"Required reading"
Read this manual before using the machine.
California Proposition 65

(For California, USA)

⚠️ WARNING:
Operating, servicing and maintaining a passenger vehicle or off-road vehicle can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle. For more information go to www.P65Warnings.ca.gov/passenger-vehicle.

EU Emission Control (Stage V)

(For Europe)

Important
No deliberate tampering with or misuse of the engine emissions control system should take place.
Make repairs immediately if the fault codes of PCD (Particulate Control Diagnostic) and NCD (NOx Control Diagnostic) appear.
Tampering with and use without effect of the engine emissions control system are regulatory infringements and they are penalized.

California Spark Arrester

(For California, USA)

⚠️ Warning
Operation of this equipment may create sparks that can start fires around dry vegetation.
A spark arrester may be required.
The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.

The DPF installed on the engine of this machine meets requirements of California Public Resource Code Section 4443.
Thank you for purchasing the Baroness product. This manual describes the proper handling, adjustment, and inspection of your product. We hope you will use the product safely, and take advantage of its best performance.

**Keeping The Owner's Operating Manual**

Keep this Manual in the bag located in the rear of the seat.

---

**Keeping The Owner's Operating Manual_001**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bag</td>
</tr>
</tbody>
</table>
Read this manual carefully to ensure that you thoroughly understand how to properly operate and maintain the product, and to avoid causing injury to yourself or others.

The operator is responsible for operating the product properly and safely.

Maintenance should only be performed by a certified specialist.

If you have any questions concerning maintenance or genuine parts, please contact a Baroness dealer or Kyoeisha.

When making inquiries about the product, please specify the product's model designation and serial number.

When loaning or transferring the product, please also provide this manual together with the product.

Kyoeisha Co., Ltd.

**Warning Symbols**

This manual uses the following warning symbols for handling precautions that are important for your safety.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="696cq5-001" alt="Warning" /></td>
<td>Indicates the articles regarding “Danger,” “Warning,” or “Caution.” Those articles describe important safety precautions and so read them carefully to understand completely before operating the machine. Failure to adequately follow these safety precautions may cause an accident.</td>
</tr>
<tr>
<td><img src="696cq5-001" alt="Danger" /></td>
<td>Indicates that serious injury or death will occur if the warning is ignored.</td>
</tr>
<tr>
<td><img src="696cq5-001" alt="Warning" /></td>
<td>Indicates that serious injury or death may occur if the warning is ignored.</td>
</tr>
<tr>
<td><img src="696cq5-001" alt="Caution" /></td>
<td>Indicates that injury or damage to property may occur if the warning is ignored.</td>
</tr>
<tr>
<td><img src="696cq5-001" alt="Important" /></td>
<td>Indicates precautions on the mechanism of the machine.</td>
</tr>
</tbody>
</table>
Precautionary Statement

⚠️ Caution

The information described in this manual is subject to change for improvement without prior notice.
When replacing parts, be sure to use genuine Baroness parts or parts designated by Kyoeisha.
Note that the Baroness product warranty may not apply to defects caused by the use of parts from other companies.

Prior to use, carefully read the following manuals to thoroughly understand the contents for safe and correct operation.
- Baroness Owner's Operating Manual
- The Engine's Owner's Manual
- The Battery's Owner's Manual

Purpose

This product is intended for cutting turf grass at golf courses.
Do not use this product in any way other than its intended purpose, and do not modify this product.
Operating this product for other purposes and modifying it may be very dangerous and may cause damage to the product.
In addition, this product is not authorized for operation as a special motor vehicle. Do not operate it on public roads.
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Failure to adequately follow these safety precautions may cause an accident resulting in injury or death.

**Danger**

This product is designed to ensure safe operation and has been tested and inspected thoroughly before shipment from the factory. The product is equipped with safety devices to prevent accidents. However, whether the product demonstrates its original performance level depends on the manner in which it is operated and handled, as well as the manner in which it is managed on a daily basis. Inappropriate use or management of the product may result in injury or death. Observe the following safety instructions to ensure safe operation.

### Safe Operating Practices

#### Training

1. Read this manual and other training material carefully. Be familiar with the controls, safety signs, and the proper use of the equipment.

2. If the operator or mechanic cannot read English, it is the owner's responsibility to explain this manual to them.

3. All operators and mechanics should seek and obtain professional and practical instruction. The owner is responsible for training the users. Such instruction should emphasize:
   - The need for care and concentration when working with ride-on machines.
   - Control of a ride-on machine sliding on a slope will not be regained by the application of the brake. The main reasons for loss of control are:
     - Insufficient wheel grip
     - Being driven too fast
     - Inadequate braking
     - The type of machine is unsuitable for its task
     - Lack of awareness of the effect of ground conditions, especially slopes
     - Incorrect hitching and load distribution

4. Never allow children or people unfamiliar with these instructions to use or service the machine. Local regulations may restrict the age of the operator.

5. The owner/user can prevent and is responsible for accidents or injuries occurring to themselves, other people, or property.

6. Keep in mind that the owner, operator, and mechanic are responsible for accidents or hazards occurring to other people or their property.

7. The ROPS is an integral and effective safety device. Do not remove or alter the ROPS.

8. Replace a damaged ROPS. Do not repair or alter.

9. You can find additional safety information where needed throughout this manual.

10. Determine the left and right sides of the machine from the normal operating position.

#### Preparation

1. Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job. Only use accessories and attachments approved by the manufacturer.

2. While operating, always wear substantial footwear, long trousers, hard hat, safety glasses, and ear protection. Long hair, loose clothing, or jewelry may get tangled in moving parts. Do not operate the equipment when barefoot or wearing open sandals.

3. Inspect the area where the equipment is to be used and remove all objects such as rocks, toys, and wire which can be thrown by the machine.

4. Keep children out of the operating area and under the watchful care of a responsible adult other than the operator.
5. Exercise care in the handling of fuel.

**Warning**

Fuel is highly flammable. Take the following precautions.

1. Store fuel in containers specifically designed for this purpose.
2. Add fuel before starting the engine. Never remove the cap of the fuel tank or add fuel while the engine is running or when the engine is hot.
3. Refuel outdoors only and do not smoke while refueling.
4. If fuel is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until petrol vapours have dissipated.
5. Replace all fuel tanks and container caps securely.

6. Check that operator's presence controls, safety switches and shields are attached and functioning properly. Do not operate unless they are functioning properly.
7. If the brake operation is faulty or the parking brake lever has noticeable play, be sure to adjust or repair them before operating the machine.
8. Replace faulty mufflers.
9. On multi-cylinder/multi-reel machines take care as rotating one cylinder/reel can cause other cylinder/reels to rotate.

**Operation**

1. Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.
2. Only operate in good light, keeping away from holes and hidden hazards.
3. Before attempting to start the engine, disengage all attachments, shift into neutral, and engage the parking brake. Only start engine from the operator’s position. Use seat belts if provided.
4. Remember there is no such thing as a safe slope. Travel on grass slopes requires particular care. To guard against overturning:
   1. Do not stop or start suddenly when going up or downhill.
   2. Engage clutch slowly, always keep machine in gear, especially when traveling downhill.
   3. Machine speeds should be kept low on slopes and during tight turns.
   4. Stay alert for humps and hollows and other hidden hazards.
   5. Never operate across the face of the slope, unless the machine is designed for this purpose.
   6. Never drive the machine on a slope with an angle of gradient that is greater than that specified or in a place where there is a danger of the machine slipping.
5. Use extra care while operating machine with a grass catcher or other attachments. They can affect the stability of the machine.
6. Never operate the machine with damaged guards, shields, or without safety protective devices in place. Be sure all interlocks are attached, adjusted and functioning properly.
7. Do not change the engine governor settings or overspeed the engine. Operating the engine at excessive speed may increase the hazard of personal injury.
8. Do the following before leaving the operator’s position.
    1. Stop on level ground.
    2. Disengage the power take-off and lower the attachments.
    3. Change into neutral and set the parking brake.
    4. Stop the engine and remove the key.
9. Disengage the drive to attachments, stop the engine, and remove the ignition key in the following conditions:
    1. Before refueling.
    2. Before making height adjustment unless adjustment can be made from the operator's position.
    4. Before checking, cleaning, or working the machine.
After striking a foreign object or if an abnormal vibration occurs.
Inspect the machine for damage and make repairs before restarting and operating the equipment.

10. Keep hands and feet away from the cutting units and the rotating parts.
11. Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.
12. Do not carry passengers.
13. Never operate while people, especially children, or pets are nearby.
14. Slow down and use caution when making turns and crossing roads and sidewalks.
15. Stop the blades rotating before crossing surfaces other than grass.
16. Disengage drive to attachments when transporting or not in use.
17. When using any attachments, never direct discharge of material toward bystanders nor allow anyone near the machine while in operation.
18. Do not operate the machine under the influence of alcohol or drugs.
19. Take care when loading or unloading the machine into a trailer or a truck. Load or unload the machine in a flat and safe place. Before loading or unloading, set the parking brake on the truck or trailer, stop the engine, and chock the wheels. When transporting the machine on a truck or a trailer, set the parking brake, stop the engine, and fasten the machine to the truck with a rope or other suitable restraining device that has sufficient strength. When using a loading ramp, select one with sufficient strength, length, and width and that will not cause the machine to slip.
20. Close the fuel valve before transporting the machine.
21. Use care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.
22. Do not take your eyes off the road ahead. Do not operate the machine with no hands.
23. Reduce the throttle setting during engine run-out and, if the engine is provided with a shut-off valve, turn the fuel off at the conclusion of operation.
24. Do not operate the machine when there is the risk of lightning.

Maintenance and Storage

1. Disengage drives on level ground, lower the attachments, set parking brake, stop engine and remove key from ignition. Wait for all movement to stop before adjusting, cleaning or repairing.
2. When machine is to be parked, stored, or left unattended, lower the cutting units unless a positive mechanical lock is provided.
3. To reduce the fire hazard, keep the engine, silencer/muffler, battery compartment fuel storage area, cutting unit and drives free of grass, leaves, or excessive grease. Clean up oil or fuel spillage.
4. Allow the engine to cool before storing in any enclosure.
5. Only cover the machine with a sheet after hot parts have sufficiently cooled down.
6. Never store the equipment with fuel in the tank inside a building where fumes may reach an open flame or spark.
7. If the engine is provided with a shut-off valve, shut off valve while storing or transporting.
8. Do not store fuel near flames.
9. Never allow untrained personnel to service machine.
10. Allow the engine/muffler to cool before checking/maintenance.
11. Appropriately manage and correctly use the tools necessary for servicing or adjusting the machine.
12. Use jack stands to support components when required.
13. Carefully release pressure from components with stored energy.
14. Be sure to depressurize the hydraulic system before performing maintenance operations on it such as removing hydraulic equipment.
15. Check whether line connectors in the hydraulic system are properly tightened. Before applying hydraulic pressure, check the connections of the hydraulic pressure lines and the condition of the hoses.
16. When checking the hydraulic circuit for pinhole leaks or oil leakage from nozzles, do not use your hands. Use items such as paper or corrugated cardboard to find leakage points. Be extremely careful with high-pressure oil as it may pierce your skin, resulting in an injury. If fluid is injected into the skin it must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.

17. Disconnect battery before making any repairs. Disconnect the negative terminal first and the positive last. Reconnect positive first and negative last.

18. Make sure that parts such as wires are not touching each other and that their covers have not come off.

19. Use care when checking the cylinders/reels and bed knives.

[1] Wear gloves and use caution when servicing them.

[2] Be careful during adjustment of the machine to prevent entrapment of the fingers between moving blades and fixed parts of the machine.

20. On multi-cylinder/multi-reel machines take care as rotating one cylinder/reel can cause other cylinder/reels to rotate.

21. Keep hands and feet away from moving parts. If possible, do not make adjustments with the engine running.

22. Charge batteries in an open well ventilated area, away from spark and flames. Unplug charger before connecting or disconnecting from battery. Wear protective clothing and use insulated tools.

23. Keep all parts in good working condition and all hardware tightened. Replace all worn or damaged decals.

24. Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.

25. If the fuel tank has to be drained, do this outdoors.

26. Swallowing engine coolant can cause injury or death; keep out of reach from children and pets.
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Recycle and Waste Disposal

About Recycle

Recycling battery etc. is recommended for environmental conservation and economical use of resources.
It may be required by local laws.

About Waste Disposal

Make sure that waste generated when servicing or repairing the machine is disposed of in accordance with local regulations.
(e.g. waste oil, antifreeze, rubber products, and wires etc.)
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Instruction Decals ................................... Page 3-10
## Specifications

### Model

<table>
<thead>
<tr>
<th>Specification</th>
<th>LM3210A (Type_F)</th>
<th>LM3210A (Type_R)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total length</td>
<td>124.06 in</td>
<td>129.92 in</td>
</tr>
<tr>
<td>Total width</td>
<td>144.49 in</td>
<td>144.88 in</td>
</tr>
<tr>
<td>Total height</td>
<td>92.91 in</td>
<td>93.31 in</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machine (empty fuel tank)</td>
<td>4254.92 lb</td>
<td>4276.96 lb</td>
</tr>
<tr>
<td>CR Brush (for one machine)</td>
<td>48.50 lb</td>
<td>22.0 kg</td>
</tr>
<tr>
<td>Minimum turning radius</td>
<td>125.98 in</td>
<td>320 cm</td>
</tr>
<tr>
<td><strong>Engine</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>Kubota V2403-CR-TE5B</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Vertical water-cooled 4-cycle diesel engine with turbocharger</td>
<td></td>
</tr>
<tr>
<td>Total displacement</td>
<td>148.51 cu.in.</td>
<td>2,434 cm³ (2.434 L)</td>
</tr>
<tr>
<td>Maximum output</td>
<td>43.2 kW (58.7 PS)/2,400 rpm</td>
<td></td>
</tr>
<tr>
<td>Fuel tank capacity</td>
<td>Diesel 13.47 U.S.gals</td>
<td>Diesel 51.0 dm³ (51.0 L)</td>
</tr>
<tr>
<td>Fuel consumption</td>
<td>182 g/PS • h (rated output)</td>
<td>248 g/kW • h (rated output)</td>
</tr>
<tr>
<td>Engine oil capacity</td>
<td>2.56 U.S.gals</td>
<td>9.7 dm³ (9.7 L)</td>
</tr>
<tr>
<td>Coolant volume</td>
<td>3.17 U.S.gal.</td>
<td>12.0 dm³ (12.0 L)</td>
</tr>
<tr>
<td>Hydraulic tank capacity</td>
<td>11.62 U.S.gal.</td>
<td>44.0 dm³ (44.0 L)</td>
</tr>
<tr>
<td>Operating width (Mowing width)</td>
<td>125.98 in</td>
<td>320 cm</td>
</tr>
<tr>
<td>Operating height (Mowing height)</td>
<td>0.394 - 2.362 in</td>
<td>10 - 60 mm</td>
</tr>
<tr>
<td>Blades</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td><strong>Drive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traveling</td>
<td>HST (2WD/4WD selectable)</td>
<td></td>
</tr>
<tr>
<td>Mowing</td>
<td>Hydraulic</td>
<td></td>
</tr>
<tr>
<td><strong>Speed (HST)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forward</td>
<td>2WD 0 - 9.63 mph</td>
<td>2WD 0 - 15.5 km/h</td>
</tr>
<tr>
<td></td>
<td>4WD 0 - 6.22 mph</td>
<td>4WD 0 - 10.0 km/h</td>
</tr>
<tr>
<td>Reverse</td>
<td>0 - 3.73 mph</td>
<td>0 - 6.0 km/h</td>
</tr>
<tr>
<td><strong>Efficiency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.22 acres/hour</td>
<td>33,280 m²/h (2WD : 13.0 km/h x Mowing width x 0.8)</td>
<td></td>
</tr>
<tr>
<td><strong>Maximum inclination for operation</strong></td>
<td>15 degrees</td>
<td></td>
</tr>
<tr>
<td>Tire size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front wheel</td>
<td>31 x 13.50 - 15</td>
<td>31 x 15.50 - 15</td>
</tr>
<tr>
<td>Rear wheel</td>
<td>20 x 12.00 - 10</td>
<td></td>
</tr>
<tr>
<td><strong>Tire pneumatic pressure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front wheel</td>
<td>20.30 psi</td>
<td>140 kPa (1.4 kgf/cm²)</td>
</tr>
<tr>
<td>Rear wheel</td>
<td>20.30 psi</td>
<td>140 kPa (1.4 kgf/cm²)</td>
</tr>
<tr>
<td><strong>Battery</strong></td>
<td>105D31R</td>
<td></td>
</tr>
<tr>
<td><strong>Engine plug</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The factory default maximum engine rpm is 2,600 rpm.
Sound Pressure Level

This machine was confirmed to have a continuous A-weighted sound pressure level of 88 dB by measuring identical machines in accordance with the procedure specified in ISO5395-1:2013.

Sound Power Level

This machine was confirmed to have a sound power level of 105dB by measuring identical machines in accordance with the procedure specified in ISO5395-1:2013.

Vibration Level

Hand-Arm Vibration

This machine was confirmed not to exceed a vibration level of 2.5 m/s² to hands and arms by measuring identical machines in accordance with the procedure specified in ISO 5395-1:2013.

Whole Body Vibration

This machine was confirmed not to exceed a vibration level of 0.5 m/s² to the whole body by measuring identical machines in accordance with the procedure specified in ISO 5395-1:2013.

Carbon Dioxide (CO₂) Emissions Measurement

For CO₂ emissions measurement on the engine of this machine, refer to the engine's owner's manual.
Names of Each Section

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Seat</td>
</tr>
<tr>
<td>2</td>
<td>Steering handle</td>
</tr>
<tr>
<td>3</td>
<td>Tilt lever</td>
</tr>
<tr>
<td>4</td>
<td>Diff-lock switch</td>
</tr>
<tr>
<td>5</td>
<td>Parking brake lever</td>
</tr>
<tr>
<td>6</td>
<td>Brake pedal</td>
</tr>
<tr>
<td>7</td>
<td>Forward pedal</td>
</tr>
<tr>
<td>8</td>
<td>Reverse pedal</td>
</tr>
<tr>
<td>9</td>
<td>Mower unit up/down lever</td>
</tr>
<tr>
<td>10</td>
<td>Throttle knob</td>
</tr>
<tr>
<td>11</td>
<td>Reel rotation switch</td>
</tr>
<tr>
<td>12</td>
<td>2WD/4WD selector switch</td>
</tr>
<tr>
<td>13</td>
<td>Reel rotation/stop switching lever</td>
</tr>
<tr>
<td>14</td>
<td>Fuel tank</td>
</tr>
<tr>
<td>15</td>
<td>Hydraulic tank</td>
</tr>
<tr>
<td>16</td>
<td>Hood</td>
</tr>
<tr>
<td>17</td>
<td>Radiator</td>
</tr>
<tr>
<td>18</td>
<td>Oil cooler</td>
</tr>
<tr>
<td>19</td>
<td>Radiator cover</td>
</tr>
<tr>
<td>20</td>
<td>Light</td>
</tr>
<tr>
<td>21</td>
<td>Mower unit #1</td>
</tr>
<tr>
<td>22</td>
<td>Mower unit #2</td>
</tr>
<tr>
<td>23</td>
<td>Mower unit #3</td>
</tr>
<tr>
<td>24</td>
<td>Mower unit #4</td>
</tr>
<tr>
<td>25</td>
<td>Mower unit #5</td>
</tr>
</tbody>
</table>
Regulation Decals

Positions of Regulation Decals

<table>
<thead>
<tr>
<th>Position</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Serial number plate</td>
</tr>
<tr>
<td>B</td>
<td>Specification decal</td>
</tr>
<tr>
<td>C</td>
<td>Noise emission decal</td>
</tr>
<tr>
<td>D</td>
<td>Year of manufacture decal</td>
</tr>
<tr>
<td>E</td>
<td>ROPS compliance decal</td>
</tr>
<tr>
<td>F</td>
<td>ROPS caution decal</td>
</tr>
<tr>
<td>G</td>
<td>Battery capacity decal</td>
</tr>
<tr>
<td>H</td>
<td>Recycle decal</td>
</tr>
<tr>
<td>I</td>
<td>Battery danger decal</td>
</tr>
<tr>
<td>J</td>
<td>Indicating diesel fuel decal</td>
</tr>
<tr>
<td>K</td>
<td>California proposition 65 decal (riding type)</td>
</tr>
<tr>
<td>L</td>
<td>Spark arrester warning decal</td>
</tr>
</tbody>
</table>

Description of Regulation Decals

Serial Number Plate

The serial number plate indicates the model and serial number of the machine.

Specification Decal

(For Europe)
CE mark indicates that the machine sold in the EU nations complies with the EU requirements.
The Specification decal indicates the CE marking, model, and weight, etc.

Noise Emission Decal

(For Europe)
The noise emission decal indicates the sound power level determined by measuring identical machines in accordance with the procedure specified in the EC directives.
**Year of Manufacture Decal**

(For Europe)
The year of manufacture decal indicates the year when this machine was manufactured.

**Battery Capacity Decal**

(For Europe)
The battery capacity decal indicates the capacity by 20HR and CCA.

**ROPS Compliance Decal**

The ROPS compliance decal indicates the manufacturer, model, etc., in accordance with International Standard ISO 21299:2009.

**Recycle Decal**

Recycle Decal illustrates Recycle Mark in accordance with local regulation.

**ROPS Caution Decal**

ROPS caution decal describes the following caution messages.
- Replace damaged ROPS.
- Do not repair or revise.
Battery Danger Decal

(For USA)
Battery Danger Decal describes handling precautions for battery.

Indicating Diesel Fuel Decal

(For USA)
Indicating diesel fuel decal describes the type of fuel to be used.
Use Ultra Low Sulfur Diesel Fuel (sulfur-free diesel).

California Proposition 65 Decal (Riding Type)

(For the State of California, USA)
California Proposition 65 decal describes the warning messages as required by California Proposition 65.

Spark Arrester Warning Decal

(For the State of California, USA)
Spark arrester warning decal describes the warning messages as required by California Public Resources Code.
Safety Signs and Instruction Signs

About Safety Signs and Instruction Signs

Important

Safety decals and instruction decals are attached to this product. Make sure that they are preserved in their entirety. If they are damaged, become dirty, or peel off, replace them with new ones.

Part numbers for decals that need to be replaced are listed in the parts catalog. Order them from a Baroness dealer or Kyoeisha.

Positions of Safety Signs and Instruction Signs

Positions of Safety Signs and Instruction Signs_001

Positions of Safety Signs and Instruction Signs_002

Positions of Safety Signs and Instruction Signs_003

Positions of Safety Signs and Instruction Signs_004

Positions of Safety Signs and Instruction Signs_005
1. Operation decal
2. Start/stop decal (reel)
3. Caution to mutilation decal
4. Caution for high temperatures decal
5. Caution to injury decal
6. Caution to rotating object decal
7. Hydraulic oil icon
8. Diesel fuel icon
9. Fire prohibited decal
10. Caution for mower lock decal
11. Caution for spouting coolant decal
12. Caution to getting pinched decal
13. Caution exhaust gas decal
14. Engine warning lamp decal (EN)
15. Caution to noise decal
16. Maintenance decal
Description of Safety Decals and Instruction Decals

Operation Decal

LM3210A0901Z0
Decal, operation

1.

⚠️ Warning
Read the Owner’s Operating Manual.

2.

⚠️ Warning
Apply the parking brake, stop the engine, remove the ignition key, and then leave the machine.

3.

⚠️ Caution
Flying objects - Be sure that people around the machine keep a safe distance away.

4.

⚠️ Warning
May cut your hand or leg - Keep hands and feet away from moving parts.

5.

⚠️ Caution
Rollover - Do not work on slopes of 15 degrees or more. When you descend a slope, lower the mower units and then drive at low speed. For ROPS equipped machine, fasten your seatbelt.

Start/Stop Decal

K4205001840
Sticker, reel start/stop

1.

⚠️ Warning
Read the Owner’s Operating Manual.

2. Procedure to Start Engine
   Read the Owner’s Operating Manual.
   [1] Sit on the seat.
   [2] Turn the key to the "ON (GLOW)" position, and then wait for the "BARONESS" logo to turn off.
   [3] Turn the key to the "START" position.
   [4] Depress the brake pedal to release the parking brake.

3. Procedure to Stop Engine
   Read the Owner’s Operating Manual.
   [1] Set the reel rotation switch to the "OFF" position, and then raise the mower units.
   [3] Turn the key to the "OFF" position, and then remove it.
Caution to Mutilation Decal

K4205001600
DECAL, CAUTION TO MUTILATION

Warning
May cut your hand or leg - Stop the cutter rotation and engine. Otherwise you may get injured.

Caution to Mutilation Decal_001

Caution for High Temperatures Decal

K4205001920
Decal, caution for high temperatures

Caution
High temperature - Do not touch. Otherwise, you will get burned.

Caution for High Temperatures Decal_001

Caution to Injury Decal

K4205001580
Decal, caution to injure

Caution
May pinch - There is a risk of being pinched.

Caution to Injury Decal_001

Caution to Rotating Object Decal

K4205001530
Decal, caution to rotating object

Warning
Watch for rotating parts - Keep your hands away from the belts while the engine is running.

Caution to Rotating Object Decal_001
Hydraulic Oil Icon

K4209000980
Hydraulic oil icon
Read the Owner's Operating Manual.

Diesel Fuel Icon

K4209001000
Diesel fuel icon
Use diesel fuel.

Fire Prohibited Decal

K4205001940
Decal, fire prohibited

<n:warning>
Keep away from fire.
</n:warning>

Caution for Mower Lock Decal

K4205001900
Decal, caution for mower lock
Lock the mower units when traveling or storing with the mower units #4 and 5 raised.
Caution for Spouting Coolant Decal

K4205001970
Decal, caution for spouting coolant

⚠️ Caution
Caution for spouting coolant - Do not open while hot.
High temperature - Do not touch. Otherwise, you will get burned.

Caution to Getting Pinched Decal

K4205001930
Decal, caution to getting pinched

⚠️ Caution
May pinch - There is a risk of being pinched.

Caution Exhaust Gas Decal

K4205001950
Decal, caution exhaust gas

⚠️ Warning
Caution for exhaust gas

Engine Warning Lamp Decal

K4205002270
Decal, Engine Warning Lamp

⚠️ Warning
Engine Warning Lamp Decal_001
Caution to Noise Decal

K4205002090
Decal, caution to noise

Maintenance Decal

K4209001550
Label, maintenance
The maintenance decal indicates the necessary inspection and maintenance items for this machine.
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LM3210A
Handling Instructions

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Inspections

Inspect the machine according to the maintenance schedule so that you will be able to take advantage of its optimum performance for a long period of time.

Reel Cutter (Cutting Cylinder) and Bed Knife (Bottom Blade)

Inspection of Reel Cutter (Cutting Cylinder) and Bed Knife (Bottom Blade)

Caution

Wear gloves when touching edged tools to avoid cutting your hands.

