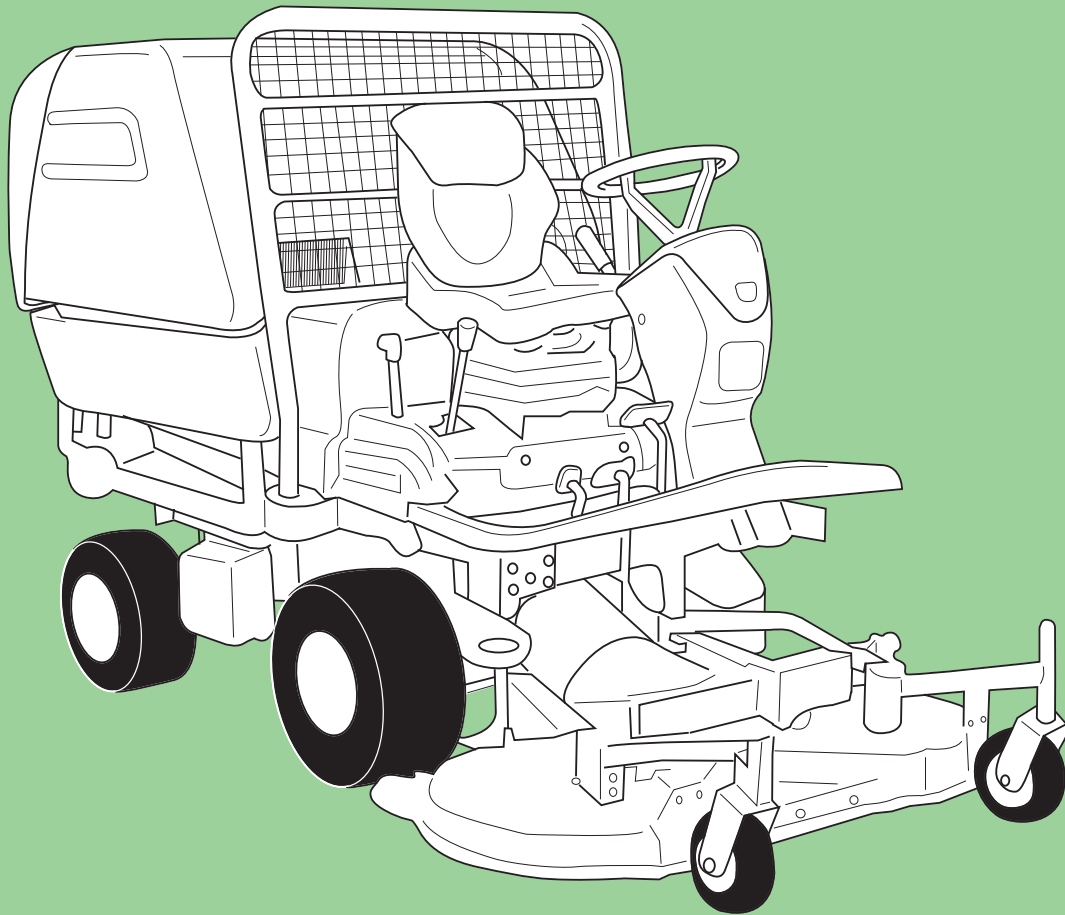


# ISEKI FRONT MOWERS



## Operation Manual

### **MODELS:**

***SFH240 SFH220***

***SCMA48F SCMA54F SMM54F***

***SBC550FL SBC550FH***



## INTRODUCTION

Thank you very much for purchasing an ISEKI front mower.

This operator's manual provides the information necessary for operating and maintaining your front mower safely and properly. The contents are mainly composed of the following two items:

|                        |                                                                                     |
|------------------------|-------------------------------------------------------------------------------------|
| SAFETY INSTRUCTION:    | Essential items which you should observe while operating the front mower.           |
| TECHNICAL INSTRUCTION: | Items which are necessary to operate, adjust, and service the front mower properly. |

Every time you see the words and symbols shown below in the manual and on the safety decals, you must take note of their instructions and warning.



**DANGER:** This symbol together with the words DANGER indicates an imminently hazardous situation that, if not avoided, will result in VERY SERIOUS INJURY OR EVEN DEATH.



**WARNING:** This symbol together with the word WARNING indicates a potentially hazardous situation that, if not avoided, could result in SERIOUS INJURY OR EVEN DEATH.



**CAUTION:** This symbol together with the word CAUTION is used to indicate a potentially hazardous situation that, if not avoided, may result in MINOR INJURY.

**IMPORTANT:** The word IMPORTANT is used to provide instructions or advice in order to let the front mower provide the optimum performance.

**NOTE:** The word NOTE is used to indicate points of particular interest for more efficient and convenient repair or operation.

Before starting to operate the front mower for the first time, you should read this operation manual thoroughly and carefully until you are sufficiently familiar with the operation of the front mower in order to do jobs safely and properly. You are advised to refer to it from time to time to refresh your understanding of the front mower.

The manual should be kept in a handy place so you can refer to it when required.

The parts employed in this front mower may be modified without notice for better performance and quality and for safety purposes, which may lead to some inconsistency found on your front mower with the contents of this manual.

The front mower is designed to be used on well-kept lawns. Using the front mower in other places is not authorized. Besides, the manufacturer will not pay for any damage caused by unauthorized use and the risk is only borne by the user. Proper use of the front mower also implies that the user follows the operational, adjusting, and servicing instructions indicated in the operation manual.

When you have any question about your front mower, you are always welcome to ask your dealer.

All information, illustrations, and specifications contained in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.



※ Chapter numbers don't make any sense.

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## ABBREVIATION LIST

| Abbreviations     | Definitions                                                                                    |
|-------------------|------------------------------------------------------------------------------------------------|
| PTO               | Power Take Off                                                                                 |
| RH / LH           | Right - hand and Left - hand sides are determined by facing in the direction of forward travel |
| ROPS              | Roll - Over Protective Structure                                                               |
| min <sup>-1</sup> | Revolutions Per Minute                                                                         |
| SCMA              | Center Collecting Mower                                                                        |
| SMM               | Mulching Mower                                                                                 |
| SSM               | Side Discharge Mower                                                                           |

## UNIVERSAL SYMBOLS



Safety Alert Symbol



Operation manual



Preheat



Engine - Stop



Engine - Run



Starter Control



Engine - Revolution



Fast



Slow



Mower - deck



Mower - Lowered position



Mower - Raised position



Cutting Height



Power Take - Off Clutch Control - Off position



Power Take - Off Clutch Control - On position



Battery



Diesel Fuel



Parking Brake

# CHAPTER 1. FOR SAFE OPERATION



**DANGER :** Failure to observe the following safety instructions can result in serious injury or death. As the owner or operator of the front mower, you are responsible for preventing accidents or injuries.

## 1. HOW TO BE A SAFE OPERATOR

- 1.1. Follow all the safety signs on the front mower and all the manufacturer's instructions before starting the front mower. If you do not, it may result in body injuries.
- 1.2. Pay attention to the caution labels on the front mower and mower deck and observe the instructions they give to avoid physical injuries.
- 1.3. Ensure that all operators are responsible individuals who have read the instructions or been fully trained on the safe operation of the front mower.
- 1.4. All operators should evaluate their health and ability to operate a front mower safely enough to protect them selves and others from serious injury. Do not operate the front mower while you are under the influence of alcohol or drugs.
- 1.5. Understand how to properly and safely operate and maintain the front mower. Seek and obtain practical instruction on how to operate and maintain the front mower properly.
- 1.6. Be sure to use necessary protective devices such as headgear, safety glasses, safety shoes, ear plugs, gloves, etc.
- 1.7. Wear appropriate protective clothing and equipment when you are operating, adjusting, or servicing the front mower, such as safety glasses, long pants, substantial footwear, and ear protection. Long hair, loose clothing, or jewellery can get tangled in moving parts.
- 1.8. Never permit the following persons to operate the front mower:
  - Persons not properly trained to operate the front mower
  - Persons who cannot understand the instructions mentioned in this operation manual and on the caution labels
  - Pregnant women
  - Children

Local regulations may restrict the age of the operator.

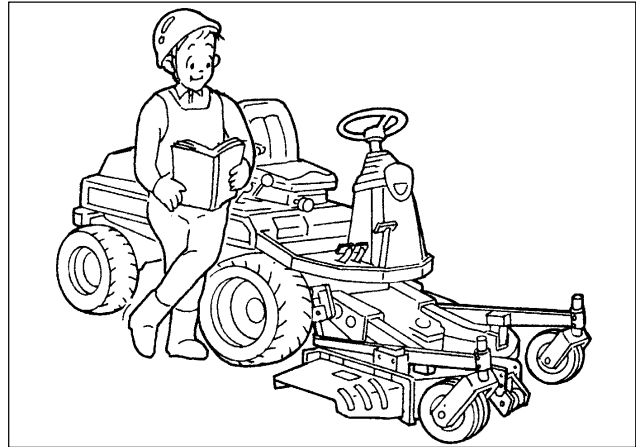


**FIG. 1**

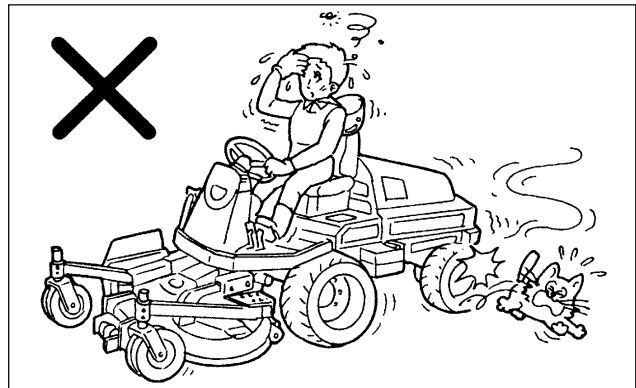


**FIG. 2**

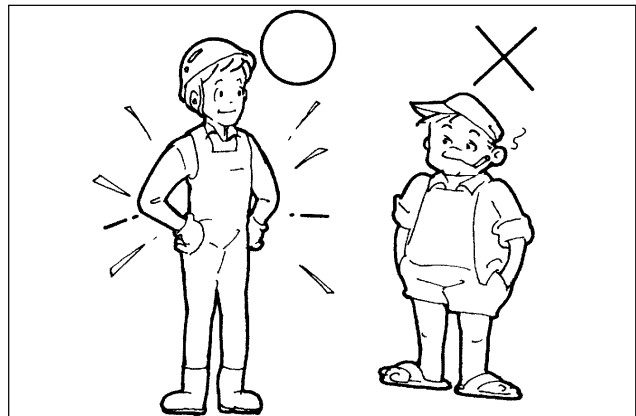


**FIG. 3**

## **SFH220,240**

- 1.9. Inspect the front mower periodically. If not, this may not only shorten the front mower's service life but also make safe and efficient operation impossible.
- 1.10. Never use the front mower out of normal usage even if it is not mentioned at this operation manual.

### **2. BEFORE STARTING THE FRONT MOWER**

- 2.1. Set up an operation plan with sufficient time allowance. A tight plan may result in unexpected accidents. Especially when operating the front mower under extremely hot, cold, or humid circumstances, set up an operation schedule or method which will ensure operational safety.
- 2.2. Mow only in daylight or good artificial light. Mowing in the dark may cause unexpected accidents.
- 2.3. Thoroughly inspect the mowing area and remove all objects from the mowing area that the front mower can throw, such as stones, toys, sticks, and wires, which may lead to serious accidents.
- 2.4. Ensure that there are no people or pets in the area where you will mow. Keep children out of the mowing area and under the watchful care of a responsible adult.
- 2.5. Do not operate the front mower unless the operator's presence controls, safety switches, and guards are attached and functioning properly.
- 2.6. Start the engine from the operating or designated starting position.
- 2.7. Before starting the engine, make sure that everything is safe around the front mower and put the traction drive in neutral, set parking brake, and disengage the cutting unit (s). Otherwise, unexpected accidents may occur.
- 2.8. Start the engine with the starter switch only. Never attempt to start the engine by shorting the terminals, or the front mower may move abruptly, and result in unexpected accidents.
- 2.9. Do not run the engine in an enclosed area where dangerous carbon monoxide fumes can collect. Sufficient ventilation should be provided when starting the engine in an enclosed area.
- 2.10. Make sure of safety around the front mower and move slowly when starting. Abrupt starting may cause unexpected accidents.

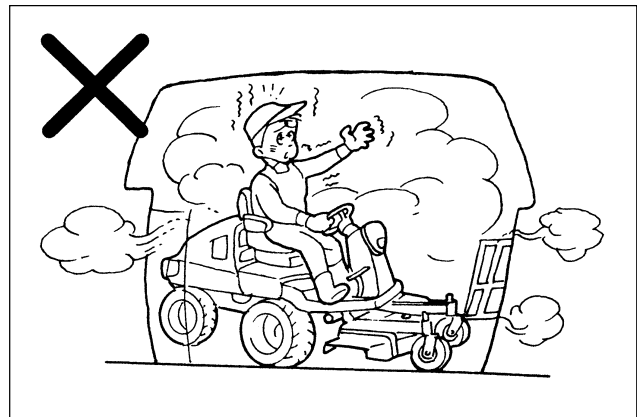


**FIG. 4**

- 2.11. Become familiar with the operation, particularly, the stopping of the front mower. You should be skilful enough to be able to stop the front mower at will.
- 2.12. Use only attachments and accessories approved by the manufacturer and install and operate them as directed.
- 2.13. When your front mower is equipped with an implement other than a standard mower deck such as a collector, a cabin, etc., never fail to ask your dealers about machine balance. Always follow their advice.
- 2.14. Keep in mind that the operator or user is responsible for the accidents or hazards caused by the front mower to other people or their property.
- 2.15. Inspect the front mower for wear or damage. Replace any worn or damaged parts.
- 2.16. Especially before starting the mower, be sure to perform advised pre-operation inspections especially on the brakes and inspect visually to see that the blade and blade tightening nuts are not worn, damaged or loose. Replace worn or damaged blade and nuts as an assembly to preserve blade balance. Otherwise, poor braking or scattered broken blades may result, which is very dangerous.

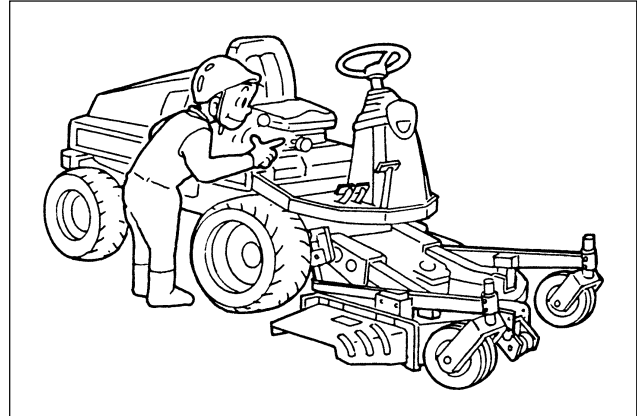


**FIG. 5**

## **SFH220,240**

### **3. OPERATION OF THE FRONT MOWER**

- 3.1. When the lawnmower is running, stay away from the discharge opening, the cutting unit(s), and all moving parts.
- 3.2. During operation, never allow anyone, especially children, and animals to be in the vicinity of the front mower. Do not direct the discharge at anyone.
- 3.3. When you are working with co-workers, be sure to alert them by signalling before you take a new action.
- 3.4. When operating the front mower, you should be seated in the operator's seat properly, hold the steering wheel by both hands, and look in the direction in which the front mower advances. Avoid looking a side or holding the steering wheel by one hand during operation.
- 3.5. Always be sure to operate the front mower from the driver's seat with seat belt. Never attempt to get on or off the front mower while it is travelling.
- 3.6. Do not mow on wet grass. the front mower may slide.
- 3.7. Slow down before turning the front mower. Turning at high speed may cause the front mower to turn over.
- 3.8. Never attempt to depress the dif-lock pedal while turning around the front mower. Turning with the dif-lock on may cause the front mower to turn over.
- 3.9. Look down and behind you and ensure a clear path before you move the front mower backward.
- 3.10. Do not mow while moving backward unless it is absolutely necessary.

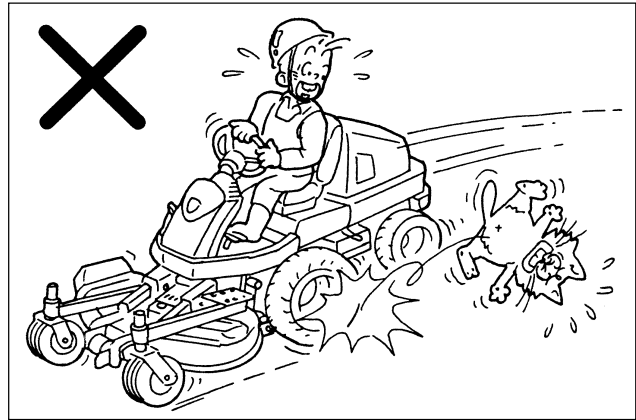


**FIG. 6**

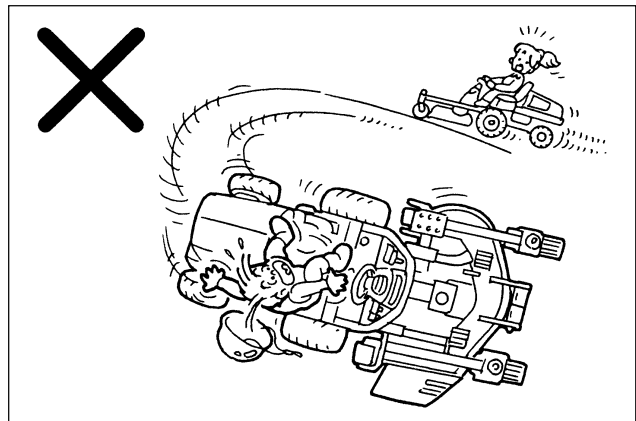


**FIG. 7**

- 3.11. Never operate the front mower in terrain where there are ditches, holes, or steps easy to collapse. In such a place, the front mower could turn over or fall.
- 3.12. Before making access to moving parts, stop the engine, and keep your hands, feet, clothing, accessories and etc. away so as not to be caught in the moving parts of the front mower.
- 3.13. Be alert when you approach blind corners and objects that may obscure your vision. Watch for holes, ruts, or bumps. Tall grass can hide obstacles.
- 3.14. Never rest a foot on the brake pedal. If so, the brakes disc wear rapidly, which may lead to serious accidents.
- 3.15. Travelling set with the cruise lever should be restricted only to operations in spacious, flat areas with an unobstructed view and used with the range shift lever always kept in the low speed position. (SFH240F-B)
- 3.16. Never attempt to do the mowing operation without the discharge cover in place or with the cover left open.
- 3.17. Never attempt to operate without the drive shaft cover in place.
- 3.18. Do not attempt to adjust the cutting height while the engine is running.
- 3.19. Adjust the cutting height with the gauge wheels in accordance with the condition of the ground surface at the working site. Mowing on rough ground with low cutting height may cause the blades to hit soil or stones, which is very dangerous.
- 3.20. If you strike an object or if the front mower vibrates abnormally, stop the front mower immediately, wait for all moving parts to stop, and inspect the cutting unit (s). Make all repairs before you resume operation.
- 3.21. Be sure to keep the grass discharging part clean. A clogged discharging part may cause the discharge cover to open, resulting in scattering of grass and stones, which is very dangerous.
- 3.22. Never allow grass or leaves to accumulate around heated parts such as the engine and the muffler, or this may cause a fire.
- 3.23. Before moving the front mower to another place, be sure to stop the mower blades and lift up the mower deck. Otherwise, they may hit stones and scatter them around, which is very dangerous.

