion (FORWARD)
B	Back lapping motion (REVERSE)

9. Apply the abrasive evenly with the brush on the top side of reel cutter (cutting cylinder) where the newspaper was cut well or of chalk-marked locations.
   (Never apply to blunt areas.)
   Use an abrasive of one part back lapping powder (#150 - #200) to three or four parts oil.
10. Idle the machine for a while, and when contact noise is no longer heard, return the reel rotation lever to the neutral position to stop reel cutter (cutting cylinder).
11. Stop the engine.
12. Wash off or wipe off with cloth etc. the abrasive from the reel cutter (cutting cylinder), then check it for sharpness.

13. Repeat steps 2 to 12 until the entire range (three or four points from left edge to right one) of the reel cutter (cutting cylinder) will be uniformly sharpened.
14. Finally, apply abrasive to the entire blade width of the reel cutter (cutting cylinder) and perform final back lapping.
15. Stop the rotation of the reel cutter (cutting cylinder), stop the engine, and then carefully and thoroughly wash off any remaining abrasive.
16. While checking the blade for sharpness, adjust blade engagement.

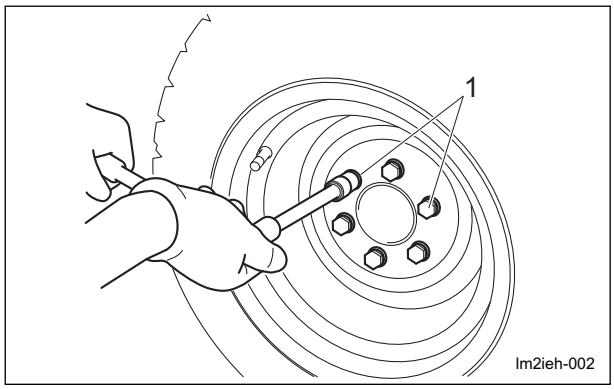
Maintenance (Main Body)

Removing/Installing Tires

Front Tires

Follow the steps below to remove the front tires:

1. Loosen the bolts.



Front Tires_001

1	Heat-treated bolt

2. Securely place the jack beneath the jack-up point of the front left/right frame area, and then raise it until the tire lifts off the ground. (See "Jack-up Points" (Page 5-6) .)
3. Remove the bolts.
4. Remove the tire from the wheel mounting seat.

Caution

Refer to the Tightening Torque table.
Note that the Baroness product warranty may not apply to defects caused by incorrect or overtorque tightening etc.

Important

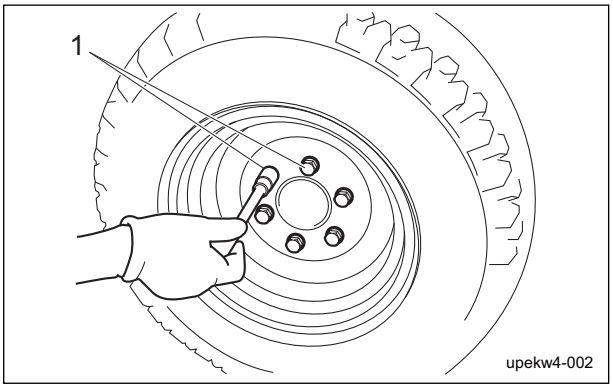
Tighten the bolts in the tightening order (diagonally).

For installing the front tires, reverse the removing procedure.

Rear Tire

Follow the steps below to remove the rear tires:

1. Loosen the bolts.



Rear Tires_001

1	Heat-treated bolt

2. Securely place the jack beneath the jack-up point of the rear frame area, and then raise it until the tire lifts off the ground. (See "Jack-up Points" (Page 5-6) .)
3. Remove the bolts.
4. Remove the tire from the wheel mounting seat.

Caution

Refer to the Tightening Torque table.
Note that the Baroness product warranty may not apply to defects caused by incorrect or overtorque tightening, etc.

Important

Tighten the bolts in the tightening order (diagonally).

For installing the rear tires, reverse the removing procedure.

Adjustment of Belt Tension

Caution

Be sure to stop the engine before adjusting the belts.

Important

Make sure that the belt has the specified amount of tension.

If the belt becomes slack due to frequent use, it may jump or slip.
In addition, if it is overtightened, it may wear prematurely.
If necessary, adjust it, and always check the belt for appropriate tension.