The reel cutter (cutting cylinder) and bed knife (bottom blade) may become dull due to frequent use, objects crushed during mowing, or damage caused during transportation. Inspect the reel cutter (cutting cylinder) and bed knife (bottom blade), and if necessary, adjust the blade engagement, perform back lapping, or resharpen or replace the reel cutter (cutting cylinder) and the bed knife (bottom blade).

1. Check to see whether or not the edge of the reel cutter (cutting cylinder) and the bed knife (bottom blade) are too blunt to cut.
2. Make sure that the reel cutter (cutting cylinder) and the bed knife (bottom blade) are not cracked.
3. Check to see how much the reel cutter (cutting cylinder) and the bed knife (bottom blade) are worn.
4. Make sure that the reel cutter (cutting cylinder) and the bed knife (bottom blade) have not changed color due to heat from grinding.
5. Check to see whether or not the second edge face (relief) remains at the point of reel cutter (cutting cylinder).
6. Make sure that the welding between the reel cutter (cutting cylinder) and the disc has not come off.

Cover

Inspection of Covers

Warning

If you have removed the covers during inspection, be sure to securely install them in their original positions. If a cover remains removed, the operator may come into contact with rotating parts or belts and foreign objects may fly off, possibly resulting in injuries.

1. Make sure that there is no wear or deterioration of the reel cover and all other covers.
2. Make sure that there is no damage to the reel cover and all other covers.
3. Make sure that there is no interference with moving parts due to deformation of the reel cover and all other covers.
4. Make sure that the reel cover and all other covers are installed in their appropriate positions.

Roller

Inspection of Rollers

Bearing wear due to frequent use or bearing damage caused by water infiltration may prevent the roller from rotating smoothly. Inspect the roller and, if necessary, replace parts such as oil seals and bearings.

1. Make sure that there is no abrasion nor adhesion of the roller.
2. Make sure that there is no wear of the roller shaft.
3. Make sure that there is no wear nor damage of the oil seal.
4. Make sure that there is no wear nor rust of the bearing.
5. Make sure that there is no play in the roller shaft.
CR brush

Inspection of CR Brush

Note:
Depending on the specifications, this function may not be available.
Bearing wear due to frequent use or bearing damage caused by water infiltration may prevent the brush from rotating smoothly.
Inspect the brush and, if necessary, replace parts such as bearings.
1. Make sure that there is no abrasion nor adhesion of the brush.
2. Make sure that there is no wear of the brush shaft.
3. Make sure that there is no abnormality in the brush.
4. Make sure that there is no play in the fit of the bearing and the housing.
5. Make sure that there is no play in the brush shaft.

Scrapper

Inspection of Rear Scraper (Wire Type)

Note:
Depending on the specifications, this function may not be available.
The operating efficiency may be reduced due to frequent use, objects crushed during operation, or damage during transportation.
Inspect the scraper, and replace any parts if necessary.
1. Make sure that there are no breaks nor sagging in the scraper (wire).
2. Make sure that there is no contact between the scraper and roller.

Radiator Cover

Inspection of Radiator Cover

1. Make sure that there is no damage to the radiator cover.
2. Make sure that the radiator cover is not contaminated.

Cleaning of Radiator Cover

Important
An unclean radiator cover may cause overheating or damage to the engine. It may also cause malfunction of the hydraulic system.

If the radiator cover has been contaminated with dust, be sure to clean it.
After operating the machine in a dusty environment, it is important to remove dust from the cover as soon as possible.
1. Open the radiator cover.
2. Carefully clean the front and back of the radiator cover with water or compressed air.
Radiator

**Inspection of Radiator**

1. Make sure that there is no damage to the radiator.
2. Make sure that the radiator is not contaminated.

**Cleaning of Radiator**

**Important**

An unclean radiator may cause overheating or damage to the engine. It may also cause malfunction of the hydraulic system.

**Important**

Do not use solid objects, such as a spatula or screwdriver, or high-pressure water to clean the radiator or oil cooler. Otherwise, special fins or tubes may be damaged, possibly resulting in reduced cooling performance or coolant leakage.

If the radiator has been contaminated with dust, be sure to clean it. After operating the machine in a dusty environment, it is important to remove dust as soon as possible.

1. Open the radiator cover.
2. Unlock the rubber catches on the left and right of the oil cooler, and then tilt the oil cooler.
3. Carefully clean the front and back of the radiator with water or compressed air.

Coolant

**Inspection of Coolant**

**Caution**

Do not touch the radiator or coolant during engine operation or immediately after the engine has been turned off. Otherwise, you may get burned.

**Caution**

Inspection should take place after the engine has well cooled down.

1. Make sure that the coolant level in the reserve tank is between "FULL" and "LOW".

![Image of Coolant](image-url)
Coolant Supply

**Caution**
Do not touch the radiator or coolant during engine operation or right after the engine has been turned off. Due to high temperatures, doing so could cause burns.

**Caution**
Supply coolant after the engine has well cooled down.

**Caution**
The radiator cap is pressurized. If you remove the radiator cap while the engine is overheated, hot steam will burst out, possibly resulting in burns. Make sure that the water temperature and pressure are reduced, and then grab the cap with a thick cloth and gradually open the cap.

**Important**
When you supply coolant, be sure to use clean water, such as tap water.

**Important**
tightly close the radiator cap. If the cap is loose or incorrectly installed, water may leak and the engine may overheat.

1. If the coolant level in the reserve tank is lower than the "LOW" mark, open the reserve tank cap and fill the tank with clean water up to the "FULL" mark.

2. If no coolant is in the reserve tank, follow the steps below to fill the tank with clean water.

   [1] Open the radiator cap, and then supply clean water up to the opening.

   [2] Open the reserve tank cap, and then supply clean water up to the "FULL" mark.

Oil Cooler

**Inspection of Oil Cooler**

1. Make sure that there is no damage to the oil cooler.
2. Make sure that the oil cooler is not contaminated.

**Cleaning of Oil Cooler**

**Important**
An unclean oil cooler may cause malfunction of the hydraulic system.

**Important**
Do not use solid objects, such as a spatula or screwdriver, or high-pressure water to clean the radiator or oil cooler. Otherwise, special fins or tubes may be damaged, possibly resulting in reduced cooling performance or coolant leakage.

If the oil cooler has been contaminated with dust, be sure to clean it. After operating the machine in a dusty environment, it is important to remove dust as soon as possible.

1. Open the radiator cover.
2. Unlock the rubber catches on the left and right of the oil cooler, and then tilt the oil cooler.

3. Carefully clean the front and back of the oil cooler with water or compressed air.

**Hydraulic Oil**

**Inspection of Hydraulic Oil**

The oil gauge is on the side of the hydraulic tank.

1. Lower the mower units and maintain that position on a level surface.
2. Make sure that the oil level is at the middle of the oil gauge.

3. Check underneath the machine for oil leakage.

**Hydraulic Oil Supply**

- **Important**
  - Do not mix different types of oil.

- **Important**
  - Use Shell Tellus S2M46 (or equivalent) as hydraulic oil.

1. If the oil level is low, remove the left tank cover, and then open the tank cap and supply oil.

2. Tighten the tank cap securely.
3. Start the engine, raise and lower the mower units, and turn the steering wheel left and right. Move forward and reverse repeatedly several times.
4. Raise the mower units and maintain that position on a level surface, and then check to see if the oil level is at the middle of the oil gauge. If necessary, supply oil.
5. Check underneath the machine for oil leakage.
6. Attach the left tank cover.
Air Cleaner

Inspection of Air Cleaner

Liners and piston rings so that the engine will always operate smoothly. A contaminated air cleaner element may cause malfunction of the engine.

1. Inspect the air cleaner by checking the vacuum indicator.
   If the air cleaner element is contaminated, the vacuum indicator will display a red ring.

2. Make sure that there is no damage to the air cleaner.

3. Make sure that the air cleaner is not contaminated.

Cleaning of Air Cleaner

A contaminated air cleaner element may cause malfunction of the engine. To maximize the life of the engine, clean the air cleaner properly.

**Important**

The inner element cannot be cleaned.

1. Follow the steps below to clean the outer element.
   [1] Remove the clips from the three locations, remove the air cleaner cap, and then remove the outer element.
   [2] While paying close attention not to damage the outer element, tap a solid portion of the outer element or blow compressed air from its inside to remove dust and dirt.
   If the outer element is extremely contaminated, replace it with a new one.

2. Press the reset button for the vacuum indicator.

3. Attach the outer element to the air cleaner body.

4. Replace the air cleaner cap, and then fix it securely using the clips.
Battery

Inspection of Battery

**Danger**

Keep away from fire while inspecting or charging the battery. The battery may explode.

**Warning**

Do not allow the battery fluid level to become lower than the LOWER LEVEL (minimum fluid level line). The battery may explode if it is used or charged while the battery fluid level is at the LOWER LEVEL (minimum fluid level line).

**Caution**

Perform operations after the muffler and engine have sufficiently cooled. Otherwise, you may suffer burns.

1. Clean the areas around the battery fluid level lines using a cloth damped with water.
2. Make sure that the battery fluid level is between the UPPER LEVEL (maximum fluid level line) and the LOWER LEVEL (minimum fluid level line).

Supply of Battery Fluid

**Danger**

Be careful not to let your skin, eyes or clothes, etc., come into contact with the battery fluid or accidentally swallow the fluid. Should your skin or clothes come into contact with the battery fluid, immediately wash them away with water.

**Caution**

When you supply battery fluid, wear protective garments and safety glasses, etc.

**Caution**

Implement after the engine and muffler etc. have well cooled down. Otherwise you may get burned.

1. If the battery fluid level is lower than halfway between the UPPER LEVEL (maximum) line and LOWER LEVEL (minimum) line, add purified water up to the UPPER LEVEL (maximum) line.
**Tire**

Inspection of Tires

1. Check the pneumatic pressure of the tires.
2. Make sure that there are no cracks, damage or abnormal wear.

<table>
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<tr>
<th>Tire size</th>
<th>Pneumatic pressure</th>
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<tbody>
<tr>
<td>Front wheel (31 x 13.50 - 15)</td>
<td>140 kPa (1.4 kgf/cm²)</td>
</tr>
<tr>
<td>Rear wheel (20 x 12.00 - 10)</td>
<td>140 kPa (1.4 kgf/cm²)</td>
</tr>
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**Type_R**

<table>
<thead>
<tr>
<th>Tire size</th>
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<td>140 kPa (1.4 kgf/cm²)</td>
</tr>
</tbody>
</table>

**Brake**

Inspection of Brake

While traveling, depress the brake pedal firmly to make sure that the brake is applied effectively.

Inspection of Parking Brake

1. Make sure that the parking brake is applied after depressing the brake pedal and pulling the parking brake lever.
2. Make sure that the parking brake is not applied even slightly after depressing the brake pedal to release the parking brake lever.

**Belt**

Inspection of Belt

**Warning**

The engine must be stopped when the belt is inspected.

**Important**

A slacking or damaged belt or damaged fan may cause overheating or lack of a battery charge.

1. Press the middle of the belt with your finger to check the belt tension.
2. Make sure that there are no cracks, damage or abnormal wear.

**Wire**

Inspection of Wire

1. Make sure that the wire is not cracked or damaged.
2. If the wire is cracked or damaged, replace it with a new one immediately.

**Around The Engine**

Inspection of Engine-Associated Parts

**Caution**

Implement after the engine and DPF etc. have well cooled down. Otherwise you may get burned.

1. Check the fuel system parts for loosened or cracked joints and leakage. Replace the parts if necessary.
2. Blow compressed air to clean any grass or flammable materials that may be attached on or around the DPF. Remove clippings and dust in a gap thoroughly due to the intricately shaped engine.
**Engine Oil**

**Inspection of Engine Oil**

*Important*

Securely tighten the oil level gauge and oil filler cap.

1. Stop the engine, wait for 10 to 20 minutes for the engine to cool down, and then check the oil level.

2. Position the machine so that the engine will be level, and then insert the oil level gauge all the way to check the oil level.

3. The appropriate oil level should be between the upper and lower limit lines on the gauge.

**Supply of Engine Oil**

*Important*

Do not supply too much engine oil. Otherwise, the engine may be damaged.

*Important*

Do not mix different types of engine oil.

*Important*

Be sure to use engine oil that is classified as JASO DH-2 or API Service Grade CJ-4, with SAE viscosity that is appropriate for the operating environment (ambient temperature).

*Important*

Securely tighten the oil level gauge and oil filler cap.

1. If the engine oil level is lower than the lower limit line on the oil level gauge, supply engine oil through the oil filling port. Remove the oil filler cap, and then supply new engine oil until the oil reaches a level in between the upper and lower limit lines on the oil level gauge.

2. Replace the oil filler cap.

3. It will take a while for the supplied engine oil to descend into the oil pan. Check the oil level again 10 to 20 minutes after supplying the oil.
Fuel

Inspection of Fuel Quantity

With the machine on a level surface, observe the fuel level in the monitor to check the fuel level.

Warning
Do not supply additional fuel after the fuel level indicates 100%. If you supply too much fuel, it might overflow from the fuel cap when you travel or work on a slope.

Warning
Keep fire away while refueling. Do not smoke.

Important
Use ultra-low sulfur diesel fuel (sulfur-free diesel fuel).

Important
In case of lack of fuel, DPF regeneration cannot be performed.

If the monitor displays the warning message "FUEL LEVEL LOW", immediately stop operation, and then supply fuel (diesel). The fuel tank capacity is approximately 51.0 dm$^3$ (51.0 L).

Air Bleeding of Fuel System

1. Open the hood.
2. Set the key switch to the "ON" position and then start the electromagnetic pump.
3. A priming pump is installed on the feed pump. Repeatedly press the top of the priming pump with your finger until resistance is felt, to bleed air.
4. Set the key switch to the "OFF" position.
5. Close the hood.
Water Separator

Inspection of Water Separator

**Important**

If water contaminates the fuel, the supply pump and injector will seize due to heat.

The water separator removes water from the fuel.

1. Make sure that debris and water have not accumulated in the cup.
   With the float raised, water incorporation is confirmed.

Draining of Water Separator

**Important**

If water contaminates the fuel, the supply pump and injector will seize due to heat.

Drain the water in accordance with the Maintenance Schedule.

However, when the float is raised by water, drain the water even before the schedule.

1. Follow the steps below to drain the water.
   [1] Stop the engine, and then turn the key switch to the "OFF" position.
   [2] Place a container under the water separator.
   [3] Loosen the water drain plug and air-bleeding bolt to drain the water into the container.
   [5] Bleed air from the fuel system.

Cleaning of Water Separator

**Important**

If water contaminates the fuel, the supply pump and injector will seize due to heat.

Clean the water separator in accordance with the Maintenance Schedule.

However, when debris has accumulated in the cup, clean it even before the schedule.

1. Follow the steps below to clean the water separator.
   [1] Stop the engine, and then turn the key switch to the "OFF" position.
   [2] Place a container under the water separator.
   [4] Replace the element with a new one when replacement needed.
Cleaning of Water Separator_001

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Float</td>
</tr>
<tr>
<td>2</td>
<td>Cup</td>
</tr>
<tr>
<td>3</td>
<td>Water drain plug</td>
</tr>
<tr>
<td>4</td>
<td>Element</td>
</tr>
<tr>
<td>5</td>
<td>Air-bleeding bolt</td>
</tr>
</tbody>
</table>

[4] Install the cup, element and float in their original positions.
[5] Bleed air from the fuel system.

**Fuel Filter**

**Inspection of Fuel Filter**

The fuel filter works to remove foreign objects mixed into the fuel.
When the fuel flow becomes insufficient, replace the fuel filter if necessary.
1. Make sure that there is no fuel leakage.
2. Make sure that the fuel filter is not damaged or dirty.

**Oil Leakage**

**Inspection of Oil Leakage**

⚠️ **Caution**

When performing maintenance on the hydraulic system, lower the mower units.

After approximately 50 hours of operation, some tightened portions may be loosened and oil and grease may leak. Be sure to retighten the parts. Check the bottom of the machine for oil and grease leakage.
Tightening Torques

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

**Standard Tightening Torques**

Bolts and Nuts

**Important**
A number of bolts are used in each part of this machine.
Be sure to re-tighten the bolts and nuts, because they may be loosened at the earlier stage of the use.

As to the bolts and nuts without any special instruction, tighten them in appropriate tightening torque with proper tool.
Too much tightening may cause the looseness or damage of the screw.
The strength of tightening is determined by types of screws, strength, the friction of thread face or base face and others.
The table below is for the galvanized or parkerized bolts.
In case that the strength of internal thread is weak, it is not applied.
Do not use rusty or sand attached "screw."
Otherwise, it may cause insufficient tightening even if you apply the specified tightening torque.
The friction of the screw face becomes higher and the tightening torque is canceled out by the friction, therefore sufficient tightening cannot be applied.
If "screw" is wet by water or oil, do not tighten it with normal tightening torque.
If the screw is wet, the torque coefficient will get smaller and it may result in too much tightening.
Too much tightening may cause looseness by the screw stretched or result in damage.
Do not use a bolt experienced too much burden.
Using the impact wrench requires the skill.
Do exercise as much as possible for steady tightening.
## Handling Instructions

### Tightening Torques

<table>
<thead>
<tr>
<th>Nominal diameter</th>
<th>M4 T</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5</td>
<td>3 - 5</td>
</tr>
<tr>
<td>M6</td>
<td>7 - 9</td>
</tr>
<tr>
<td>M8</td>
<td>14 - 19</td>
</tr>
<tr>
<td>M10</td>
<td>29 - 38</td>
</tr>
<tr>
<td>M12</td>
<td>52 - 67</td>
</tr>
<tr>
<td>M14</td>
<td>70 - 94</td>
</tr>
<tr>
<td>M16</td>
<td>88 - 112</td>
</tr>
<tr>
<td>M18</td>
<td>116 - 144</td>
</tr>
<tr>
<td>M20</td>
<td>147 - 183</td>
</tr>
<tr>
<td>M22</td>
<td>295</td>
</tr>
<tr>
<td>M24</td>
<td>370</td>
</tr>
<tr>
<td>M27</td>
<td>550</td>
</tr>
<tr>
<td>M30</td>
<td>740</td>
</tr>
</tbody>
</table>

### Heat-treated bolt

<table>
<thead>
<tr>
<th>Nominal diameter</th>
<th>8 T</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5</td>
<td>5 - 7</td>
</tr>
<tr>
<td>M6</td>
<td>8 - 11</td>
</tr>
<tr>
<td>M8</td>
<td>23 - 29</td>
</tr>
<tr>
<td>M10</td>
<td>45 - 57</td>
</tr>
<tr>
<td>M12</td>
<td>67 - 85</td>
</tr>
<tr>
<td>M14</td>
<td>106 - 134</td>
</tr>
<tr>
<td>M16</td>
<td>152 - 188</td>
</tr>
<tr>
<td>M18</td>
<td>200 - 240</td>
</tr>
<tr>
<td>M20</td>
<td>245 - 295</td>
</tr>
<tr>
<td>M22</td>
<td>-</td>
</tr>
<tr>
<td>M24</td>
<td>-</td>
</tr>
<tr>
<td>M27</td>
<td>-</td>
</tr>
<tr>
<td>M30</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nominal diameter</th>
<th>11T</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5</td>
<td>5 - 7</td>
</tr>
<tr>
<td>M6</td>
<td>8 - 11</td>
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<tr>
<td>M8</td>
<td>23 - 29</td>
</tr>
<tr>
<td>M10</td>
<td>45 - 57</td>
</tr>
<tr>
<td>M12</td>
<td>67 - 85</td>
</tr>
<tr>
<td>M14</td>
<td>106 - 134</td>
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<tr>
<td>M16</td>
<td>152 - 188</td>
</tr>
<tr>
<td>M18</td>
<td>200 - 240</td>
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<tr>
<td>M20</td>
<td>245 - 295</td>
</tr>
<tr>
<td>M22</td>
<td>-</td>
</tr>
<tr>
<td>M24</td>
<td>-</td>
</tr>
<tr>
<td>M27</td>
<td>-</td>
</tr>
<tr>
<td>M30</td>
<td>-</td>
</tr>
</tbody>
</table>

Note:

The same values are applied to "fine screw thread."
**Principal Tightening Torques**

Tightening Torque by Model

**LM3210A**

Tighten the following bolts and nuts at the torque specified in the table. For thread locking adhesive, apply a middle strength thread locker (ThreeBond 1322 or equivalent anaerobic sealant).

<table>
<thead>
<tr>
<th>Location</th>
<th>Code</th>
<th>Part name</th>
<th>N-m</th>
<th>kgf-cm</th>
<th>lb-in</th>
<th>Thread locking adhesive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor housing</td>
<td>K0014160402</td>
<td>Bolt, heat-treated M16-40P1.5</td>
<td>152 - 188</td>
<td>1549.94 - 1917.04</td>
<td>1345.35 - 1663.99</td>
<td>—</td>
</tr>
<tr>
<td>Motor</td>
<td>K0013140502</td>
<td>Bolt, heat-treated M14-50</td>
<td>100</td>
<td>1019.7</td>
<td>885.1</td>
<td>—</td>
</tr>
<tr>
<td>Wheel mounting</td>
<td>1 1/4-18UNF</td>
<td>Slotted nut (Hydraulic motor)</td>
<td>400 - 430</td>
<td>4078.80 - 4384.71</td>
<td>3540.40 - 3805.93</td>
<td>—</td>
</tr>
<tr>
<td>Disc brake</td>
<td>K001A080401</td>
<td>Bolt, w/hexagon hole, M8-40</td>
<td>28 - 38</td>
<td>285.52 - 387.49</td>
<td>247.83 - 336.34</td>
<td>—</td>
</tr>
<tr>
<td>Wheel</td>
<td>K0014120652</td>
<td>Bolt, heat-treated M12-65P1.5</td>
<td>67 - 85</td>
<td>683.20 - 833.75</td>
<td>593.02 - 752.34</td>
<td>—</td>
</tr>
<tr>
<td>Rear wheel</td>
<td>K0138240002</td>
<td>24 slotted nut high P1.5</td>
<td>180 - 200</td>
<td>1835.46 - 2039.40</td>
<td>1593.18 - 1770.20</td>
<td>—</td>
</tr>
<tr>
<td>Wheel</td>
<td>K0014120652</td>
<td>Bolt, heat-treated M12-65P1.5</td>
<td>67 - 85</td>
<td>683.20 - 866.75</td>
<td>593.02 - 752.34</td>
<td>—</td>
</tr>
<tr>
<td>Front axle</td>
<td>K0015200702</td>
<td>Bolt, heat-treated M20-70P1.5</td>
<td>370 - 450</td>
<td>3772.89 - 4588.65</td>
<td>3274.87 - 3982.95</td>
<td>—</td>
</tr>
<tr>
<td>Brake ass'y</td>
<td>K1720000260</td>
<td>M12 nut (accessories)</td>
<td>50 - 70</td>
<td>509.85 - 713.79</td>
<td>442.55 - 619.57</td>
<td>○</td>
</tr>
<tr>
<td>Engine</td>
<td>K0012120352</td>
<td>Bolt, heat-treated M12-35P1.25</td>
<td>67 - 85</td>
<td>683.20 - 886.75</td>
<td>593.02 - 752.34</td>
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<tr>
<td></td>
<td>K0015120552</td>
<td>Bolt, heat-treated M12-55P1.25</td>
<td>67 - 85</td>
<td>683.20 - 886.75</td>
<td>593.02 - 752.34</td>
<td>—</td>
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<tr>
<td></td>
<td>K0011100502</td>
<td>Bolt, heat-treated M10-50P1.25</td>
<td>58 - 76</td>
<td>591.43 - 774.97</td>
<td>513.36 - 672.68</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>K0013121102</td>
<td>Bolt, heat-treated M12-110</td>
<td>67 - 85</td>
<td>683.20 - 886.75</td>
<td>593.02 - 752.34</td>
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<tr>
<td></td>
<td>K36800000030</td>
<td>M3.5 Screw (accessories)</td>
<td>0.78 - 1.18</td>
<td>7.95 - 12.03</td>
<td>6.90 - 10.44</td>
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<tr>
<td>Flywheel adapter</td>
<td>K0011100302</td>
<td>Bolt, heat-treated M10-30P1.25</td>
<td>58 - 76</td>
<td>591.43 - 774.97</td>
<td>513.36 - 672.68</td>
<td>—</td>
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<tr>
<td></td>
<td>K0010100352</td>
<td>Bolt, heat-treated M10-35</td>
<td>45 - 76</td>
<td>458.87 - 774.97</td>
<td>398.30 - 672.68</td>
<td>—</td>
</tr>
<tr>
<td>Joint</td>
<td>K001A100401</td>
<td>Bolt, w/hexagon hole, M10-40</td>
<td>80</td>
<td>815.76</td>
<td>708.08</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>K0013100352</td>
<td>Bolt, heat-treated M10-35</td>
<td>45 - 76</td>
<td>458.87 - 774.97</td>
<td>398.30 - 672.68</td>
<td>—</td>
</tr>
<tr>
<td>Kingpin stopper</td>
<td>K0010120502</td>
<td>Bolt, heat-treated M12-50</td>
<td>52 - 67</td>
<td>530.24 - 683.20</td>
<td>460.25 - 593.02</td>
<td>—</td>
</tr>
<tr>
<td>Location</td>
<td>Code</td>
<td>Part name</td>
<td>Tightening torque</td>
<td>Thread locking adhesive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------</td>
<td>-----------------------------------------</td>
<td>-------------------</td>
<td>-------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tie rod</td>
<td>K1610000020</td>
<td>Slotted nut of tie rod end RH</td>
<td>45 N-m</td>
<td>458.87 kgf-cm, 398.30 lb-in</td>
<td>—</td>
<td></td>
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<tr>
<td></td>
<td>K1611000020</td>
<td>Slotted nut of tie rod end LH</td>
<td>45 N-m</td>
<td>458.87 kgf-cm, 398.30 lb-in</td>
<td>—</td>
<td></td>
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<tr>
<td>Piston pump</td>
<td>K0013120502</td>
<td>Bolt, heat-treated M12-50</td>
<td>67 - 134 N-m</td>
<td>683.20 - 1366.40 kgf-cm, 593.02 - 1186.03 lb-in</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Tandem gear pump</td>
<td>K0069000251</td>
<td>Bolt, 3/8-16 UNC 31.8</td>
<td>29 - 38</td>
<td>295.71 - 387.49 kgf-cm, 256.68 - 336.34 lb-in</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Diff-lock valve</td>
<td>K001A100151</td>
<td>Bolt, w/hexagon hole, M10-15</td>
<td>29 - 38</td>
<td>295.71 - 387.49 kgf-cm, 256.68 - 336.34 lb-in</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Bumper</td>
<td>K0010120302</td>
<td>Bolt, heat-treated M12-30</td>
<td>67 - 134 N-m</td>
<td>683.20 - 1366.40 kgf-cm, 593.02 - 1186.03 lb-in</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Cover mounting bracket</td>
<td>K0000080202</td>
<td>Bolt, M8-20</td>
<td>9 - 14</td>
<td>91.77 - 142.76 kgf-cm, 61.96 - 123.91 lb-in</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Bed knife (bottom blade)</td>
<td>K0071001182</td>
<td>Screw, heat-treated flathead M10-16</td>
<td>29 - 38</td>
<td>295.71 - 387.49 kgf-cm, 256.68 - 336.34 lb-in</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Mower stopper</td>
<td>K0041060122</td>
<td>Screw, + flathead M6-12</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>ROPS</td>
<td>K0013121102</td>
<td>Bolt, HT M12-110</td>
<td>104 - 134</td>
<td>1,060.49 - 1,366.40 kgf-cm, 920.50 - 1186.03 lb-in</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>
Adjustment before Work

Adjustment of Steering Wheel

**Warning**
Since it is dangerous, do not adjust the steering wheel while traveling.

**Caution**
Be sure the steering wheel position is securely locked. It may result in an unexpected accident if it becomes loose while traveling.