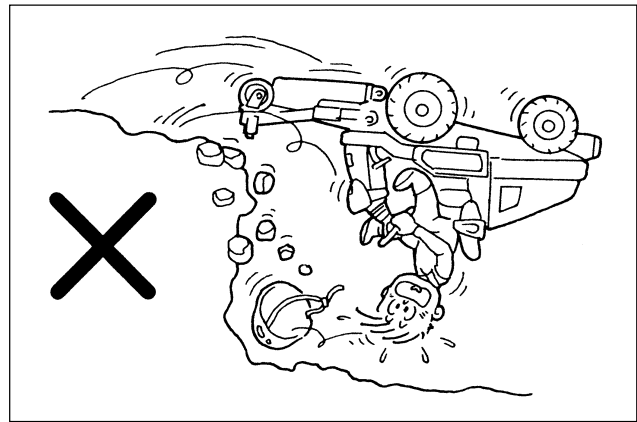


**FIG. 8**

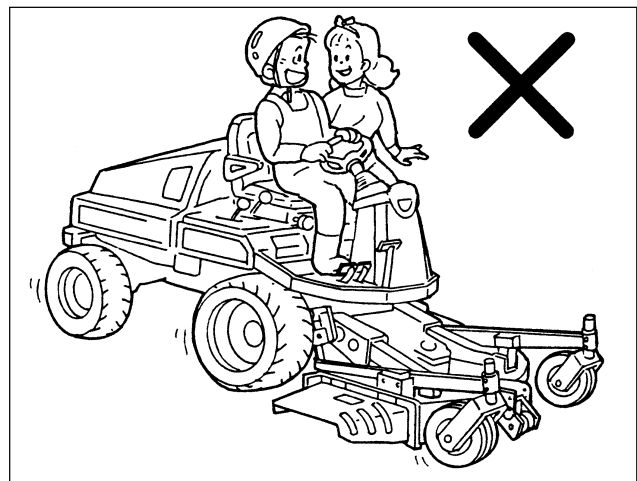


**FIG. 9**

**SFH220,240**

- 3.24. When driving over a levee or step, stop the mower blades, lift up the mower deck, and move the front mower straight to the levee and make it climb over slowly. Avoid climbing over a levee too high, or the front mower may fall sideways or turn over.
- 3.25. Stop the cutting unit(s) when you are crossing gravel areas
- 3.26. Watch for traffic when you are operating the front mower near a roadway or when crossing a roadway.
- 3.27. Never attempt to use the front mower to draw an implement or a trailer. It is not designed to draw a load.
- 3.28. Stay alert and stop the lawnmower if people or pets enter the area.
- 3.29. Do not carry passengers
- 3.30. Never carry children, even when the cutting means are not moving. Children may fall off the front mower and become seriously injured or prevent you from operating the front mower safely. Children who have been given rides in the past may suddenly appear in the mowing area for another ride and be run over or backed over by the lawnmower.
- 3.31. Before stopping the engine, be sure to lower the mower deck onto the ground, apply the parking brakes, shift the range shift lever in neutral and turn the PTO switch to the OFF position.
- 3.32. Before leaving the operating position of the front mower for any reason, always do the following:
  - Stop the front mower on level ground.
  - Stop the cutting unit(s), disengage PTO, and lower the attachment(s).
  - Disengage the drive(s).
  - Set the parking brake.
  - Stop the engine and wait for all moving parts to stop.

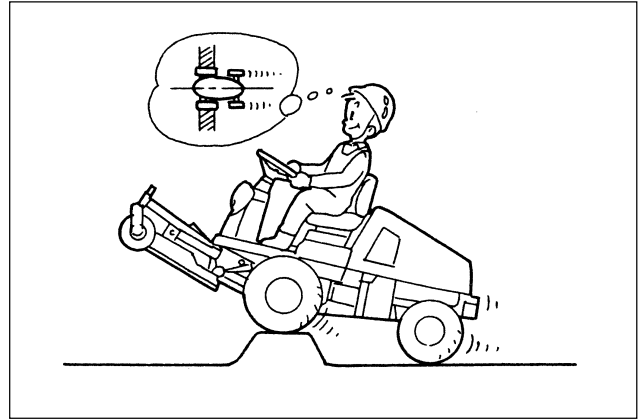


**FIG. 10**

**4. OPERATION ON A SLOPE**

**DANGER :** Slopes are a major factor related to accidents with front mowers, resulting in severe injuries.

We cannot recommended the front mower with mower deck be operated on a slope. All slopes require extra caution; no slope is safe.

You can lose control of the front mower on a slope because of one of the following:

- the wheels lack traction; you are driving the front mower too fast.
- you are not braking properly; the front mower type is not suited for the task.
- you are unaware of the ground conditions (especially slopes).
- you incorrectly hitch an attachment or distribute a load

If the front mower has to be used on a slope, Never use it on a slope of more than "10° ". Even if using it on a slope of less than "10° ", be sure to abide by the foiiowing instructions.

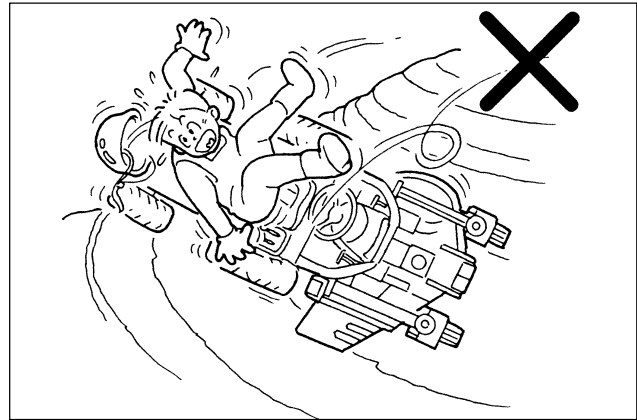
A slope angle of 10° is specified with the front mowers equipped with the attachments mentioned respectively.

- The front mower is not equipped with any attachments or a cabin.
- The front mower is equipped with a standard mower deck.

Grass catchers and other attachments can change the stability of the front mower. Follow the instructions for adding weight to improve the stability of the front mower. When your front mower is equipped with an implement other than standard, such as a cabin, etc., never fail to ask your dealer about machine balance. Always follow their advice.

If a rollover protection system (ROPS) is available for your front mower, we recommended that you use a ROPS if you will operate the front mower on steep slopes. A ROPS consists of both a rollover protection device and a seat belt. Always wear the seat belt with your ROPS; do not use the seat belt unless the rollover protection device is also properly installed.

- 4.1. Be sure to wear a helmet during operation.
- 4.2. If you feel uneasy operating your front mower on a slope, do not mow it.
- 4.3. Evaluate the terrain to determine what accessories and attachments you will need to be safe.
- 4.4. Do not mow near drop-offs, ditches, or embankments. You can tip the front mower over if a wheel is over the edge of a drop-off or if an edge caves in. Uneven terrain can cause the lawnmower to overturn.

**FIG. 11**

|                   | Parts code of weight | Quantity | Note          |
|-------------------|----------------------|----------|---------------|
| Weight (Rear) SET | 1771-923-200-00      | 1        | Set equipment |
| Bumper SET        | 1728-410-360-00      | 1        |               |
| Weight (15) SET   | 1771-923-200-00      | 5 (Max)  |               |

## **SFH220,240**

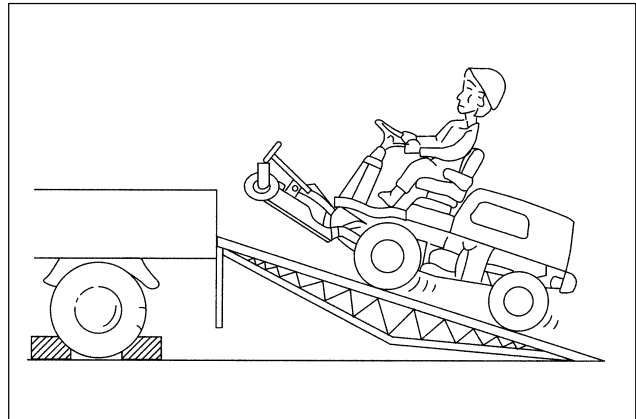
- 4.5. Never perform mowing operation on wet grass.
- 4.6. Be sure to shift the 4WD lever to the 4WD position (SFH240).
- 4.7. Never use the cruise control during mowing operation (SFH240F-B).
- 4.8. Avoid sudden starting and stopping.
- 4.9. Mow up and down a slope; do not mow across it.
- 4.10. Mow a slope by moving slowly. Do not suddenly change your speed or direction.
- 4.11. Do not turn on a slope unless it is necessary, and then, turn slowly downhill, if possible.
- 4.12. If the tyres lose traction, disengage the cutting unit(s) and proceed slowly, straight down the slope. Do not apply the brake on the front mower that is sliding down a slope. Engage the clutch slowly and always keep the front mower in gear, especially when travelling downhill.
- 4.13. Do not use the grass catcher(s) while you are mowing a steep slope.
- 4.14. Do not try to stabilize the front mower by putting your foot on the ground.
- 4.15. Avoid stopping the front mower on a slope.

## **5. DRIVING ON PUBLIC ROADS**

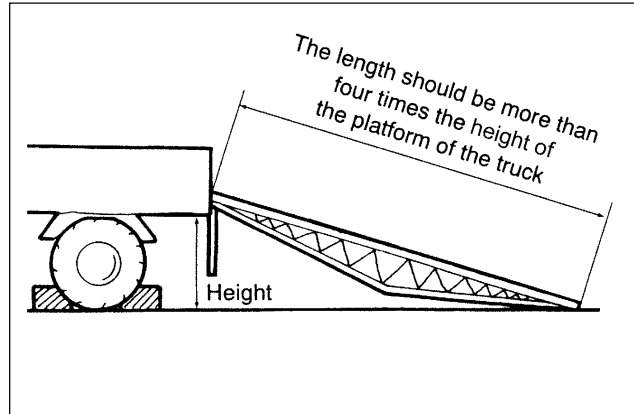
- 5.1. This front mower cannot be driven on a public road without authorization by a local government agency, etc. Therefore it may be illegal for the front mower not only to travel on but also to cross a public road.
- 5.2. When transporting the front mower on a public road, load it on a truck or trailer.

**6. LOADING ONTO OR UNLOADING FROM A TRUCK**

- 6.1. When loading the front mower onto a truck, turn off the truck's engine, apply the parking brakes to the truck, and chock the wheels to avoid unexpected moving of the truck or trailer.
- 6.2. Pay sufficient attention to safety conditions around the front mower and have it guided by someone to assist the operator. Never allow other persons to approach the front mower, especially in front of or behind it.
- 6.3. When loading the front mower onto a truck, lift up the mower deck fully and advance it straight at sufficiently low speeds. Drive it rearward when unloading it from the truck or trailer.
- 6.4. If the engine stalls unexpectedly on the ramps, depress the brake pedals immediately and roll the front mower to the ground by releasing the brakes gradually. Then start the engine and try again.
- 6.5. Use ramps with the same or better specifications mentioned below. When the front mower is equipped with attachments other than those included in the specifications mentioned below, ask your dealer for advice.

**FIG. 12****Specifications of the ramps**

- Length .....more than 4 times the height of the platform of the truck
  - Width (effective width).....more than 30 cm
  - Required quantity .....2 ramps
  - Capacity (one ramp) .....more than 750 kg
  - Ramps should have anti-skid surfaces.
- The above specifications are effective with the front mower with the following configurations.
- The front mower is not equipped with any attachments or a cabin.
  - The front mower is equipped with a standard mower deck.

**FIG. 13**

- 6.6. Park the truck on hard level ground. Hook the ramps securely on the platform of the truck with the top of the ramp level with the platform.
- 6.7. Drive the front mower carefully at the moment when the front mower moves from the ramps onto the platform for it changes angles abruptly.
- 6.8. When the front mower is loaded on the truck, lower the mower deck onto the truck bed, stop the engine, apply parking brakes, and withdraw the starter key, chock the wheels, and rope it securely to the truck. Refrain from unnecessary abrupt starting, stopping, and turning during transportation, or the front mower may shift position on the truck, which is very dangerous.

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### **7. WHEN FILLING WITH FUEL**



**DANGER : Fuel is highly flammable and explosive. Take the following precautions.**

- 7.1. Do not add or drain fuel indoors, while smoking, or near a source of flame.
- 7.2. Do not remove the fuel tank cap or add fuel to the tank while the engine is running or hot. Wait until the engine cools down sufficiently.
- 7.3. Do not completely fill the fuel tank. Add fuel to the tank until the level inside the tank is just below the bottom of the filler neck. The empty space allows the fuel to expand.
- 7.4. If you spill fuel, clean it up and do not attempt to start the engine until the vapour has dissipated.
- 7.5. When fuelling under certain circumstances, a static charge may develop and ignite the fuel.
- 7.6. Use only an approved fuel container to store fuel.
- 7.7. Do not store the front mower or the fuel container near a source of open flame, such as a water heater.
- 7.8. Replace all fuel tank and container caps securely.
- 7.9. To prevent personal injury and property damage, do the following:
  - Always place fuel containers on the ground and away from the vehicle before fuelling.
  - Do not fill the fuel container(s) inside a vehicle or on a truck or trailer bed.
  - When practical, remove a fuel-powered the front mower from the truck or trailer and refuel it with its wheels on the ground.
  - If it is not practical to do this, refuel the front mower on a truck or trailer from a portable container, not fuel dispenser nozzle.
  - If you must use a fuel dispenser nozzle, keep the nozzle in contact with the rim of the fuel tank or fuel container opening until you have completed fuelling.

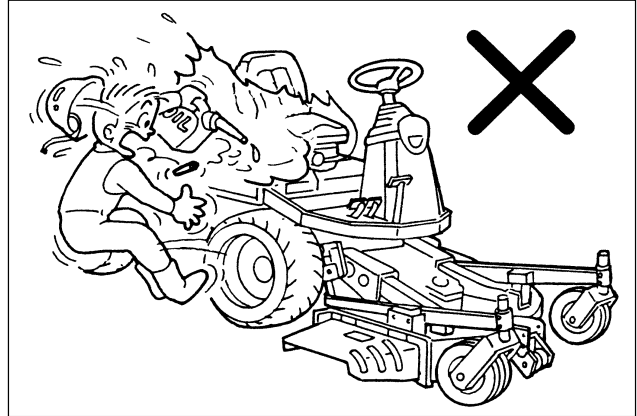


**FIG. 14**

### **8. MOUNTING AND DISMOUNTING OF THE MOWER DRIVE SHAFT**

The mower gear box is driven through a drive shaft with universal joints from the front mower. When connecting or disconnecting the shaft, follow the next instructions.

- 8.1. Lower the mower deck onto the ground, stop the engine, draw the engine key, and apply the parking brakes before mounting or dismounting the drive shaft.

- 8.2. Shift the side PTO lever and the center PTO lever to the OFF position (☒).
- 8.3. Make sure that the PTO shaft and mower blades stop completely.
- 8.4. The drive shaft should be mounted or dismounted at the front mower deck side. Never leave the shaft connected only at the mower side. If the PTO shaft be driven unexpectedly, the shaft will be swung around and damage the front mower or cause serious accidents.

## **9. INSPECTION AND MAINTENANCE**

- 9.1. Never start the engine in a closed place. Exhaust fumes contain poisonous carbon monoxide, so sufficient ventilation should be provided when starting the engine indoors.
- 9.2. Be sure to wear safety glasses and gloves when servicing the front mower.
- 9.3. When servicing the front mower or mounting or dismounting the mower deck, please the front mower on level, hard ground.
- 9.4. Service the front mower in a place sufficiently illuminated, or darkness may cause unexpected accidents.
- 9.5. Do not adjust or repair the front mower while the engine is running.
- 9.6. When servicing the front mower or mounting or dismounting the mower deck, stop the engine and Remove the key (if applicable) to prevent someone from accidentally starting the engine and apply the parking brakes.
- 9.7. The engine, muffler, radiator, etc. are very hot just after operation, so wait until those heated parts cool down sufficiently to avoid burns.
- 9.8. Never remove the radiator cap while the engine is hot or running. Wait until the engine cools down and then relieve the radiator pressure by releasing the radiator cap. Carelessly pouring cooling water into the heated radiator can cause serious damage to the radiator and the engine. Careless removal of the radiator cap can cause serious injury because of superheated water vapor.
- 9.9. Before servicing the front mower, be sure to turn the PTO switch to the OFF position(☒) and make sure that the mower blades have stopped completely. Rotating blades may cause serious accidents.



**FIG. 15**

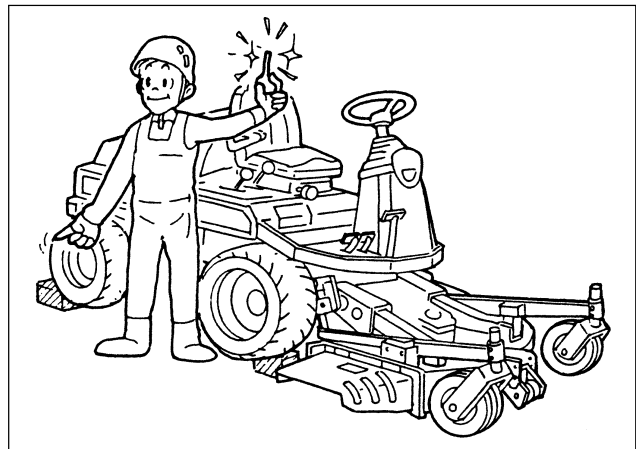


**FIG. 16**

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- 9.10. While adjusting the front mower, keep your fingers away from all pinch points.
- 9.11. When servicing the front mower, use proper tools. Using makeshift tools may lead to injuries or poor service, which may result in unexpected accidents during operation.
- 9.12. When removing a tire, chock other tires and support the front mower securely. When installing tires, be sure to tighten the wheel nuts to the specified torque. Loose nuts may cause serious accidents.
- 9.13. When raising up the mower deck for service, raise up it fully and apply the lift lock of hydraulic cylinder to avoid lowering.
- 9.14. The cutting means(s) are sharp and can cut you. Wrap the cutting means(s) or wear leather gloves when you service them. On the front mower with two or more cutting means, rotating one cutting means may cause the other cutting means(s) to rotate.
- 9.15. Never step on the mower deck, or the mower deck may be damaged or deformed, which may lead to breakdown or accidents.
- 9.16. A first aid kit and a fire extinguisher should be kept in a place always in instant access.
- 9.17. On the front mowers with hydraulic devices, hydraulic fluid escaping under pressure can penetrate and seriously damage the skin, requiring immediate medical assistance. Do not use your hand to check for a hydraulic leak; use a piece of cardboard. Be sure to consult your dealer about the hydraulic and fuel injection system troubles.
- 9.18. If any hydraulic fluid is injected accidentally into the skin, it must be removed within a few hours by a doctor familiar with this type of injury.
- 9.19. Never allow grass or leaves to accumulate around heated parts such as the engine and the muffler, or this may cause a fire.
- 9.19. Be sure to reinstall the removed parts in place. Never attempt to start the engine with any parts removed.
- 9.20. Replace any worn or damaged parts with the manufacturer's recommended parts.
- 9.21. To reduce the fire hazard, keep the engine, muffler (silencer), battery area, and fuel storage area free of debris.