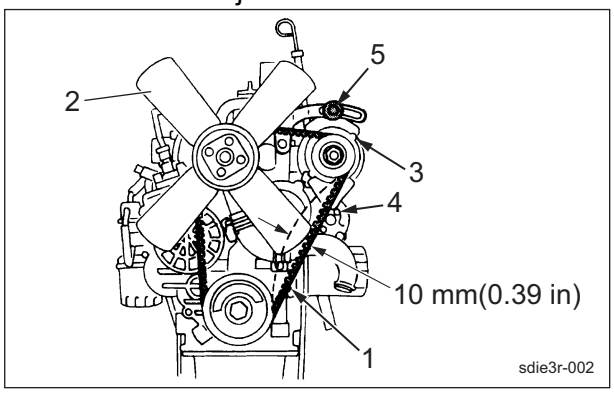
Fan Belt

Caution

Be sure to stop the engine before adjusting the belts.

For details on handling the engine, please refer to the separate Engine Operating Manual.

1. Press the middle of the belt with your finger to check the belt tension.
2. If the belt is too slack, loosen bolts A and B (that affix the alternator), then move the alternator to adjust the tension.



Fan Belt_001

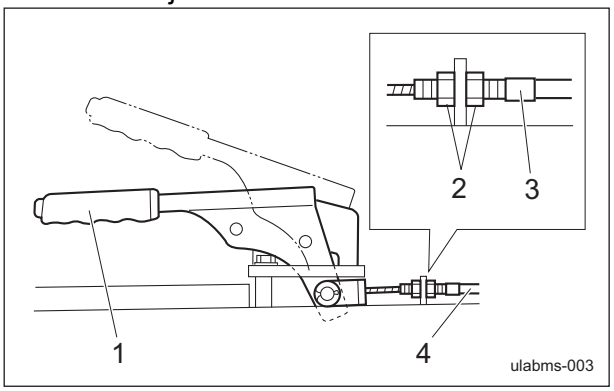
1	Fan belt
2	Blade
3	Alternator
4	Bolt A
5	Bolt B

Adjustment of Parking Brake

Danger

If the brake wire is cut, the machine will be unable to stop. This would be extremely dangerous.
If the brake wire is cracked or damaged, replace it with a new one immediately.
If the parking brake is not sufficiently effective when you pull the parking brake lever, adjust the brake wire.

Adjust the parking brake by tightening the brake wire adjustment bolt.



Adjustment of Parking Brake_001

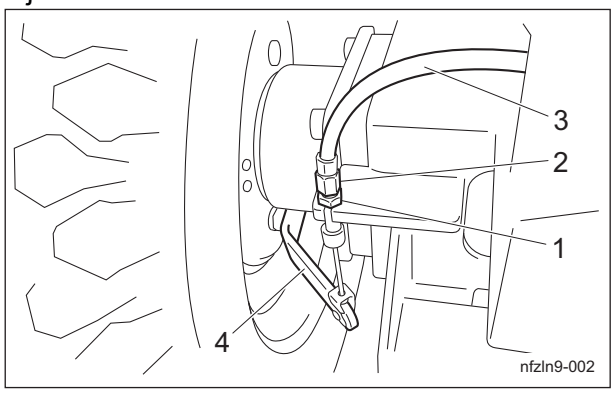
1	Parking brake lever
2	Lock nut
3	Adjustment bolt
4	Brake wire

Adjustment of Brake

Danger

If the brake wire is cut, the machine will be unable to stop. This would be extremely dangerous.
If the brake wire is cracked or damaged, replace it with a new one immediately.
If the brake is not sufficiently effective, adjust the brake wire.

Adjust the brake by tightening the brake wire adjustment bolt.



Adjustment of Brake_001

1	Lock nut
2	Adjustment bolt
3	Brake wire
4	Brake lever

Break-in of Brakes

If the brake shoes or brake pads are worn, replace them with new ones.
Immediately after replacement, drive to break in the brakes if the effectiveness of the brakes is low.
While driving, lightly operate the brakes to break in the contact areas.

Adjusting the Neutral Position of the Piston Pump

Caution

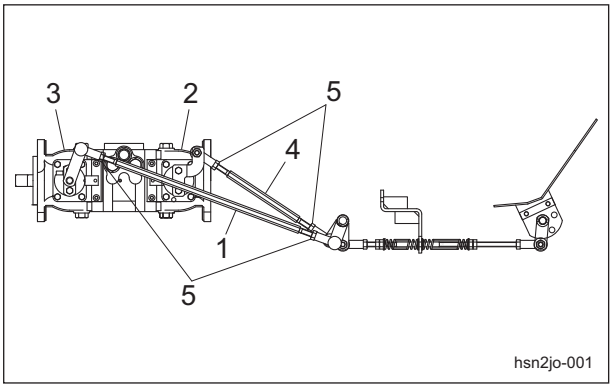
Make sure not to touch rotating tires.