The steering wheel can be adjusted up or down. Adjust the position according to the operator's body size. Shift the tilt lever to the "FREE" position, move the steering wheel to the position that suits your work requirements, and then shift the tilt lever to the "LOCK" position to secure the steering wheel in place. The tilt lever is located in the right front of the driver’s position.

Adjustment of Seat

Use the adjustment levers to adjust the seat. Adjust the position to fit the operator.

1. Use the forward/backward adjustment lever to adjust the seat back and forth.
2. Use the tilt adjustment lever to adjust the angle of the backrest.
3. Turn the suspension adjustment handle to adjust the firmness of the seat suspension. Refer to the suspension indicator while making adjustments. [45 to 130 kg (99.2 to 286.6 lb)]
4. Turn the armrest adjustment knob to adjust the angle of the armrests.
5. Turn the seat height adjustment knob to adjust the height of the seat steplessly. [0 to 60 mm (0 to 2.36 in)] Adjust the height of the seat while sitting in it.

Adjustment of Seat

| 1 | Forward/backward adjustment lever |
| 2 | Tilt adjustment lever |
| 3 | Suspension adjustment handle |
| 4 | Suspension indicator |
| 5 | Armrest adjustment knob |
| 6 | Seat height adjustment knob |
Adjustment of Blade Engagement

**Caution**
When handling the reel cutter (cutting cylinder) and the bed knife (bottom blade), 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.

1. Stop the engine.
2. Set the reel rotation/stop switching lever to the "Stop" position.

3. With the cutter adjustment nut, adjust the engagement between the reel cutter (cutting cylinder) and the bed knife (bottom blade) so that newspaper (two to three sheets) will be cut by the edge of both blades when the blades in their entirety come slightly into contact with each other.

4. 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) to check the sharpness of the blades. Check the sharpness of the entire range (three or four points) of the reel cutter (cutting cylinder).

   - If a gap is created between edges: Loosen the cutter adjustment nut to apply more contact pressure between the reel cutter (cutting cylinder) and the bed knife (bottom blade).
   - If the reel cutter (cutting cylinder) is too tight to turn: Tighten the cutter adjustment nut to reduce the contact pressure between the reel cutter (cutting cylinder) and the bed knife (bottom blade).
   - If the blades still cannot cut well: Perform back lapping of the reel cutter (cutting cylinder).

Adjustment of Cutting Height

Roller (Roller Type)
Adjust the cutting height to fit your cutting work.
You can adjust the front roller in four stages.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 - 20 mm (0.39 - 0.79 in)</td>
<td>20 - 30 mm (0.79 - 1.81 in)</td>
<td>28 - 40 mm (1.10 - 1.57 in)</td>
<td>38 - 60 mm (1.50 - 2.36 in)</td>
</tr>
</tbody>
</table>
Attach the front roller in a position within the range of cutting height that suits your work requirements.

1. To increase cutting height:
   [1] Loosen cutting height adjustment nut A, tighten cutting height adjustment nut B, then lower the rear roller.
   [2] Use the cutting height gauge to determine the position, then tighten cutting height adjustment nut A securely.

2. To decrease cutting height:
   [1] Loosen cutting height adjustment nut B, tighten cutting height adjustment nut A, then raise the rear roller.
   [2] Use the cutting height gauge to determine the position, then tighten cutting height adjustment nut B securely.

Adjustment before Work

Front Wheel Type

Adjust the cutting height to fit your cutting work.
You can adjust the wheel to one of four levels.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>17 - 32 mm (0.67 - 1.26 in)</td>
<td>23 - 37 mm (0.91 - 1.46 in)</td>
<td>29 - 43 mm (1.14 - 1.69 in)</td>
<td>35 - 68 mm (1.38 - 2.68 in)</td>
</tr>
</tbody>
</table>

Attach the wheel in a position within the range of cutting height that suits your work requirements.

1. To increase cutting height:
   [1] Loosen cutting height adjustment nut A, tighten cutting height adjustment nut B, then lower the rear roller.
   [2] Use the cutting height gauge to determine the position, then tighten cutting height adjustment nut A securely.

2. To decrease cutting height:
   [1] Loosen cutting height adjustment nut B, tighten cutting height adjustment nut A, then raise the rear roller.
   [2] Use the cutting height gauge to determine the position, then tighten cutting height adjustment nut B securely.
Adjustment of Cutter Adjustment Spring

If the diameter of the reel cutter (cutting cylinder) becomes smaller, adjust the cutter adjustment spring.
1. Adjust the blade engagement.
2. Loosen the pipe with cutter adjusting screw, and then adjust the length of the spring coil to approximately 40 mm (1.575 in.).

Adjustment of Reel Cover

Note:
Depending on the specifications, this function may not be available.
The angle of the reel cover can be adjusted.
1. Pull the right and left knobs securing the reel cover to release it.
2. Select the hold position of the cover adjustment plate and secure the reel cover.
Adjustment of CR Brush

Note:
Depending on the specifications, this function may not be available.

Important
Pressing the brush against the roller too tightly will cause the belt to slip or break.

CR brush prevents clippings etc. from adherence to the rear roller owing to rotating brush.

1. Loosen the bolts and nuts attached to the both ends of CR brush.

2. Securely tighten the loosened bolts and nuts as the gap between the brush and rear roller is adjusted to between 0 and 1.0 mm (0 - 0.039 in).

Adjustment of Rear Scraper (Wire Type)

Note:
Depending on the specifications, this function may not be available.

Important
Do not place the scraper in contact with the rear roller too tightly.
It will cause the scraper break and slack.

The scraper prevents grass clippings, etc., from attaching to the rear roller.

1. Loosen the left and right lock nuts and nuts of the scraper.
2. Tighten the nuts to stretch the wire.
The wire position is appropriate when the distance between the scraper and the rear roller is 2.0 to 3.0 mm (0.079 to 0.118 in).
3. Secure the position with the lock nuts.

・ Wire scraper
Procedure to Start/Stop Engine

Start/Stop of Engine

Procedure to Start Engine

**Caution**

When starting the engine, the reel cutter (cutting cylinder) may rotate slowly. Before starting the engine, make sure that there are no other people or obstacles around the machine.

**Important**

When restarting the engine after it has been turned off, wait until the electromagnetic pump has fully stopped before restarting the engine. The electromagnetic pump will stop approximately 7 seconds after the key switch is turned to the "OFF" position.

**Important**

Starter operation must take 15 seconds or less. If the engine does not start, stop using the battery for 30 to 60 seconds to avoid exhausting the battery.

1. Sit on the seat.
2. Make sure that the parking brake is applied.
3. Make sure that the knife rotation switch is in the "STOP" position.
4. Make sure that the traveling pedal is in the neutral position.
5. Move the throttle knob halfway from the "Low speed" position toward the "High speed" position.

6. Switch the ignition key to the "ON (GLOW)" position.

7. Make sure that the glow plug is generating heat, the "BARONESS" logo or "Warming up" message appears in the monitor display, and the yellow and red LEDs are lit.

---

**Monitor display**

1. Monitor display
2. Yellow LED
3. Red LED

---

**Important**

When the ignition key is switched to the "ON" position, "Warming up" may appear in the monitor display. Do not start the engine until the message disappears.
Important
Quickly returning the ignition key from the "START" position to the "ON" position may result in damage to the machine.

Safety Mechanisms
This machine features a safety device for starting/stopping the engine.

1. As for starting the engine, the safety device prevents the engine from starting unless it meets each of the following four conditions.
   - An operator is sitting on the seat.
   - The parking brake is applied.
   - The reel rotation switch is set to the "OFF" position.
   - The traveling pedal is set to the neutral position.

2. In the event the operator leaves the seat with the parking brake applied and the engine running, the safety device will be activated and will stop the engine under any of the following conditions:
   - The traveling pedal is not set to the neutral position. (The operator has depressed the traveling pedal.)
   - The reel rotation switch is set to the "Rotate" position. However, when the reel reverse switch is set to the "ON" position (reverse rotation), the engine does not stop.

Procedure to Stop Engine

1. Set the traveling pedal to the neutral position.
2. Apply the parking brake.
3. Set the reel rotation switch to the "Stop" position.
4. Raise the mower units.
5. Shift the throttle knob to the "Low speed" position, and then idle the machine for 1-2 minutes.
6. Switch the ignition key to the "OFF" position.
7. Make sure that the engine has stopped.
8. Hook the mower lock levers (latches) for the mower units #4 and #5.
9. Remove the ignition key.
10. Leave the driver's seat.

Procedure to Start/Stop Engine

8. After the "BARONESS" logo and the yellow and red LEDs go off and the parameters (items and values such as the rotation speed) appear, immediately set the ignition key to the "START" position.
9. When the starter starts rotating and the engine starts, slowly return the ignition key to the "ON" position.
10. Move the throttle knob to the "Low speed" position, and then warm up the engine for 1-2 minutes.
11. Gradually move the throttle knob toward the "High speed" position.

Important
When you restart the engine after the safety device stops the engine, be sure to return the ignition key to the "OFF" position first, and then restart it. Otherwise the engine does not start.
Warning Mechanisms

**Important**

When the buzzer (intermittent tone) sounds, be sure to stop operation since the engine is overheated. Do not stop the engine without idling. Allow the engine to cool down, first. Keep the engine idling for about 5 minutes before stopping. Remove dust that is jamming in the radiator, air cleaner, and etc.

This machine features warning mechanisms for overheating, the hydraulic oil and the engine.

1. If the engine water temperature exceeds 115 degrees Celsius, a buzzer will sound. (intermittent tone)
2. If the oil level in the hydraulic tank declines from the specified level by approximately 2.0 dm$^3$ (2.0 L), a buzzer will sound. (continuous tone)
3. With an engine malfunction, a monitor LED lights up and a fault code appears.

Operation Method

Cautions for when You Leave The Machine

**Caution**

If the brakes are not sufficiently effective, use the wheel stoppers to secure the machine.

**Caution**

Never park the machine on a slope.

Positions of Operation Decals
Description of Operation Decals

Key Switch Decal

Decal, key switch
This indicates the key switch positions.

| 1 | OFF |
| 2 | ON (GLOW) |
| 3 | START |

Reel Rotation Mark

Reel rotation mark
It illustrates Rotation/Stop of the reel cutter (cutting cylinder).

2WD/4WD Selector Mark

2WD/4WD selector mark
This indicates the 2WD/4WD positions.

| 1 | 4WD |
| 2 | 2WD |
DPF Regeneration Mark (EN)

- DPF regeneration mark (EN)
  This indicates the changeover of DPF regeneration.

Mower Unit Up/Down Decal

Decal, mower unit up/down
This indicates the Up/Down positions of the mower unit.

Light Switch Mark

Note:
Depending on the specifications, this function may not be available.

Light switch mark
It illustrates ON/OFF of the light.

Engine Rotation Mark

Engine rotation mark
This indicates low/high speed of engine rotation.
Differential Lock Decal

K4203001420
Decal, differential lock
This indicates the positions for engaging or releasing the differential lock.

```
Differential
lock
ON
1
OFF
2
ON
3
```

<table>
<thead>
<tr>
<th>1</th>
<th>Engage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Release</td>
</tr>
</tbody>
</table>

Parking Brake Decal

K4203001340
Parking brake decal
This shows how to lock and release the parking brake.

```
FREE
1
LOCK
2
```

<table>
<thead>
<tr>
<th>1</th>
<th>Lock</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Release</td>
</tr>
</tbody>
</table>

Tilt Steering Decal

K4203001350
Decal, tilt steering
This illustrates the tilt directions of the steering wheel and the locked/free positions.

```
FREE
LOCK
```

FORWARD Decal

K4203001430
Decal, FORWARD
This indicates forward travel.
BACKWARD Decal

K4203001440
Decal, BACKWARD
This indicates backward travel.

BRAKE Decal

K4203001450
Decal, BRAKE
This indicates brake.

Lapping Decal

K4203001590
Decal, lapping
This indicates rotational direction of the reel cutter (cutting cylinder).

Reel Rotation Decal

K4203001300
Decal, reel rotation
This indicates rotation of the reel cutter (cutting cylinder).
Reel Stop Decal

K4203001310
Decal, reel stop
This indicates stop of the reel cutter (cutting cylinder).

Proximity Sensors

There are three proximity sensors on mower arm fulcrums #3, #4 and #5. These sensors detect the raised or lowered positions of mower units #3, #4 and #5. The information is related to controlling rotation and stop of the reel cutters (cutting cylinders).

Relays

The relay box is located inside the right tank cover. These relays control operation of the diff-lock, rotation of the reel cutters (cutting cylinders), and 2WD/4WD selection. The operating condition can be checked by the illumination of the LEDs.

- LEDs ① and ② light up when the diff-lock valve is in the "ON" position.
- LEDs ③ and ⑤ light up when the reel rotation switch is in the "Rotation" position and the mower units are lowered.
- LEDs ④ and ⑥ light up when the reel reverse switch is in the "Reverse" position and the mower units are lowered.
- LED ⑦ is not used.
- LED ⑧ lights up when the 2WD/4WD selector switch is in the "4WD" position, and then the machine enters 4WD.
Reel Rotation Switch

⚠️ Caution
Set the reel rotation switch to the "Rotation" position immediately before starting cutting work. At all other times, be sure to leave the reel rotation switch set to the "Stop" position.

⚠️ Important
Be sure to switch when the machine stops. Otherwise, the hydraulic system will malfunction.

The reel rotation switch is located in the operation panel and operates rotation of the reel cutters (cutting cylinders) of the mower units.

When the reel rotation switch is set to the "Rotation" position, the reel cutters (cutting cylinders) of all mower units will rotate. When the reel rotation switch is set to the "Stop" position, the reel cutters (cutting cylinders) will stop.

Note:
When the mower units are raised, the reel cutters (cutting cylinders) do not rotate, even if the switch is set to the "Rotation" position.

2WD/4WD Selector Switch

⚠️ Caution
When working on a slope, be sure to use the machine in 4WD.

⚠️ Important
Be sure to switch when the machine stops. Otherwise, the hydraulic system will malfunction.

The 2WD/4WD selector switch is located in the operation panel.

When the switch is set to the "2WD" position, the machine will be in two-wheel drive (front-wheel drive). When it is set to the "4WD" position, the machine will be in four-wheel drive.

<table>
<thead>
<tr>
<th>1</th>
<th>2WD/4WD selector switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4WD</td>
</tr>
<tr>
<td>B</td>
<td>2WD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1</th>
<th>Reel rotation switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Rotation</td>
</tr>
<tr>
<td>B</td>
<td>Stop</td>
</tr>
</tbody>
</table>
DPF Auto Regeneration Inhibit Switch

**Caution**
Normally, set the DPF auto regeneration inhibit switch to "Auto regeneration mode". However, when operating in a location where fires may occur, set the DPF auto regeneration inhibit switch to "Auto regeneration inhibit mode".

**Important**
The DPF auto regeneration inhibit switch is reset to "Auto regeneration mode" when the engine is started even if the engine was stopped with the DPF auto regeneration inhibit switch set to "Auto regeneration inhibit mode".

The DPF auto regeneration inhibit switch is located in the operation panel. The DPF auto regeneration inhibit switch is the switch for shifting between "Auto regeneration mode" and "Auto regeneration inhibit mode". With the engine running, press this switch to shift between "Auto regeneration mode" and "Auto regeneration inhibit mode".

- **Auto regeneration mode:**
  The DPF auto regeneration inhibit switch is reset to "Auto regeneration mode" when the engine is started. In "Auto regeneration mode" regeneration is automatically performed regardless of the main vehicle's travel and stop on the condition that a specific amount of PM is accumulated and the requirements for DPF regeneration are fulfilled.

- **Auto regeneration inhibit mode:**
  In order to set to "Auto regeneration inhibit mode", press the DPF auto regeneration inhibit switch after the engine is started. In "Auto regeneration inhibit mode" PM accumulates in the DPF and PM accumulation level increases. Unless the operator implements regeneration on his own will, regeneration is not performed.

When the DPF auto regeneration inhibit switch is pressed and set to "Auto regeneration inhibit mode", the monitor displays Auto regeneration inhibit icon.
DPF Parked Regeneration Switch

**Danger**
Do not perform DPF regeneration in a location where fires may occur since it will become extremely hot around the exhaust outlet during DPF regeneration.

**Important**
If parked regeneration is not required, it will not start even if the switch is pressed.

The DPF parked regeneration switch is located in the operation panel. The switch for actuating parked regeneration. When the regeneration icon is blinking, press the switch to start parked regeneration.

When parked regeneration starts, regeneration icon in the monitor display changes from blinking to lighting.

Light Switch

**Note:** Depending on the specifications, this function may not be available.

**Caution**
The lights provide auxiliary lighting. Do not travel or operate the machine at night or under poor visibility.

The light switch is located in the operation panel. When the switch is set to the "ON" position, the lights turn on. When it is set to the "OFF" position, the lights turn off.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Light switch</td>
</tr>
<tr>
<td>A</td>
<td>ON (turn on)</td>
</tr>
<tr>
<td>B</td>
<td>OFF (turn off)</td>
</tr>
</tbody>
</table>
Reel Reverse Switch

**Important**

Do not switch the rotation directions, "Normal rotation" or "Reverse" while the reel cutter (cutting cylinder) is rotating. Otherwise, a hydraulic system malfunction will result.

**Important**

If the reel rotation switch is not set to the "Rotation" position, the reel cutter (cutting cylinder) will not rotate.

This is located under the hood. This switches the rotation direction of the reel cutter (cutting cylinder). When the reel reverse switch is set to the "Reverse" position, the reel cutters (cutting cylinders) of all mower units rotate in reverse (back lapping motion). When the reel reverse switch is set to the "Normal rotation" position, the reel cutters (cutting cylinders) rotate for cutting.

Reel Rotation/Stop Switching Lever

**Caution**

Before operating the reel rotation/stop switching lever, be sure to set the reel rotation switch to the "Stop" position.

The reel rotation/stop switching lever is located on the reel motor attached to each mower unit. It is used during cutting and back lapping. You must shift only the lever(s) for the mower unit(s) that you plan to use for cutting or back lapping to the "Rotate" position. Leave the lever(s) for other mower units in the "Stop" position.
Reel Rotation Adjustment Valve

These valves adjust the rotation speeds of the reel cutters (cutting cylinders).

For #1 and #5

Reduce the rotation speed by loosening the lock nut, then tightening the knob.
After making adjustments, tighten the lock nut.

For #2, #3 and #4

Mower Lock Lever (Latch)

The mower lock levers (latches) are located in the foot area on the left and right sides.
Hook the mower lock levers (latches) on the arms to keep the mower units #4 and #5 raised.
The mower lock levers (latches) may be used for the following operations.
- Moving by the machine
- Transporting the machine
- Storing the machine

Mower Unit Up/Down Lever

Caution

Before raising or lowering the mower units, make sure that there are no people around the machine.

Important

When the mower lock levers (latches) are engaged, do not operate the mower unit up/down lever.

The mower unit up/down lever is located in the operation panel and raises or lowers the mower units.
When the lever is shifted to the "DOWN" position, the mower units are lowered. When the lever is shifted to the "UP" position, the mower units are raised.
Release the lever to return it to the neutral position.
Diff-Lock Switch

Note:
Depending on the specifications, this function may not be available.

<table>
<thead>
<tr>
<th>Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not operate the diff-lock switch unless it is necessary.</td>
</tr>
</tbody>
</table>

The diff-lock switch is located below the right side of the steering wheel and engages the differential lock for the left and right front wheels.

Tilt the switch lever up or down to turn "ON" to engage the differential lock for the front wheels.
Release the switch lever to return it to the neutral position ("OFF" position) and disengage the differential lock.

Throttle Knob

The throttle knob is located to the right of the driver's seat and enables you to adjust the engine rpm.
Move the throttle knob toward the "High speed" position to increase the engine rpm, and toward the "Low speed" to reduce the rpm.

<table>
<thead>
<tr>
<th>Note:</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the mower units are raised, the reels stop rotating, even if the reel rotation switch is set to the &quot;Rotation&quot; position.</td>
</tr>
</tbody>
</table>

**Mower Unit Up/Down Lever**

<table>
<thead>
<tr>
<th>1</th>
<th>Mower unit up/down lever</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>UP</td>
</tr>
<tr>
<td>B</td>
<td>Neutral</td>
</tr>
<tr>
<td>C</td>
<td>DOWN</td>
</tr>
</tbody>
</table>

**Throttle Knob**

<table>
<thead>
<tr>
<th>1</th>
<th>Throttle knob</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>High speed</td>
</tr>
<tr>
<td>B</td>
<td>Low speed</td>
</tr>
</tbody>
</table>

**Diff-Lock Switch**

<table>
<thead>
<tr>
<th>1</th>
<th>Diff-lock switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>ON (lock)</td>
</tr>
<tr>
<td>B</td>
<td>OFF (release)</td>
</tr>
</tbody>
</table>
Traveling Pedal

Caution
When the machine is traveling at a high speed, it will not stop immediately after you take your foot off the traveling pedal. If necessary, also use the brake.

The traveling pedals are located in the right foot area and control forward and reverse operation of the machine. When the forward pedal (inside) is depressed, the machine travels forward. When the reverse pedal (outside) is depressed, the machine travels in reverse. The speed changes in accordance with how much the pedal is depressed. When you take your foot off the pedal, the machine stops automatically.

Brake Pedal

The brake pedal is located in the left foot area. To stop the machine, depress the brake pedal when needed.

Parking Brake Lever

Caution
Never park the machine on a slope.

Important
Be sure to release the parking brake before driving. Otherwise, it could cause the brakes and hydraulic equipments to malfunction.

The parking brake lever is located to the left of the front cover. When parking, depress the brake pedal, and then pull the parking brake lever completely. To release the parking brake, depress the brake pedals.
**Hood**

**Caution**
Do not open the hood in strong winds.

**Caution**
Be careful not to pinch your fingers when you open or close the hood.

1. Unlock the rubber catch, and then lift up the hood.
2. Hook the hood support rod onto the latch inside the hood. Make sure that the hood will not close, and then remove your hands.

![Hood Diagram](image)

**Table: Hood_001**

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rubber catch</td>
</tr>
<tr>
<td>2</td>
<td>Left hood</td>
</tr>
<tr>
<td>3</td>
<td>Hood support rod</td>
</tr>
<tr>
<td>4</td>
<td>Right hood</td>
</tr>
</tbody>
</table>

3. To close the hood, release the hood support rod from the latch, and then lower the hood slowly.
4. Lock the rubber catch securely.

**Underseat Cover**

**Caution**
Be careful not to pinch your fingers when you open or close the underseat cover.

1. Make sure that the steering wheel is raised completely.
2. Bring the seat to the backmost position.
3. Pull up the lever behind the seat to unlock it.
4. Tilt the seat forward to open the cover. To close the cover, slowly lower the seat.

![Underseat Cover Diagram](image)

**Table: Underseat Cover_001**

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lever</td>
</tr>
<tr>
<td>2</td>
<td>Seat</td>
</tr>
<tr>
<td>A</td>
<td>Pull up</td>
</tr>
<tr>
<td>B</td>
<td>Tilt forward</td>
</tr>
</tbody>
</table>

**Operation Method**
Instruments

Description of Monitor

The monitor displays various information about the machine, such as the operating status and fault conditions. The information of desired items can be confirmed according to operating the keys.

1. Monitor display
   Displays machine conditions and items.

2. LED (yellow)
   Lights up when a malfunction is detected, indicating warning and/or caution on the engine.

3. LED (red)
   Lights up when a critical malfunction on the engine is detected.

4. Enter key
   Selects the menu or parameter.
   Switches between displaying/hiding the current fault code.

5. Right arrow key
   Scrolls the screen.
   Move the parameter selection to the right or down.

6. Left arrow key
   Scrolls the screen.
   Move the parameter selection to the left or up.

7. Menu key
   Opens or exits the menu.

Displayed Icon

The icon appears at the top of the monitor display.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Regeneration icon</td>
<td>Auto regeneration inhibit icon</td>
<td>High exhaust temperature icon</td>
<td>Warning mark</td>
</tr>
</tbody>
</table>

1. Regeneration icon
   The regeneration icon appears with DPF regeneration request or during DPF regeneration.
   - DPF regeneration request: Blinking
   - During DPF regeneration: Lighting

2. Auto regeneration inhibit icon
   The auto regeneration inhibit icon lights up when the DPF auto regeneration inhibit switch is set to the "Auto regeneration inhibit mode".

3. High exhaust temperature icon
   The high exhaust temperature icon lights up when the exhaust temperature reaches 450 °C during DPF regeneration.

4. Warning mark
   The warning mark continues to be displayed in the upper right corner of the monitor display if the warning message ignored and the Enter key pressed to hide the message.
   - Service reminders
   - Low fuel level
   - Fault codes
Main Menu Items

While any parameter is displayed, press the menu key to display the main menu with the following 11 items.

- GO TO 1-UP DISPLAY / GO TO 4-UP DISPLAY
- LANGUAGES
- STORED CODES
- ENGINE CONFIGURATION
- SETUP 1-UP DISPLAY
- SETUP 4-UP DISPLAY
- SERVICE REMINDERS
- SELECT UNITS
- ADJUST BACKLIGHT
- ADJUST CONTRAST
- UTILITIES

1-Up Display / 4-Up Display

"GO TO 1-UP DISPLAY" / "GO TO 4-UP DISPLAY" are used to set whether to display parameters individually in a screen or in groups of four per screen.

1. 1-up display
   One parameter is displayed individually in the monitor display.

2. 4-up display
   Four parameters are displayed in the monitor display.
   With the 4-up display, a total of 8 parameters are displayed over 2 pages.

Note:
The factory default display is the 4-up display. "GO TO 1-UP DISPLAY" appears in the main menu.
When the 1-up display is set, "GO TO 4-UP DISPLAY" appears in the main menu.
The parameters and corresponding information that appear in the monitor display are listed below.