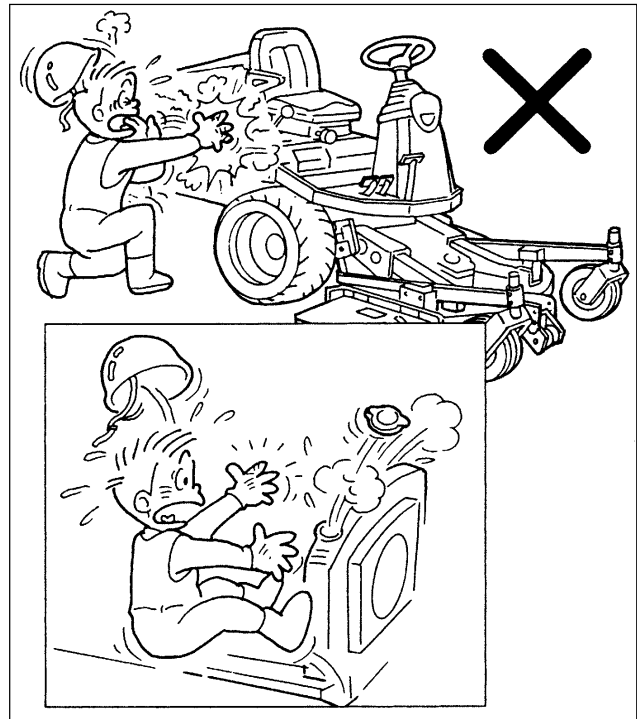


**FIG. 17**

- 9.22. If fuel has to be drained, this should be done outdoors.
- 9.23. Check the brake(s) on the front mower frequently and adjust and service the brake(s) as required.
- 9.24. Replace faulty mufflers (silencers).
- 9.25. Do not change the engine governor settings or overspeed the engine. Operating an engine at an excessive speed can increase the risk of personal injury.
- 9.26. The grass catcher components are subject to wear and damage, exposing you to moving parts or thrown objects. Frequently check and replace them with the manufacturer's recommended parts when necessary.
- 9.27. Be sure to reinstall the removed parts in place. Never attempt to start the engine with any parts removed.
- 9.28. Never attempt unauthorized modification of the front mower as this could be very hazardous. Damaged or worn parts should be replaced with ISEKI genuine spare parts. Unauthorized parts may cause breakdown of the front mower, accidents, and ISEKI warranty to expire.
- 9.29. Keep all fasteners tight, especially those that hold the cutting means(s).
- 9.30. Check that all safety devices are in place and operating properly.

|         |           | Parts code of blade                                   | Punched ID                       |
|---------|-----------|-------------------------------------------------------|----------------------------------|
| SCMA48F | Std       | 8667-306-011-00<br>8667-306-012-00                    | ⊗ 8667C<br>⊗ 8667D               |
|         | Opt (Dry) | 8667-306-001-00<br>8667-306-002-00                    | ⊗ 8668A<br>⊗ 8668B               |
| SCMA54F | Std       | 8668-306-011-00<br>8668-306-012-00                    | ⊗ 8668C<br>⊗ 8668D               |
|         | Opt (Dry) | 8668-306-001-00<br>8668-306-002-00                    | ⊗ 8668A<br>⊗ 8668B               |
| SMM54F  |           | IE01-306-211-00<br>IE01-306-212-00<br>IE01-306-212-00 | DI IE01C<br>DI IE01B<br>DI IE01A |
| SSM54F  |           | 8657-306-005-00                                       | ⊗ 8657D                          |

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### 10. MAINTENANCE OF THE ELECTRIC SYSTEM

#### 10.1. TO MAINTAIN ELECTRIC WIRING

- (1) When servicing the electric wiring, stop the engine without fail. Otherwise your hands or clothes may be caught in or sandwiched between rotating parts.
- (2) Before manipulating electric parts, be sure to disconnect the earth battery cable (-), or you may get an electric shock or be injured by sparks.
- (3) Loosen electric terminals or connectors may not only lower electrical performance but also cause short circuit or leakage of electricity, which may lead to a fire. Promptly repair or replace damaged wiring.
- (4) Remove chaff or dust from the battery, wiring, muffler or engine. Otherwise it could result a fire.

#### 10.2. TO HANDLE THE BATTERY

- (1) When working around the battery, avoid smoking. The battery generates explosive hydrogen and oxygen gasses when it is being charged. Keep the battery away from sparks or open flames.
- (2) The battery should be inspected before starting the engine. Be careful not to touch the electrolyte makes contact with the skin or clothing, wash it off immediately with water and then consult a doctor.
- (3) When replacing or inspection the battery stop the engine and turn the main switch off, or electrical parts may be damaged or unexpected accident may occur.
- (4) When disconnecting the battery cables, disconnect the earth cable (-) first without fail. When connecting the battery cables, connect the positive cable (+) first. Disconnecting or connecting in wrong order may lead to a short circuit or sparks.

#### 10.3. TO HANDLE BOOSTER CABLES

When using booster cables, pay attention to the following items for safe operation:

- (1) Before connecting cables, remove the vent plugs. This will lower the force in case of explosion.
- (2) Before connecting cables, be sure to stop the engine. Otherwise unexpected accidents may occur.
- (3) Use booster cables with sufficient electrical capacity. A cable of inadequate capacity will cause generation of heat, which may lead to a fire.

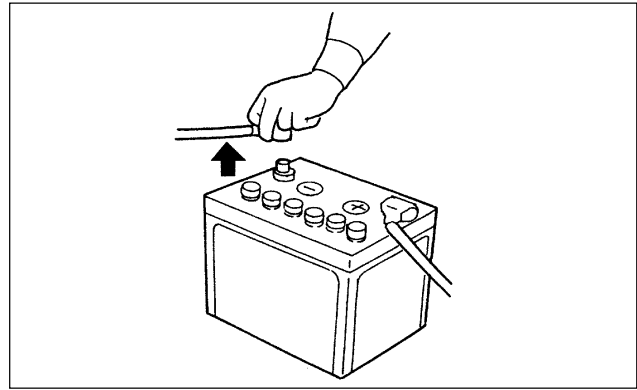


FIG. 18

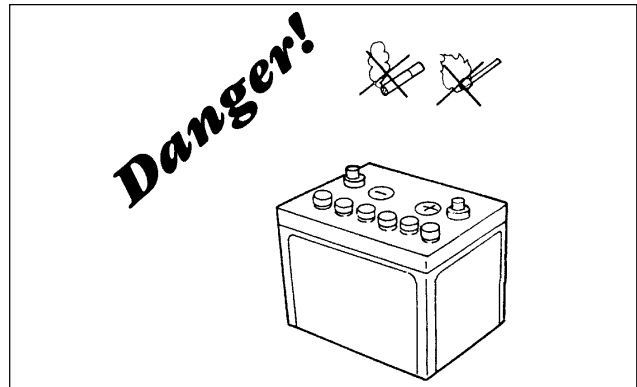


FIG. 19

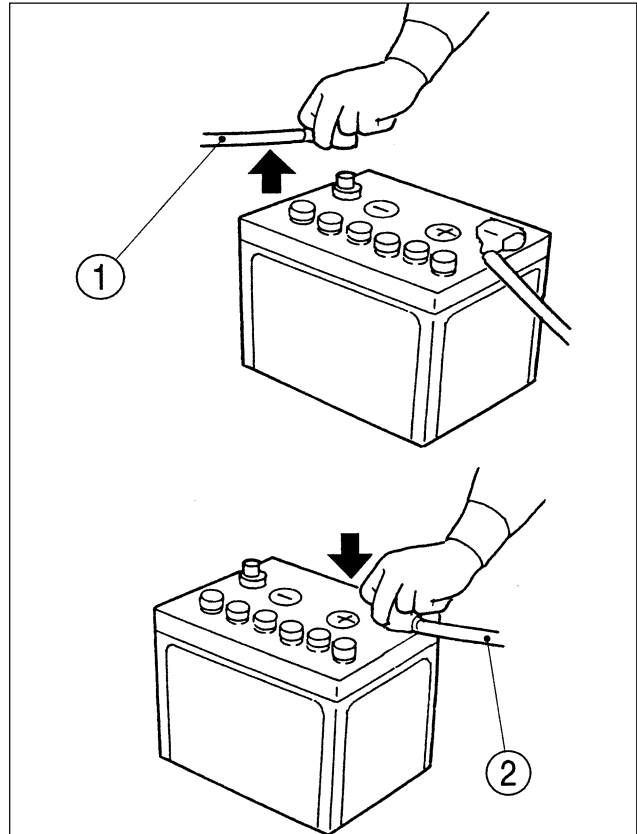


FIG. 20

(1) Negative cord

(2) Positive cord

## **11. TIRES AND WHEELS**

- 11.1. Be sure to keep tire pressures at the levels specified in this manual. Excessively high tire pressure may result in explosion, which may lead to physical accidents.
- 11.2. If a cut is found in a tire and the cut reaches the cords, do not use it. Such a tire may explode.
- 11.3. Before replacing or repairing tires, tubes, or rims, consult your dealer ahead of time. Such operation should be performed by trained mechanics.

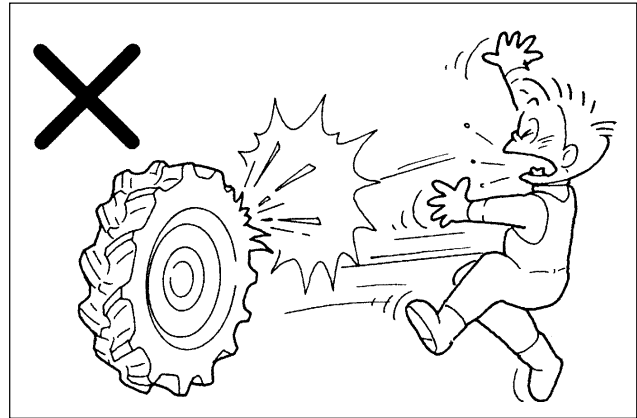


**FIG. 21**

## **12. BEFORE STORING THE FRONT MOWER**

- 12.1. After operation, be sure to close the fuel cock to prevent fuel from spilling, as spilled fuel may catch fire.
- 12.2. Never allow grass or leaves to accumulate around heated parts such as the engine and the muffler, or this may cause a fire.
- 12.3. Be sure to remove the ignition key to prevent unexpected accidents caused by engine starting by untrained persons or children.
- 12.4. When storing the front mower with the mower deck attached, be sure to lower the mower deck on the ground. Otherwise manipulation of the lift lever by untrained person or children may cause unexpected accidents.
- 12.5. Store the front mower in a place provided with sufficient illumination. Inspection and moving of the front mower in a dark place may lead to unexpected accidents.
- 12.6. When the front mower is to be stored in a closed place like a garage or a barn, provide sufficient ventilation for exhaust gases. Exhaust fumes can be lethal.
- 12.7. To avoid fire hazard, keep the engine, muffler, battery, and fuel storage area free of grass, leaves, or excessive grease.
- 12.8. Never cover a hot front mower just after operation with a tarpaulin or the like, or the heated engine and related parts may cause a fire.

## **13. LONG TERM STORAGE**

- 13.1. Never store the mower with fuel in the tank inside a building where fumes can reach an open flame or spark

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- 13.2. Lower the cutting unit(s) when you store the front mower, unless you lock the cutting unit(s) into position.
- 13.3 Allow the engine to cool before storing the front mower in any enclosure.
- 13.4. Before storing the front mower for a long period of time, disconnect the battery cables to prevent them, in case they are gnawed by rats, from causing a short circuit, which may lead to a fire. When disconnecting the battery, disconnect the negative (-) cable first, while connecting the positive (+) cable first when connecting the battery. Wrong order of disconnecting or connecting the battery will cause sparks, which is very dangerous.

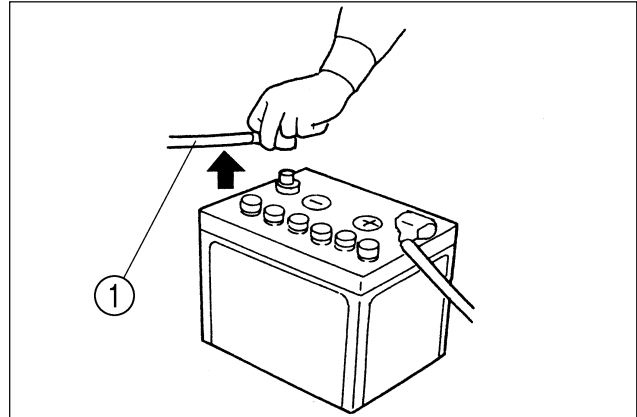
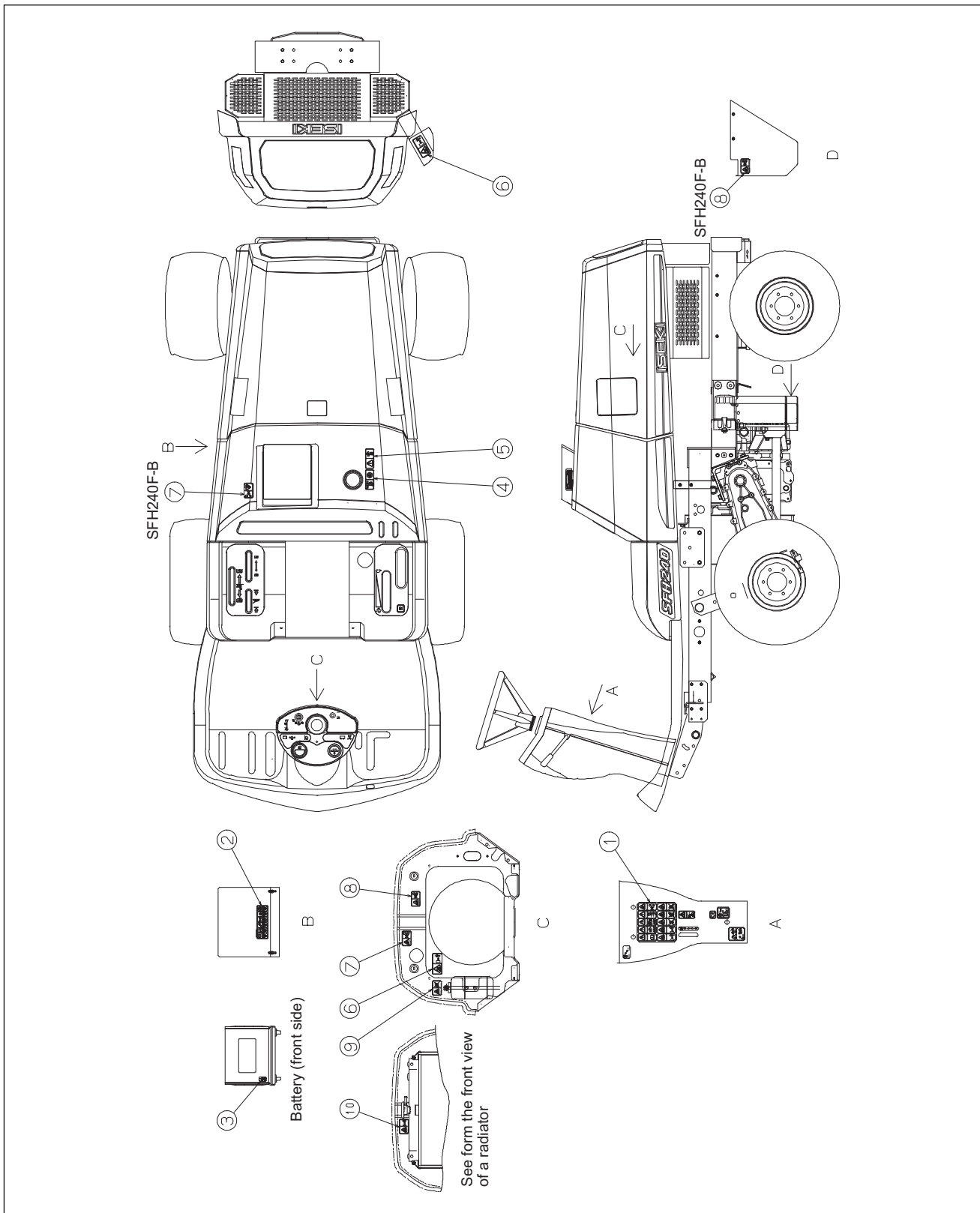


**FIG. 22**

(1) Negative cord

## 14. CAUTION LABELS & THEIR POSITIONS

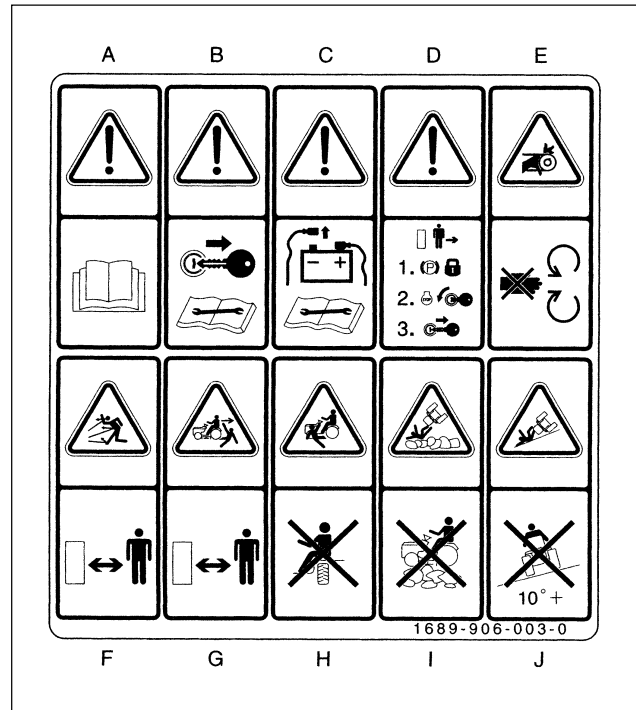
The following labels are stuck on the front mower and mower deck. You should of course read the caution instructions in the manual. But never fail to read the labels on the front mower as well. Their respective code numbers are also mentioned below, so order them from your dealer if any of them are lost or damaged.



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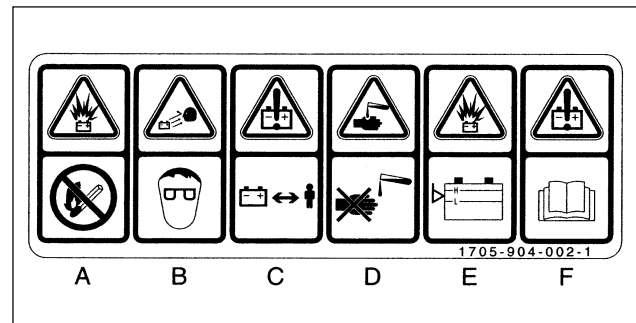
### (1) Caution label (Code No. 1689-906-003-0)

- A. **WARNING: BEFORE OPERATION**  
Read the safety and operating instructions in the operation manual before operating the front mower.
- B. **WARNING: BEFORE SERVICING**  
Read the technical instructions in the operation manual before servicing the front mower. Remove the starter key before servicing.
- C. **WARNING: RISK OF ELECTRIC SHOCK**  
When disconnecting the battery, detach the negative terminal first and attach the positive terminal first when connecting the battery.
- D. **WARNING: RISK OF ABRUPT MOVING**  
Before leaving the front mower unattended, apply the parking brake, lower the implement, turn off the engine and remove the starter key to avoid unexpected moving of the front mower.
- E. **WARNING: RISK OF ENTANGLEMENT**  
Stay clear of the belt while it is running.
- F. **WARNING: RISK OF INJURY**  
Stay away of the discharge opening of the mower deck because stones or other hard objects ejected from the mower may hit you.
- G. **WARNING: RISK OF RUNNING OVER A PERSON**  
Watch behind before reversing the front mower and keep people from around the front mower before starting it.
- H. **WARNING: RISK OF RUNNING OVER A PERSON**  
Don't allow any other person to ride on a wheel fender or any place.
- I. **WARNING: RISK OF OVERTURNING OR CRUSHING**  
Do not operate the front mower in any place where it could slip or tip over.
- J. **WARNING: RISK OF OVERTURNING OR CRUSHING**  
Avoid operating the front mower on a slope of 10° or over.



### (2) Battery label (Code No. 1705-904-002-1)

- A. **WARNING: RISK OF EXPLOSION**  
Keep away from sparks or flames, which could cause explosion.
- B. **WARNING: WEAR AN EYE PROTECTION DEVICE**  
Battery electrolyte (sulphuric acid) may cause blindness. Wear an eye protector to prevent contact with the eyes.



C. WARNING: KEEP OUT OF REACH OF CHILDREN

D. WARNING: RISK OF BURNS

Battery electrolyte (sulphuric acid) may cause burns. Avoid contact with skin or clothing. In case of an accident, flush affected part immediately with plenty of water.

E. WARNING: RISK OF EXPLOSION

Never use the battery with the electrolyte surface below the "LOWER" limit, or it may explode. Never replenish exceeding "UPPER" limit or electrolyte may leak out.

F. WARNING: READ OPERATION MANUAL

Read the safety and operating instructions in the operation manual before operating the front mower.

Take care of handling the battery.

Improper handling may lead to explosion.

Never short the poles.

Charge the battery in well ventilated place.

(3) Battery disposal label

(Code No. 1728-903-003-0)

A. WARNING: DON'T THROW AWAY THE BATTERY TO THE GARBAGE CAN. RECYCLE IT WITH OBSERVING THE LAW OF YOUR COMMUNITY.

(4) Fuel label

(Code No. 1770-906-001-0)

(5) Fuel label

(Code No. 1728-903-002-0)

**DANGER: RISK OF EXPLOSION AND BURNS**

Use only diesel fuel.

Before replenishing fuel, be sure to stop the engine and wait until the engine and heated parts cool down sufficiently. Keep sparks, open flames, etc. away from the fuel tank. No smoking!