Caution

When adjusting the neutral position, pay close attention to abrupt start of the machine.
Place the jacks beneath the jack-up points, and then lift the machine until all the tires get off the ground.

If the machine moves forward or backward while the traveling pedals are released, they are not set to the neutral position.
Follow the steps below to make adjustments.

1. Stop the engine.
2. Place the jacks beneath the jack-up points, and then lift the machine off the ground. Use stable jack stands, and raise the machine until the tires lift off the ground. (See "Jack-up Points" (Page 5-6) .)
3. Start the engine, and rev it up to the maximum rpm.
4. Adjust the neutral position.
   [1] If the front tires rotate forward, loosen the lock nuts, then turn the front wheel rod to shorten it.
   [2] If the front tires rotate in reverse, loosen the lock nuts, then turn the front wheel rod to extend it.



Adjusting the Neutral Position of the Piston Pump_001

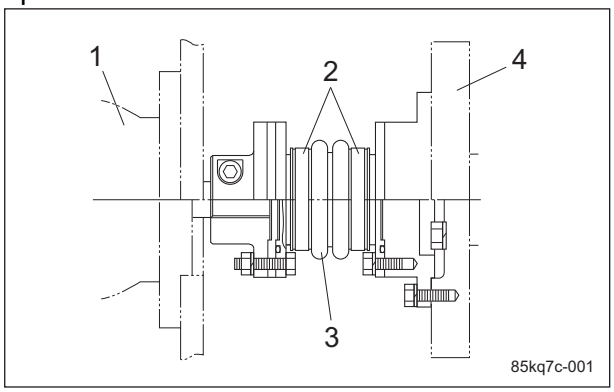
1	Rear wheel rod
2	Front wheel pump
3	Rear wheel pump
4	Front wheel rod
5	Lock nut

5. Find the position where the front wheels stop, and then tighten the lock nuts.
6. Follow the same steps to adjust the rear wheels.

Change of Constant Velocity Joint

> **Caution**
>
> Do not use any other grease than the grease for the NTN constant velocity joint.

If grease leaks from the joint and attaching portion or boot band attaching portion, replace the boot and O-ring etc.
You cannot reuse the boot band. Be sure to replace it with a new one.



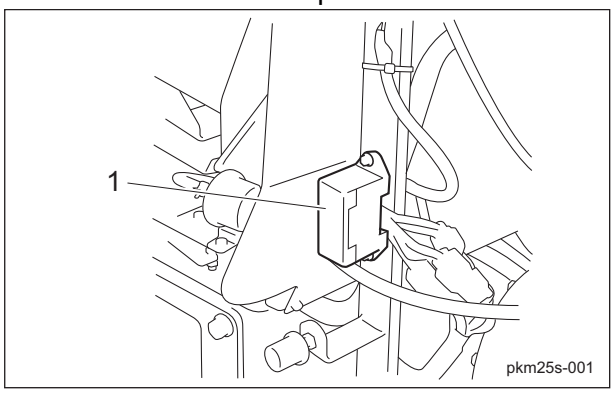
Change of Constant Velocity Joint_001

1	Hydraulic pump
2	Boot band
3	Boot
4	Engine

Change of Fuse

Fuse Box

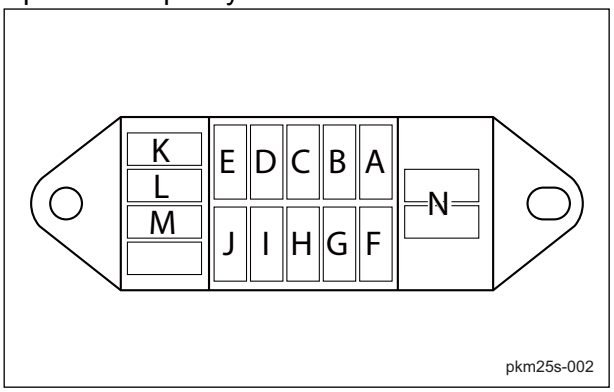
The fuse box includes spare fuses and tools.



Fuse Box_001

1	Fuse box

The machine uses a mini fuse for automobiles.
Replace an old fuse with a new fuse of the specified capacity.