<table>
<thead>
<tr>
<th>No.</th>
<th>Monitor display L</th>
<th>Monitor display S</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ENGINE SPEED</td>
<td>ENG RPM</td>
<td>Displays the engine rpm.</td>
</tr>
<tr>
<td>2</td>
<td>DRIVERS DEMAND ENGINE TORQUE</td>
<td>DEMAND TQ</td>
<td>Displays the torque required by the ECU.</td>
</tr>
<tr>
<td>3</td>
<td>ACTUAL ENGINE TORQUE</td>
<td>ENG TORQ</td>
<td>Displays the actual torque.</td>
</tr>
<tr>
<td>4</td>
<td>PERCENT LOAD AT CURRENT RPM</td>
<td>LOAD@RPM</td>
<td>Displays the engine load factor.</td>
</tr>
<tr>
<td>5</td>
<td>ACCELERATOR PEDAL POSITION 1</td>
<td>ACCEL PED1</td>
<td>Displays the accelerator sensor opening.</td>
</tr>
<tr>
<td>6</td>
<td>ENGINE DESIRED OP SPEED</td>
<td>DES ENG SP</td>
<td>Displays the engine rpm required by the ECU.</td>
</tr>
<tr>
<td>7</td>
<td>ENGINE COOLANT TEMPERATURE</td>
<td>COOL TEMP</td>
<td>Displays the temperature measured by the coolant temperature sensor.</td>
</tr>
<tr>
<td>8</td>
<td>FUEL RATE</td>
<td>FUEL RATE</td>
<td>Displays the engine fuel consumption rate.</td>
</tr>
<tr>
<td>9</td>
<td>THROTTLE POSITION</td>
<td>THROTTLE</td>
<td>Displays the engine throttle opening.</td>
</tr>
<tr>
<td>10</td>
<td>BOOST PRESSURE</td>
<td>BST PRES</td>
<td>Displays the pressure measured by the intake pressure sensor.</td>
</tr>
<tr>
<td>11</td>
<td>INTAKE MANIFOLD TEMPERATURE</td>
<td>MANI TEMP</td>
<td>Displays the temperature measured by the intake temperature sensor built into the air flow sensor.</td>
</tr>
<tr>
<td>12</td>
<td>BATTERY POTENTIAL</td>
<td>BAT VOLT</td>
<td>Displays the battery voltage.</td>
</tr>
<tr>
<td>13</td>
<td>BAROMETRIC PRESSURE</td>
<td>BARO PRES</td>
<td>Displays the atmospheric pressure measured by the atmospheric pressure sensor.</td>
</tr>
<tr>
<td>14</td>
<td>AMBIENT AIR TEMP</td>
<td>AMB TEMP</td>
<td>Displays the ambient temperature.</td>
</tr>
<tr>
<td>15</td>
<td>AIR INLET TEMPERATURE</td>
<td>AIR IN TP</td>
<td>Displays the intake air temperature measured by the air flow sensor.</td>
</tr>
<tr>
<td>16</td>
<td>TOTAL FUEL USED</td>
<td>FUEL USED</td>
<td>Displays the total fuel consumption of the engine.</td>
</tr>
<tr>
<td>17</td>
<td>TOTAL ENGINE HOURS</td>
<td>ENG HRS</td>
<td>Displays the total time that the ECU is on (time that the key is in the &quot;ON&quot; position).</td>
</tr>
<tr>
<td>18</td>
<td>ENGINE OIL PRESSURE</td>
<td>OIL PRES</td>
<td>Displays the engine oil pressure measured by the oil pressure switch. While the engine is running: Normal=200 kPa, Abnormal=0 kPa</td>
</tr>
<tr>
<td>19</td>
<td>INJECTOR METERING RAIL PRESS</td>
<td>RAIL PRES</td>
<td>Displays the fuel pressure in the rail, measured by the rail pressure sensor.</td>
</tr>
<tr>
<td>20</td>
<td>ENGINE INLET AIR MASS FLOW RATE</td>
<td>AIR RATE</td>
<td>Displays the intake air volume measured by the air flow sensor.</td>
</tr>
<tr>
<td>21</td>
<td>DOC INTAKE GAS TEMP</td>
<td>DOC TEMP</td>
<td>Displays the DOC inlet gas temperature measured by the exhaust temperature sensor.</td>
</tr>
<tr>
<td>22</td>
<td>EXHAUST FILTER INLET TEMP</td>
<td>EF IN T</td>
<td>Displays the DPF inlet gas temperature measured by the exhaust temperature sensor.</td>
</tr>
<tr>
<td>23</td>
<td>DPF DIFFERENCE PRESSURE</td>
<td>DIFF PRES</td>
<td>Displays the pressure difference before and after the DPF, measured by the differential pressure sensor.</td>
</tr>
<tr>
<td>No.</td>
<td>Monitor display L</td>
<td>Monitor display S</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>------------------</td>
<td>------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>24</td>
<td>EXHAUST FILTER OUTLET TEMP</td>
<td>EF OUT T</td>
<td>Displays the DPF outlet gas temperature measured by the exhaust temperature sensor.</td>
</tr>
<tr>
<td>25</td>
<td>PARTICUATE TRAP LAMP</td>
<td>PT LAMP</td>
<td>Shows the status of the regeneration icon. Icon not displayed=&quot;OFF&quot;, Icon blinking=&quot;ON BLINK&quot;, Icon solid=&quot;ON SOLID&quot;</td>
</tr>
<tr>
<td>26</td>
<td>DPF STATUS</td>
<td>DPF ST</td>
<td>Shows the status of the DPF. DPF regeneration not needed=&quot;REGEN NOT NEEDED&quot; DPF regeneration needed=(Level 1=&quot;NEEDED LOWEST&quot;, Level 2-3=&quot;NEEDED MODERATE&quot;, Level 4=&quot;NEEDED HIGHEST&quot;)</td>
</tr>
<tr>
<td>27</td>
<td>DPF ACTIVE REGEN STATUS</td>
<td>DPF AR ST</td>
<td>Shows the DPF regeneration status. Regeneration not needed=&quot;INACTIVE&quot;, Regeneration needed=&quot;NEEDED&quot;, Regenerating=&quot;ACTIVE&quot;</td>
</tr>
<tr>
<td>28</td>
<td>DPF REGEN INHIBIT STATUS</td>
<td>INHIBIT ST</td>
<td>Shows the ECU auto regeneration inhibited status. Auto regeneration inhibit switch off=&quot;OFF&quot;, Auto regeneration inhibit switch on=&quot;ON&quot;</td>
</tr>
<tr>
<td>29</td>
<td>DPF REGENERATION INHIBITED SW</td>
<td>DPF INHIB SW</td>
<td>Shows the status of auto regeneration inhibit switch. Auto regeneration inhibit switch off=&quot;OFF&quot;, Auto regeneration inhibit switch on=&quot;ON&quot;</td>
</tr>
<tr>
<td>30</td>
<td>EXHAUST HIGH TEMP LAMP</td>
<td>EXH T LAMP</td>
<td>Displays the condition of the exhaust temperature. 450 °C or more=&quot;ON&quot;, 450 °C or less=&quot;OFF&quot;</td>
</tr>
<tr>
<td>31</td>
<td>%SOOT</td>
<td>%SOOT</td>
<td>Displays the amount of soot accumulated in the DPF.</td>
</tr>
<tr>
<td>32</td>
<td>MACHINE HOURS</td>
<td>MACH HRS</td>
<td>Displays the total operating time of the machine (time that the engine was actually running).</td>
</tr>
<tr>
<td>33</td>
<td>FUEL LEVEL</td>
<td>FUEL LEVEL</td>
<td>Displays the quantity of fuel remaining in the fuel tank.</td>
</tr>
</tbody>
</table>

Note:
When display settings are being specified, the parameters appear on "Monitor display L". At all other times, the parameters appear on "Monitor display S".
Language

With "LANGUAGES", the language used in the monitor display can be set to either of the following two.

• ENGLISH
• JAPANESE

An asterisk appears at the right of the currently selected language.

Note:
The factory default language is "ENGLISH".

Fault Code Log

With "STORED CODES", a log of past fault codes can be checked.

When there is a fault code log, each fault is displayed over two pages.

Use the arrow keys to change the page.

If there is no fault code log, "NO STORED FAULT CODES" appears.
**List of Fault Codes**

*Important*

When the fault code appears in the monitor display, refer to "Kubota DIAGNOSIS MANUAL COMMON RAIL SYSTEM" or contact your dealer.

The fault codes (DTC) and corresponding information that appear in the monitor display are listed below.