(6) Hot-part warning label

(Code No. 8595-901-007-0)

**WARNING: HOT SURFACES, RISK OF BURNS ON HANDS AND FINGERS**

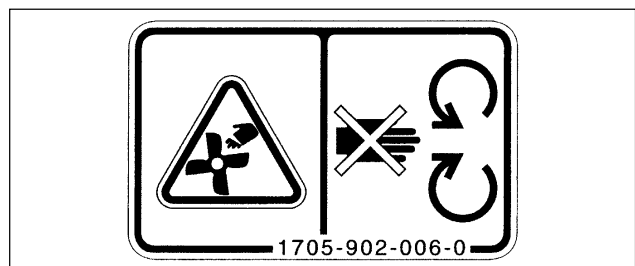
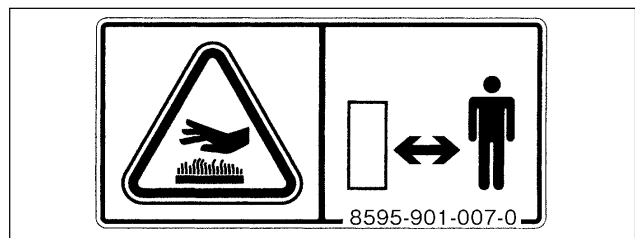
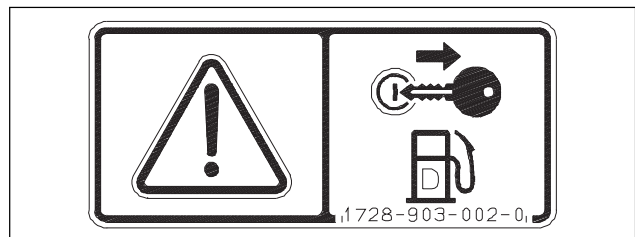
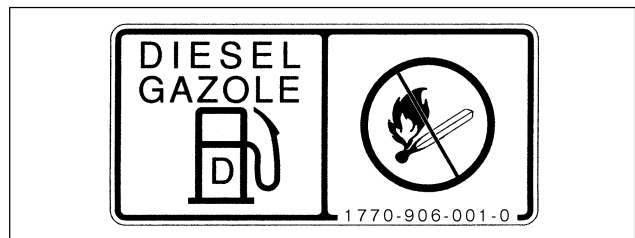
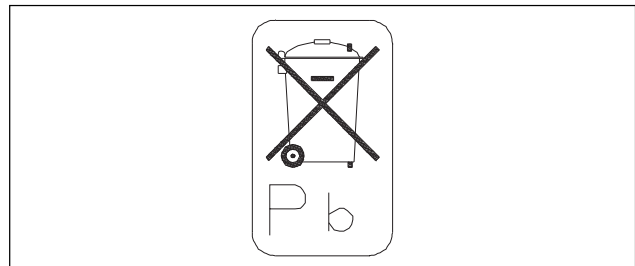
Stay clear of the heated parts until they cool down sufficiently.

(7) Fan warning label

(Code No. 1705-902-006-0)

**WARNING: RISK OF ENTANGLEMENT**

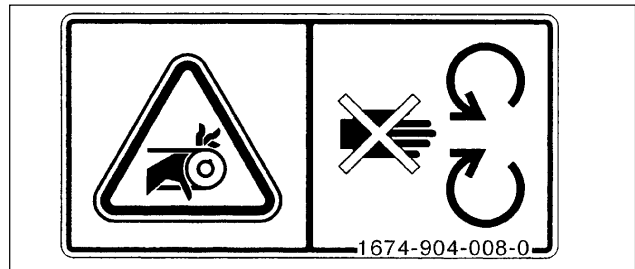
Stay clear of the fan while it is turning.



**SFH220,240**

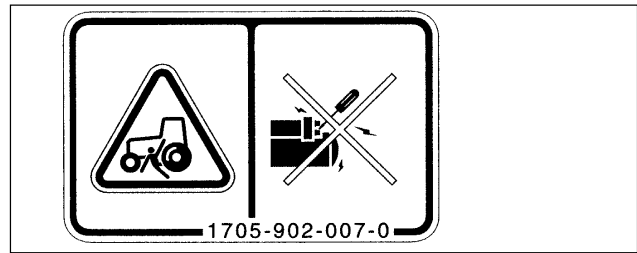
(8) Belt warning label  
(Code No. 1674-904-008-0)

WARNING: RISK OF ENTANGLEMENT  
Stay clear of the belt while it is running.



(9) Starter warning label  
(Code No. 1705-902-007-0)

**DANGER: RISK OF ELECTRIC SHOCK**  
Start the engine only from the seat using the key.



(10) Radiator warning label  
(Code No. 1705-902-008-0)

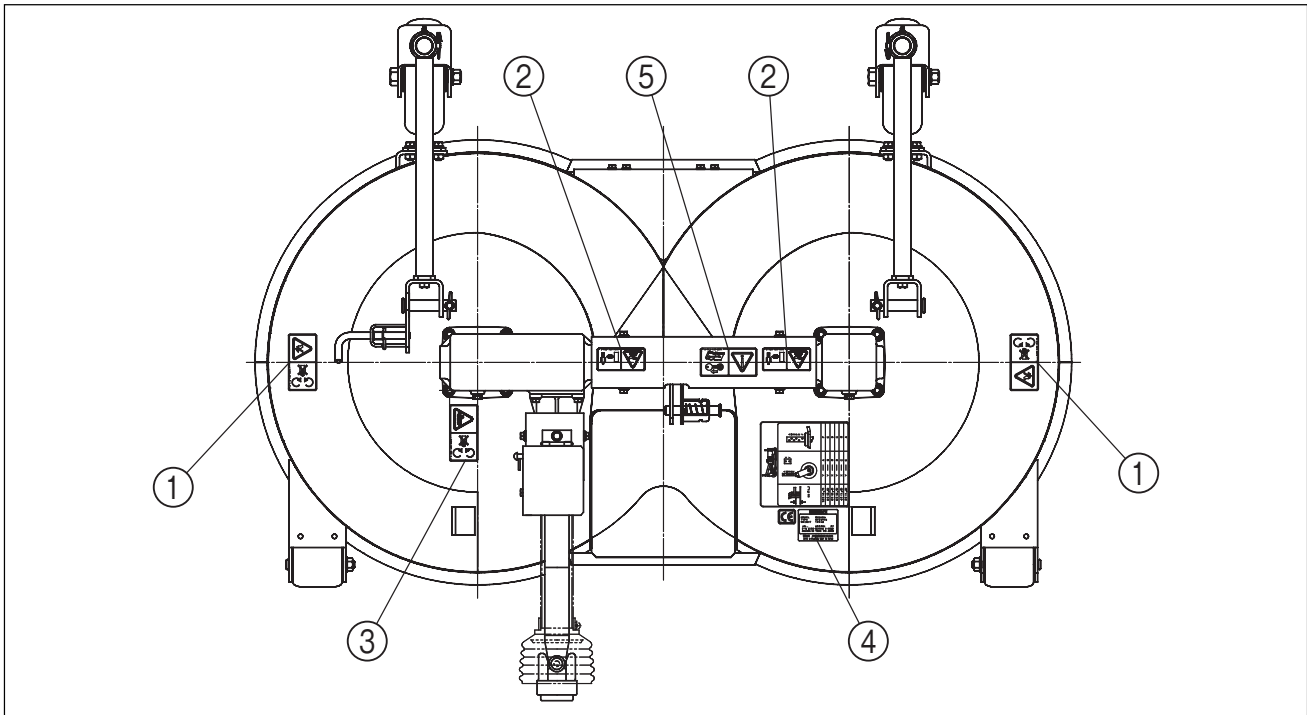
**WARNING: HIGH PRESSURE STEAM AND HOT WATER**

Never remove the radiator cap during or just after operation. The water in the radiator is very hot and highly pressurized, which could cause burns.

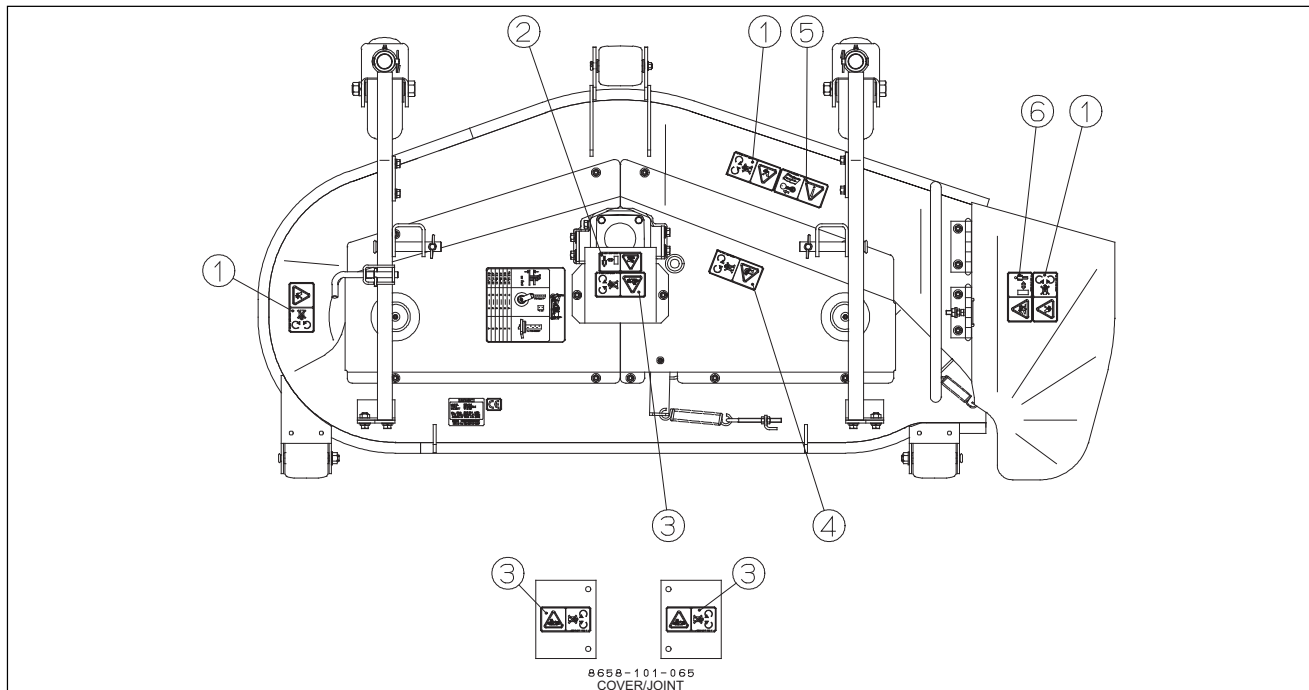
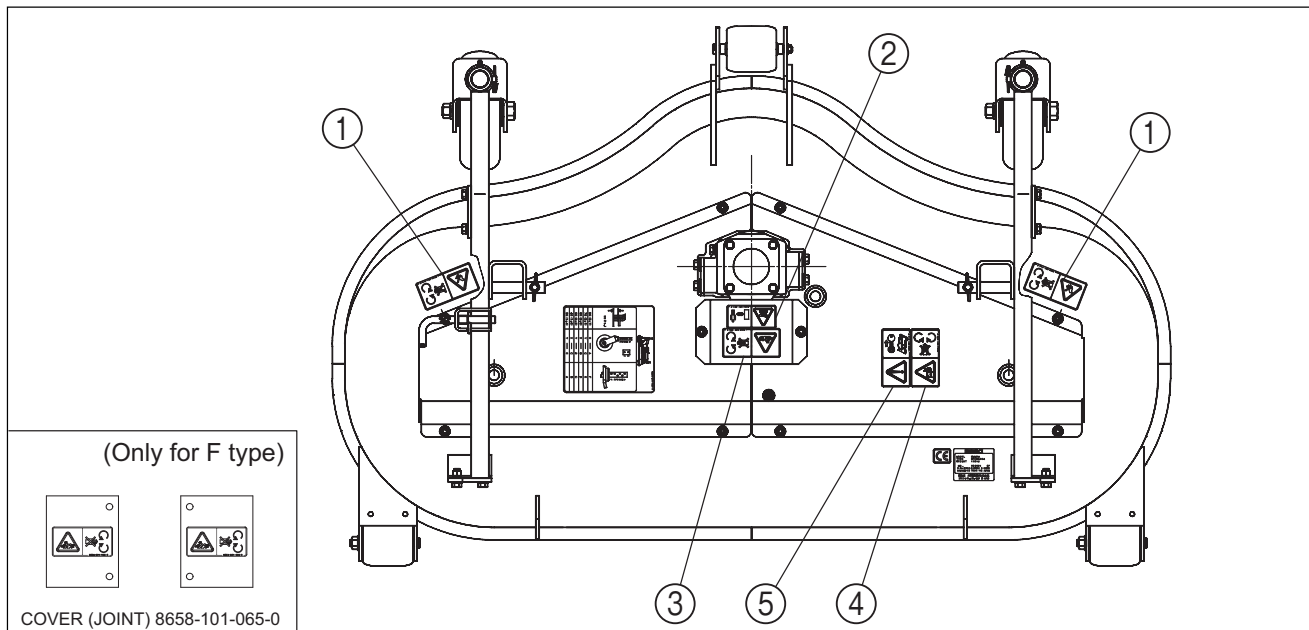


• **Maintenance of the caution labels**

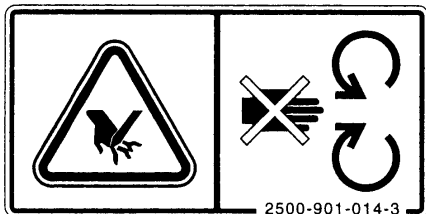
- The labels should always be clearly seen, that is, nothing should obscure them.
- When they have become dirty, wash them with soapy water and wipe off with soft cloth.
- If any of them are torn or lost, order new labels from your dealer.
- A new label should be placed in the same place where the old one was located.
- When sticking on a new label, clean the place to enable the label to stick and squeeze out all air bubbles trapped under it.
- When replacing a part with a caution label stuck on, a new caution label should also be ordered and installed.



**SFH220,240**

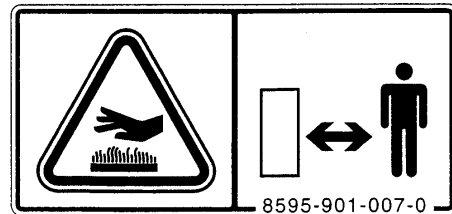


(1) Danger label  
(Code No. 2500-901-014-3)



**WARNING: RISK OF INJURY**  
Stay clear of the mower blades while the engine is running.

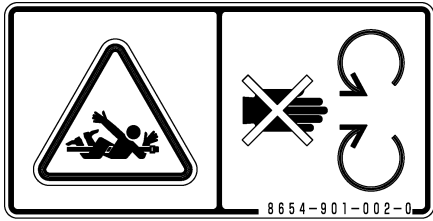
(2) Hot-part warning label  
(Code No. 8595-901-007-0)



**WARNING: HOT SURFACES, RISK OF BURNS ON HANDS AND FINGERS**  
Stay clear of the heated parts until they cool down sufficiently.

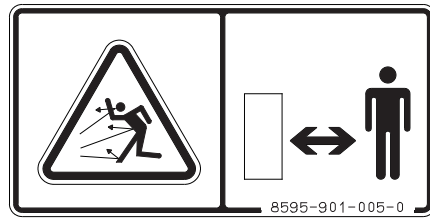
## CHAPTER 1. FOR SAFE OPERATION

(3) PTO label  
(Code No. 8654-901-002-0)



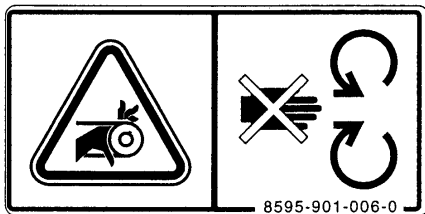
**WARNING: RISK OF ENTANGLEMENT**  
Stay clear of the PTO shaft while the engine is running.

(6) Discharge label  
(Code No. 8595-901-005-0)



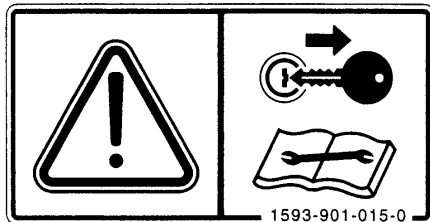
**WARNING: RISK OF INJURY**  
Stay away of the discharge opening of the mower deck because stones or other hard objects ejectde from the mower may hit you.

(4) Belt warning lable  
(Code No. 8595-901-006-0)



**WARNING: RISK OF ENTANGLEMENT**  
Stay clear of the belt while it is running.

(5) Maintenance label  
(Code No. 1593-901-015-0)



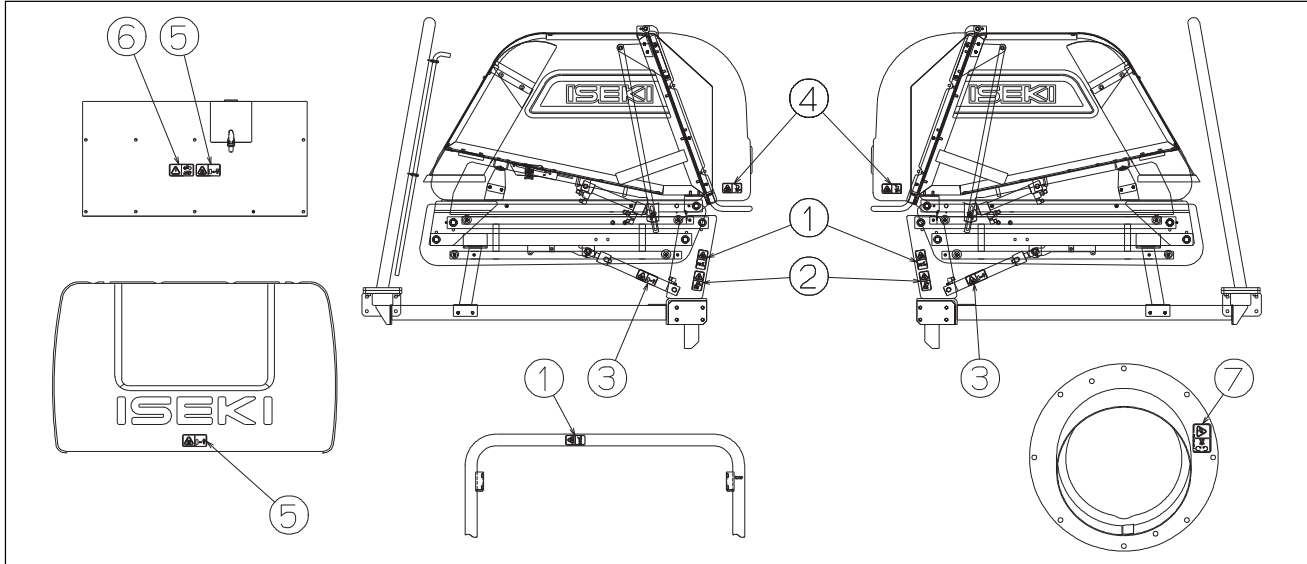
**WARNING:BEFORE SERVICING**  
Shut off the engine and remove the starter key before performing maintenance or repair work.

### • Maintenance of the caution labels

- The labels should always be clearly seen, that is, nothing should obscure them.
- When they have become dirty, wash them with soapy water and wipe off with soft cloth.
- If any of them are torn or lost, order new labels from your dealer.
- A new label should be placed in the same place where the old one was located.
- When sticking on a new label, clean the place to enable the label to stick and squeeze out all air bubbles trapped under it.
- When replacing a part with a caution label stuck on, a new caution label should also be ordered and installed.

## SFH220,240

On the collector  
High dump collector



(1) Link caution label  
(Code No. 8664-905-003-0)



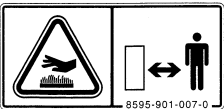
**WARNING: RISK OF CRUSHING**  
Stay clear of the collector frame while the container dumping.

(2) Collector caution label  
(Code No. 8664-955-002-0)



**WARNING: RISK OF CRUSHING**  
Stay clear of the lifted container

(3) Hot-part caution label  
(Code No. 8595-901-007-0)



**WARNING: HOT SURFACES, RISK OF BURNS ON HANDS AND FINGERS**  
Stay clear of the heated parts until they cool down sufficiently.