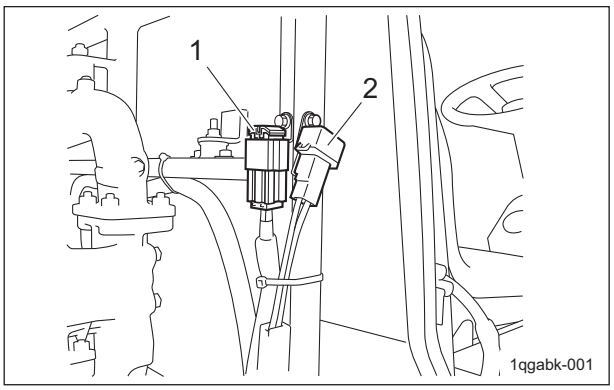


Fuse Box_002

A	5A	Proximity sensor, reel rotation stop solenoid
B		Charge lamp, oil pressure lamp (engine oil pressure lamp), water temperature gauge, buzzer, hour meter, fuel gauge
C		Fuel pump
D		Glow lamp (thermo-start lamp)
E		Glow lamp timer
F		Starter relay
G		Engine stop solenoid
H		Alternator (IG)
I		Glow lamp timer
J	15 A	Lights
K		Spares (5 A x 2, 15 A x 1)
L		
M		
N	Tool	

Fusible Link

Fuse capacities of the fusible links are 30 A and 50 A.



Fusible Link_001

1	Fusible link (50 A)
2	Fusible link (30 A)

Long-Term Storage

Before Long-Term Storage

- Remove dirt, grass clippings, debris, oil stains etc. completely.
- Supply oil and apply grease to appropriate parts.
- Remove the battery.

EC Declaration of Conformity

We

Manufacture's Name:	Kyoeisha Co., Ltd.
Manufacture's Address:	1-26 Miyuki-cho, Toyokawa, Aichi-pref. 442-8530 Japan

declare that

Product:	Ride-on Lawnmower
Make:	BARONESS
Type:	LM283
Starting Serial No.:	10125

compiler of the technical file

Name:	Kyoeisha U.K.Ltd.
Address:	Unit 5 Hatch Industrial Park Grewell Road,Basingstke Hampshire RG24 7NG, the United Kingdom

in accordance with the following Directives :

2006/42/EC	The Machinery Directive and its amending directives

has been designed and manufactured using the following specifications :

ISO 12100 : 2010
ISO 5395-1 : 2013
ISO 5395-3 : 2013

References of other Community Directives applied
2000/14/EC 、 2004/108/EC

Place: Japan
Date : January 6,2014

Signature : Kimiya Kaneko
Name : Kimiya Kaneko
Position : Quality Dept. Manager

Manufacturer's Declaration of Conformity for

Product Identification

Product :	Ride-on lawnmower
Make :	BARONESS
Type :	LM283
Version(s) :	Not Applicable
Starting Serial No. :	10053
Measured Sound Power Level :	LWA **98.63** dB
Guaranteed Sound Power Level :	LWA **103** dB
Manufacturer	
Name :	Kyoeisha Co., Ltd.
Address :	1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japan

Technical Documentation

Keeper's Name :	Kyoeisha Co., Ltd.
Keeper's Address :	1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japan

Conformity Assessment Procedure : Internal Control of Production with Assessment of Technical Documentation and Periodical Checking (Annex VI) of 2000/14/EC-2005/88/EC

Involved Notified Body

Name :	SNCH
Address :	11, Route de Sandweiler 5230 Sandweiler Luxembourg

Technical Construction File

Date :	December 8, 2011
Technical Construction File No. :	TCLM283-01
Test Laboratory	TUV Rheinland Luxemburg GmbH 2a, Kalchesbruck L-1852 Luxembourg

Certificate / Report No. : SNCH*2000/14*2005/88*1837*01/TCLM283-01

Means of conformity

The product is in conformity with the Directive relating to the noise emission in the environment by equipment for use outdoors 2000/14/EC-2005/88/EC, in accordance with Article 12 of the Directive.

References of other Community Directives applied

2006/42/EC , 2004/108/EC

Signature :

Kimiya Kaneko

Kimiya Kaneko
Manager
Quality Dept.
Kyoeisha Co., Ltd.

Date : January 30, 2012

BARONESS®

Quality on Demand

KYOEISHA CO.,LTD.

Head Office 1-26, Miyuki-cho, Toyokawa, Aichi-Pref. 442-8530 Japan.
Tel : (0533) 84 - 1390
Fax : (0533) 89 - 3623

LM283---UM--GBZ/14E-00-S.K C