<table>
<thead>
<tr>
<th>No.</th>
<th>DTC name</th>
<th>Corrective action</th>
<th>ISO 14229 P-Code</th>
<th>J1939-73 SPN</th>
<th>Detection item</th>
<th>Remark</th>
<th>Behavior During Malfunction</th>
<th>Recovery from error</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NE-G phase shift</td>
<td>NE: Crankshaft position sensor G: Camshaft position sensor</td>
<td>See Service Manual</td>
<td>P0016</td>
<td>636</td>
<td>Large phase shift between NE pulse and G pulse</td>
<td>(Invalid G signal) - Engine hesitates at start-up</td>
<td>Diagnostic counter = zero</td>
</tr>
<tr>
<td>2</td>
<td>Pressure limiter emergency open</td>
<td></td>
<td>See Service Manual</td>
<td>P0087</td>
<td>633</td>
<td>Pressure limiter emergency open</td>
<td>To minimize PM emission to DPF - Insufficient output - Worsening exhaust gas emissions</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>3</td>
<td>High rail pressure</td>
<td></td>
<td>See Service Manual</td>
<td>P0088</td>
<td>157</td>
<td>Actual pressure exceeds the command pressure</td>
<td>To minimize PM emission to DPF - Insufficient output - Worsening exhaust gas emissions</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>4</td>
<td>SCV (MPROP) stuck</td>
<td></td>
<td>See Service Manual</td>
<td>P0089</td>
<td>1347</td>
<td>SCV stuck at open position (Actual rail pressure continuously exceeds the command rail pressure)</td>
<td>To minimize PM emission to DPF - Insufficient output - Worsening exhaust gas emissions - Engine stops in some cases</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>5</td>
<td>Fuel leak (in high pressured fuel system)</td>
<td>Stop ENG</td>
<td>See Service Manual</td>
<td>P0093</td>
<td>1239</td>
<td>Fuel leak from high pressured fuel system (Fuel consumption is calculated from the difference of fuel pressure of before and after the injection, and the error will be detected when excess fuel)</td>
<td>To minimize PM emission to DPF - Insufficient output - Worsening exhaust gas emissions - Engine stops in some cases</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>No.</td>
<td>DTC name Text 1</td>
<td>Corrective action Text 2</td>
<td>ISO 14229 P-Code</td>
<td>J1939-73 SPN</td>
<td>FMI</td>
<td>Detection item</td>
<td>Remark</td>
<td>Behavior During Malfunction</td>
</tr>
<tr>
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<td>-----------------------------</td>
</tr>
<tr>
<td>5</td>
<td>Fuel leak (in high pressured fuel system)</td>
<td>Stop ENG See Service Manual</td>
<td>P0093</td>
<td>1239</td>
<td>1</td>
<td>consumption is found</td>
<td>To minimize PM emission to DPF</td>
<td>- Insufficient output - Worsening exhaust gas emissions - Engine stops in some cases</td>
</tr>
<tr>
<td>6</td>
<td>Intake air temp. error: Low</td>
<td>See Service Manual</td>
<td>P0112</td>
<td>172</td>
<td>4</td>
<td>Ground short circuit of sensor or harness</td>
<td>- White smoke increases at low temperature</td>
<td>Diagnostic counter = zero</td>
</tr>
<tr>
<td>7</td>
<td>Intake air temp. error: High</td>
<td>See Service Manual</td>
<td>P0113</td>
<td>172</td>
<td>3</td>
<td>Open circuit or +B short circuit of sensor or harness</td>
<td>- White smoke increases at low temperature</td>
<td>Diag counter = zero</td>
</tr>
<tr>
<td>8</td>
<td>Coolant temperature sensor: Low</td>
<td>See Service Manual</td>
<td>P0117</td>
<td>110</td>
<td>4</td>
<td>Ground short circuit of sensor or harness</td>
<td>- White smoke increases at low temperature - Insufficient output - Worsening exhaust gas emissions</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>9</td>
<td>Coolant temperature sensor: High</td>
<td>See Service Manual</td>
<td>P0118</td>
<td>110</td>
<td>3</td>
<td>Open circuit or +B short circuit of sensor or harness</td>
<td>- White smoke increases at low temperature - Insufficient output - Worsening exhaust gas emissions</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>10</td>
<td>Rail pressure sensor: Low</td>
<td>Stop ENG See Service Manual</td>
<td>P0192</td>
<td>157</td>
<td>4</td>
<td>Ground short circuit of sensor or harness Failure of sensor</td>
<td>To minimize PM emission to DPF</td>
<td>- Insufficient output - Worsening exhaust gas emissions - Engine running noise increases - White smoke increases - Engine stops</td>
</tr>
<tr>
<td>No.</td>
<td>DTC name</td>
<td>Corrective action</td>
<td>ISO 14229 P-Code</td>
<td>J1939-73 SPN</td>
<td>FMI</td>
<td>Detection item</td>
<td>Remark</td>
<td>Behavior During Malfunction</td>
</tr>
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<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 11  | Rail pressure sensor: High | Stop ENG See Service Manual | P0193 | 157 | 3 | Open circuit or +B short circuit of sensor or harness Failure of sensor | To minimize PM emission to DPF | - Insufficient output  
- Worsening exhaust gas emissions  
- Engine running noise increases  
- White smoke increases  
- Engine stops | Key switch turn OFF |
| 12  | Injector charge voltage: High | Stop ENG See Service Manual | P0200 | 523535 | 0 | Injector charge voltage: High | | - Insufficient output  
- Worsening exhaust gas emission  
- Engine stops | Key switch turn OFF |
| 13  | Open circuit of harness or coil in 1st cylinder injector | See Service Manual | P0201 | 651 | 3 | Open circuit of harness Open circuit of injector coil | To minimize PM emission to DPF Injectors which have no error are operated | - Insufficient output  
- Engine vibration increases  
- Worsening exhaust gas emissions | Key switch turn OFF |
| 14  | Open circuit of harness or coil in 3rd cylinder injector | See Service Manual | P0202 | 653 | 3 | Open circuit of harness Open circuit of injector coil | To minimize PM emission to DPF Injectors which have no error are operated | - Insufficient output  
- Engine vibration increases  
- Worsening exhaust gas emissions | Key switch turn OFF |
| 15  | Open circuit of harness or coil in 4th cylinder injector | See Service Manual | P0203 | 654 | 3 | Open circuit of harness Open circuit of injector coil | To minimize PM emission to DPF Injectors which have no error are operated | - Insufficient output  
- Engine vibration increases  
- Worsening exhaust gas emissions | Key switch turn OFF |
| 16  | Open circuit of harness or coil in 2nd cylinder injector | See Service Manual | P0204 | 652 | 3 | Open circuit of harness Open circuit of injector coil | To minimize PM emission to DPF Injectors which have no error are operated | - Insufficient output  
- Engine vibration increases  
- Worsening exhaust gas emissions | Key switch turn OFF |
| 17  | Engine overheat | Stop mowing!! | P0217 | 110 | 0 | Overheat of engine coolant temperature | | - Insufficient output  
- Overheat | Diagnostic counter = zero |
<table>
<thead>
<tr>
<th>No.</th>
<th>DTC name Text 1</th>
<th>Corrective action Text 2</th>
<th>ISO 14229 P-Code</th>
<th>J1939-73 FMI</th>
<th>Detection item</th>
<th>Remark</th>
<th>Behavior During Malfunction</th>
<th>Recovery from error</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Engine overrun</td>
<td>See Service Manual</td>
<td>P0219</td>
<td>190 0</td>
<td>Engine speed exceeds threshold speed</td>
<td>- Overrun</td>
<td>Diagnostic counter = zero</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Boost pressure sensor: Low</td>
<td>See Service Manual</td>
<td>P0237</td>
<td>102 4</td>
<td>Ground short circuit of sensor or harness Failure of sensor</td>
<td>Default value is set in consideration with high altitude usage</td>
<td>- Insufficient output</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>20</td>
<td>Boost pressure sensor: High</td>
<td>See Service Manual</td>
<td>P0238</td>
<td>102 3</td>
<td>Open circuit or +B short circuit of sensor or harness Failure of sensor</td>
<td>Default value is set in consideration with high altitude usage</td>
<td>- Insufficient output</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>21</td>
<td>No input of NE sensor (Crank position sensor) pulse</td>
<td>See Service Manual</td>
<td>P0335</td>
<td>636 8</td>
<td>Open circuit or short circuit of sensor or harness Failure of sensor</td>
<td>(Running only with G signal) Faulty starting Engine Vibration increases slightly Insufficient output</td>
<td>Key switch turn OFF</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>NE sensor (Crank position sensor) pulse number error</td>
<td>See Service Manual</td>
<td>P0336</td>
<td>636 2</td>
<td>Open circuit or short circuit of sensor or harness Failure of sensor</td>
<td>(Running only with G signal) Faulty starting Engine Vibration increases slightly Insufficient output</td>
<td>Key switch turn OFF</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>No input of G sensor (Camshaft position sensor) pulse</td>
<td>See Service Manual</td>
<td>P0340</td>
<td>723 8</td>
<td>Open circuit or short circuit of sensor or harness Failure of sensor</td>
<td>(Invalid G signal) Engine hesitates at start-up Diagnostic counter = zero</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>G-sensor (Camshaft position sensor) pulse number error</td>
<td>See Service Manual</td>
<td>P0341</td>
<td>723 2</td>
<td>Open circuit or short circuit of sensor or harness Failure of sensor</td>
<td>(Invalid G signal) Engine hesitates at start-up Diagnostic counter = zero</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Open circuit of glow relay driving circuit</td>
<td>See Service Manual</td>
<td>P0380</td>
<td>676 5</td>
<td>Open circuit of air glow relay</td>
<td>(At low temperature) Faulty starting White smoke increases</td>
<td>Key switch turn OFF</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>+B short of glow relay driving circuit</td>
<td>See Service Manual</td>
<td>P0380</td>
<td>523544 3</td>
<td>+B short of glow relay driving circuit</td>
<td>(At low temperature) Faulty starting White smoke increases</td>
<td>Key switch turn OFF</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>DTC name Text 1</td>
<td>Corrective action Text 2</td>
<td>ISO 14229 P-Code</td>
<td>J1939-73 SPN</td>
<td>FMI</td>
<td>Detection item</td>
<td>Remark</td>
<td>Behavior During Malfunction</td>
</tr>
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</tr>
<tr>
<td>27</td>
<td>Ground short of glow relay driving circuit</td>
<td>See Service Manual</td>
<td>P0380</td>
<td>523544</td>
<td>4</td>
<td>Ground short of glow relay driving circuit</td>
<td></td>
<td>(At low temperature) - Faulty starting - White smoke increases</td>
</tr>
<tr>
<td>28</td>
<td>Glow heater relay driving circuit overheat</td>
<td>See Service Manual</td>
<td>P0381</td>
<td>676</td>
<td>0</td>
<td>Overheat of glow plug driving circuit</td>
<td></td>
<td>(At low temperature) - Faulty starting - White smoke increases</td>
</tr>
<tr>
<td>29</td>
<td>Oil pressure error</td>
<td>Stop ENG See Service Manual</td>
<td>P0524</td>
<td>100</td>
<td>1</td>
<td>Oil pressure switch</td>
<td></td>
<td>- Engine stops</td>
</tr>
<tr>
<td>30</td>
<td>Battery voltage: Low</td>
<td>See Service Manual</td>
<td>P0562</td>
<td>168</td>
<td>4</td>
<td>Open circuit, short circuit or damage of harness Failure of battery</td>
<td></td>
<td>- Faulty starting - Insufficient output - Worsening exhaust gas emissions - Engine stops in some cases</td>
</tr>
<tr>
<td>31</td>
<td>Battery voltage: High</td>
<td>See Service Manual</td>
<td>P0563</td>
<td>168</td>
<td>3</td>
<td>Open circuit, short circuit or damage of harness Failure of battery</td>
<td></td>
<td>- Faulty starting - Insufficient output - Worsening exhaust gas emissions</td>
</tr>
<tr>
<td>32</td>
<td>QR (IQA) data error</td>
<td>Contact dealer</td>
<td>P0602</td>
<td>523538</td>
<td>2</td>
<td>QR data read error To cover each injector dispersion</td>
<td></td>
<td>- Insufficient output</td>
</tr>
<tr>
<td>33</td>
<td>No QR (IQA) data</td>
<td>Contact dealer</td>
<td>P0602</td>
<td>523538</td>
<td>7</td>
<td>QR data is unwritten</td>
<td></td>
<td>- Insufficient output</td>
</tr>
<tr>
<td>34</td>
<td>ECU FLASH ROM error</td>
<td>Stop ENG See Service Manual</td>
<td>P0605</td>
<td>628</td>
<td>2</td>
<td>FLASH ROM error</td>
<td></td>
<td>- Engine stops</td>
</tr>
<tr>
<td>35</td>
<td>ECU CPU (Main IC) error</td>
<td>Stop ENG See Service Manual</td>
<td>P0606</td>
<td>1077</td>
<td>2</td>
<td>Failure of CPU and/or IC</td>
<td></td>
<td>- Engine stops</td>
</tr>
<tr>
<td>36</td>
<td>ECU CPU (Monitoring IC) error</td>
<td>Stop ENG See Service Manual</td>
<td>P0606</td>
<td>523527</td>
<td>2</td>
<td>Failure of monitoring IC of CPU</td>
<td></td>
<td>- Engine stops</td>
</tr>
<tr>
<td>No.</td>
<td>DTC name</td>
<td>Corrective action</td>
<td>ISO 14229 P-Code</td>
<td>J1939-73 SPN</td>
<td>FMI</td>
<td>Detection item</td>
<td>Remark</td>
<td>Behavior During Malfunction</td>
</tr>
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</tr>
<tr>
<td>37</td>
<td>Injector charge voltage: Low</td>
<td>Stop ENG See Service Manual</td>
<td>P0611</td>
<td>523525</td>
<td>1</td>
<td>Injector charge voltage: Low Failure of charge circuit of ECU</td>
<td>- Insufficient output - Worsening exhaust gas emissions - Engine stops</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>38</td>
<td>Open circuit of SCV (MPROP)</td>
<td>Stop ENG See Service Manual</td>
<td>P0627</td>
<td>1347</td>
<td>5</td>
<td>Open circuit of SCV (MPROP)</td>
<td>- Insufficient output - Worsening exhaust gas emissions</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>39</td>
<td>SCV (MPROP) drive system error</td>
<td>Stop ENG See Service Manual</td>
<td>P0628</td>
<td>1347</td>
<td>4</td>
<td>Ground short circuit of SCV (MPROP)</td>
<td>- Insufficient output - Worsening exhaust gas emissions</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>40</td>
<td>+B short circuit of SCV (MPROP)</td>
<td>See Service Manual</td>
<td>P0629</td>
<td>1347</td>
<td>3</td>
<td>+B short circuit of SCV (MPROP)</td>
<td>- Insufficient output - Worsening exhaust gas emissions</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>41</td>
<td>Injector drive IC error or Open circuit</td>
<td>Stop ENG See Service Manual</td>
<td>P062B</td>
<td>1077</td>
<td>12</td>
<td>Injector drive IC error or Open circuit of No.1 &amp; 4 cylinder injector or Open circuit of No.2 &amp; 3 cylinder injector</td>
<td>- Engine stops</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>42</td>
<td>Internal injector drive circuit short</td>
<td>Stop ENG See Service Manual</td>
<td>P062D</td>
<td>523605</td>
<td>6</td>
<td>Short circuit in Injector driver IC</td>
<td>- Insufficient output - Engine Vibration increases - Worsening exhaust gas emissions - Engine stops in some cases</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>43</td>
<td>Sensor supply voltage 1: Low</td>
<td>See Service Manual</td>
<td>P0642</td>
<td>3509</td>
<td>4</td>
<td>Sensor supply voltage 1 error or recognition error</td>
<td>Emission related</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>No.</td>
<td>DTC name</td>
<td>Corrective action</td>
<td>ISO 14229 P-Code</td>
<td>J1939-73 SPN</td>
<td>FMI</td>
<td>Detection item</td>
<td>Remark</td>
<td>Behavior During Malfunction</td>
</tr>
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<td>-----------------------------------------------</td>
</tr>
<tr>
<td>44</td>
<td>Sensor supply voltage 1: High</td>
<td>See Service Manual</td>
<td>P0643</td>
<td>3509</td>
<td>3</td>
<td>Sensor supply voltage 1 error or recognition error</td>
<td>Emission related</td>
<td>- Faulty starting</td>
</tr>
<tr>
<td>45</td>
<td>Sensor supply voltage 2: Low</td>
<td>See Service Manual</td>
<td>P0652</td>
<td>3510</td>
<td>4</td>
<td>Sensor supply voltage 2 error or recognition error</td>
<td>Emission related</td>
<td>- Faulty starting</td>
</tr>
<tr>
<td>46</td>
<td>Sensor supply voltage 2: High</td>
<td>See Service Manual</td>
<td>P0653</td>
<td>3510</td>
<td>3</td>
<td>Sensor supply voltage 2 error or recognition error</td>
<td>Emission related</td>
<td>- Faulty starting</td>
</tr>
<tr>
<td>47</td>
<td>Sensor supply voltage 3: Low</td>
<td>See Service Manual</td>
<td>P0662</td>
<td>3511</td>
<td>4</td>
<td>Sensor supply voltage 3 error or recognition error</td>
<td>Emission related</td>
<td>- Faulty starting</td>
</tr>
<tr>
<td>48</td>
<td>Sensor supply voltage 3: High</td>
<td>See Service Manual</td>
<td>P0663</td>
<td>3511</td>
<td>3</td>
<td>Sensor supply voltage 3 error or recognition error</td>
<td>Emission related</td>
<td>- Faulty starting</td>
</tr>
<tr>
<td>49</td>
<td>Main relay is locked in closed position</td>
<td>See Service Manual</td>
<td>P0687</td>
<td>1485</td>
<td>2</td>
<td>Failure of main relay</td>
<td>Emission related</td>
<td>- Battery goes dead</td>
</tr>
<tr>
<td>50</td>
<td>Ground short of Starter relay driving circuit</td>
<td>See Service Manual</td>
<td>P081A</td>
<td>677</td>
<td>4</td>
<td>Ground short of Starter relay driving circuit</td>
<td>Emission related</td>
<td>- Faulty starting</td>
</tr>
<tr>
<td>51</td>
<td>Accelerator position sensor 1: Low</td>
<td>See Service Manual</td>
<td>P2122</td>
<td>91</td>
<td>4</td>
<td>Ground short circuit or open circuit of sensor or harness</td>
<td>Emission related</td>
<td>- Insufficient output</td>
</tr>
<tr>
<td>52</td>
<td>Accelerator position sensor 1: High</td>
<td>See Service Manual</td>
<td>P2123</td>
<td>91</td>
<td>3</td>
<td>Battery short circuit out of sensor or harness</td>
<td>Emission related</td>
<td>- Insufficient output</td>
</tr>
<tr>
<td>53</td>
<td>Accelerator position sensor 2: Low</td>
<td>See Service Manual</td>
<td>P2127</td>
<td>29</td>
<td>4</td>
<td>Ground short circuit or open circuit of sensor or harness</td>
<td>Emission related</td>
<td>- Insufficient output</td>
</tr>
<tr>
<td>54</td>
<td>Accelerator position sensor 2: High</td>
<td>See Service Manual</td>
<td>P2128</td>
<td>29</td>
<td>3</td>
<td>Battery short circuit out of sensor or harness</td>
<td>Emission related</td>
<td>- Insufficient output</td>
</tr>
<tr>
<td>No.</td>
<td>DTC name Text 1</td>
<td>Corrective action Text 2</td>
<td>ISO 14229 P-Code</td>
<td>J1939-73 SPN</td>
<td>FMI</td>
<td>Detection item</td>
<td>Remark</td>
<td>Behavior During Malfunction</td>
</tr>
<tr>
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</tr>
<tr>
<td>55</td>
<td>Accelerator Position Sensor Error (CAN)</td>
<td>See Service Manual</td>
<td>P2131</td>
<td>523543</td>
<td>2</td>
<td>Accelerator position sensor signal error (sensor or harness open circuit, ground short circuit etc.)</td>
<td>- Insufficient output</td>
<td>Diagnostic counter = zero (CAN signal recovers)</td>
</tr>
<tr>
<td>57</td>
<td>No. 1 &amp; 4 cylinder injector short to +B or GND</td>
<td>Stop ENG See Service Manual</td>
<td>P2148</td>
<td>523523</td>
<td>3</td>
<td>Wiring harness short to +B or Wiring harness short to ground</td>
<td>To minimize PM emission to DPF Injectors which have no error are operated</td>
<td>- Insufficient output - Engine Vibration increases - Worsening exhaust gas emissions - Engine stops in some cases</td>
</tr>
<tr>
<td>59</td>
<td>No. 2 &amp; 3 cylinder injector short to +B or GND</td>
<td>Stop ENG See Service Manual</td>
<td>P2151</td>
<td>523524</td>
<td>3</td>
<td>Wiring harness short to +B or Wiring harness short to ground</td>
<td>To minimize PM emission to DPF Injectors which have no error are operated</td>
<td>- Insufficient output - Engine Vibration increases - Worsening exhaust gas emissions - Engine stops in some cases</td>
</tr>
<tr>
<td>60</td>
<td>Barometric pressure sensor error (Low side)</td>
<td>See Service Manual</td>
<td>P2228</td>
<td>108</td>
<td>4</td>
<td>Sensor or ECU internal circuit short to ground</td>
<td>Default value is set in consideration with high altitude usage</td>
<td>- Insufficient output</td>
</tr>
<tr>
<td>61</td>
<td>Barometric pressure sensor error (High side)</td>
<td>See Service Manual</td>
<td>P2229</td>
<td>108</td>
<td>3</td>
<td>Sensor or ECU internal circuit short to +B</td>
<td>Default value is set in consideration with high altitude usage</td>
<td>- Insufficient output</td>
</tr>
<tr>
<td>62</td>
<td>Pressure limiter not open</td>
<td>See Service Manual</td>
<td>P2293</td>
<td>679</td>
<td>7</td>
<td>Rail pressure value is sticking or too low engine power not to open PL valve forcibility</td>
<td>- Engine stops</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>CAN1 Bus off</td>
<td>See Service Manual</td>
<td>U0077</td>
<td>523604</td>
<td>2</td>
<td>CAN1 +B or GND short circuit or high traffic error</td>
<td>- Insufficient output - Transmitted CAN data are invalid</td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>DTC name Text 1</td>
<td>Corrective action Text 2</td>
<td>ISO 14229 P-Code</td>
<td>J1939-73 SPN</td>
<td>FMI</td>
<td>Detection item</td>
<td>Remark</td>
<td>Behavior During Malfunction</td>
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<tr>
<td>64</td>
<td>CAN2 Bus off</td>
<td>See Service Manual</td>
<td>U0075</td>
<td>523547</td>
<td>2</td>
<td>CAN2 +B or GND short circuit or high traffic error</td>
<td>- Insufficient output - Transmitted CAN data are invalid</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>65</td>
<td>CAN-KBT Frame error</td>
<td>See Service Manual</td>
<td>U0081</td>
<td>523548</td>
<td>2</td>
<td>CAN-KBT original frame open circuit error</td>
<td>- Insufficient output</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>66</td>
<td>Intake air temp. built-in MAF sensor: Low</td>
<td>See Service Manual</td>
<td>P0072</td>
<td>171</td>
<td>4</td>
<td>Ground short circuit of sensor or harness</td>
<td>None</td>
<td>Diagnostic counter = zero</td>
</tr>
<tr>
<td>67</td>
<td>Intake air temp. built-in MAF sensor: High</td>
<td>See Service Manual</td>
<td>P0073</td>
<td>171</td>
<td>3</td>
<td>Open circuit or +B short circuit of sensor or harness</td>
<td>None</td>
<td>Diagnostic counter = zero</td>
</tr>
<tr>
<td>68</td>
<td>Intake air volume: Low</td>
<td>See Service Manual</td>
<td>P0101</td>
<td>132</td>
<td>1</td>
<td>Engine inlet air mass flow rate lacking (Disconnect turbo blower intake hose)</td>
<td>- Insufficient output</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>70</td>
<td>MAF sensor: High</td>
<td>See Service Manual</td>
<td>P0103</td>
<td>132</td>
<td>3</td>
<td>+B short circuit of sensor or harness</td>
<td>Engine is not stopped forcibly by ECU However KUBOTA strongly recommends operator to stop engine as soon as possible</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>71</td>
<td>EGR actuator open circuit</td>
<td>See Service Manual</td>
<td>P0403</td>
<td>523574</td>
<td>3</td>
<td>EGR actuator open circuit</td>
<td>- Insufficient output - Worsening exhaust gas performance</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>72</td>
<td>EGR actuator coil short</td>
<td>See Service Manual</td>
<td>P0404</td>
<td>523574</td>
<td>4</td>
<td>EGR actuator coil short</td>
<td>- Insufficient output - Worsening exhaust gas emissions</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>73</td>
<td>EGR position sensor failure</td>
<td>See Service Manual</td>
<td>P0409</td>
<td>523572</td>
<td>4</td>
<td>EGR position sensor failure</td>
<td>- Insufficient output - Worsening exhaust gas emissions</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>74</td>
<td>Exhaust gas temperature sensor 1: Low</td>
<td>See Service Manual</td>
<td>P0543</td>
<td>3242</td>
<td>4</td>
<td>Ground short circuit of sensor or harness</td>
<td>None</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>No.</td>
<td>DTC name Text 1</td>
<td>Corrective action Text 2</td>
<td>ISO 14229 P-Code</td>
<td>J1939-73 SPN</td>
<td>FMI</td>
<td>Detection item</td>
<td>Remark</td>
<td>Behavior During Malfunction</td>
</tr>
<tr>
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<tr>
<td>75</td>
<td>Exhaust gas temperature sensor 1: High</td>
<td>See Service Manual</td>
<td>P0544</td>
<td>3242</td>
<td>3</td>
<td>Open circuit or +B short circuit of sensor or harness</td>
<td>None</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>76</td>
<td>Exhaust gas temperature sensor 0: Low</td>
<td>See Service Manual</td>
<td>P0546</td>
<td>4765</td>
<td>4</td>
<td>Ground short circuit of sensor or harness</td>
<td>None</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>77</td>
<td>Exhaust gas temperature sensor 0: High</td>
<td>See Service Manual</td>
<td>P0547</td>
<td>4765</td>
<td>3</td>
<td>Open circuit or +B short circuit of sensor or harness</td>
<td>None</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>78</td>
<td>EEPROM check sum error</td>
<td>See Service Manual</td>
<td>P1990</td>
<td>523700</td>
<td>13</td>
<td>KBT-EEPROM check sum error</td>
<td>None</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>79</td>
<td>EEPROM check sum error (DST1)</td>
<td>See Service Manual</td>
<td>P1991</td>
<td>523701</td>
<td>13</td>
<td>DST1-EEPROM check sum error</td>
<td>None</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>80</td>
<td>EEPROM check sum error (DST2)</td>
<td>See Service Manual</td>
<td>P1992</td>
<td>523702</td>
<td>13</td>
<td>DST2-EEPROM check sum error</td>
<td>None</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>81</td>
<td>Intake throttle feedback error</td>
<td>See Service Manual</td>
<td>P2108</td>
<td>523580</td>
<td>2</td>
<td>Intake throttle feedback error</td>
<td>None</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>82</td>
<td>Accelerator position sensor correlation error</td>
<td>See Service Manual</td>
<td>P2135</td>
<td>91</td>
<td>2</td>
<td>Deviation from designed correlation in two sensors</td>
<td>- Insufficient output</td>
<td>Diagnostic counter = zero</td>
</tr>
<tr>
<td>83</td>
<td>EGR actuator valve stuck</td>
<td>See Service Manual</td>
<td>P2413</td>
<td>523575</td>
<td>7</td>
<td>EGR actuator valve stuck</td>
<td>- Insufficient output</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>84</td>
<td>EGR (DC motor) overheat</td>
<td>See Service Manual</td>
<td>P2414</td>
<td>523576</td>
<td>2</td>
<td>EGR (DC motor) overheat</td>
<td>- Insufficient output</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>85</td>
<td>EGR (DC motor) temp. sensor failure</td>
<td>See Service Manual</td>
<td>P2415</td>
<td>523577</td>
<td>2</td>
<td>EGR (DC motor) temp. sensor failure</td>
<td>- Insufficient output</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>86</td>
<td>Exhaust gas temperature sensor 2: Low</td>
<td>See Service Manual</td>
<td>P242C</td>
<td>3246</td>
<td>4</td>
<td>Ground short circuit of sensor or harness</td>
<td>None</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>87</td>
<td>Exhaust gas temperature sensor 2: High</td>
<td>See Service Manual</td>
<td>P242D</td>
<td>3246</td>
<td>3</td>
<td>Open circuit or +B short circuit of sensor or harness</td>
<td>None</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>No.</td>
<td>DTC name Text 1</td>
<td>Corrective action Text 2</td>
<td>ISO 14229 P-Code</td>
<td>J1939-73 SPN</td>
<td>FMI</td>
<td>Detection item</td>
<td>Remark</td>
<td>Behavior During Malfunction</td>
</tr>
<tr>
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<tr>
<td>88</td>
<td>Differential pressure sensor 1: Low</td>
<td>See Service Manual</td>
<td>P2454</td>
<td>3251</td>
<td>4</td>
<td>Ground short circuit of sensor or harness</td>
<td>None</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>90</td>
<td>Intake throttle lift sensor: Low</td>
<td>See Service Manual</td>
<td>P2621</td>
<td>523582</td>
<td>4</td>
<td>Intake throttle lift sensor: Low</td>
<td>None</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>91</td>
<td>Intake throttle lift sensor: High</td>
<td>See Service Manual</td>
<td>P2622</td>
<td>523582</td>
<td>3</td>
<td>Intake throttle lift sensor: High</td>
<td>None</td>
<td>Key switch turn OFF</td>
</tr>
<tr>
<td>92</td>
<td>Emission deterioration</td>
<td>See Service Manual</td>
<td>P3001</td>
<td>3252</td>
<td>0</td>
<td>DOC is heated up due to unburned fuel</td>
<td>To minimize PM emission to DPF</td>
<td>- Insufficient output</td>
</tr>
<tr>
<td>93</td>
<td>Emergency Exhaust gas temperature sensor 0: High</td>
<td>Stop ENG See Service Manual</td>
<td>P3002</td>
<td>4765</td>
<td>0</td>
<td>DOC inlet temp. (T0): High</td>
<td>• In case engine ECU is not involved to drive starter, starter activation should be inhibited by other way until exhaust temp. reduces down to 300 degC (572 degF)</td>
<td>- Engine stops - Inhibited cranking until down to 300 degC (572 degF)</td>
</tr>
<tr>
<td>94</td>
<td>Emergency Exhaust gas temperature sensor 1: High</td>
<td>Stop ENG See Service Manual</td>
<td>P3003</td>
<td>3242</td>
<td>0</td>
<td>DPF inlet temp. (T1): High</td>
<td>• In case engine ECU is not involved to drive starter, starter activation should be inhibited by other way until exhaust temp. reduces down to 300 degC (572 degF)</td>
<td>- Engine stops - Inhibited cranking until down to 300 degC (572 degF)</td>
</tr>
<tr>
<td>95</td>
<td>Emergency Exhaust gas temperature sensor 2: High</td>
<td>Stop ENG See Service Manual</td>
<td>P3004</td>
<td>3246</td>
<td>0</td>
<td>DPF outlet temp. (T2): High</td>
<td>• In case engine ECU is not involved to drive starter, starter activation should be inhibited by other way until exhaust temp. reduces down to 300 degC (572 degF)</td>
<td>- Engine stops - Inhibited cranking until down to 300 degC (572 degF)</td>
</tr>
<tr>
<td>96</td>
<td>Excessive PM3</td>
<td>Start DPF Parked Regeneration immediately</td>
<td>P3006</td>
<td>3701</td>
<td>15</td>
<td>PM accumulation level 3</td>
<td>To minimize PM emission</td>
<td>- Insufficient output</td>
</tr>
<tr>
<td>No.</td>
<td>DTC name</td>
<td>Corrective action Text 1</td>
<td>ISO 14229 P-Code</td>
<td>J1939-73 SPN</td>
<td>FMI</td>
<td>Detection item</td>
<td>Remark</td>
<td>Behavior During Malfunction</td>
</tr>
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</tr>
<tr>
<td>97</td>
<td>Excessive PM4</td>
<td>Stop engine!! Contact dealer immediately</td>
<td>P3007</td>
<td>3701</td>
<td>16</td>
<td>PM accumulation level 4</td>
<td>To minimize PM emission</td>
<td>- Insufficient output</td>
</tr>
<tr>
<td>98</td>
<td>Excessive PM5</td>
<td>Stop engine!! Contact dealer immediately</td>
<td>P3008</td>
<td>3701</td>
<td>0</td>
<td>PM accumulation level 5</td>
<td>To minimize PM emission Engine is not stopped forcibly by ECU However KUBOTA strongly recommends operator to stop engine as soon as possible</td>
<td>- Insufficient output</td>
</tr>
<tr>
<td>99</td>
<td>Boost pressure: Low</td>
<td>See Service Manual</td>
<td>P3011</td>
<td>132</td>
<td>15</td>
<td>Disconnect the hose between the turbo blower out and intake flange Boost pressure sensor error</td>
<td>Engine power is restricted by boost pressure signal accordingly To minimize PM emission to DPF</td>
<td>- Insufficient output</td>
</tr>
<tr>
<td>100</td>
<td>Low coolant temp. in parked regeneration</td>
<td>See Service Manual</td>
<td>P3012</td>
<td>523589</td>
<td>17</td>
<td>During regeneration mode, Engine warm-up condition is not satisfied (coolant temp. is low)</td>
<td>None</td>
<td>Diagnostic counter = zero (Leaving from Parked active regeneration status)</td>
</tr>
<tr>
<td>101</td>
<td>Parked regeneration time out</td>
<td>See Service Manual</td>
<td>P3013</td>
<td>523590</td>
<td>16</td>
<td>Time out error: regeneration incomplete due to low temperature of DPF</td>
<td>None</td>
<td>Diagnostic counter = zero (Leaving from Parked active regeneration status)</td>
</tr>
<tr>
<td>102</td>
<td>All exhaust temp. sensor failure</td>
<td>See Service Manual</td>
<td>P3018</td>
<td>523599</td>
<td>0</td>
<td>All exhaust temp. sensor failure simultaneously</td>
<td>None</td>
<td>Diagnostic counter = zero</td>
</tr>
<tr>
<td>103</td>
<td>High exhaust gas temp. after emergency high temp. DTC</td>
<td>Stop ENG See Service Manual</td>
<td>P3023</td>
<td>523601</td>
<td>0</td>
<td>Exhaust gas temperature sensor 0, 1, 2 output</td>
<td>None</td>
<td>Diagnostic counter = zero</td>
</tr>
<tr>
<td>104</td>
<td>High frequency of regeneration</td>
<td>See Service Manual</td>
<td>P3024</td>
<td>523602</td>
<td>0</td>
<td>Time interval from the end time to the start time of the regeneration</td>
<td>- Worsening exhaust gas emissions (NOx)</td>
<td>Key switch turn OFF (Reset by Service tool)</td>
</tr>
<tr>
<td>No.</td>
<td>DTC name Text 1</td>
<td>Corrective action Text 2</td>
<td>ISO 14229 P-Code</td>
<td>J1939-73 Detection item</td>
<td>Remark</td>
<td>Behavior During Malfunction</td>
<td>Recovery from error</td>
<td></td>
</tr>
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<tr>
<td>105</td>
<td>Over heat precaution</td>
<td>See Service Manual</td>
<td>P3025 523603 15</td>
<td>Coolant temp.</td>
<td>- Worsening exhaust gas emissions (NOx)</td>
<td>Diagnostic counter = zero</td>
<td></td>
<td></td>
</tr>
<tr>
<td>106</td>
<td>No communication with EGR</td>
<td>See Service Manual</td>
<td>U0076 523578 2</td>
<td>No communication with EGR</td>
<td>- Insufficient output - Worsening exhaust gas emissions</td>
<td>Key switch turn OFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>107</td>
<td>CAN CCVS (Parking SW and Vehicle speed) frame error</td>
<td>See Service Manual</td>
<td>U0082 523591 2</td>
<td>CAN_CCVS communication stopping</td>
<td>None</td>
<td>Key switch turn OFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>108</td>
<td>CAN CM1 (Regen SW) frame error</td>
<td>See Service Manual</td>
<td>U0083 523592 2</td>
<td>CAN_CM1 communication stopping</td>
<td>None</td>
<td>Key switch turn OFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>109</td>
<td>CAN DDC1 (Transmission) frame error</td>
<td>See Service Manual</td>
<td>U0084 523593 2</td>
<td>CAN_DDC1 communication stopping</td>
<td>None</td>
<td>Key switch turn OFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>CAN ETC2 (Neutral SW) frame error</td>
<td>See Service Manual</td>
<td>U0085 523594 2</td>
<td>CAN_ETC2 communication stopping</td>
<td>None</td>
<td>Key switch turn OFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>111</td>
<td>CAN ETC5 (Neutral SW) frame error</td>
<td>See Service Manual</td>
<td>U0086 523595 2</td>
<td>CAN_ETC5 communication stopping</td>
<td>None</td>
<td>Key switch turn OFF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>112</td>
<td>CAN TSC1 frame error</td>
<td>See Service Manual</td>
<td>U0087 523596 2</td>
<td>CAN_TSC1 communication stopping</td>
<td>None</td>
<td>Diagnostic counter = zero</td>
<td></td>
<td></td>
</tr>
<tr>
<td>113</td>
<td>CAN EBC1 frame error</td>
<td>See Service Manual</td>
<td>U0089 523598 2</td>
<td>CAN_EBC1 communication stopping</td>
<td>None</td>
<td>Diagnostic counter = zero</td>
<td></td>
<td></td>
</tr>
<tr>
<td>114</td>
<td>FUEL LEVEL LOW</td>
<td>Refuel None 96 17</td>
<td>Remaining fuel volume at specified value or less (factory default setting=10%) Can be adjusted between 10% and 80%</td>
<td>None</td>
<td>Supply fuel until remaining fuel volume reaches the specified value or above</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>DTC name Text 1</td>
<td>Corrective action Text 2</td>
<td>ISO 14229 P-Code</td>
<td>J1939-73 SPN</td>
<td>FMI</td>
<td>Detection item</td>
<td>Remark</td>
<td>Behavior During Malfunction</td>
</tr>
<tr>
<td>-----</td>
<td>-----------------</td>
<td>--------------------------</td>
<td>--------------------</td>
<td>-------------</td>
<td>-----</td>
<td>----------------</td>
<td>--------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>116</td>
<td>Loss of DPF Function</td>
<td>See Service Manual</td>
<td>P3015</td>
<td>3936</td>
<td>2</td>
<td>Loss of function of DPF</td>
<td>PCD</td>
<td>-</td>
</tr>
<tr>
<td>117</td>
<td>Open Circuit of Differential pressure sensor</td>
<td>See Service Manual</td>
<td>P2455</td>
<td>3251</td>
<td>3</td>
<td>Open circuit or +B short circuit of sensor or harness</td>
<td>PCD</td>
<td>None</td>
</tr>
<tr>
<td>118</td>
<td>Open Circuit of ENG CAN Line</td>
<td>See Service Manual</td>
<td>U0076</td>
<td>523578</td>
<td>2</td>
<td>No communication with EGR</td>
<td>NCD</td>
<td>None</td>
</tr>
<tr>
<td>119</td>
<td>Open Circuit of MAF Sensor</td>
<td>See Service Manual</td>
<td>P0102</td>
<td>132</td>
<td>4</td>
<td>Open circuit or ground short circuit of sensor or harness</td>
<td>Engine is not stopped forcibly by ECU However KUBOTA strongly recommends operator to stop engine as soon as possible - Insufficient output - Worsening exhaust gas emissions</td>
<td>Diagnostic counter = zero</td>
</tr>
</tbody>
</table>

LM3210A
Handling Instructions
Engine Configuration

This function is not supported.

1-Up Display Setup

With "SETUP 1-UP DISPLAY", the displayed parameters can be reset to the factory defaults, or the monitor display of selected, necessary parameters can be set up. The following 3 items appear when "SETUP 1-UP DISPLAY" is selected.

- USE DEFAULTS
- CUSTOM SETUP
- AUTOMATIC SCAN

- Use Defaults

With "USE DEFAULTS", the 1-up display parameters return to the factory defaults.

1. Press the menu key. After the main menu appears, use the arrow keys to highlight "SETUP 1-UP DISPLAY", and then press the Enter key.

2. Highlight "USE DEFAULTS", and then press the Enter key.

- Custom Setup

With "CUSTOM SETUP", the type and number of parameters as well as their display order can be specified.

1. Press the menu key. After the main menu appears, use the arrow keys to highlight "SETUP 1-UP DISPLAY", and then press the Enter key.

3. "RESTORED TO DEFAULTS" appears in the monitor display, and the parameters are reset to the factory defaults of the following 8 items.

[1] ENGINE SPEED
[2] ENGINE COOLANT TEMPERATURE
[3] %SOOT
[4] FUEL LEVEL
[5] ENGINE OIL PRESSURE
[6] MACHINE HOURS
[7] BATTERY POTENTIAL
[8] DPF STATUS

4. After the settings have been applied, pressing the menu key once returns to the main menu, and pressing the key again returns to the 1-up/4-up display screen.
2. Highlight "CUSTOM SETUP", and then press the Enter key. The list of parameters appears.

3. Change the parameters.
   [1] To add a parameter
   a. Use the arrow keys to highlight the parameter to be added, and then press the Enter key.

   [2] To deselect a parameter and remove it from the list of displayed parameters
   a. Highlight the parameter, and then press the Enter key.

4. After the settings have been applied, pressing the menu key once returns to the main menu, and pressing the key again returns to the 1-up/4-up display screen.
Automatic Scan

With "AUTOMATIC SCAN", the 1-up display can be set to automatically scroll through the selected parameters one by one.

1. Press the menu key.
   After the main menu appears, use the arrow keys to highlight "SETUP 1-UP DISPLAY", and then press the Enter key.

2. When "AUTOMATIC SCAN ON" appears, the parameters are scrolled automatically. For manual scrolling, highlight "AUTOMATIC SCAN ON", and then press the Enter key.
   It turns into "AUTOMATIC SCAN OFF" and the parameters will be scrolled manually.

3. After the settings have been applied, pressing the menu key once returns to the main menu, and pressing the key again returns to the 1-up/4-up display screen.
   Note: When the parameters are scrolled automatically, press the Enter key once to pause scrolling.
   When scrolling is paused, press the Enter key once to restart scrolling.

4-Up Display Setup

With "SETUP 4-UP DISPLAY", the displayed parameters can be reset to the factory defaults, or the monitor display of selected, necessary parameters can be set up.

The following 2 items appear when "SETUP 4-UP DISPLAY" is selected.

- USE DEFAULTS
- CUSTOM SETUP

Use Defaults

With "USE DEFAULTS", the 4-up display parameters return to the factory defaults.

1. Press the menu key.
   After the main menu appears, use the arrow keys to highlight "SETUP 4-UP DISPLAY", and then press the Enter key.
2. Highlight "USE DEFAULTS", and then press the Enter key.

3. "RESTORED TO DEFAULTS" appears in the monitor display, and the parameters are reset to the factory defaults of the following 8 items.
   - First page
     [1] ENGINE SPEED
     [2] ENGINE COOLANT TEMPERATURE
     [3] %SOOT
     [4] FUEL LEVEL
   - Second page
     [1] ENGINE OIL PRESSURE
     [2] MACHINE HOURS
     [3] BATTERY POTENTIAL
     [4] DPF STATUS

4. After the settings have been applied, pressing the menu key once returns to the main menu, and pressing the key again returns to the 1-up/4-up display screen.

- Custom Setup

With "CUSTOM SETUP", the type and number of parameters as well as their display order can be specified.

1. Press the menu key. After the main menu appears, use the arrow keys to highlight "SETUP 4-UP DISPLAY", and then press the Enter key.

2. Highlight "CUSTOM SETUP", and then press the Enter key.
3. Select the page.
   [1] Check that the values for the four parameters are highlighted.

4. Change the parameters.
   [1] Check that the value for one parameter is highlighted.

The number at the right of the parameter indicates the location in the 4-up display.
1=Upper left
2=Lower left
3=Upper right
4=Lower right
b. Check that a number appeared to the right of the selected parameter.

Custom Setup_008

[5] To deselect a parameter and remove it from the list of displayed parameters

a. Highlight the parameter to be removed, and then press the Enter key.

Custom Setup_009

b. Check that the number at the right of the parameter disappeared.

Custom Setup_011

c. Press the menu key and check that the parameter has changed.

Custom Setup_012

5. Pressing the menu key once returns to the display for selecting the page.
6. To change other parameters, repeat steps 3 to 5.

Service Reminders

With "SERVICE REMINDERS", the notification of replacement time for the following 5 consumables can be specified.

- Engine oil
- Engine oil filter
- Hydraulic oil
- Hydraulic oil filter
- Air cleaner

The following 2 items appear when "SERVICE REMINDERS" is selected.

- RESET REMINDERS
- MODIFY REMINDERS
■ Reset Reminders

With "RESET REMINDER", displayed remaining time can be reset to the time specified with "MODIFY REMINDERS".