(4) Door caution label  
(Code No. 8664-955-001-0)



**WARNING: RISK OF CRUSHING**  
Stay clear of the container rear frame while the close of the rear door.

(5) Discharge label  
(Code No. 8595-901-005-0)



**WARNING: RISK OF INJURY**  
Stay away of the opening of door because stones or other hard objects ejected from the blower may hit you.

(6) Maintenance label  
(Code No. 1593-901-015-0)



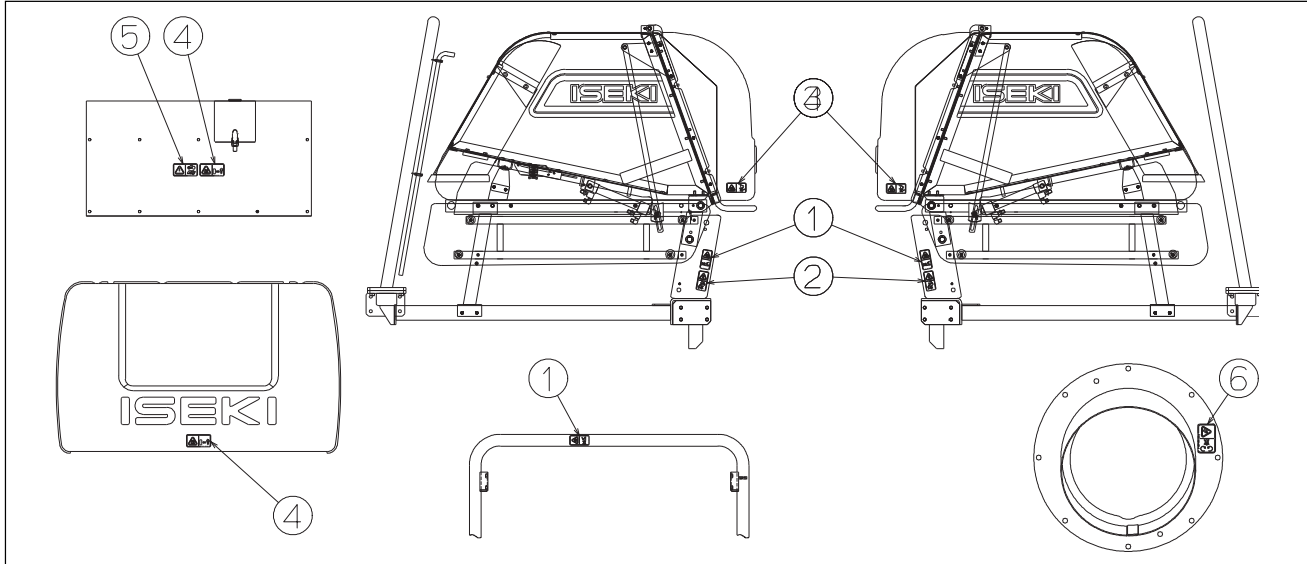
**WARNING: BEFORE SERVICING**  
Shut off the engine and remove the starter key before performing maintenance or repair work.

(7) Fan warning label  
(Code No. 1705-902-006-0)



**WARNING: RISK OF ENTANGLEMENT**  
Stay clear of the fan while it is turning.

On the collector  
Low dump collector



(1) Link caution label  
(Code No. 8664-905-003-0)



**WARNING: RISK OF CRUSHING**  
Stay clear of the collector frame while the container dumping.

(2) Collector caution label  
(Code No. 8664-955-002-0)



**WARNING: RISK OF CRUSHING**  
Stay clear of the dumping container

(3) Door caution label  
(Code No. 8664-955-001-0)



**WARNING: RISK OF CRUSHING**  
Stay clear of the container rear frame while the close of the rear door.

(4) Discharge label  
(Code No. 8595-901-005-0)



**WARNING: RISK OF INJURY**  
Stay away of the opening of door because stones or other hard objects ejected from the blower may hit you.

(5) Maintenance label  
(Code No. 1593-901-015-0)



**WARNING: BEFORE SERVICING**  
Shut off the engine and remove the starter key before performing maintenance or repair work.

(6) Fan warning label  
(Code No. 1705-902-006-0)



**WARNING: RISK OF ENTANGLEMENT**  
Stay clear of the fan while it is turning.

## CHAPTER 2. WARRANTY AND AFTER-SALE CARE

### 1. WARRANTY

On the warranty of this front mower and mower deck, refer to the warranty policy attached.

### 2. AFTER-SALE CARE

As for breakdown or question about the front mower and mower deck, consult with your dealers identifying the model and serial number of your front mower.

### 3. SERIAL NUMBER PLATE

The model name and serial number for both machine and engine are found in the serial number plates on the right frame near the rear tyre.

This manual explains about several types of the front mowers as listed below. Please confirm the type of yours by referring to the name plate.

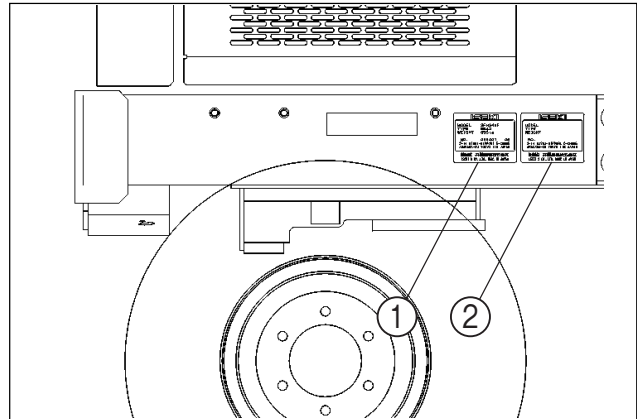


**FIG. 23**

- (1) Machine model name and serial number
- (2) Engine model name and serial number

| MODEL   | TYPE    | 4WD | 2WD | Collector available | Road homologation certified | Rear weight | For France |
|---------|---------|-----|-----|---------------------|-----------------------------|-------------|------------|
| SFH240F | BE42C   | ○   |     | ○                   |                             |             |            |
|         | BGE42C  | ○   |     | ○                   | ○                           |             |            |
|         | BGE42F2 | ○   |     | ○                   | ○                           |             | ○          |
|         | WE42C   | ○   |     |                     |                             | ○           |            |
|         | GWE42C  | ○   |     |                     | ○                           | ○           |            |
|         | GWE42F2 | ○   |     |                     | ○                           | ○           | ○          |
| SFH220T | WE42C   |     | ○   |                     |                             | ○           |            |
|         | GWE42C  |     | ○   |                     | ○                           | ○           |            |
|         | GWE42F2 |     | ○   |                     | ○                           | ○           | ○          |

### 4. SUPPLY LIMIT OF SPARE PARTS

- The supply time limit of the spare parts for this model is 12 years after manufacture of the model is stopped. Even within the supply limit, the delivery date of some parts have to be determined after negotiation.
- The supply of spare parts terminates when the limit mentioned above is exceeded. But orders for parts after the limit may be met after negotiation about the delivery date, price etc.

**CHAPTER 3. SPECIFICATIONS**

| Model                 |                                      |                          | SFH240F-B                      | SFH240F           | SFH220T        |
|-----------------------|--------------------------------------|--------------------------|--------------------------------|-------------------|----------------|
| Dimentions of machine | Overall length (mm)                  |                          | 2330                           |                   |                |
|                       | Overall width (mm)                   |                          | 1195                           |                   |                |
|                       | Overall height (mm)                  |                          | 1450 (steering)                |                   |                |
|                       | Tread                                | Front (mm)               | 950                            |                   |                |
|                       |                                      | Rear (mm)                | 945                            |                   |                |
|                       | Wheel base (mm)                      |                          | 1110                           |                   |                |
|                       | Weight (Except for local seats) (kg) |                          | 674 (G type+3)                 | 704 (G type+3)    | 680 (G type+3) |
| Engine                | Model                                |                          | E3112                          |                   |                |
|                       | "No. of cylinders"                   |                          | 3                              |                   |                |
|                       | Total displacement (L)               |                          | 1.123                          |                   |                |
|                       | Output (net) (kW{PS})                |                          | 16.2{22.0}                     |                   |                |
|                       | Rated revolution (min-1)             |                          | 2600                           |                   |                |
|                       | Fuel tank capacity (L)               |                          | 30                             |                   |                |
| Transmission          | Main clutch                          |                          | NA                             |                   |                |
|                       | Shift system                         | Main shift               | HST                            |                   |                |
|                       |                                      | Auto cruise              | Std                            | NA                |                |
|                       |                                      | HST pedal                | 2pedal                         |                   |                |
|                       |                                      | Auto accelerator         | Std                            |                   |                |
| PTO                   | Side                                 | Clutch                   | Belt tension                   | -                 |                |
|                       |                                      | Revolution (min-1)       | 2000                           | -                 |                |
|                       | Center                               | Clutch                   | Wet multiple disk              |                   |                |
|                       |                                      | Revolution (min-1)       | 1750                           |                   |                |
| Front axle            | Differential lock                    |                          | Std (Lh)                       |                   |                |
|                       | Brake                                | Type                     | Drum                           |                   |                |
|                       |                                      | Position                 | Side (Rh)                      |                   |                |
|                       |                                      | Position (G type)        | Lh/Rh                          |                   |                |
|                       | Parking brake                        |                          | Knob                           |                   |                |
|                       |                                      | G type                   | Lever                          |                   |                |
|                       | Maximum speed                        | Forward (No load) (km/h) | 15.0                           |                   |                |
| Backward (km/h)       |                                      | 10                       |                                |                   |                |
| Tyre size             | Turf                                 | Front                    | 20x10.00-8                     |                   |                |
|                       |                                      | Rear                     | 210/60D-8                      |                   |                |
| Steering system       | Driving system                       |                          | Auto or 4WD                    |                   | 2WD            |
|                       | Steering system                      |                          | Hydraulic                      |                   |                |
|                       | Tilt steering                        |                          | Std                            |                   |                |
| Hydraulic system      | Lift link Front                      |                          | Std                            |                   |                |
|                       | Auxiliary hydraulic valve            |                          | Std (doublex2)                 |                   |                |
| Electric system       | Light, Lamp                          |                          | Std (work lamp)                |                   |                |
|                       | Battery Meter                        | V-Ah 5hr rate (V.Ah)     | 12V-55Ah                       |                   |                |
|                       |                                      | Fuel meter               | Std (electric)                 |                   |                |
|                       |                                      | Hour meter               | Std                            |                   |                |
| ROPS                  |                                      |                          | Opt                            |                   |                |
| Mower deck            |                                      |                          | 54"/48"(Opt)                   | 54"(Opt)          |                |
|                       | Discharge direction                  |                          | 54,48 rear / 54 Mulching, side | 54 Mulching, side |                |
|                       | No. of blades                        |                          | 2/3                            | 3                 |                |
|                       | Flip up                              |                          | Std                            |                   |                |
| Collector             | Capacity (L)                         |                          | 550 (Opt)                      |                   | NA             |
|                       | Dump system                          |                          | Hydraulic                      |                   | -              |
|                       | Lift system                          |                          | Hydraulic high / Lo            |                   | -              |
|                       | Blower                               |                          | Inboard                        |                   | -              |

[illegible]

# ***ISEKI FRONT MOWERS FRONT MOWER SECTION***



## CHAPTER 4. NAME OF MAJOR COMPONENTS

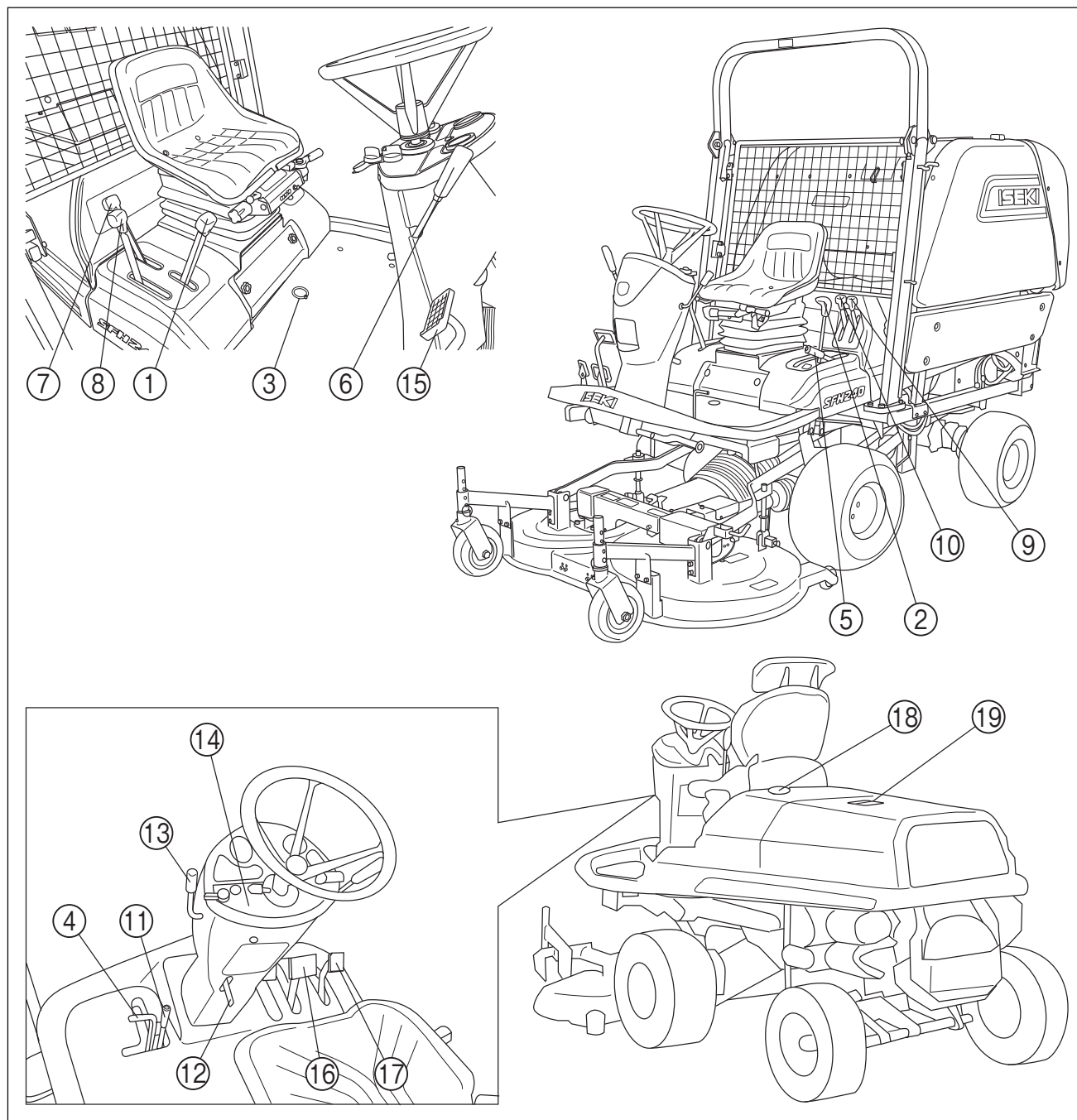


**FIG. 24**

- |                                  |                                                 |
|----------------------------------|-------------------------------------------------|
| (1) Lift lever                   | (11) Parking brake lever (Except G type)        |
| (2) Cruise control lever         | (12) Tilt lock lever                            |
| (3) Floor open ring              | (13) Auto / 4WD changeover lever                |
| (4) Dif-lock pedal               | (14) Control panel                              |
| (5) Parking brake lever (G type) | (15) Master brake pedal                         |
| (6) Throttle lever               | (16) HST forward travel pedal (Forward control) |
| (7) Center PTO lever             | (17) HST reverse travel pedal (Reverse control) |
| (8) Side PTO lever               | (18) Fuel tank filler                           |
| (9) Collector Dump lever         | (19) Hood lock lever                            |
| (10) Collector Lift lever        |                                                 |

## CHAPTER 5. CONTROLS AND METERS

### 1. CONTROL PANEL

Except G type

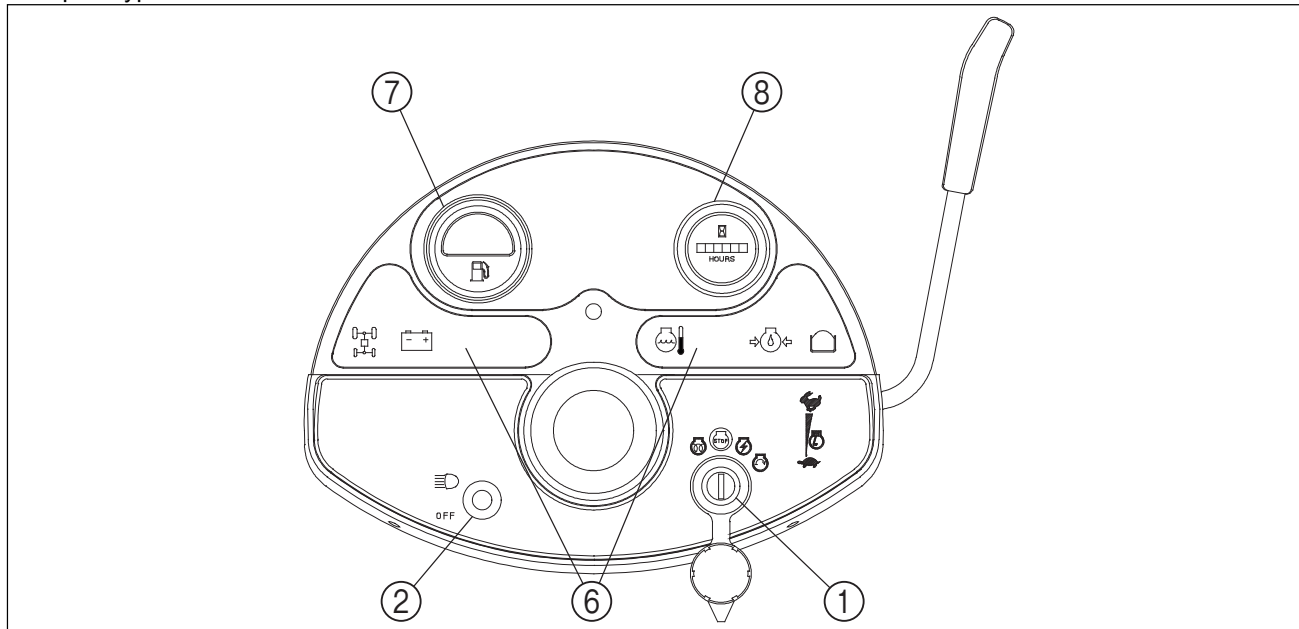


**FIG. 25**

G type

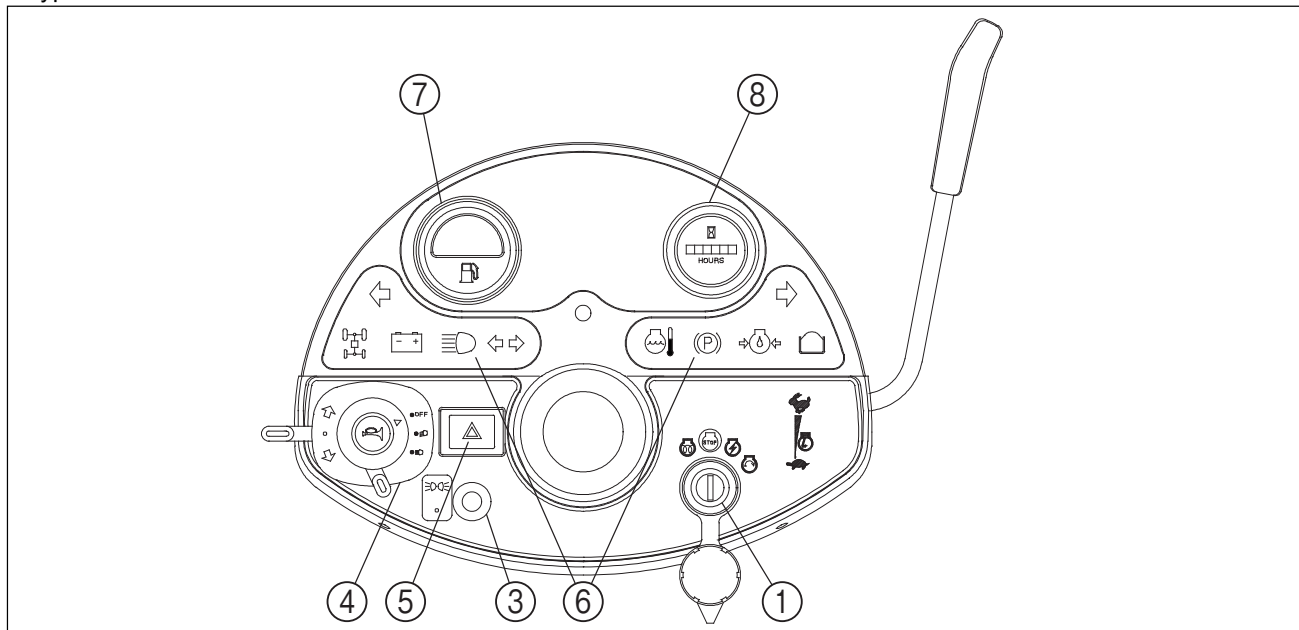


**FIG. 26**

- |                        |                        |
|------------------------|------------------------|
| (1) Starter switch     | (5) Hazard switch      |
| (2) Work lamp switch   | (6) Monitor lamp array |
| (3) Position switch    | (7) Fuel gauge         |
| (4) Combination switch | (8) Hour meter         |

### 1.1. STARTER SWITCH

- ☺: Glow position: the engine is pre-heated.
- ☹: OFF position: the engine stops and all electric circuits are turned off.
- ⚡: ON position: the key turns to this position after starting the engine and remains there during operation.
- ⚙: START position: the starter motor is switched on.