1. Press the menu key.
   After the main menu appears, use the arrow keys to highlight "SERVICE REMINDERS", and then press the Enter key.

2. Highlight "RESET REMINDER", and then press the Enter key.

3. Use the arrow keys to highlight the item to be changed, and then press the Enter key. A plus appears at the right of the currently selected items.

4. The remaining time for the selected item appears.

5. The screen for selecting the item appears.

[1] To reset the remaining time to the specified time, press the Enter key.
To reset, press the Enter key.
To cancel resetting, press the menu key.
- Modify Reminders

With "MODIFY REMINDERS", the replacement time period for consumables can be specified. The factory default replacement time periods are the initial time periods. Change the setting as necessary. The replacement time period should be in accordance with the maintenance schedule.

<table>
<thead>
<tr>
<th></th>
<th>Initial time period</th>
<th>Regular time period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine oil</td>
<td>50 hrs.</td>
<td>400 hrs.</td>
</tr>
<tr>
<td>Engine oil filter</td>
<td>50 hrs.</td>
<td>400 hrs.</td>
</tr>
<tr>
<td>Hydraulic oil</td>
<td>100 hrs.</td>
<td>500 hrs.</td>
</tr>
<tr>
<td>Hydraulic oil filter</td>
<td>100 hrs.</td>
<td>500 hrs.</td>
</tr>
<tr>
<td>Air cleaner</td>
<td>600 hrs.</td>
<td>600 hrs.</td>
</tr>
</tbody>
</table>

1. Press the menu key. After the main menu appears, use the arrow keys to highlight "SERVICE REMINDERS", and then press the Enter key.

2. Highlight "MODIFY REMINDERS", and then press the Enter key.

3. Use the arrow keys to highlight the item to be changed, and then press the Enter key. A plus appears at the right of the currently specified items.

4. The replacement time period for the selected item appears.
5. Highlight the digit to be changed.
   Press the right arrow key to increase the number. Press the left arrow key to change the digit.

6. To save the specified time period, press the Enter key.

7. "MODIFY SERVICE REMINDER?" appears.
   To save the changes, press the Enter key.
   To cancel the changes, press the menu key.

   Modify Reminders_005
   1 Right arrow key
   2 Left arrow key

8. The display for selecting the item appears.

Reminder Display

- Important
  If a warning message appears, immediately stop operation, and then perform the replacement procedure.

1. When the specified replacement time period for a consumable has passed, a warning message appears in the monitor display and the LED (yellow) lights up.

2. Pressing the Enter key changes the screen from the warning message to the parameter display.

3. A warning mark appears in the upper-right corner of the monitor display.

4. Change the replacement time period of consumables with "RESET REMINDERS" or "MODIFY REMINDERS".
   When the replacement time period is changed, the warning message and mark disappear.
Select Units

With "SELECT UNITS", the units of parameter values can be set to any of the following three formats.

- ENGLISH
- METRIC KPA
- METRIC BAR

An asterisk appears at the right of the currently selected unit.

<table>
<thead>
<tr>
<th>Monitor display S</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ENGLISH</td>
</tr>
<tr>
<td>ENG RPM</td>
<td>RPM</td>
</tr>
<tr>
<td>DEMAND TQ</td>
<td>%</td>
</tr>
<tr>
<td>ENG TORQ</td>
<td>%</td>
</tr>
<tr>
<td>LOAD@RPM</td>
<td>%</td>
</tr>
<tr>
<td>ACCEL PED1</td>
<td>%</td>
</tr>
<tr>
<td>DES ENG SP</td>
<td>RPM</td>
</tr>
<tr>
<td>COOL TEMP</td>
<td>°F</td>
</tr>
<tr>
<td>FUEL RATE</td>
<td>G/HR</td>
</tr>
<tr>
<td>THROTTLE</td>
<td>%</td>
</tr>
<tr>
<td>BST PRES</td>
<td>PSI</td>
</tr>
<tr>
<td>MANI TEMP</td>
<td>°F</td>
</tr>
<tr>
<td>BAT VOLT</td>
<td>VDC</td>
</tr>
<tr>
<td>BARO PRES</td>
<td>PSI</td>
</tr>
<tr>
<td>AMB TEMP</td>
<td>°F</td>
</tr>
<tr>
<td>AIR IN TP</td>
<td>°F</td>
</tr>
<tr>
<td>FUEL USED</td>
<td>Gal</td>
</tr>
<tr>
<td>ENG HRS</td>
<td>H</td>
</tr>
<tr>
<td>OIL PRES</td>
<td>PSI</td>
</tr>
<tr>
<td>RAIL PRES</td>
<td>PSI</td>
</tr>
<tr>
<td>AIR RATE</td>
<td>Gal</td>
</tr>
<tr>
<td>DOC TEMP</td>
<td>°F</td>
</tr>
<tr>
<td>EF IN T</td>
<td>°F</td>
</tr>
<tr>
<td>DIFF PRES</td>
<td>PSI</td>
</tr>
<tr>
<td>EF OUT T</td>
<td>°F</td>
</tr>
<tr>
<td>%SOOT</td>
<td>%</td>
</tr>
<tr>
<td>MACH HRS</td>
<td>H</td>
</tr>
<tr>
<td>FUEL LEVEL</td>
<td>%</td>
</tr>
</tbody>
</table>

Note:
The factory default unit is "METRIC KPA".
Adjust Backlight

With "ADJUST BACKLIGHT", the brightness of the monitor display can be adjusted. Press the right arrow key to make the display brighter. Press the left arrow key to make the display darker.

Adjust Contrast

With "ADJUST CONTRAST", the contrast of the monitor display can be adjusted. Press the right arrow key to decrease the contrast. Press the left arrow key to increase the contrast.

Utilities

With "UTILITIES", the remaining fuel volume can be specified and the monitor configuration can be displayed. The following 6 items appear when "UTILITIES" is selected.

- SOFTWARE VERSION
- FAULT CONVERSION
- ANALOG INPUT
- OEM

Note: "GAGE DATA" and "REMOVE ALL GAGES" are not supported on this machine.

Software Version

With "SOFTWARE VERSION", the software version of the monitor can be displayed.

Fault Conversion

With "FAULT CONVERSION", the J1939 fault code conversion method can be specified. The monitor normally detects J1939 version 4. Since the engine ECU of this machine uses J1939 version 4, no adjustments are necessary.

Analog Input

With "ANALOG INPUT", remaining fuel volume information can be specified. The following 2 items appear when "ANALOG INPUT" is selected.

- BACKLIGHT DIMMER
- FUEL LEVEL

Important

"BACKLIGHT DIMMER" is not supported on this machine. Always select "FUEL LEVEL". If "BACKLIGHT DIMMER" is selected, "NO DATA" appears as the value for the fuel level parameter.

Note:
The factory default analog input is "FUEL LEVEL".
1. Fuel Level

With "FUEL LEVEL", the low fuel level can be specified.

1. Press the menu key.
   After the main menu appears, use the arrow keys to highlight "UTILITIES", and then press the Enter key.

2. Highlight "ANALOG INPUT", and then press the Enter key.

3. Highlight "FUEL LEVEL", and then press the Enter key.

4. Highlight "SET LOW FUEL LEVEL", and then press the Enter key.

5. "LOW FUEL" appears.

6. Press the right arrow key to increase the value. Press the left arrow key to decrease the value.
   The value can be set between 10% and 80% in 5% increments.

7. To save the specified value, press the Enter key.

Note:
The factory default low fuel level is 10%.
2. Low Fuel Level Display

Caution
If a warning message appears, immediately stop operation, and then supply fuel.

1. When the fuel level falls below the specified low fuel level, a warning message appears in the monitor display and the LED (yellow) lights up. The warning message appears on two pages. Use the arrow keys to change the page.

   - Text 1

2. Pressing the Enter key changes the screen from the warning message to the parameter display.

3. A warning mark appears in the upper-right corner of the monitor display.

4. When fuel is supplied to bring the fuel level above the specified low fuel level, the warning message and mark disappear.

**OEM**
"OEM" is used when the manufacturer specifies factory default settings.

**Important**
No adjustments by the operator are necessary.
Fault Code Displays

Important
When the fault code (DTC) appears in the monitor display, contact your dealer.

A fault code (DTC) appears in the monitor display when a failure occurs on the function of engine.
Each fault code is displayed over two pages.
Use the arrow keys to change the page.

Text 1
The fault code name appears.

Pressing the Enter key changes the screen from the fault code to the parameter display.

Important
If the service reminders are configured, the notices of the replacement time period for consumables and the fault code may appear all together.
If the low fuel level is specified, the notices of fuel level low and the fault code may appear all together.
If "ACTIVE FAULTS - ECU" message appears, check both the service reminder warning message and the fault code (DTC).

To check the service reminder warning message:
Highlight the service reminder notice, and then press the Enter key.

Text 2
The corrective action appears.

The item of requiring replacement of consumables appears.
The corrective action appears.

Note:
If the warning message of service reminder ignored and the Enter key pressed to hide the message, the monitor will display "ACTIVE FAULTS - ECU".
If the fault code (DTC) ignored and the Enter key pressed, the monitor will also display "ACTIVE FAULTS - ECU".
If the notice ignored and the menu key pressed when the monitor displays "ACTIVE FAULTS - ECU", the warning mark continues to be displayed in the upper right corner of the monitor display.
To check the warning message and the fault code (DTC) again, press the Enter key to return to the display of "ACTIVE FAULTS - ECU".

1 25 C 55 %
0 RPM
ENG RPM
FUEL LEVEL
COOL TEMP
0 %
LOAD@RPM

Fault Code Displays_009
1 Warning mark
Engine Warning Lamp

Important
Make repairs immediately if the fault codes of PCD (Particulate Control Diagnostic) and NCD (NOx Control Diagnostic) appear.

Engine warning lamp (LED) lights up or blinks when a failure occurs on the function of engine. Check the fault code (DTC) in the monitor display.

The lighting patterns of engine warning lamp are as follows.

Note:
PCD means fault codes relevant to Particulate Control Diagnostic.
NCD means fault codes relevant to NOx Control Diagnostic.

1. Engine warning lamp lights up when only DTC other than PCD/NCD come up.

2. Engine warning lamp blinks when only DTC relevant to PCD/NCD come up.

3. Engine warning lamp repeats blinking and lighting alternately when DTC relevant to other than PCD/NCD come up at the same time. (It repeats blinking three times and lighting three seconds.)
Move

Traveling Procedure

**Caution**
Under any circumstances drive the machine at such a speed that you can stop it immediately for emergencies.

**Caution**
When traveling, be sure to stop the reel cutters and raise the mower units.

**Important**
Do NOT start to move or stop the machine abruptly. It will damage the hydraulic system or result in oil leakage.

1. Start the engine. "Procedure to Start Engine" (Page 4-24)
2. Make sure that all the mower units are raised and the mower lock levers (latches) for mower units #4 and #5 are hooked.
3. Depress the brake pedal to release the parking brake.
4. Release the brake pedal.
5. Slowly depress the traveling pedal.
6. The machine starts traveling.
7. The machine stops slowly when the traveling pedal released.

Towing The Machine

If the machine does not travel due to engine trouble, etc., you can move it by towing it.

**Caution**
Before towing, check that the brake is applied effectively.

**Caution**
Before starting the engine, be sure to close the unload valves.

**Important**
Do not touch the unload valve except when towing the machine.

**Important**
When towing the machine, travel at a speed no more than 3.0 km/h. In addition, do not tow the machine for more than 3 minutes. If the towing speed is too fast or there is excessive movement, the pump or motor will be damaged.

1. Stop the engine. "Procedure to Stop Engine" (Page 4-25)
2. Apply the parking brake.
3. Chock the wheels.
4. Secure the machine with ropes.

**Important**
When towing the machine, travel at a speed no more than 3.0 km/h. In addition, do not tow the machine for more than 3 minutes. If the towing speed is too fast or there is excessive movement, the pump or motor will be damaged.

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1. Stop the engine. "Procedure to Stop Engine" (Page 4-25)
2. Apply the parking brake.
3. Chock the wheels.
4. Secure the machine with ropes.

**Important**
When towing the machine, travel at a speed no more than 3.0 km/h. In addition, do not tow the machine for more than 3 minutes. If the towing speed is too fast or there is excessive movement, the pump or motor will be damaged.

1. Stop the engine. "Procedure to Stop Engine" (Page 4-25)
2. Apply the parking brake.
3. Chock the wheels.
4. Secure the machine with ropes.

**Important**
When towing the machine, travel at a speed no more than 3.0 km/h. In addition, do not tow the machine for more than 3 minutes. If the towing speed is too fast or there is excessive movement, the pump or motor will be damaged.

1. Stop the engine. "Procedure to Stop Engine" (Page 4-25)
2. Apply the parking brake.
3. Chock the wheels.
4. Secure the machine with ropes.
Rear side

5. Set the 2WD/4WD selector switch to the "2WD" position.
6. Make sure that the steering wheel is raised completely, and then bring the seat to the backmost position.
7. Pull up the lever behind the seat to unlock it, and then tilt the seat forward to open the cover.

8. Turn the needle valve, located beside the hydraulic pump, 90 degrees (so that it is vertical) to open the unload valve.

9. Replace the seat and close the cover.
10. Remove the wheel stopper.
11. Depress the brake pedal to release the parking brake.

**Warning**
While towing, always keep your foot on the brake pedal and depress the brake pedal at any time to stop.

12. Tow the machine slowly.

**Cutting Work**

**Warning**
Do not start to move or stop the machine abruptly.

**Caution**
Be sure to operate at an appropriate speed for the mowing site. When cutting over bumpy surfaces, keep the engine rpm steady, and slow down the cutting speed.

**Caution**
Note that if you stop operating the mower unit up/down lever before the mower units are raised completely, reel rotation may not stop. Reel rotation will be turned on or off based on the sensor-detected position of the mower units.

**Important**
Do NOT start to move or stop the machine abruptly. It will damage the hydraulic system or result in oil leakage.

1. Release the mower lock levers (latches) for mower units #4 and #5.
2. Start the engine. "Procedure to Start Engine" (Page 4-24)
3. Firmly depress the brake pedal to release the locking pedal for releasing the locked brake pedal.
4. Shift the throttle knob to rev the engine up to the maximum rpm.
5. Shift the mower unit up/down lever to the “Down” position to lower the mower units.
6. Set the reel rotation switch to the "Rotation" position to rotate the reel cutters (cutting cylinders) of all mower units.
7. Depress the traveling pedal to start cutting work.

Note:
During the work, the reel cutters (cutting cylinders) will rotate or stop in sync with the up and down motion of the mower units.

Transporting
Transporting Procedure
When loading the machine into a trailer or a truck to transport it, drive the machine forward. When unloading, drive the machine in reverse. If the roof is installed on the machine, remove it. The roof may be damaged by wind pressure.

Storage
Before Long-Term Storage
- Remove dirt, grass clippings, debris, oil stains etc. completely.
- Supply oil and apply grease to appropriate parts.
- Remove the negative terminal of the battery.
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Maintenance Precautions

**Caution**
First, learn well the maintenance operations you plan to perform.

**Important**
Use tools appropriate for each maintenance operation.

**Important**
For the safe and best performance of your machine, use Baroness genuine parts for replacement and accessories. Please note that our product warranty may be void if you use non-genuine parts for replacement or accessories.

Maintenance Schedule

**LM3210A**
Follow the maintenance schedule below.
○ ・・・ Inspect, adjust, supply, clean
● ・・・ Replace (first time)
△ ・・・ Replace

<table>
<thead>
<tr>
<th>Maintenance Item</th>
<th>Before Work</th>
<th>After Work</th>
<th>Every 50 hrs.</th>
<th>Every 100 hrs.</th>
<th>Every 250 hrs.</th>
<th>Every 400 hrs.</th>
<th>Every 500 hrs.</th>
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<th>Every month</th>
<th>Every year</th>
<th>Every 2 years</th>
<th>Every 4 years</th>
<th>Remarks</th>
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<td>Grease and Lubricate all moving parts</td>
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<td>Grease rear mower unit swing out pins</td>
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<td>Check CR brush condition</td>
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<td>Clean inside of CR brush belt cover</td>
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<td>Grease mower unit hydraulic motor shafts</td>
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<td>Grease cutting reel pivot pins (Axis bolt)</td>
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<td>*4 Clean air cleaner outer element (Replace the element after 6-time cleaning)</td>
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Maintenance Schedule
<table>
<thead>
<tr>
<th>Maintenance Item</th>
<th>Before Work</th>
<th>After Work</th>
<th>Every 50 hrs.</th>
<th>Every 100 hrs.</th>
<th>Every 250 hrs.</th>
<th>Every 500 hrs.</th>
<th>Every 800 hrs.</th>
<th>Every 1000 hrs.</th>
<th>Every 1500 hrs.</th>
<th>Every 3000 hrs.</th>
<th>Every 4 years</th>
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<th>Every Year</th>
<th>Remarks</th>
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<td>*5 Replace hydraulic oil filter</td>
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Remarks:

- ○: Required
- △: Required when required
- ▲: Required when required, otherwise in normal conditions

Conditions:

- 100 hours first change, every 500 hours thereafter
- Check every 100 hours or every month whichever comes earlier
- Check every 100 hours or every month whichever comes earlier
- Check every 100 hours or every month whichever comes earlier
- Check every 100 hours or every month whichever comes earlier
- Check every 100 hours or every month whichever comes earlier
- Check every 250 hours or every year whichever comes earlier
<table>
<thead>
<tr>
<th>Maintenance Item</th>
<th>Before Work</th>
<th>After Work</th>
<th>Every 50 hrs.</th>
<th>Every 100 hrs.</th>
<th>Every 250 hrs.</th>
<th>Every 400 hrs.</th>
<th>Every 500 hrs.</th>
<th>Every 800 hrs.</th>
<th>Every 1000 hrs.</th>
<th>Every 1500 hrs.</th>
<th>Every 3000 hrs.</th>
<th>Every month</th>
<th>Every year</th>
<th>Every 2 years</th>
<th>Every 4 years</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>*1 Replace fuel filter cartridge</td>
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<td>Initial 50 hours, thereafter every 400 hours or every year whichever comes earlier</td>
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<tr>
<td>*4 Change engine oil</td>
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<td>Initial 50 hours, thereafter every 400 hours or every year whichever comes earlier</td>
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<tr>
<td>*4 Replace oil filter cartridge</td>
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<td>*4 Clean water separator</td>
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<td>*2.*4 Clean fuel tank interior</td>
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<tr>
<td>*2.*4 Clean water jacket and radiator interior</td>
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<td>*2.*4 Replace fan belt</td>
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<td>Replace every 500 hours or 2 years whichever comes earlier</td>
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<tr>
<td>Replace hydraulic suction filter</td>
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<td>*2.*4 Check valve clearance</td>
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<td>*2.<em>3.</em> 4 Check injector</td>
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<td>*2.<em>3.</em> 4 Check EGR cooler</td>
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<td>*3.*4 Replace oil separator element</td>
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<tr>
<td>*2.<em>3.</em> 4 Check PCV (Positive Crankcase Ventilation) Valve in the oil separator body</td>
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<td>*2.<em>3.</em> 4 Check turbocharger</td>
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<tr>
<td>*2.<em>3.</em> 4 Replace DPF filters</td>
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<td>*2.<em>3.</em> 4 Check EGR system</td>
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<tr>
<td>Check electrical wiring condition (Damage,</td>
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</tbody>
</table>

**Maintenance Schedule**
<table>
<thead>
<tr>
<th>Maintenance Item</th>
<th>Before Work</th>
<th>After Work</th>
<th>Every 250 hrs.</th>
<th>Every 500 hrs.</th>
<th>Every 1000 hrs.</th>
<th>Every 2 years</th>
<th>Every 4 years</th>
<th>When Required</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>defacement and joint looseness</td>
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<tr>
<td>*2.*4 Replace air cleaner inner element</td>
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<td></td>
<td>△ The secondary (inner) element should be removed only if it is to be replaced.</td>
</tr>
<tr>
<td>*2.*4 Check DPF differential pressure pipes and hoses</td>
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<tr>
<td>*2.*4 Check EGR piping</td>
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<tr>
<td>*4 Check exhaust manifold (Crack, gas leakage and mounting screw)</td>
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<tr>
<td>*2.*4 Replace oil separator rubber hose</td>
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<tr>
<td>*2.*4 Replace rubber hose of DPF differential pressure sensor</td>
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<tr>
<td>*2.*4 Replace intake hose (After air flow sensor) and inter cooler hose</td>
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<td>*2.*4 Replace rubber hose of boost pressure sensor</td>
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<tr>
<td>*2.*4 Replace EGR cooler hose</td>
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<tr>
<td>*2.*4 Replace water hose</td>
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<td>*2.*4 Replace lubricant hose</td>
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<tr>
<td>*4 Change radiator coolant (L.L.C.)</td>
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<tr>
<td>*2.*4 Replace radiator hoses and clamp bands</td>
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<tr>
<td>*1.*2.*4 Replace fuel hoses and clamps</td>
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<tr>
<td>*2.*4 Replace intake air line (air cleaner hose)</td>
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<tr>
<td>Replace hydraulic hoses (Moving part)</td>
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<td>△</td>
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<tr>
<td>Replace hydraulic hoses (Fixed part)</td>
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<tr>
<td>Backlap blades</td>
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<tr>
<td>Replace brake pads</td>
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</tbody>
</table>
Maintenance Schedule

### Adjusted Value

<table>
<thead>
<tr>
<th>Item</th>
<th>Adjusted Value</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutter adjustment spring</td>
<td>40.0 mm (1.575 in)</td>
<td></td>
</tr>
<tr>
<td>CR brush</td>
<td>0 - 1.0 mm (0 - 0.039 in)</td>
<td>Gap between brush and rear roller</td>
</tr>
<tr>
<td>Fan belt</td>
<td>7.0 - 9.0 mm (0.28 - 0.35 in)</td>
<td>Belt slack</td>
</tr>
<tr>
<td>CR brush drive belt</td>
<td>5.0 - 6.0 mm (0.197 - 0.236 in)</td>
<td>Slack with 10.0 N (1.0 kgf) force</td>
</tr>
<tr>
<td></td>
<td></td>
<td>applied around center section between belt pulleys</td>
</tr>
<tr>
<td>Brake</td>
<td>0.2 mm (0.0079 in)</td>
<td>Clearance between the brake disc and the pad</td>
</tr>
<tr>
<td></td>
<td>1.0 mm (0.039 in)</td>
<td>Play at the connection of the inner wire</td>
</tr>
</tbody>
</table>

*1: When biodiesel fuel is used, change the fuel filter cartridge, fuel hose and clamp bands with new ones at intervals half of the usual ones.

*2: Consult your local Baroness Dealer or local KUBOTA Dealer for this service.

*3: The items above are registered as emission related critical parts by KUBOTA in the U.S. EPA nonroad emission regulation.

As the engine owner, you are responsible for the performance of the required maintenance on the engine according to the above instruction.

Please see the Engine's Warranty Statement in detail.


*5: Refer to the Battery's Owner's Manual.

The values for consumables are not guaranteed.

Replace the steering cylinder hoses every 2 years.
About DPF

The DPF is a purifying filter that collects PM (soot) from exhaust gas. When a certain amount of PM (soot) has accumulated, DPF regeneration must be performed automatically or manually in order to restore the filtering function.

**DPF Regeneration**

**Danger**

Since it will become extremely hot around the exhaust outlet during DPF regeneration, do not perform the regeneration in a location where fires may occur.

**Caution**

Do not use "DPF Auto Regeneration Inhibit Switch" and "DPF Parked Regeneration Switch" during back lapping.

**Important**

When the system enters the level where DPF regeneration is required, perform the regeneration immediately. Interrupting the regeneration or ignoring the warning and continuing traveling or cutting work may cause the engine and DPF to malfunction.

**Important**

Do not repeat unnecessary regeneration or interrupting regeneration. If repeating them, the measured level of engine oil may increase since the engine oil is mixed with a slight amount of fuel, accompanied by quality degradation.

**Important**

Perform DPF regeneration when the engine sufficiently warmed up.

DPF regeneration is burning PM (soot) collected in DPF with the exhaust temperature heated up to high temperature by the engine ECU control of intake air mass and fuel injection.

**Automatic Regeneration**

**Danger**

Since it will become extremely hot around the exhaust outlet during DPF regeneration, do not perform the regeneration in a location where fires may occur.

**Caution**

Normally, set the DPF auto regeneration inhibit switch to the "Auto regeneration mode". However, when operating in a location where fires may occur, set the DPF auto regeneration inhibit switch to the "Auto regeneration inhibit mode".

**Important**

When the system enters the level where DPF regeneration is required, perform the regeneration immediately. Interrupting the regeneration can cause the engine and DPF to malfunction.

Automatic regeneration is the automatic control of increasing the exhaust temperature for DPF regeneration.

- You can continue to use this machine for traveling and cutting work during DPF regeneration.
- You can operate this machine to perform the regeneration. (The fault diagnostic tool is not required.)
- Automatic regeneration is activated only when the auto regeneration inhibit switch set to the "Auto regeneration mode".
- Automatic regeneration is activated when PM accumulation level is "Level 1" or "Level 2". However, it may be activated in "Level 0" depending on the other condition.
If the regeneration remains uncompleted even after 30 minutes have passed since the start of automatic regeneration in PM accumulation "Level 1", PM accumulation level enters "Level 2".

These are the procedures of automatic regeneration.

■ When the DPF auto regeneration inhibit switch set to the "Auto regeneration mode":
1. When the conditions for automatic regeneration are met, the automatic regeneration starts with the regeneration icon lighting.
2. When the regeneration completed, the regeneration icon disappears.

■ When the DPF auto regeneration inhibit switch set to the "Auto regeneration inhibit mode":
1. When PM accumulation level enters "Level 1" or "Level 2", the blinking regeneration icon appears.
2. Set the DPF auto regeneration inhibit switch to the "Auto regeneration mode".
3. When the conditions for automatic regeneration are met, the automatic regeneration starts and the regeneration icon changes from blinking to lighting.
4. When the regeneration completed, the regeneration icon disappears.

Since it will become extremely hot around the exhaust outlet during DPF regeneration, do not perform the regeneration in a location where fires may occur.

Parked Regeneration

Danger
When the system enters the level where DPF regeneration is required, perform the regeneration immediately. Interrupting the regeneration or ignoring the warning and continuing traveling or cutting work may cause the engine and DPF to malfunction.

Parked regeneration is the DPF regeneration forcibly performed, parking this machine in a safe location, when auto regeneration does not reduce the amount of accumulated PM to the specified value.

・ You can not continue to use this machine for traveling and cutting work during DPF regeneration.
・ You can operate this machine to perform the regeneration. (The fault diagnostic tool is not required.)
・ These are the conditions for activating parked regeneration.
1. The parking brake is applied.
2. The traveling pedal is in neutral.
3. The throttle opening is 0% (idling).
・ Parked regeneration is activated when PM accumulation level is "Level 1", "Level 2" or "Level 3".

Important
When the system enters the level where DPF regeneration is required, perform the regeneration immediately. Interrupting the regeneration or ignoring the warning and continuing traveling or cutting work may cause the engine and DPF to malfunction.

Parked regeneration is the DPF regeneration forcibly performed, parking this machine in a safe location, when auto regeneration does not reduce the amount of accumulated PM to the specified value.

・ You can not continue to use this machine for traveling and cutting work during DPF regeneration.
・ You can operate this machine to perform the regeneration. (The fault diagnostic tool is not required.)
・ These are the conditions for activating parked regeneration.
1. The parking brake is applied.
2. The traveling pedal is in neutral.
3. The throttle opening is 0% (idling).
・ Parked regeneration is activated when PM accumulation level is "Level 1", "Level 2" or "Level 3".
Important
If the regeneration remains uncompleted in automatic regeneration, parked regeneration is required with the blinking regeneration icon.

■ In PM accumulation "Level 1" or "Level 2":

Important
If ignoring the parked regeneration requirement and continuing traveling or cutting work in PM accumulation "Level 1" or "Level 2", PM accumulation level enters "Level 2" or "Level 3".

Follow the steps below for parked regeneration.
1. When PM accumulation level enters "Level 1" or "Level 2", the blinking regeneration icon appears.
   When the DPF auto regeneration inhibit switch set to the "Auto regeneration mode":

![Regeneration icon]

When the DPF auto regeneration inhibit switch set to the "Auto regeneration inhibit mode":

![Regeneration icon]

2. Stop traveling and cutting work.

3. Park this machine in a safe location.
4. Apply the parking brake.
5. Set the throttle opening to 0% (idling).
6. Press the DPF parked regeneration switch.
   Parked regeneration starts and the regeneration icon changes from blinking to lighting.
7. When the regeneration completed, the regeneration icon disappears.

■ In PM accumulation "Level 3":

Important
If ignoring the parked regeneration requirement and continuing traveling or cutting work in PM accumulation "Level 3", PM accumulation level enters "Level 4".
If still continuing traveling or cutting work, you will not be able to operate this machine for regeneration.

Important
Automatic regeneration can not be activated in PM accumulation "Level 3".
Perform parked regeneration immediately.

1. These are the statuses in PM accumulation "Level 3".
   - "Excessive PM3" appears in the monitor display.
     Pressing an arrow key changes the display to "CORRECTIVE ACTION: Start DPF Parked Regeneration immediately".
   - The LED (yellow) lights up.
   - The engine output is limited at 50%.
**Manual Regeneration**

**Danger**

Since it will become extremely hot around the exhaust outlet during DPF regeneration, do not perform the regeneration in a location where fires may occur.

**Important**

When the system enters the level where DPF regeneration is required, perform the regeneration immediately. Interrupting the regeneration or ignoring the warning and continuing traveling or cutting work may cause the engine and DPF to malfunction.

Manual regeneration is the DPF regeneration performed only by the expert with the fault diagnostic tool. Normal automatic regeneration or parked regeneration can not complete regeneration since large amount of PM accumulates. Manual regeneration can be activated in any PM accumulation level.

- You can not continue to use this machine for traveling and cutting work during DPF regeneration.
- You can not perform the regeneration. (The fault diagnostic tool is required.)
- Manual regeneration is activated in PM accumulation "Level 4".
- Manual regeneration is activated in any PM accumulation level when the following condition met.
  1. when replacing DPF
  2. when replacing ECU

2. Stop traveling and cutting work.
3. Park this machine in a safe location.
4. Apply the parking brake.
5. Set the throttle opening to 0% (idling).
6. Press the DPF parked regeneration switch. Parked regeneration starts and the regeneration icon changes from blinking to lighting.
7. When the regeneration completed, the regeneration icon disappears.
In PM accumulation "Level 4":

If ignoring the manual regeneration requirement and continuing traveling or cutting work in PM accumulation "Level 4", PM accumulation level enters "Level 5". If still continuing traveling or cutting work, fatal trouble will occur on the engine and DPF.

1. These are the statuses in PM accumulation "Level 4".
   - "Excessive PM4" appears in the monitor display.
     Pressing an arrow key changes the display to "CORRECTIVE ACTION: Stop engine!! Contact dealer immediately".
   - The LED (yellow) lights up.
   - The engine output is limited at 50%.

2. Stop traveling and cutting work.
3. Park this machine in a safe location.
4. Apply the parking brake.
5. Stop the engine.

6. Contact your dealer for manual regeneration.

Replacement of DPF

When PM accumulates excessively in the DPF or ash accumulates, replace the DPF since the regeneration in that case is prohibited.
- You can not continue to use this machine for traveling and cutting work.
- The regeneration is impossible.
- Replace every 3,000 hours.
- Replace DPF in PM accumulation "Level 5" or "High frequency of regeneration".

In PM accumulation "Level 5":
1. These are the statuses in PM accumulation "Level 5".
   - "Excessive PM5" appears in the monitor display.
     Pressing an arrow key changes the display to "CORRECTIVE ACTION: Stop engine!! Contact dealer immediately".
   - The LED (red) lights up.
   - The engine output is limited at 50%.

2. Stop traveling and cutting work.
3. Park this machine in a safe location.
4. Apply the parking brake.
5. Stop the engine.
6. Contact your dealer for DPF replacement.

In the case of "High frequency of regeneration":
1. These are the statuses in the case of "High frequency of regeneration".
   - "High frequency of regeneration" appears in the monitor display.
   - Pressing an arrow key changes the display to description of corrective action.
   - The LED (yellow) lights up.
   - The engine output is limited at 50%.

2. Stop traveling and cutting work.
3. Park this machine in a safe location.
4. Apply the parking brake.
5. Stop the engine.
6. Contact your dealer for DPF replacement.

### Conditions for DPF Regeneration

**Danger**

Since it will become extremely hot around the exhaust outlet during DPF regeneration, do not perform the regeneration in a location where fires may occur.

**Important**

If DPF regeneration is interrupted before it is completed, the next regeneration may be requested soon since not all of the PM (soot) was removed.

**Important**

Perform DPF regeneration when the engine sufficiently warmed up.

1. DPF auto regeneration does not begin unless both of the following two conditions are met.
   - The DPF auto regeneration inhibit switch is set to the "Auto regeneration mode". (Auto regeneration inhibit icon is turned off.)
   - The coolant temperature is 50 °C or more.
2. DPF parked regeneration and manual regeneration do not begin unless all of the following four conditions are met.
   - The parking brake is applied.
   - The traveling pedal is in the neutral position.
   - The throttle opening is 0% (idling).
   - The coolant temperature is 50 °C or more.
3. During DPF regeneration, the operation is canceled if any of the following conditions occur.
   - Any condition for starting regeneration is violated.
   - The ignition key is switched to the "OFF" position.
PM Accumulation Level

Level 0

DPF regeneration is not necessary.

Level 1

**Danger**

Since it will become extremely hot around the exhaust outlet during DPF regeneration, do not perform the regeneration in a location where fires may occur.

**Caution**

Normally, set the DPF auto regeneration inhibit switch to the "Auto regeneration mode". However, when operating in a location where fires may occur, set the DPF auto regeneration inhibit switch to the "Auto regeneration inhibit mode".

**Important**

When the system enters the level where DPF regeneration is required, perform the regeneration immediately. Interrupting the regeneration or ignoring the warning and continuing traveling or cutting work may cause the engine and DPF to malfunction.

**Important**

If the regeneration remains uncompleted even after 30 minutes have passed since the start of automatic regeneration in PM accumulation "Level 1", PM accumulation level enters "Level 2".

- You can continue to use this machine for traveling and cutting work during DPF regeneration.
- You cannot continue to use this machine for traveling and cutting work during DPF parked regeneration.
- You can operate this machine to perform the regeneration. (The fault diagnostic tool is not required.)

---

<Automatic regeneration>

- When the DPF auto regeneration inhibit switch set to the "Auto regeneration mode":
  1. When the conditions for automatic regeneration are met, the automatic regeneration starts with the regeneration icon lighting.
  2. When the regeneration completed, the regeneration icon disappears.

- When the DPF auto regeneration inhibit switch set to the "Auto regeneration inhibit mode":
  1. The blinking regeneration icon appears.
  2. Set the DPF auto regeneration inhibit switch to the "Auto regeneration mode".
  3. When the conditions for automatic regeneration are met, the automatic regeneration starts and the regeneration icon changes from blinking to lighting.
  4. When the regeneration completed, the regeneration icon disappears.
<Parked regeneration>

These are the conditions for activating parked regeneration.
1. The parking brake is applied.
2. The traveling pedal is in neutral.
3. The throttle opening is 0% (idling).

1. The blinking regeneration icon appears. When the DPF auto regeneration inhibit switch set to the "Auto regeneration mode":

![Image of regeneration icon]

2. Stop traveling and cutting work.
3. Park this machine in a safe location.
4. Apply the parking brake.
5. Set the throttle opening to 0% (idling).
6. Press the DPF parked regeneration switch. Parked regeneration starts and the regeneration icon changes from blinking to lighting.
7. When the regeneration completed, the regeneration icon disappears.

Level 2

**Danger**

Since it will become extremely hot around the exhaust outlet during DPF regeneration, do not perform the regeneration in a location where fires may occur.

**Caution**

Normally, set the DPF auto regeneration inhibit switch to the "Auto regeneration mode". However, when operating in a location where fires may occur, set the DPF auto regeneration inhibit switch to the "Auto regeneration inhibit mode".

**Important**

When the system enters the level where DPF regeneration is required, perform the regeneration immediately. Interrupting the regeneration or ignoring the warning and continuing traveling or cutting work may cause the engine and DPF to malfunction.

**Important**

If ignoring the parked regeneration requirement and continuing traveling or cutting work in PM accumulation "Level 2", PM accumulation level enters "Level 3".

- You can continue to use this machine for traveling and cutting work during DPF auto regeneration.
- You can not continue to use this machine for traveling and cutting work during DPF parked regeneration.
- You can operate this machine to perform the regeneration. (The fault diagnostic tool is not required.)

<Automatic regeneration>

When the DPF auto regeneration inhibit switch set to the "Auto regeneration mode":

1. When the conditions for automatic regeneration are met, the automatic regeneration starts with the regeneration icon lighting.
2. When the regeneration completed, the regeneration icon disappears.

When the DPF auto regeneration inhibit switch set to the "Auto regeneration inhibit mode":
1. The blinking regeneration icon appears.
2. Set the DPF auto regeneration inhibit switch to the "Auto regeneration mode".
3. When the conditions for automatic regeneration are met, the automatic regeneration starts and the regeneration icon changes from blinking to lighting.
4. When the regeneration completed, the regeneration icon disappears.

<Parked regeneration>
These are the conditions for activating parked regeneration.
1. The parking brake is applied.
2. The traveling pedal is in neutral.
3. The throttle opening is 0% (idling).
1. The blinking regeneration icon appears.
When the DPF auto regeneration inhibit switch set to the "Auto regeneration mode":

Stop traveling and cutting work.
3. Park this machine in a safe location.
4. Apply the parking brake.
5. Set the throttle opening to 0% (idling).
6. Press the DPF parked regeneration switch.
    Parked regeneration starts and the regeneration icon changes from blinking to lighting.
7. When the regeneration completed, the regeneration icon disappears.
Level 3

**Danger**
Since it will become extremely hot around the exhaust outlet during DPF regeneration, do not perform the regeneration in a location where fires may occur.

**Important**
When the system enters the level where DPF regeneration is required, perform the regeneration immediately. Interrupting the regeneration or ignoring the warning and continuing traveling or cutting work may cause the engine and DPF to malfunction.

**Important**
If ignoring the parked regeneration requirement and continuing traveling or cutting work in PM accumulation "Level 3", PM accumulation level enters "Level 4". If still continuing traveling or cutting work, you will not be able to operate this machine for regeneration.

**Important**
Automatic regeneration can not be activated in PM accumulation "Level 3". Perform parked regeneration immediately.

- You can not continue to use this machine for traveling and cutting work during DPF regeneration.
- You can operate this machine to perform the regeneration. (The fault diagnostic tool is not required.)

1. These are the statuses in PM accumulation "Level 3".

   - "Excessive PM3" appears in the monitor display.
   - Pressing an arrow key changes the display to "CORRECTIVE ACTION: Start DPF Parked Regeneration immediately".
   - The LED (yellow) lights up.
   - The engine output is limited at 50%.

2. Stop traveling and cutting work.
3. Park this machine in a safe location.
4. Apply the parking brake.
5. Set the throttle opening to 0% (idling).
6. Press the DPF parked regeneration switch. Parked regeneration starts and the regeneration icon changes from blinking to lighting.
7. When the regeneration completed, the regeneration icon disappears.
Level 4

**Danger**

Since it will become extremely hot around the exhaust outlet during DPF regeneration, do not perform the regeneration in a location where fires may occur.

**Important**

When the system enters the level where DPF regeneration is required, perform the regeneration immediately. Interrupting the regeneration or ignoring the warning and continuing traveling or cutting work may cause the engine and DPF to malfunction.

**Important**

If ignoring the manual regeneration requirement and continuing traveling or cutting work in PM accumulation "Level 4", PM accumulation level enters "Level 5". If still continuing traveling or cutting work, fatal trouble will occur on the engine and DPF.

- You can not continue to use this machine for traveling and cutting work during DPF regeneration.
- You can not perform the regeneration. (The fault diagnostic tool is required.)

1. These are the statuses in PM accumulation "Level 4".

- "Excessive PM4" appears in the monitor display.
  Pressing an arrow key changes the display to "CORRECTIVE ACTION: Stop engine!! Contact dealer immediately".
- The LED (yellow) lights up.
- The engine output is limited at 50%.

2. Stop traveling and cutting work.
3. Park this machine in a safe location.
4. Apply the parking brake.
5. Stop the engine.
6. Contact your dealer for manual regeneration.
Level 5

When PM accumulates excessively in the DPF or ash accumulates, replace the DPF since the regeneration in that case is prohibited.

- You can not continue to use this machine for traveling and cutting work.
- The regeneration is impossible.

1. These are the statuses in PM accumulation "Level 5".

- "Excessive PM5" appears in the monitor display.
  - Pressing an arrow key changes the display to "CORRECTIVE ACTION: Stop engine!! Contact dealer immediately".
  - The LED (red) lights up.
  - The engine output is limited at 50%.

2. Stop traveling and cutting work.
3. Park this machine in a safe location.
4. Apply the parking brake.
5. Stop the engine.
6. Contact your dealer for DPF replacement.

---

### Warning

When replacing a tire or beginning any other maintenance or repairs, be sure to chock the wheels to prevent the machine from moving. Before jacking up the machine, park it on a hard, flat surface such as a concrete floor and remove any obstacles that could prevent you from performing the work safely.

When necessary, use an appropriate chain block, hoist, or jack. Support the machine securely with jack stands or appropriate blocks. Failure to do so may cause the machine to move or fall, resulting in injury or death.

### Important

Only place a jack under the jack-up points specified. Placing a jack at any other point will result in damage to the frame or other parts.

Use the jack-up points identified in this manual when jacking up the machine.
Jack-Up Points

1. Front right frame

2. Front left frame

3. Center of pivot

4. Below rear wheel motors
   There is one jack-up point below each rear wheel motor (left and right).
Greasing

About Greasing

Since there may be adhesion or damage due to lack of grease on moving parts, they must be greased.

Add urea-based No. 2 grease in accordance with the Maintenance Schedule.

Other locations where the specified grease or lubricant is used are indicated in "Greasing Points".

Add grease using the specified grease or lubricant.

Greasing Points

Type_F

Grease nipples are installed in the following locations.
Add grease every 50 hours of operation.

<table>
<thead>
<tr>
<th>Location</th>
<th>No. of greasing points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Mower arm fulcrum</td>
<td>5</td>
</tr>
<tr>
<td>2 Lift arm fulcrum</td>
<td>5</td>
</tr>
<tr>
<td>3 Brake lever shaft</td>
<td>2</td>
</tr>
<tr>
<td>4 Traveling pedal shaft fulcrum</td>
<td>2</td>
</tr>
<tr>
<td>5 Pivot</td>
<td>3</td>
</tr>
<tr>
<td>6 Neutral position area</td>
<td>2</td>
</tr>
<tr>
<td>7 Reel housing</td>
<td>10</td>
</tr>
<tr>
<td>8 Rear roller</td>
<td>10</td>
</tr>
<tr>
<td>9 Front roller</td>
<td>10</td>
</tr>
<tr>
<td>10 Mower unit fulcrum</td>
<td>5</td>
</tr>
</tbody>
</table>

1. Mower arm fulcrum
There is one greasing point on each mower arm fulcrum connected to a mower unit.
Grease mower units #2 and #3 in the swiveled position.
"Swiveling Mower Units #2 and #3" (Page 5-35)

Mower units #1, #4 and #5

Type_F_001

Type_F_002

Type_F_003
2. Lift arm fulcrum
   There is one greasing point on each lift arm fulcrum connected to a mower unit. Lower the mower units before greasing the lift arm fulcrums.
   Mower units #1 and #4

3. Brake lever shaft
   There are two greasing points on the brake lever shaft.

4. Traveling pedal shaft fulcrum
   There are two greasing points on the traveling pedal shaft fulcrum.

5. Pivot
   Middle between the rear wheels
6. Neutral position area
   There are two greasing points on the neutral position area.

7. Reel housing
   There is one greasing point on the right and left housings of each mower unit.

   **Hydraulic motor housing side**

   **Caution**
   Always use a hand operated grease gun and only add a maximum of 2 pumps of grease every 50 hours.
   Using a power assisted grease gun should be avoided.
   The grease capacity inside the reel housing on the CR brush mount side is approximately 25 g (0.05 lb).
   If you repeat greasing by 2 g (0.004 lb) twelve times for 600 hours of operation, the grease amount inside the housing will almost reach its full capacity.
   In case that the grease exceeds its capacity, the brush frame will project outward.
   Therefore, remove the brush frame and discard the grease inside the reel housing when it reaches the capacity.

   **Reel housing side**
8. Rear roller
There is one greasing point on the left and right of the rear roller of each mower unit.

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

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

Grease nipples are installed in the following locations. Add grease every 50 hours of operation.

<table>
<thead>
<tr>
<th>Location</th>
<th>No. of greasing points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mower arm fulcrum</td>
<td>5</td>
</tr>
<tr>
<td>Lift arm fulcrum</td>
<td>5</td>
</tr>
<tr>
<td>Brake lever shaft</td>
<td>2</td>
</tr>
<tr>
<td>Traveling pedal shaft fulcrum</td>
<td>2</td>
</tr>
<tr>
<td>Pivot</td>
<td>3</td>
</tr>
<tr>
<td>Neutral position area</td>
<td>2</td>
</tr>
<tr>
<td>Reel housing</td>
<td>10</td>
</tr>
<tr>
<td>Rear roller</td>
<td>10</td>
</tr>
</tbody>
</table>
1. Mower arm fulcrum
   There is one greasing point on each mower arm fulcrum connected to a mower unit. Grease mower units #2 and #3 in the swiveled position.
   "Swiveling Mower Units #2 and #3" (Page 5-35)
   Mower units #1, #4 and #5

2. Lift arm fulcrum
   There is one greasing point on each lift arm fulcrum connected to a mower unit. Lower the mower units before greasing the lift arm fulcrums.
   Mower units #1 and #4

3. Brake lever shaft
   There are two greasing points on the brake lever shaft.
4. Traveling pedal shaft fulcrum
   There are two greasing points on the traveling pedal shaft fulcrum.

5. Pivot
   Middle between the rear wheels

6. Neutral position area
   There are two greasing points on the neutral position area.

7. Reel housing
   There is one greasing point on the right and left housings of each mower unit.
   Hydraulic motor housing side
Lubricating Points

Apply lubricant at the following locations every 50 hours of operation.

<table>
<thead>
<tr>
<th>Location</th>
<th>No. of lubricating points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mower cylinder spherical bearing</td>
<td>10</td>
</tr>
<tr>
<td>Steering cylinder spherical bearing</td>
<td>2</td>
</tr>
</tbody>
</table>

About Lubrication

It is necessary to lubricate moving parts so that they will not become stuck or damaged. The locations where lubricant is used are indicated in "Lubricating Points". Apply the lubricant.
1. Mower cylinder spherical bearing
   There are two points on each mower cylinder.
   Mower cylinder #1

   ![Mower cylinder #1 diagram](https://example.com/mower_cylinder1.png)

   Type_F_002

   Mower cylinder #2 and 3

   ![Mower cylinder #2 and 3 diagram](https://example.com/mower_cylinder2_3.png)

   Type_F_003

   Mower cylinder #4 and 5

   ![Mower cylinder #4 and 5 diagram](https://example.com/mower_cylinder4_5.png)

   Type_F_004

2. Steering cylinder spherical bearing
   There are two points.

   ![Steering cylinder spherical bearing diagram](https://example.com/steering_cylinder.png)

   Type_F_005

Apply lubricant at the following locations every 50 hours of operation.

<table>
<thead>
<tr>
<th>Location</th>
<th>No. of lubricating points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mower cylinder spherical bearing</td>
<td>10</td>
</tr>
<tr>
<td>Steering cylinder spherical bearing</td>
<td>2</td>
</tr>
</tbody>
</table>
1. Mower cylinder spherical bearing
   There are two points on each mower cylinder.
   Mower cylinder #1

2. Steering cylinder spherical bearing
   There are two points.
Cleaning of Mower Unit

**Important**

While cleaning, do not allow water on the sealed parts of the reel shaft. (Avoid high-pressure water cleaning.) Otherwise, it may cause damage to the machine.

Be sure to clean the mower unit after use.
1. Stop the engine, and then remove the key.
2. Carefully clean the front and back of the mower unit with water or compressed air.
3. Remove any grass wrapped around the reel cutter (cutting cylinder).

Back Lapping

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.

**Warning**

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

**Caution**

Be careful not to inhale exhaust gas during back lapping.

**Caution**

Do not perform back lapping with any other persons.

Note:
The mixing ratio for the abrasive, in volume, is one part back lapping powder (#150 - #200) to three or four parts oil.

**Caution**

When handling the reel cutter (cutting cylinder) and the bed knife (bottom blade), 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.

**Important**

Check the sharpness of the blade by checking the blade engagement after cutting grass.

1. Have the following items ready: Strips of newspaper, Abrasive (Back lapping powder mixed with oil; or gel compound (Baroness genuine abrasive)), Brush.
4. Set the reel rotation/stop switching lever to the "Stop" position.

5. 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.

6. Check the sharpness of the entire range (three or four points) of the reel cutter (cutting cylinder).

7. Using a piece of chalk, mark locations on the blade that are sharp.

8. Shift 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 for the mower units for which you will not perform back lapping to the "Stop" position.

9. Sit on the seat, apply the parking brake, and then start the engine.

Note:
If the reel rotation switch is set to the "Rotation" position, the engine will not start.

10. Lower all mower units to the ground.

11. Open the hood, and then set the reel reverse switch to the "Reverse" position.

12. Run the engine at a low rpm.

13. Set the reel rotation switch to the "Rotation" position to rotate the reel cutters (cutting cylinders) for back lapping.

14. With the reel rotation/stop switching lever, adjust the rotation speed of the reel cutter (cutting cylinder).

15. 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.)

16. Idle the engine for a while, and when contact noise is no longer heard, set the reel rotation switch to the "Stop" position to stop the reel cutters (cutting cylinders).

17. Raise all mower units.

18. Stop the engine.

19. Wash off or wipe off with a cloth, etc., the abrasive from the reel cutter (cutting cylinder), and then check it for sharpness.

20. Repeat steps 4 to 19 until the entire range (three or four points) of the reel cutter (cutting cylinder) is uniformly sharpened.

21. Lower all the mower units to the ground.

22. Finally, apply abrasive to the entire blade width of the reel cutter (cutting cylinder) and perform final back lapping.

23. Set the reel rotation switch to the "Stop" position to stop the rotation of the reel cutters (cutting cylinders), stop the engine, and then carefully and thoroughly wash off any remaining abrasive.

24. Set the reel reverse switch to the "Normal rotation" position.

25. Shift the reel rotation/stop switching lever to the "Stop" position.

26. While checking the blade for sharpness, adjust blade engagement.
Sharpening of Reel Cutter (Cutting Cylinder)

The sharpening of the reel cutter (cutting cylinder) consists in maintaining its roundness and creating a relief (second edge face). This work should be performed if the sharpness cannot be restored, even after back lapping, or if the relief (second edge face) has worn away.

Sharpen the reel cutter (cutting cylinder) when the sharpness cannot be restored, even after back lapping, or when the relief (second edge face) has worn away, there is full contact or back lapping takes too much time.

In addition, if the reel cutter (cutting cylinder) becomes worn and its shape conical, perform cylindrical grinding to return it to a cylindrical shape.

For sharpening the reel cutter (cutting cylinder), contact your dealer or Baroness unless you have a grinding machine.

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both the reel cutter (cutting cylinder) and the bed knife (bottom blade) are edged tools. Handle them carefully, since they could cut your hands and feet.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wear gloves when touching edged tools to avoid cutting your hands.</td>
</tr>
</tbody>
</table>

If the outer diameter of the reel cutter (cutting cylinder) after sharpening is more than the usage limit, the reel cutter (cutting cylinder) can be sharpened.

Type_F

<table>
<thead>
<tr>
<th>New</th>
<th>Usage limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension A (Outer diameter of reel cutter (cutting cylinder))</td>
<td>Dimension B (Distance from blade edge to outer edge of reel cutter (cutting cylinder) shaft)</td>
</tr>
<tr>
<td>163 mm (6.42 in)</td>
<td>68.8 mm (2.71 in)</td>
</tr>
</tbody>
</table>

Note: The outer diameter of the reel cutter (cutting cylinder) shaft is 30 mm (1.18 in).

Type_R

<table>
<thead>
<tr>
<th>New</th>
<th>Usage limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension A (Outer diameter of reel cutter (cutting cylinder))</td>
<td>Dimension B (Distance from blade edge to outer edge of reel cutter (cutting cylinder) shaft)</td>
</tr>
<tr>
<td>205 mm (8.07 in)</td>
<td>87.5 mm (3.44 in)</td>
</tr>
</tbody>
</table>

Note: The outer diameter of the reel cutter (cutting cylinder) shaft is 30 mm (1.18 in).

Sharpening of Reel Cutter (Cutting Cylinder)_001

1 Reel cutter (cutting cylinder) blade
2 Reel cutter (cutting cylinder) disc
3 Reel cutter (cutting cylinder) shaft

A Outer diameter of reel cutter (cutting cylinder) shaft
B Distance from blade edge to outer edge of reel cutter (cutting cylinder) shaft
Sharpening is necessary when the reel cutter (cutting cylinder) reaches a condition described below.

1. When the sharpening width (length of contacting surface of bed knife (bottom blade)) for the outer diameter of the reel cutter (cutting cylinder) is greater than the usage limit.