### 1.2. WORK LAMP SWITCH

This switch turns the work lamp on and off.

- ☺: **ON:** Turn the switch lever towards this mark, and the work lamps turn on and vice versa.
- OFF:** Off

### 1.3. POSITION SWITCH (G type)

The position light in combination lamp (Option) lights up while this switch is ON.

☺: ON

○: Off

### 1.4. COMBINATION SWITCH (G type)

This switch incorporates the head lamp switch, turn signal switch and horn button.

The head light and turn signal and horn are set as optional parts.

Head Lamp Switch

**OFF:** Off

☺: Low beam

☹: High beam

Turn Signal Switch

↑: Right-hand turn signal

○: Off

↓: Left-hand turn signal

**NOTE:** *Turing indicator lamps will not self-cancel. Return the turn signal switch lever to the center position after completing turn.*

Horn Switch

The horn is activated by pushing the horn mark.

### 1.5. HAZARD SWITCH (G type)

The turning signal lamps (Option) blink while hazard switch is pushed on.

The head light and turn signal and horn are set as optional parts.

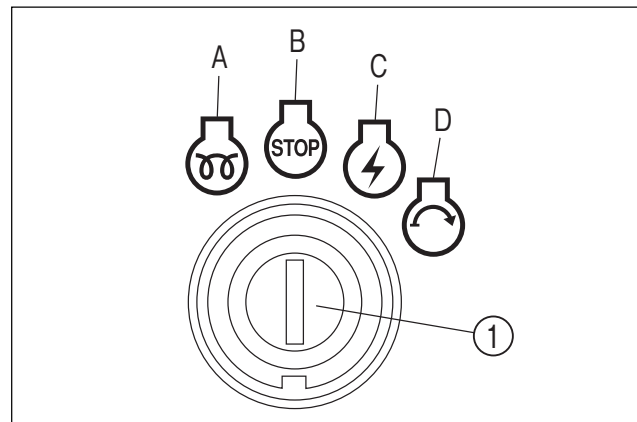


**FIG. 27**

(1) Starter switch

- A: Glow position
- B: OFF position
- C: ON position
- D: START position

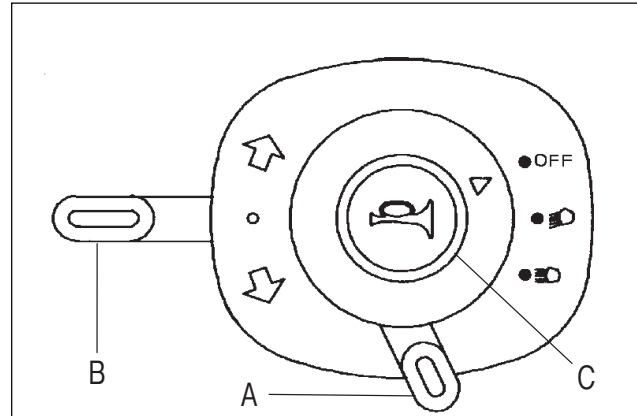


**FIG. 28**

(4) Combination switch

- A: Head lamp switch
- B: Turn signal switch
- C: Horn switch

## SFH220,240

### 1.6. MONITOR LAMP ARRAY

 **4WD:** The lamp lights up while 4WD lever is in the LOCK(PERM) position and turns off while it is in the AUTO(AUT.) position. But the SFH220 is 2WD only, doesn't light up.

 **Battery charge:** The lamp lights up while the battery is not being charged. It also lights up when the key turns to the ON (Ⓢ) position or the START (Ⓢ) position while the engine is not running, but turns off as soon as the engine starts.

 **Oil pressure:** The lamp lights up when the engine oil is not circulating normally. It also lights up when the key turns to the ON (Ⓢ) position or the START (Ⓢ) position while the engine stops, but turns off as soon as the engine starts.

 **Grass collector (Only for SFH240F-B):** The lamp works only when the machine is equipped with the grass collector. It lights up and the buzzer also sounds when the collector is filled with grass with the side PTO lever being ON (Ⓢ). When the side PTO lever is turned to OFF, only the buzzer stops. When inside of container becomes empty, lamp turns off, too. When the collector is emptied, these turn off, too. (These works only when the machine is equipped with the grass collector.)

 **High beam(G type):** The lamp lights up while high beam light of combination switch is ON.

 **Trailer(G type):** The lamp blinks when turn signal switch is ON or when hazard switch is ON with flasher lamps of trailer connected.

 **Parking(G type):** The lamp lights up with key switch ON (Ⓢ) while parking lever is pulled upward to lock brakes.

**IMPORTANT:** Always disengage the parking brake lever and confirm that the lamp is OFF before driving the front mower to prevent abnormal brake wear.

 **Turning signal(G type):** The lamp blinks while turning signal switch is ON. Both lamps blink while hazard switch is ON.

 **Engine coolant warning lamp:**  
The lamp lights up when the engine coolant is over-heated.

**IMPORTANT:** When the engine coolant is over-heated, the monitor lamp is lit and at the same time the buzzer sounds while the PTO lever is in the "ON" (Ⓢ) position. The buzzer turns off when the PTO lever is shifted to the "OFF" (Ⓢ) position

*When the monitor lamp is lit, shift the PTO lever to the "OFF" (Ⓢ) position, decelerated the engine to idling, and wait until the lamp turns off.*

*When the lamp turns off, stop the engine and correct the trouble (clogged grass or dust around engine, radiator, etc.). Then re-start operation.*



**WARNING:** When inspecting the radiator, be sure that the engine cools down sufficiently. Never release the radiator cap while the coolant is hot, or boiling water will gush out.

## 1.7. FUEL GAUGE

The gauge indicates fuel level in the fuel tank when the main switch is in the ON(⏻) position.

E: Empty  
F: Full

**NOTE:** *The gauge can not indicate an accurate fuel level when the front mower is on an incline. It takes a little time to indicate an accurate level after the front mower recovers its horizontal position.*

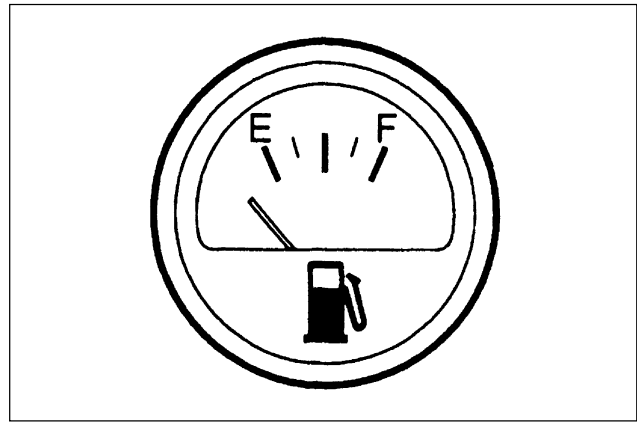


**FIG. 29**

(7) Fuel gauge

## 1.8. HOUR METER

The hourmeter, A, counts operation hours of the front mower and show them in 5-digit number. The least significant figure shows one tenth hour of operation.

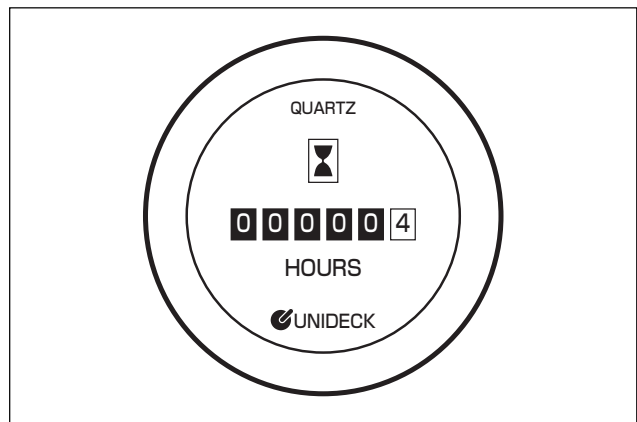


**FIG. 30**

(8) Hour meter

## 2. STEERING POST

### 2.1. THROTTLE LEVER

With this lever, the engine speed is controlled.

🐢: **LOW:** Shift(Pull) the lever towards the " turtle " mark, the engine decelerates.

🐰: **HIGH:** Shift(Push) the lever towards the " rabbit " mark, the engine accelerates.

This front mower is equipped with Auto throttle system, it raises up engine speed by depressing HST forward/ reverse travel.

**IMPORTANT:** *Don't use Auto throttle for mowing operation. Set rated engine speed by hand throttle lever.*

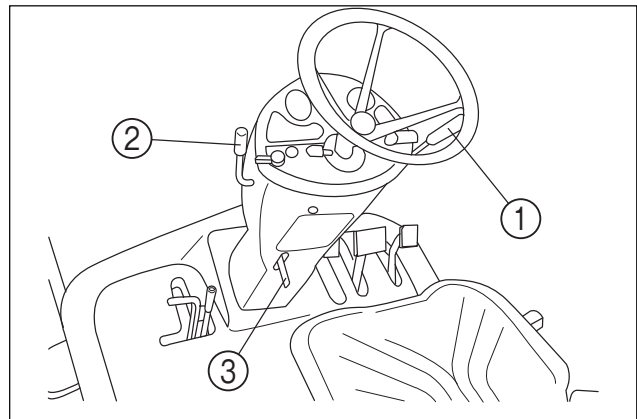


**FIG. 31**

(1) Throttle lever (2) 4WD lever (3) Tilt lock lever

## SFH220,240

### 2.2. AUTO / 4WD CHANGEOVER LEVER (4WD LEVER) SFH240FH

With this lever, 2WD/4WD automatic change-over and permanent 4WD is selectable.

**4WD PERM:** Shift(push) the lever forward to engage permanent 4WD mode.

**4WD AUT:** Shift(pull) the lever rearward to engage AUTO 4WD mode.

In AUTO 4WD mode, 2WD and 4WD is selected automatically during operation on a level ground, so the lever operation is not required.

When operating on a slope, shift the changeover lever to the 4WD position without fail.

**IMPORTANT:** *Be sure to shift the 4WD lever to the " AUTO " position when operating on level ground, as level ground operation with the 4WD selected leads to a larger turning radius and may cause turf damage.*

**IMPORTANT:** *When shifting the 4WD lever, slow down the travelling speed below 1 km/h and make the machine go straight.*



**WARNING:** When operating the front mower on a slope, be sure the 4WD lever is locked in the 4WD position from the reasons mentioned below:

In the AUTO position the mechanism shifts to 2WD automatically when the peripheral speed of the front wheels exceeds that of the rear wheels, which means loss of rear wheel driving power.

For example, when moving uphill if the front wheels slip, the mechanism stays in 4WD. But moving downhill if the front wheels slip and lose grip, and begin to slip down the slope, it shifts to 2WD, that is, braking effect of the HST unit is lost, which means loss of front mower control.

From another point of view, when you try to turn the front mower on a slope, rear wheel driving power is lost and the front mower may slip down the slope, which is also very dangerous.

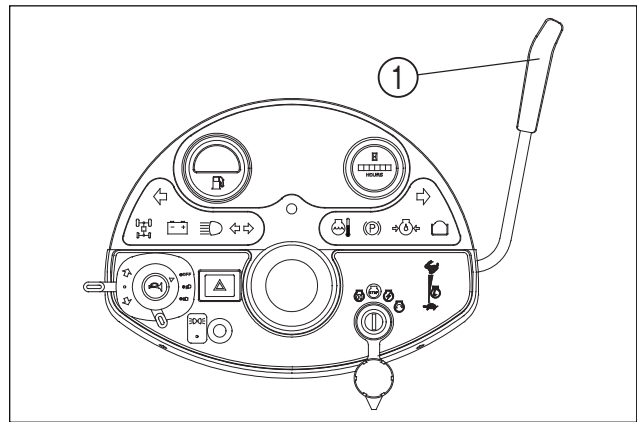


FIG. 32

(1) Throttle lever

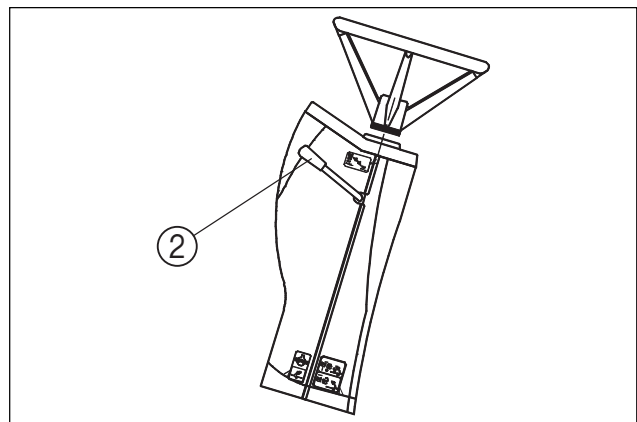


FIG. 33

(2) 4WD lever

### 2.3. TILT LOCK LEVER

The steering wheel column is tiltable to gain the optimum steering wheel position. To adjust the angles, pull up the tilt lock lever while holding the steering wheel with the other hand, and the lock is released. Select the most adequate angle within the four setting positions. Then push down the lever securely to lock the steering wheel column.



**CAUTION:** Only adjust steering tilt when the machine is parked.

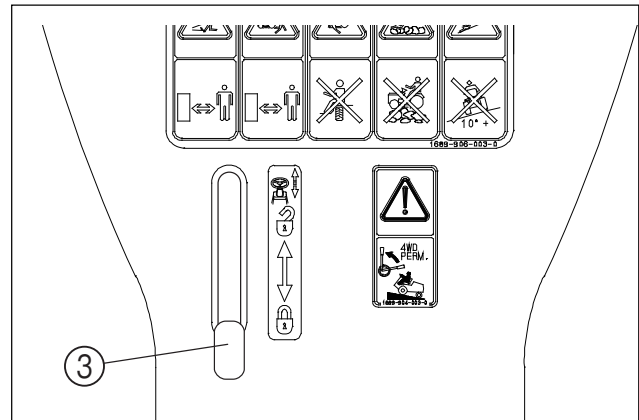


**FIG. 34**

(3) Tilt lock lever

### 3. FLOOR PEDALS AND LEVERS

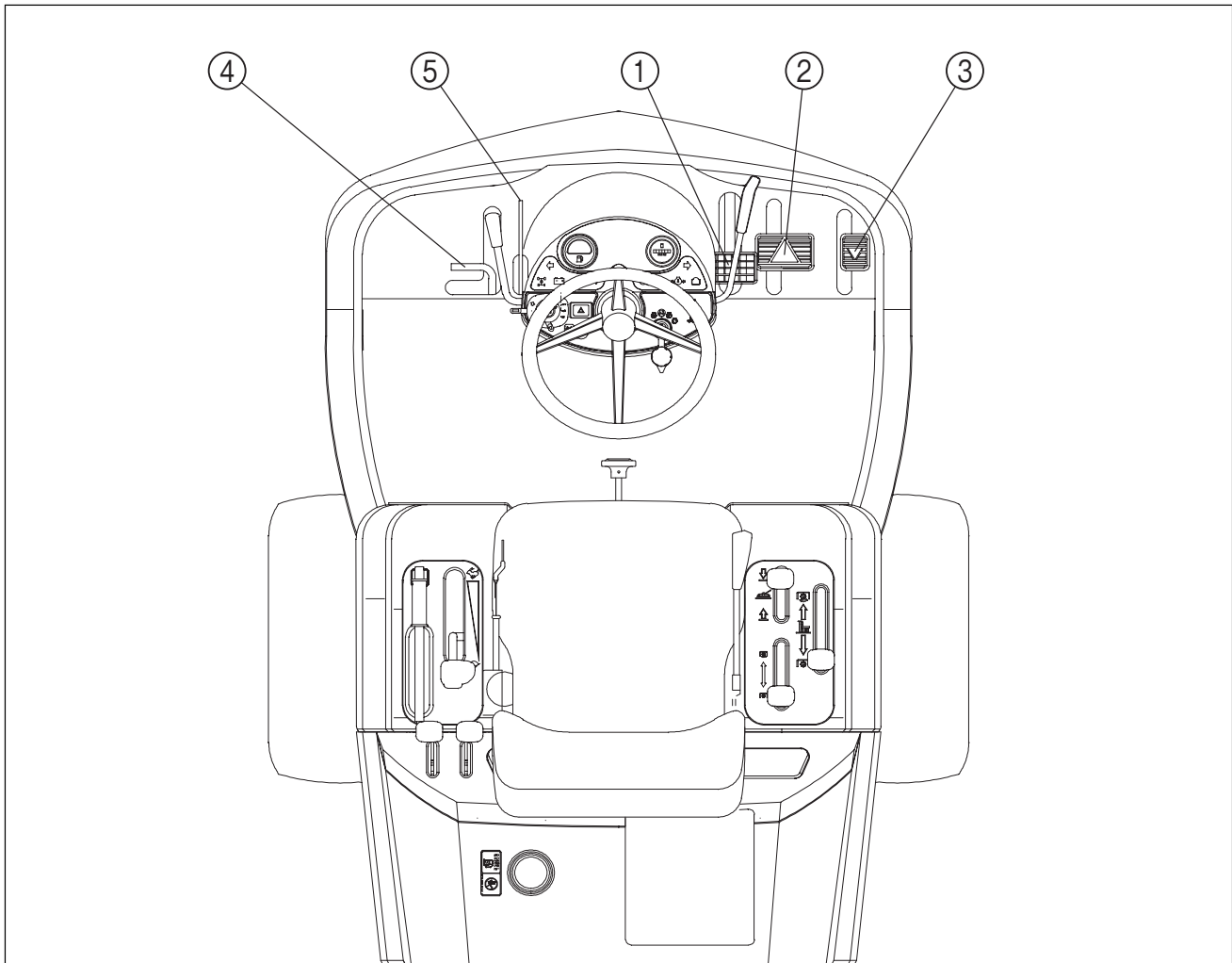


**FIG. 35**

- (1) Master brake pedal
- (2) HST forward travel pedal
- (3) HST reverse travel pedal
- (4) Dif-lock pedal
- (5) Parking brake lever (Except G type)

## SFH220,240

### 3.1. MASTER BRAKE PEDAL

The front mower stops travelling by depressing this pedal.

### 3.2. HST FORWARD TRAVEL PEDAL

Depress this pedal, and the front mower starts moving forward. Forward travelling speed is controlled only by depressing it: forward travel accelerates and decelerates by the extent the pedal is depressed.

### 3.3. HST REVERSE TRAVEL PEDAL

Depress this pedal, and the front mower starts reversing. The buzzer sounds when the front mower is moving to backward.(SFH240F-B) Reverse travelling speed is controlled only by depressing it: reverse travel accelerates and decelerates by the extent the pedal is depressed.

### 3.4. DIF-LOCK PEDAL

To minimize the turning radius of the front mower, the differential gear system is installed, which causes the right and left driving wheels to turn at different speed when turning. On the other hand, it causes the wheels to slip on wet grass or soft ground. In such a case, lower engine speed and depress the dif-lock pedal, and then the differential gears are locked and both wheels turn at the same speed, which results in straighter travelling.



#### WARNING:

- Never use the dif-lock when travelling at high speeds.
- It is very dangerous to attempt to turn the front mower with the dif-lock pedal depressed. When turning the front mower, be sure to release the dif-lock pedal.
- When the dif-lock is not released despite releasing the dif-lock pedal, stop the front mower immediately and ask your dealer to repair.

### 3.5. PARKING BRAKE LEVER (Except G type)

While depressing the master brake pedal fully, move the lever rearward and the parking brake is applied. To release the parking brake, depress the master brake pedal again.

**IMPORTANT:** *Never start travelling with the parking brake applied, or the brake performance will deteriorate soon or, even worse, the brake system could break down.*



**CAUTION:** When leaving the front mower, be sure to apply the parking brake.

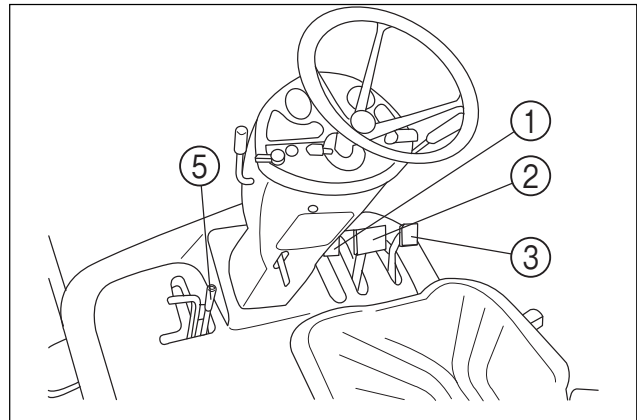


FIG. 36

- (1) Master brake pedal
- (2) HST forward travel pedal
- (3) HST reverse travel pedal
- (5) Parking brake lever (Except G type)

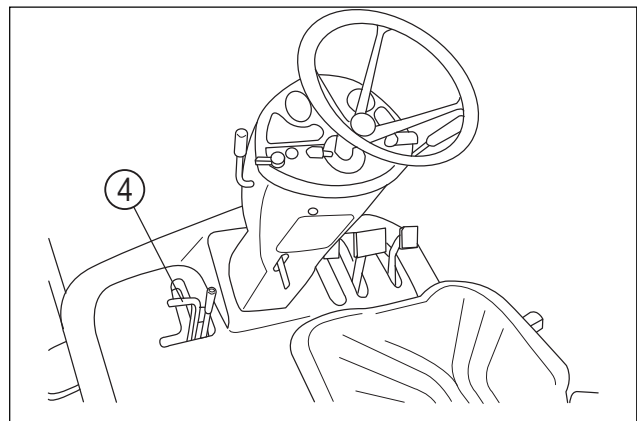


FIG. 37

- (4) Dif - lock pedal

**4. FENDER (RIGHT) PANEL****4.1. LIFT LEVER**

With this lever, the lift link(mower deck) is raised or lowered.

**↓: DOWN:** Shift the lever forward to this mark, the lift is lowered. The lever is held on the most lowest position. Return the lever to neutral by hand.

**↑: UP:** Shift the lever rearward to this mark, the lift is raised. Lever returns to neutral when your hand is released.



**CAUTION:**When servicing or leaving the front mower, be sure to lower the mower deck to the ground.

**IMPORTANT:** Do not hold the lift lever too long in the UP position(↑), or it may damage the hydraulic system.

**4.2. SIDE PTO LEVER (SFH240F-B)**

This lever is for using rear discharge mower of the SCMA48, 54.

**☛:** Shift the lever forward, and the side PTO shaft starts spinning.

**☛:** Shift the lever backward, and the side PTO shaft stops spinning.

**IMPORTANT:** This front mower is equipped with UP-STOP device for safety. PTO automatically stops when the mower deck is raised while the PTO lever is in the ON(☛) position. When the PTO stops by UP-STOP device, lower the mower deck and reset the PTO lever to the ON(☛) position to restart.

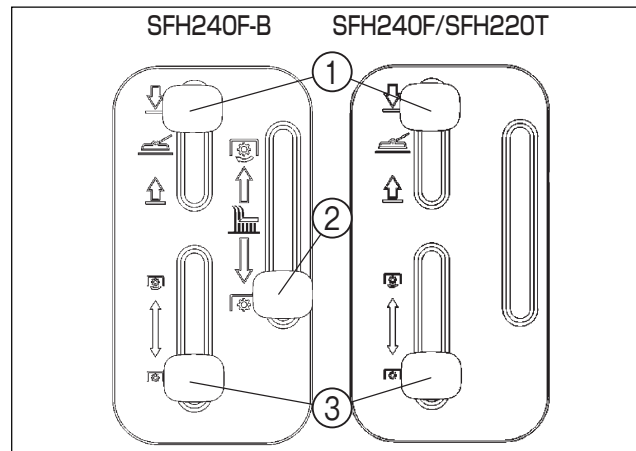
**4.3. CENTER PTO LEVER**

This lever is for using collector blower attached to center PTO shaft or general implement such as mulching mower SMM54 and side discharge mower SSM54.

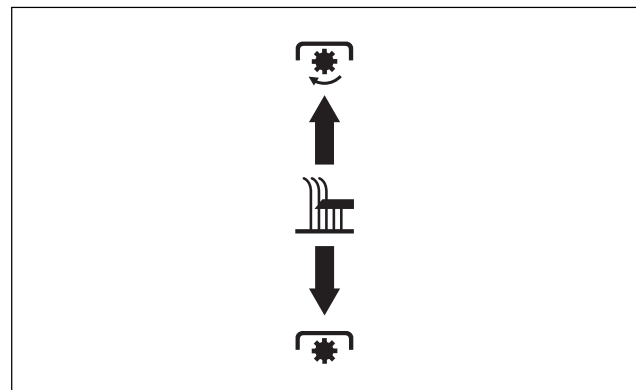
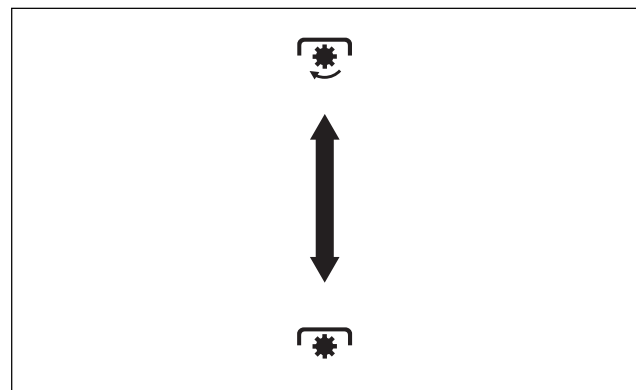
**☛:** Shift the lever forward, and the center PTO shaft starts spinning.

**☛:** Shift the lever backward, and the center PTO shaft stops spinning.

**IMPORTANT:** This front mower is equipped with UP-STOP device for safety. PTO automatically stops when the mower deck is raised while the PTO lever is in the ON(☛) position. When the PTO stops by UP-STOP device, lower the mower deck and reset the PTO lever to the ON(☛) position to restart.

**FIG. 38**

- (1) Lift lever
- (2) Side PTO lever
- (3) Center PTO lever

**FIG. 39****FIG. 40**

## SFH220,240

### 5. FENDER (LEFT) PANNEL

#### 5.1. CRUISE CONTROL LEVER (SFH240F-B)

When this lever is shifted in the required position, the travelling speed is held there without operating the HST forward travel pedal.

👉: **LOW:** Shift the lever backward, cruising speed becomes slow.

👈: **HIGH:** Shift the lever forward, cruising speed becomes fast.

#### 5.2. PARKING BRAKE LEVER (G type)

Use this lever when parking the front mower. Pull up the lever, and the parking brakes are applied. Push in the top button and lower the lever to disengage the brakes.

**IMPORTANT:** *Never start travelling with the parking brake applied, or the brake performance will deteriorate soon or, even worse, the brake system could break down.*

The parking lamp light up with key switch ON while parking lever is pulled upward.

Relieve the parking lever before starting the front mower and confirm the parking lamp is OFF.



**CAUTION:** When leaving the front mower, be sure to apply the parking brake.

### 6. PANNEL (LEFT-BACKWARD)

#### 6.1. COLLECTOR HYDRAULIC LIFT LEVER (DOUBLE ACTING HYDRAULIC LEVER)

This lever is used for lifting up and down the SBC550 high dump collector when it is attached. Lift lever is shifted up position, collector is lifted upward, the lever is shifted down position, collector is coming down. When operating if lawn mower lifts up the collector with the blower is running, engine stops due to a safety switch.

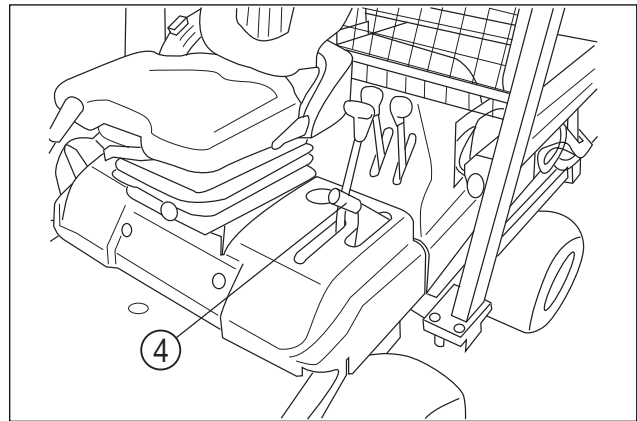


**FIG. 41**

(4) Parking brake lever (G type)

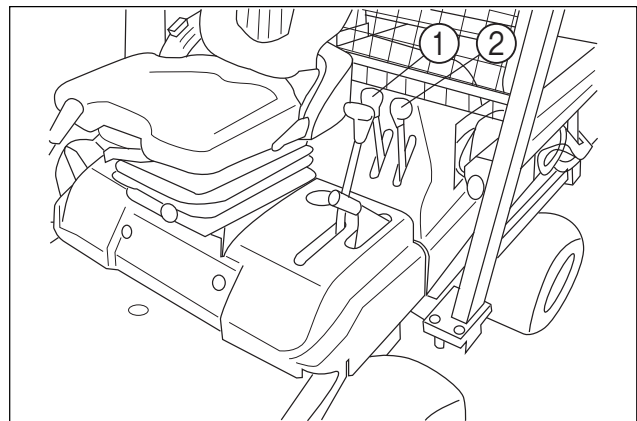


**FIG. 42**

(1) Hydraulic lift lever  
(2) Hydraulic dump lever

**6.2. COLLECTOR HYDRAULIC DUMP LEVER (DOUBLE ACTING HYDRAULIC LEVER)**

This lever is used for dump the SBC550 collector when it is attached. The lever shifted upward(A), collector dumps, the lever shifted downward(B), the collector back to original position.

When the collector is dumped, if the blower lever is shifted to "on" position the engine will be stopped by safety switch.

**7.1. SAFETY SWITCHES**

The safety devices are equipped on the operator's seat, master brake pedal and PTO levers. Before starting engine, the operator should be seated in the operator's seat, depress the master brake fully and shift the both side and center PTO levers to the OFF position.



**CAUTION:** When the engine does not start due to a defective safety switch or does not stop when the operator has left the operator's seat, consult your dealer at once without fail.

**7.2. SAFETY SWITCHES (F2 type)**

The safety devices are equipped on the operator's seat, master brake pedal and PTO levers and engine hood open. Before starting engine, the operator should be seated in the operator's seat, depress the master brake fully and shift the both side and center PTO levers to the OFF position and engine hood is closed.



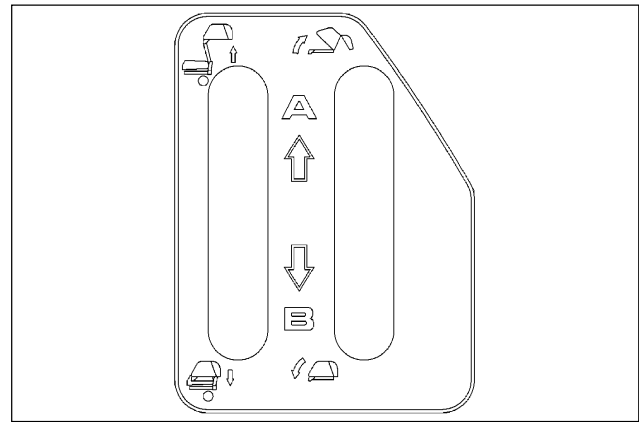
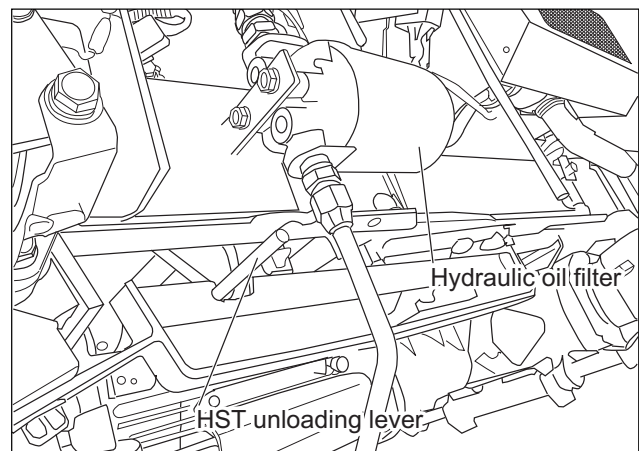
**CAUTION:** When the engine does not start due to a defective safety switch or does not stop when the operator has left the operator's seat, consult your dealer at once without fail.

**HST UNLOADING LEVER**

Turn this lever upward to unload the HST of pressure, which allows the front mower to move by pushing without starting the engine.



**WARNING:** After operation, be sure to check to see that the lever is returned to the CLOSE position.

**FIG. 43****FIG. 44**

## **CHAPTER 6. PRE-OPERATIONAL ROUTINE INSPECTION**

It is essential for avoiding accidents or breakdown during operation to keep the front mower in good condition. The following pre-operational checks should be performed without fail before starting daily operation.



**WARNING:**

- **Before inspection, be sure to park the front mower on a level and hard ground, stop the engine, lower the mower deck onto the ground, shift the side and center PTO levers to the OFF position, then wait for more than 10 seconds, and check to see that the mower blades and blower fan have completely ceased rotating.**
- **Machine weight balance is a very important factor for safe operation. When your machine is equipped with an implement such as a cabin, etc., never fail to ask your dealer about machine balance. Always follow their advice.**

### **1. INSPECTION ITEMS**

- (1) Anything that was abnormal in the previous operations.
- (2) While walking around the front mower.
  - Tire inflation
  - Exterior parts (broken or deformed covers or the like)
  - Oil leakage (engine oil, transmission oil, fuel, etc.)
  - Inspection and cleaning of air-intake
  - Inspection of engine oil level
  - Inspection of coolant level
  - Inspection of cooling fan belt
  - Inspection of fuel level
  - Inspection of fuel filter
  - Inspection of transmission oil level
  - Inspection of front and rear wheel tightening bolts and nuts
  - Cleaning of radiator and radiator screen
  - Inspection of electrical apparatus
  - Inspection of mower blades
  - Inspection of mower blade driving belt
  - Inspection of mower exterior parts like covers damage and deformation
  - Oil leakage from mower gear case
  - Inspection and cleaning of gauge wheels
  - Inspection for loosen, broken or lost pins and clips
  - Inspection for loosen blower fan
  - Inspection for broken blower intake tube
- (3) While sitting in the operator's seat:
  - Inspection of brakes
  - Adjustment of seat
- (4) After having started the engine:
  - Confirmation of the operation of safety switches

### **2. WAY OF INSPECTION AND MAINTENANCE**

Refer to the section of "MAINTENANCE."

# CHAPTER 7. OPERATION

## 1. BEFORE STARTING THE ENGINE



### CAUTION:

- Before starting the engine, be sure to carry out the pre-operation inspection in accordance with the periodical inspection table.
- Follow instructions given in " I. FOR SAFE OPERATION. "
- Observe instructions given on the caution labels on the front mower and mower deck.

## 2. STARTING THE ENGINE



### WARNING:

- Never attempt to start the engine in an enclosed place with poor ventilation. Be sure to provide sufficient ventilation, for exhaust fumes can be lethal.

**IMPORTANT:** Before starting the engine, close the engine hood securely. Sit down in the operator's seat properly, depress the master brake pedal, Shift the side PTO lever (SFH240F-B) and center PTO levers to the OFF position. or the engine cannot be started.

- Close the engine hood securely.
- Sit in the operator's seat properly.
- Apply the parking brakes, 1 or 2, securely.
- Shift the side PTO lever (SFH240F-B) and center PTO levers to the OFF position.
- Make sure the cruise control lever, 5, is returned to the LOW position(↩). (SFH240F-B)
- Shift the lift lever, 6, to the DOWN position(↓).
- Lift down the container of collector.
- Depress the master brake pedal, 7, fully.
- Insert the starter key into the starter switch, 8, and turn the key to the ON position(↻). Make sure that the charge lamp and oil pressure lamp are both lit.

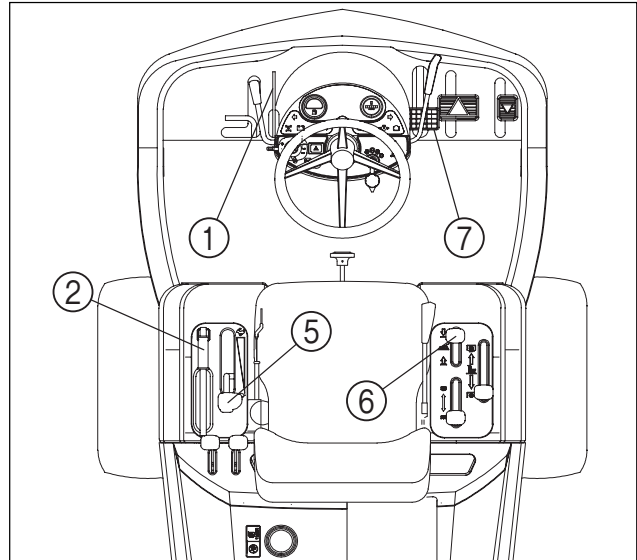


**FIG. 45**

- (1) Parking brake lever (Except G type)
- (2) Parking brake lever (G type)
- (5) Cruise control lever
- (6) Lift lever
- (7) Master brake pedal

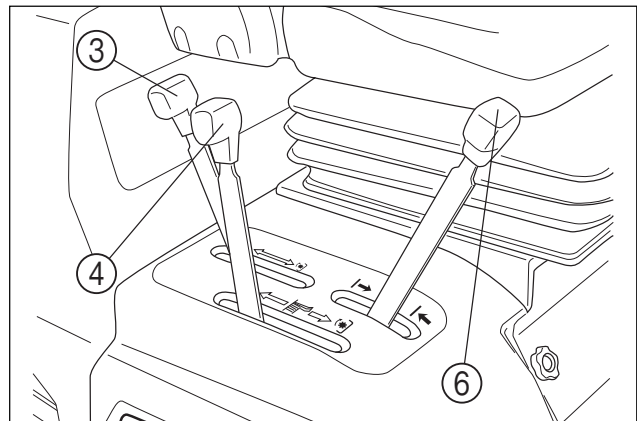


**FIG. 46**

- (3) Center PTO lever
- (4) Side PTO lever
- (6) Lift lever

**SFH220,240**

j. Shift the throttle lever to an intermediate speed position, that is, between the high speed and low speed positions (↶ and ↷).

k. Turn the key to the GLOW position (⏻) and hold it there about five to ten seconds.

**IMPORTANT:** Never keep on pre-heating more than 10 seconds, or the glow plugs may burn out.

l. Turn the starter key to the START position (⏻), and the starter is activated to crank the engine.

**IMPORTANT:** Do not hold the starter key more than 10 seconds in the START position (⏻). When the engine fails to start, return the key to the STOP (⏻) position and wait at least 20 seconds before the next attempt. If you do not, the battery will be discharged too fast.

m. As soon as the engine starts, release the starter key. The key will return automatically to the ON position (⏻).

n. Release the master brake pedal gradually.

o. Make sure that the charge lamp and oil pressure lamp turn off.