<table>
<thead>
<tr>
<th>Outer diameter of reel cutter (cutting cylinder) (new part)</th>
<th>Usage limit of sharpening width for outer diameter of reel cutter (cutting cylinder)</th>
</tr>
</thead>
<tbody>
<tr>
<td>205 mm (8.07 in)</td>
<td>3.0 mm (0.12 in) (factory-recommended)</td>
</tr>
</tbody>
</table>

2. When the edges become blunt or the blade edge cannot be formed with back lapping

3. When the reel cutter (cutting cylinder) becomes worn and its shape conical, or when blade engagement adjustment cannot be performed

**Replacement of Reel Cutter (Cutting Cylinder)**

**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 and feet.

**Caution**

Wear gloves when touching edged tools to avoid cutting your hands.

The criteria for replacing the reel cutter (cutting cylinder) are described below. However, these criteria are only a reference and do not guarantee performance like that of a new reel cutter (cutting cylinder).

1. When the outer diameter of the reel cutter (cutting cylinder) is less than the usage limit Type_F.

<table>
<thead>
<tr>
<th>New</th>
<th>Usage limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension A (Outer diameter of reel cutter (cutting cylinder))</td>
<td>Dimension B (Distance from blade edge to outer edge of reel cutter (cutting cylinder) shaft)</td>
</tr>
<tr>
<td>163 mm (6.42 in)</td>
<td>68.8 mm (2.71 in)</td>
</tr>
<tr>
<td>143 mm (5.63 in)</td>
<td>58.8 mm (2.31 in)</td>
</tr>
</tbody>
</table>

Type_R

<table>
<thead>
<tr>
<th>New</th>
<th>Usage limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension A (Outer diameter of reel cutter (cutting cylinder))</td>
<td>Dimension B (Distance from blade edge to outer edge of reel cutter (cutting cylinder) shaft)</td>
</tr>
<tr>
<td>205 mm (8.07 in)</td>
<td>87.5 mm (3.44 in)</td>
</tr>
<tr>
<td>185 mm (7.28 in)</td>
<td>77.5 mm (3.05 in)</td>
</tr>
</tbody>
</table>
Note:
The outer diameter of the reel cutter (cutting cylinder) shaft is 30 mm (1.18 in).

---

Replacement of Reel Cutter (Cutting Cylinder)

1. Reel cutter (cutting cylinder) blade
2. Reel cutter (cutting cylinder) disc
3. Reel cutter (cutting cylinder) shaft
A. Outer diameter of reel cutter (cutting cylinder)
B. Distance from blade edge to outer edge of reel cutter (cutting cylinder) shaft

---

High-speed-steel-tipped blade
Replace the bed knife (bottom blade) before it no longer has a tip.

---

Replacement of Bed Knife (Bottom Blade)

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 and feet.

Caution
Wear gloves when touching edged tools to avoid cutting your hands.

The criteria for replacing the bed knife (bottom blade) are described below.
1. When the reel cutter (cutting cylinder) is ground
2. When the reel cutter (cutting cylinder) is replaced
3. When the bed knife (bottom blade) is worn
Swiveling Mower Units #2 and #3

**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 and feet.

**Caution**

Be careful not to inhale exhaust gas while swiveling the mower units.

Maintenance can be performed more easily with mower units #2 and #3 swiveled.

1. Lower the mower units, and then stop the engine.
2. Remove the clip pin, and then remove the grip pin.
3. Swivel the mower unit toward the outside of the machine.
4. Fully insert the grip pin into the locking hole for maintenance, and then install the clip pin in the grip pin.
5. Start the engine, and then raise the mower units.
6. After the maintenance is completed, reverse the procedure to return the machine to its original condition.
Removing/Installing Tires

Front Tires

Follow the steps below to remove the front tires:
1. Loosen the bolts.
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. "Jack-Up Points" (Page 5-20)
3. Remove the bolts.
4. Remove the tire from the wheel mounting seat.

Important
Tighten the bolts in the tightening order (crosswise).

For installing the front tires, reverse the removing procedure.

Rear Tire

Follow the steps below to remove the rear tire.
1. Loosen the bolts.
2. Securely place the jack beneath the jack-up point of the rear wheel motor, and then raise it until the tire lifts off the ground. "Jack-Up Points" (Page 5-20)
3. Remove the bolts.
4. Remove the tire from the wheel mounting base.

Important
Tighten the bolts in the tightening order (diagonally).

For installing the rear tire, reverse the removing procedure.

Adjustment of Belt Tension

Warning
Be sure to stop the engine before adjusting the belts.

Important
Before making sure of belt tension, rotate the belt several times.

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

1. Press the middle of the belt with your finger to check the belt tension. The belt tension is appropriate when the belt slacks by approximately 7.0 - 9.0 mm (0.28 - 0.35 in) when you apply a force of 98 N (10 kgf) to the belt at the middle point between the pulleys.
2. If the belt tension is inappropriate, loosen bolts A and B (that affix the alternator), and then move the alternator to adjust the tension.
CR Brush Drive Belt

Note:
Depending on the specifications, this function may not be available.
1. Remove the belt cover.
2. Check the belt tension.
3. If the belt tension is inappropriate, adjust the belt tension with the tension pulley adjustment bolt.

The belt tension is appropriate when the belt slacks by approximately 5.0 to 6.0 mm (0.197 to 0.236 in) when you apply a force of 10.0 N (1.0 kgf) with your finger to the belt at the middle point between the pulleys.

Adjustment of Brake

Caution
Make sure that the brake wire is not cracked or damaged.

Important
If the brake is not sufficiently effective due to a wider clearance gap between the brake disc and the brake lining, adjust the clearance. The wire is used for fine adjustments.

Important
Adjust the brake with the brake lining.

The brake lining wear limit is 3.0 mm (0.12 in).
2. Reduce the clearance by loosening the lock nut, then tightening the adjustment nut. Tighten the adjustment nut until the brake lining contacts the friction surface of the disc.

7. With the brake pedal released, obtain a play of 1.0 mm (0.039 in) at the joint part of the inner wire.

Warning
Too narrow clearance gap between the brake disc and brake lining may cause heat generation and fire.

3. Loosen the adjustment nut to adjust the clearance gap between the brake disc and brake lining to about 0.2 mm (0.0079 in).

4. Securely place the jack beneath the jack-up point of the front left/right frame area, and then raise it until both tires lift off the ground.

5. Check that the disc rotates freely.

6. Fully tighten the lock nut while holding the adjustment nut in place.

8. Use a wrench to loosen the lock nut and tighten it after making the adjustment with the adjustment bolt.

9. Drive, and then check the following.
   - Make sure that heat is not generated in the brake area.
   - Make sure that the left and right brakes are equally effective.

Caution
It would be extremely dangerous and may result in an unexpected accident if the left and right brakes are not equally effective.

10. If the left and right brakes are not equally effective, make fine adjustments with the adjustment bolt on the brake disc side.
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.
3. Make sure that no tires come into contact with the jack stand.
4. Make sure that the steering wheel is raised completely.
5. Use the forward/backward adjustment lever to slide the seat backward completely.
6. While pulling up the lever, tilt the seat upward.

7. Start the engine, and rev it up to the maximum rpm.
8. Set the 2WD/4WD selector switch to the "2WD" position.
9. Adjust the neutral position.
   [1] If the front tires rotate forward, loosen the lock nuts, and then turn the neutral adjustment rod to shorten it.
   [2] If the front tires rotate in reverse, loosen the lock nuts, and then turn the neutral adjustment rod to extend it.

10. Find the position where the front wheels stop, and then tighten the lock nuts.
Change of Coolant

**Caution**
Do not touch the radiator or coolant during engine operation or immediately after the engine has been turned off. Otherwise, you may get burned.

**Caution**
Change coolant after the engine has well cooled down.

**Caution**
The radiator cap is pressurized. If you remove the radiator cap while the engine is overheated, hot steam will burst out, possibly resulting in burns. Make sure that the water temperature and pressure are reduced, and then grab the cap with a thick cloth and gradually open the cap.

**Important**
When changing the coolant, be sure to drain it into a container and discard it in accordance with local laws and regulations.

**Important**
When changing the coolant, be sure to mix clean water and antifreeze (long-life coolant), and then pour it into the radiator and reserve tank.

**Important**
Tightly close the radiator cap. If the cap is loose or incorrectly installed, water may leak and the engine may overheat.

When mixing antifreeze and clean water, refer to "Relationship between concentration of long-life coolant (LLC) and freezing temperature" below for the mixing ratio.

<table>
<thead>
<tr>
<th>Freezing temperature</th>
<th>LLC concentration (volume %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Down to -10 °C (14 °F)</td>
<td>20 %</td>
</tr>
<tr>
<td>Down to -15 °C (5 °F)</td>
<td>30 %</td>
</tr>
<tr>
<td>Down to -20 °C (-4 °F)</td>
<td>35 %</td>
</tr>
<tr>
<td>Down to -25 °C (-13 °F)</td>
<td>40 %</td>
</tr>
</tbody>
</table>

1. Stop the engine, and then allow the radiator to cool.
2. Open the hood.
3. Follow the steps below to drain the coolant.
   [1] Position a container to drain the coolant into.
   [2] Remove the drain plug from the radiator.

[5] Open the reserve tank cap, and then drain the coolant.

4. Install the reserve tank.
5. Clean the radiator with clean water to remove any debris or rust.
6. Drain all water from the radiator.
7. Follow the steps below to fill with coolant.
   - The coolant quantity, including the reserve tank, is 12.0 dm³ (12.0 L).
   - Install the drain plug.
   - Supply clean water and antifreeze into the radiator up to the radiator cap opening.
   - Close the radiator cap.
   - Supply clean water and antifreeze into the reserve tank up to the "FULL" mark.
   - Close the reserve tank cap.
8. Start the engine, and then idle for several minutes to bleed air from the system.
9. Stop the engine, and then allow the radiator to cool.
10. Check if the coolant level in the reserve tank is between "FULL" and "LOW", and then supply coolant if necessary.
11. Close the hood.

Change of Hydraulic Oil

- **Caution**
  - Be careful with hot oil, which could cause burns if it contacts your skin.

- **Important**
  - When you change the hydraulic oil, be sure to drain it into a bowl and discard it in accordance with local laws and regulations.

- **Important**
  - If the oil emulsifies or if it becomes even slightly less transparent, change the oil immediately.

- **Important**
  - Use Shell Tellus S2M46 (or equivalent) as hydraulic oil.

1. Follow the steps below to remove the old oil.
   - [1] Start and run the engine to warm up the oil.
   - [2] On a level surface, lower the mower units, and then stop the engine.
   - [3] Remove the drain plug of the hydraulic tank, and then drain the old oil into a container.
   - [4] Wind new sealing tape on the drain plug, and then attach it to the hydraulic tank.

2. Remove the left tank cover.
3. Open the tank cap, and then pour new oil from the fill port until the oil level reaches the middle of the oil gauge on the hydraulic tank. The hydraulic tank capacity is approximately 44.0 dm³ (44.0 L).

4. Tighten the tank cap securely.

5. Start the engine, raise and lower the mower units, and turn the steering wheel left and right. Move forward and reverse repeatedly several times.

6. Raise the mower units and maintain that position on a level surface, and then check to see if the oil level is at the middle of the oil gauge. If necessary, supply oil.

7. Check underneath the machine for oil leakage.

8. Attach the left tank cover.

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**Change of Hydraulic Oil Filter**

**Change of Hydraulic Oil Line Filter**

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**Caution**

Be careful with hot oil, which could cause burns if it contacts your skin.

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**Important**

When replacing the hydraulic oil filter, be sure to drain the oil into a container and discard it in accordance with local laws and regulations.

---

**Important**

If the hydraulic oil emulsifies or if it becomes even slightly less transparent, change the oil immediately.

---

**Important**

Use Shell Tellus S2M46 (or equivalent) as hydraulic oil.

1. On a level surface, lower the mower units, and then stop the engine.

2. Remove the filter protecting plate.

3. Loosen the old filter cartridge by hand and remove it.

4. Lightly coat the packing of the new filter cartridge with hydraulic oil, and then install the cartridge.
5. Firmly tighten the filter cartridge by hand until the packing contacts the mounting surface. And then tighten it with a half more turn.

6. Supply hydraulic oil until it reaches the specified level. "Hydraulic Oil Supply" (Page 4-7)
7. Install the filter protecting plate.
8. Start the engine and stop it after hydraulic oil warmed.
9. Check underneath the machine for hydraulic oil leakage.

**Important**
Replace the intake port packing with a new one.

1. On a level surface, lower the mower units, and then stop the engine.
2. Remove the left tank cover.
3. Remove bolts, spring washers and washers, and then remove the intake hose joint fitting.
4. Remove the old suction filter and intake port packing.
5. Remove all of the old liquid gasket from the hydraulic tank.
6. Remove all of the old liquid gasket and the intake port packing from the intake hose joint fitting.
7. Wash and clean the intake hose joint fitting.
8. Apply liquid gasket to the new intake port packing and then install it to the intake hose joint fitting.
9. Install the new suction filter to the intake hose joint fitting.
10. Install the intake hose joint fitting to the hydraulic tank.
11. Supply hydraulic oil until it reaches the specified level. "Hydraulic Oil Supply" (Page 4-7)
12. Start the engine and stop it after ten to twenty minutes.
13. Check underneath the machine for hydraulic oil leakage.
14. Install the left tank cover.

Change of Air Cleaner

A contaminated air cleaner element may cause malfunction of the engine.
To maximize the life of the engine, replace the air cleaner element at the appropriate times.
1. The timing for replacing the air cleaner element is described below.
   [1] Replace the air cleaner element in accordance with the Maintenance Schedule.
   [2] If it is significantly contaminated, replace it, even if the hours of operation do not exceed the specified time.
2. Replace the air cleaner element by following the same steps as for cleaning the air cleaner.
   "Cleaning of Air Cleaner" (Page 4-8)

Change of Engine Oil

⚠️ Caution
Be careful with hot oil, which could cause burns if it contacts your skin.

Important
When you change the engine oil, be sure to drain it into a bowl and discard it in accordance with local laws and regulations.

Important
Be sure to use engine oil that is classified as JASO DH-2 or API Service Grade CJ-4, with SAE viscosity that is appropriate for the operating environment (ambient temperature).

Important
Securely screw in the oil level gauge and oil filler cap.

Change the engine oil more frequently if the engine oil is contaminated, or if you use the machine in dusty areas or operate the engine at high loads or in high temperatures.
1. Move the machine onto a level surface, stop the engine, remove the drain plug while the engine oil is warm, and then drain the oil into a bowl.
2. Replace the drain plug in the engine.

3. Through the oil filling port, supply new engine oil until the oil reaches a level in between the upper and lower limit lines on the oil level gauge.
   Engine oil quantity is approximately 9.7 dm³ (9.7 L).
4. Replace the oil filler cap.

5. It will take a while for the supplied engine oil to descend into the oil pan.
   Check the oil level again 10 to 20 minutes after supplying the oil.
6. Check underneath the machine for oil leakage.
Replacement of Engine Oil Filter

Caution
Be careful with hot oil, which could cause burns if it contacts your skin.

Important
When replacing the engine oil filter, be sure to drain the engine oil into a container and discard it in accordance with local laws and regulations.

Important
Be sure to use engine oil that is classified as JASO DH-2 or API Service Grade CJ-4, with SAE Viscosity that is appropriate for the operating environment (ambient temperature).

Important
Securely tighten the oil level gauge and oil filler cap.

1. With the filter wrench, remove the old filter cartridge.

2. Lightly coat the packing of the new filter cartridge with engine oil.

3. Hand-tighten the filter cartridge until the packing contacts the sealing surface, and then firmly hand-tighten (without using a filter wrench).

4. Supply engine oil until it reaches the specified level. "Supply of Engine Oil" (Page 4-11)

5. Start the engine, and then stop it after 10 to 20 minutes.

6. Make sure that there is no oil leakage at the sealing surface of the filter cartridge.

7. Check the engine oil level. If it is low, supply engine oil until it reaches the specified level.

Replacement of Fuel Filter

Important
During installation, prevent contamination with dirt or dust. If the fuel is contaminated with dirt, dust, etc., the fuel injection pump and injection nozzle will become worn.

Since the fuel filter is a cartridge, it cannot be disassembled or cleaned. If dust or dirt accumulates in the fuel filter, the fuel flow will become insufficient. Replace the fuel filter at the appropriate times.

1. Follow the steps below to replace the fuel filter.

   [1] Using a filter wrench, remove the fuel filter cartridge.
[2] Lightly coat the packing of the new cartridge with fuel, and then firmly hand-tighten the cartridge, without using the filter wrench.

### Replacement of Fuel Filter_002

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cartridge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Packing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Cover</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Air-bleeding plug</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>O-ring</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Remove air after replacement.

### Change of Fuse

**Important**

When performing maintenance on the electrical system, be sure to remove the negative battery wire.

**Important**

If a fuse blows, a short may have occurred within the electrical circuit. Check for the cause, such as faulty terminal connections, damaged wiring or terminals, or incorrect wiring.

**Important**

For fuse replacement, clean the fuse mounting area with use of compressed air before mounting the fuse.

### Fuse Box

The fuse box includes spare fuses and tools.
Fusible Link

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

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fusible link (50 A)</td>
</tr>
<tr>
<td>2</td>
<td>Fusible link (30 A)</td>
</tr>
</tbody>
</table>
EU Declaration of Conformity

Product Identification
Product: Lawnmower
Brand-Name: BARONESS
Type: LM3210A
Starting Serial No.: 11016
Measured Sound Power Level: LWA 102.80 dB
Guaranteed Sound Power Level: LWA 105 dB
Manufacturer Name: Kyeisha Co., Ltd.
Address: 1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japan

Conforms to the following Directives
2006/42/EC Machinery (MD)
2014/30/EU Electromagnetic compatibility (EMC)
2000/14/EC Noise emissions from outdoor equipment

We have been designed and manufactured under the following specifications
ISO 5395-1 : 2013 (2006/42/EC)
ISO 5395-3 : 2013 (2006/42/EC)

Keeper of Technical Documentation
Name: Kyeisha Co., Ltd.
Address: 1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japan

Conformity assessment procedures
Internal production control : Module A. (2006/42/EC)
EC-type examination : Module B (2014/30/EU)

Internal control of production with assessment of technical documentation and periodical checking (2000/14/EC)

Involved Notified Body (2000/14/EC)
Name: TÜV SÜD Industrie Service GmbH
Address: Westendstraße 199 80686 München
Certificate: Notified Body NB0036 according 2000/14/EC

Place: Japan
Date: 6 January 2021 (6/01/2021)
Signature: [Signature]
Name: Aiko Hayashi
Position: Quality Dept. Director

(continued)

Déclaration de conformité UE

Identification du produit
Produit : Tondeuse à gazon
Fabriquant : BARONESS
Type : LM3210A
Numéro de série de début : 11016
Niveau de puissance acoustique mesuré : LWA 102.80 dB
Niveau de puissance acoustique garanti : LWA 105 dB

Fabricant : Kyeisha Co., Ltd.
Adresse : 1-26, Miyuki-cho, Toyokawa, préfecture d’Aichi, Japon

Conforme aux directives suivantes :
2006/42/CE Machine (MD)
2014/30/UE Compétibilité électromagnétique (CEM)
2000/14/CE Émissions sonores de l'équipement de plein air

Conception et fabrication en respect des spécifications suivantes :
ISO 5395-1 : 2013 (2006/42/CE)

Fiche technique
Marque : Kyeisha Co., Ltd.
Adresse de la marque : 1-26, Miyuki-cho, Toyokawa, préfecture d’Aichi, Japon

Compilateur de la fiche Technique (2006/42/CE)
Nom : Friedrich E. Barthels Nachf. Glockzin KG (GmbH & Co.)
Adresse : Gerhard-Falk-Str. 1 21035 Hambourg Allemagne

Procedures d’évaluation de la conformité
Contrôle de production interne : module A. (2006/42/CE)
Examen de type CE : module B (2014/30/UE)

Contrôle interne de la production avec évaluation de la fiche technique et vérification périodique (2000/14/CE)

Organisme notifié impliqué (2000/14/CE)
Nom : TÜV SÜD Industrie Service GmbH
Adresse : Westendstraße 199 80686 München / Munich Deutschland / Germany
N° de certificat : Notified Body NB0036 according 2000/14/CE
Declaración de conformidad de la UE

Identificación del producto
Producto: Cortaespesd
Marca: BARONESS
Tipo: LM3210A
N.° de serie inicial: 11016
Nivel de potencia sonora medido: LWA 102.80 dB
Nivel de potencia sonora garantizado: LWA 105 dB
Fabricante: Nombre: Kyoeisha Co., Ltd.
Dirección: 1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japón

Cumple las siguientes Directivas
2006/42/CE Maquinaria (MD)
2014/30/UE Compatibilidad electromagnética (EMC)
2000/14/CE Emisiones sonoras de máquinas de uso al aire libre

Se ha diseñado y fabricado utilizando las siguientes especificaciones
ISO 5395-1 : 2013 (2006/42/CE)

Documentación técnica
Nombre del responsable: Kyoeisha Co., Ltd.
Dirección del responsable: 1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japón
Compilador del archivo técnico: (2006/42/CE)
Nombre: Friedrich E. Barthels Nachf. Gloocklin KG (GmbH & Co.)
Dirección: Gerhard-Falk-Str. 1 21035 Hamburgo Alemania

Procedimientos de evaluación de conformidad
Control de fabricación interno: Módulo A (2006/42/CE)
Examen de tipo CE: Módulo B (2014/30/UE)
Control interno de fabricación con evaluación de documentación técnica y comprobaciones periódicas (2000/14/CE)

Organismo notificado implicado (2000/14/CE)
Nombre: TÜV SÜD Industrie Service GmbH
Dirección: Westendstraße 199 80686 München / Munich Deutschland / Germany
Certificado: Notified Body NB0036 according 2000/14/EC

EU-Konformitätserklärung

Produktbeschreibung
Produkt: Rasenmäher
Marke: BARONESS
Modell: LM3210A
Startsereienummer: 11016
Gemessener Schallleistungspegel: LWA 102.80 dB
Garantieter Schallleistungspegel: LWA 105 dB
Hersteller: Kyoeisha Co., Ltd.
Adresse: 1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japan

Entspricht den folgenden Richtlinien
2006/42/EG Maschinenrichtlinie
2014/30/EU Elektromagnetische Verträglichkeit (EMV)
2000/14/EG Geräuschemission von im Freien betriebenen Geräten

Unter Anwendung der folgenden Bestimmungen entwickelt und hergestellt
ISO 12100 : 2010 (2006/42/EG)
ISO 5395-1 : 2013 (2006/42/EG)
ISO 5395-3 : 2013 (2006/42/EG)

Technische Dokumentation
Name des Halters: Kyoeisha Co., Ltd.
Adresse des Halters: 1-26 Miyuki-cho, Toyokawa, Aichi- pref., Japan

Technische Unterlagen erstellt von (2006/42/EG)
Name: Friedrich E. Barthels Nachf. Gloocklin KG (GmbH & Co.)
Adresse: Gerhard-Falk-Str. 1 21035 Hamburg Deutschland

Konformitätsbewertungsverfahren
Interne Produktionskontrolle: Modul A (2006/42/EG)
EG-Baumustererprobung: Modul B (2014/30/EU)
Interne Produktionskontrolle mit Bewertung der technischen Unterlagen und regelmäßiger Überprüfung (2000/14/EG)

Beteiligte benannte Stelle (2000/14/EG)
Name: TÜV SÜD Industrie Service GmbH
Adresse: Westendstraße 199 80686 München / Munich Deutschland / Germany
Bescheinigung: Notified Body NB0036 according 2000/14/EC

EU02a – 2
EU-försäkran om överensstämmelse

Produktdentifiering
Produkt: Gardskläpare
Märke: BARONESS
Typ: LM3210A
Serienummer startar på: 11018
Uppnådd lyddemlazziw: LWA 102.80 dB
Garanterad lyddemlazziw: LWA 105 dB
Tillverkare: Kyoeisha Co., Ltd.
Adress: 1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japan

Uppfyller följande direktiv
2006/42/EG Maskindirektivet
2014/30/EU Elektromagnetisk kompatibilitet (EMC)
2000/14/EG Butelremission från utomhusutrustning

Följande kravspecifikationer har följs vid konstruktion och tillverkning
ISO 12100 : 2010 (2006/42/EG)
ISO 5395-1 : 2013 (2006/42/EG)
ISO 5395-3 : 2013 (2006/42/EG)

Telinisk dokumentation
Innehavarens namn: Kyoeisha Co., Ltd.
Innehavarens adress: 1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japan
Den tekniska filen(2006/42/EG) har tagits fram av
Namn: Friedrich E. Barthels Nachf. Glockzin KG (GmbH & Co.)
Adress: Gerhard-Falk-Str. 1 21035 Hamburg Tyskland

Förarande för bedömning av överensstämmelse
Interna produktionskontroll: Modul A (2006/42/EG)
EG-typprovning: Modul B (2014/30/EU)
Interna kontroll av produktion med fastställande av teknisk dokumentation och periodiska kontroller (2000/14/EG)

Anmänt organ (2000/14/EG)
Namn: TÜV SÜD Industrie Service GmbH
Adress: Westendstraße 199 80686 München / Munich Deutschland / Germany
Certifikat: Notified Body NB0036 according 2000/14/EC

EU-overensstommelleseserkläring

Produktdentifiering
Produkt: Pflegetrimmer
Märketsav: BARONESS
Typ: LM3210A
Störande serie: 11018
Mål lyddemlazziw: LWA 102.80 dB
Garanterad lyddemlazziw: LWA 105 dB
Producent: Kyoeisha Co., Ltd.
Adress: 1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japan

Er i överensstämmelse med följande direktiver
2006/42/EF Maskinre (MD)
2014/30/EU Elektromagnetisk kompatibilitet (EMC)
2000/14/EF Ställärenserien från utomhusutrustning

Vi har designat och producerat under följande specifikationer
ISO 5395-1 : 2013 (2006/42/EF)
ISO 5395-3 : 2013 (2006/42/EF)

Indehaver af teknisk dokumentation
Navn: Kyoeisha Co., Ltd.
Adress: 1-26 Miyuki-cho, Toyokawa, Aichi-pref., Japan

Kompiator av den tekniske fil (2006/42/EF)
Navn: Friedrich E. Barthels Nachf. Glockzin KG (GmbH & Co.)
Adress: Gerhard-Falk-Str. 1 21035 Hamburg Tyskland

Procedureer för overensstommellesesvurdering
Interna produktionskontroll: Modul A (2006/42/EF)
EF-typprovning: Modul B (2014/30/EU)
Interna fabrikationskontroll med värdering af teknisk dokumentation och periodisk kontroll (2000/14/EF)

Berät bemyndigat organ (2000/14/EF)
Navn: TÜV SÜD Industrie Service GmbH
Adress: Westendstraße 199 80686 München
Certifikat: Bemyndiget organ NB0036 ifölge 2000/14/EF