**IMPORTANT:** If the oil pressure should remain lit, stop the engine immediately and check the engine lubrication system.

p. Continue the warming up of front mower at least for 5 minutes.

**IMPORTANT:**

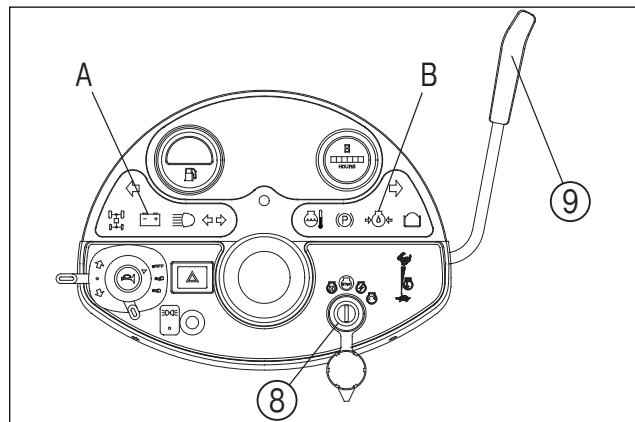
- Never turn the starter key to the START position (⏻) after the engine starts, or the starter motor will be damaged.
- Insufficient idling time will cause poor lubrication of the engine due to high viscosity of engine oil, which will lead to a shorter life of the engine.

**CAUTION:**

- During engine warming up, be sure to apply the effect to the brakes to avoid the front mower from travelling unexpectedly.

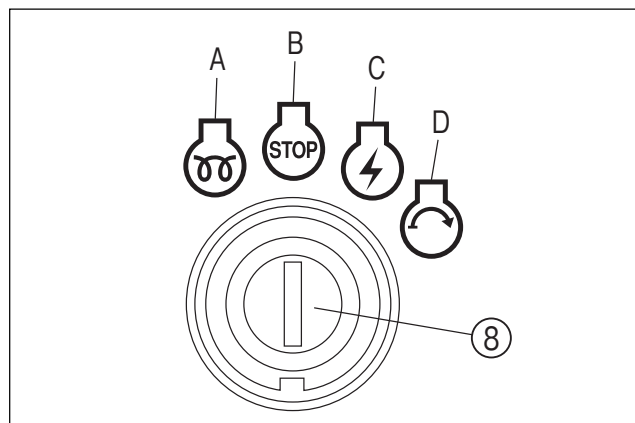
**NOTE:** Warming up criteria and atmospheric temperatures:

| Atmospheric temperatures      | Required warming up  |
|-------------------------------|----------------------|
| High than 0 °C (32°F)         | 5 to 10 minutes      |
| 0 °C to -10°C (32°F to 14°F)  | 10 to 20 minutes     |
| -10°C to -20°C (14°F to -4°F) | 20 to 30 minutes     |
| Lower than -20°C (-4°F)       | more than 30 minutes |

**FIG. 47**

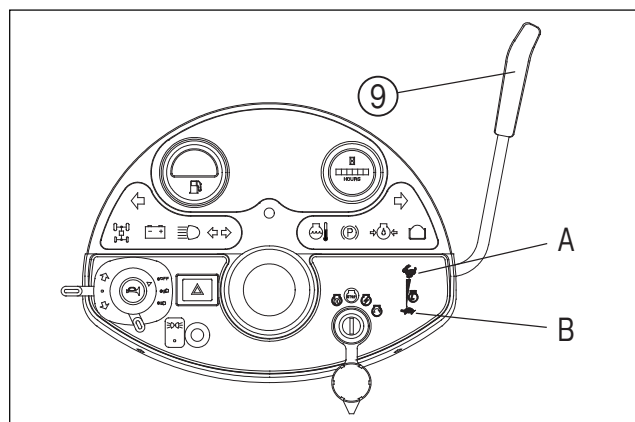
- (8) Starter switch  
(9) Throttle lever

A: Charge lamp  
B: Oil pressure lamp

**FIG. 48**

- (8) Starter key

A: GLOW  
B: STOP position  
C: ON position  
D: START position

**FIG. 49**

- (9) Throttle lever A: High speed B: Low speed

### 3. STOPPING THE ENGINE

- a. Shift the throttle lever,1, to the low speed position(↩) to reduce engine speeds.
- b. Depress the master brake pedal,2, and apply the parking brake lever,3 or 4, securely.



**CAUTION:** Park the front mower on level, hard ground and make sure that the parking brake lever are applied securely.

- c. Turn the key switch,5, to the STOP(⏻) position to stop the engine.

**IMPORTANT:**

- Never attempt stopping the engine abruptly when it is running at high speeds.
- Be sure to let the engine idle for about 5 minutes after a longtime operation and then stop the engine. Abrupt engine stopping may lead to overheating causing seizure.

- d. Remove the starter key and put cap,6, over the starter switch.

**IMPORTANT:** Be sure to cap the key hole after having removed the starter key. Otherwise, water or dust may enter into the switch which may cause trouble.



**CAUTION:** When you leave the front mower, be sure to stop the engine and remove the starter key to prevent the front mower from being started unexpectedly by children or unauthorised people.

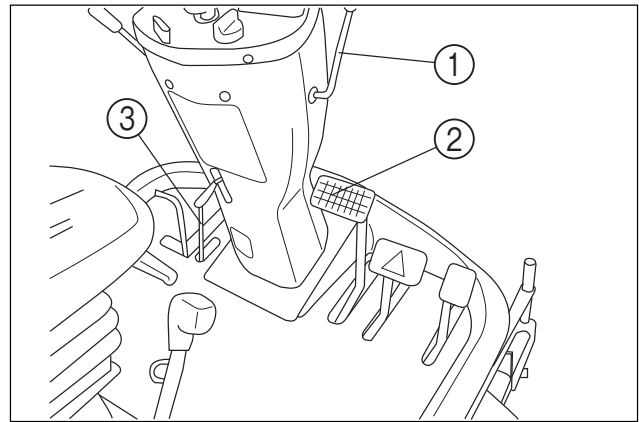


**FIG. 50**

- (1) Throttle lever
- (2) Master brake pedal
- (3) Parking brake lever (Except G type)

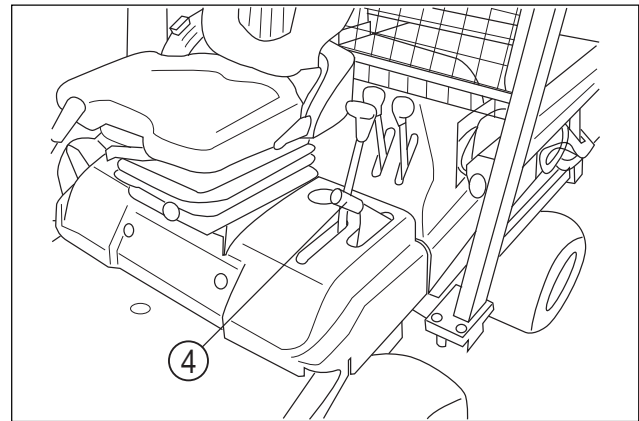


**FIG. 51**

- (4) Parking brake lever (G type)

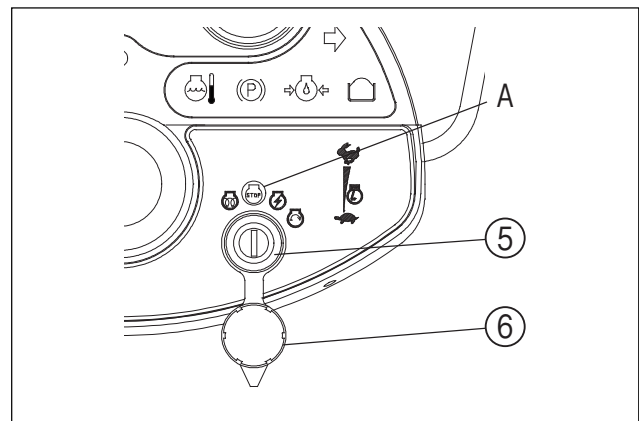


**FIG. 52**

- (5) Starter switch
- (6) Cap
- A: STOP position

## SFH220,240

### 4. TRAVELLING



#### CAUTION:

- Before having become sufficiently familiar with the operation of the front mower, be sure to operate it in a place spacious and flat without obstacles and having an unobstructed view and confirm the functioning of each control.
- Check the place to mow for bumps, ditches, mounds, steps, inclination, softness, water hole, etc. Ahead of time to avoid accidents such as turnover, fall, side-sliding of the front mower.

- Start the engine. (Refer to Chapter 7.2)
- Depress the master brake pedal, 1, fully.



#### CAUTION:

- Before having become sufficiently familiar with the operation of the front mower, operate it at the LOW speed position(↶).
- When travelling on bumps, ditches, mounds, steps, inclination softness, waterhole, etc, select the transmission range shift lever at the LOW speed position(↶).

When mowing (Not using Auto throttle);

- Shift the throttle lever, 3, to the HIGH speed position(↷) to accelerate the engine.

When travelling (Auto throttle available);

- Shift the throttle lever to the LOW speed position(↶).

**IMPORTANT:** This front mower is equipped with Auto throttle system, but don't use it for mowing operation in order to let front mower provide the optimum performance.

- Shift the lift lever, 4, to UP position(↑) to lift up the mower deck from the ground.
- When front mower is attaching a collector, be sure to lower the container.



**CAUTION:** Starting to travel at high speeds without lifting up the mower deck will cause the mower blades to hit stones or stocks, which may result in break-down of the front mower or serious accidents.



**CAUTION** When starting to travel, be sure to lower the container on the ground. Otherwise it may cause the lawn mower to turn over, it's very dangerous.

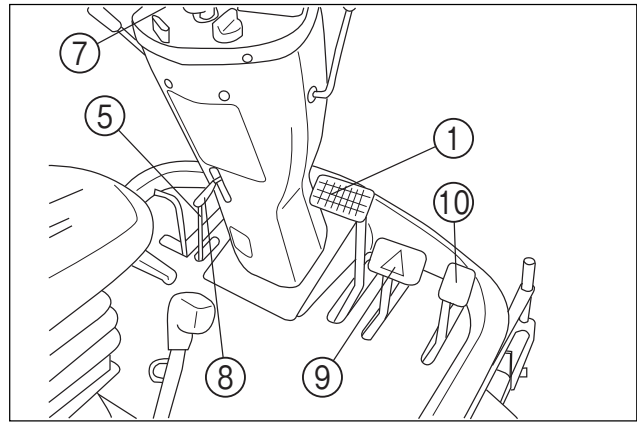


FIG. 53

- |                                        |                               |
|----------------------------------------|-------------------------------|
| (1) Master brake pedal                 | (8) Tilt lock lever           |
| (5) Parking brake knob (Except G type) |                               |
| (7) Steering wheel                     | (9) HST forward travel pedal  |
|                                        | (10) HST reverse travel pedal |

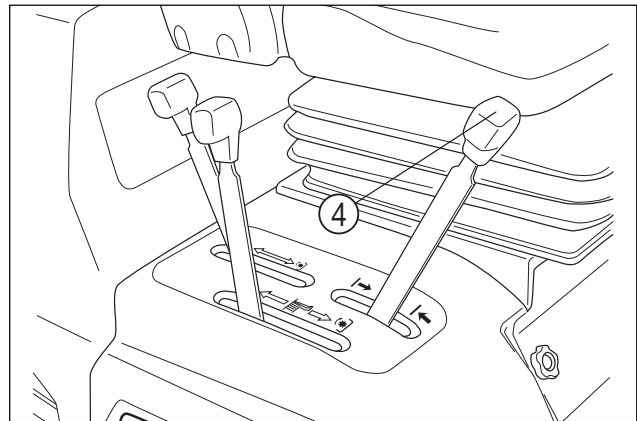


FIG. 54

- Lift lever

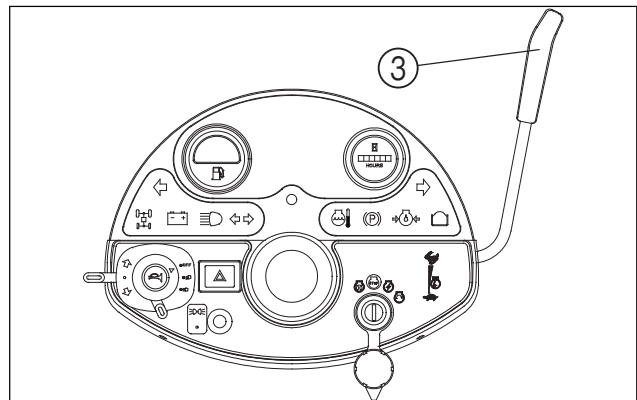


FIG. 55

- Throttle lever

- g. Make sure that the parking brake knob,5, is released.  
(Except for G-type)  
Make sure that the parking brake lever,6, is released.
- h. Release the master brake pedal gradually.

**IMPORTANT:** *For your safety, before moving forward the front mower, check the conditions in front of and around the front mower.*

- i. The steering wheel,7, is very light to turn, for the steering system is assisted hydraulically. Naturally the front mower turns to right when the steering wheel is turned clockwise and vice versa.



**WARNING:**

- **Never attempt to turn the steering wheel abruptly when travelling at high speed, which is very dangerous.**
- **Never attempt to make a sharp turn on a slope, but slow down sufficiently and turn the steering wheel slowly to prevent the mower from turning over or falling down.**

The steering wheel is tiltable in 4 steps,8, so choose the optimum angle to suit the operating position.

- j. Depress the HST forward travel pedal,9, softly, and the front mower starts travelling. When reversing the front mower, depress the HST reverse travel pedal,10, softly, and then the front mower starts reversing slowly. Buzzer sounds when front mower is moving to backward.(SFH240F-B)



**CAUTION:**

- **Never attempt to depress the HST pedal abruptly, or the front mower will dash, which is very dangerous.**
- **Before changing travelling directions, be sure that the front mower has stopped travelling completely.**
- **When reversing, be sure of the safety conditions behind the front mower.**



**WARNING:**

- **When transporting or moving the front mower to another place, never shift the side PTO lever and center PTO lever to the ON position to allow the mower blades and the blower fan to turn. Rotating the blades and blower fan during transportation or moving is very dangerous.**

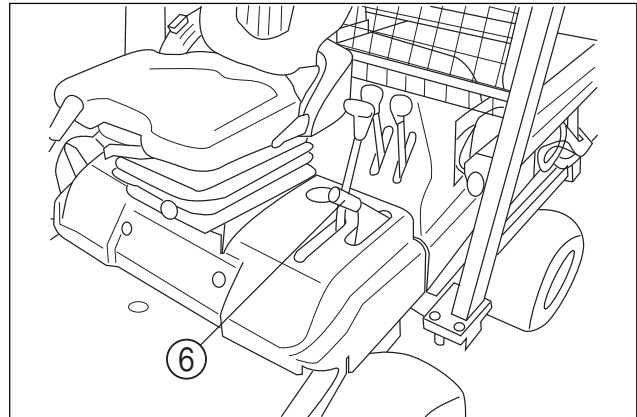


**FIG. 56**

(6) Parking brake lever (G type)

## SFH220,240

### 5. CRUISE CONTROL (SFH240F-B)

#### a. How to set

When a required speed is attained with the HST forward travel pedal, move the cruise control lever, 1, from LOW speed position (←) to HIGH speed position (→) until the movement feels heavy and release the HST pedal, and then the attained travel speed is kept.

When slowing down during cruise travel, shift the lever towards the LOW speed position (←), and then the control is released and the travel speed is controllable with the HST forward travel pedal. When speeding up during cruise travel, depress the HST forward travel pedal and shift the lever towards the HIGH speed position (→).

#### b. How to release

Return the lever towards the LOW speed position (←). In case of emergency, depress the master brake pedal to release the auto cruise control.

With this lever, reverse travel speed is not controlled.



#### WARNING:

Use the cruise control only;

- Operations in specious, flat areas with an unobstructed view.
- After having become sufficiently familiar with the way of releasing it. Otherwise, unexpected accidents may occur, which is very dangerous.

### 6. STOPPING

- Release the HST pedal, 1 or 2.
- Shift the throttle lever, 3, to the LOW speed (←) position to slow down the engine.
- Depress the master brake pedal, 4, and lock the parking brakes, 5 or 6, securely.



**CAUTION:** Park the front mower on flat, level ground and make sure that the parking brakes are applied securely.

- Shift the lift lever, 8, to DOWN position (↓) to lower the mower deck onto the ground.



**CAUTION:** When stopping the front mower, lower the mower deck onto the ground without fail to avoid accidents unexpectedly.

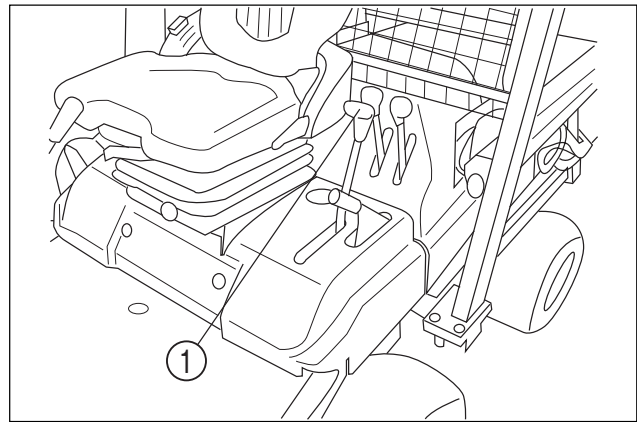


FIG. 57

(1) Cruise control lever (SFH240F-B)

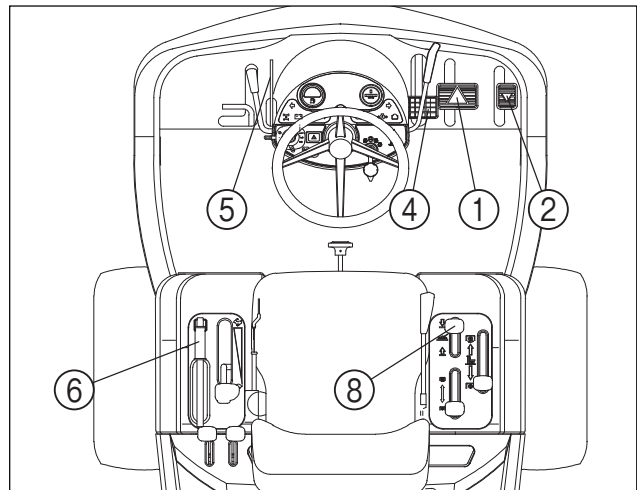


FIG. 58

- HST forward travel pedal
- HST reverse travel pedal
- Master brake pedal
- Parking brake lever (Except G type)
- Parking brake lever (G type)
- Lift lever

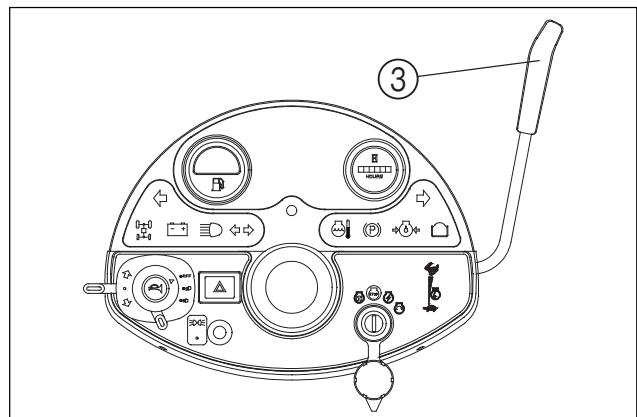


FIG. 59

(3) Throttle lever

**7. MOWING WITH MULCHING DECK****CAUTION:**

- Before moving the front mower into the working site, investigate the whole site and get rid of all obstacles such as stones, wood, empty tins, bottles, wires, etc for operation safety.
- Also investigate the site for pits, mounds, steps, slope angles, ground softness, water pools, etc to avoid turning over, falling down, and side-shifting.

- Start the engine and turn the throttle lever, 1, to the intermediate position (between the LOW speed(↶) and HIGH speed(↷) positions).
- Shift the lift lever, 3, to the UP position(↑) to raise the mower deck.
- Release the parking brake, 4 or 5.
- Push down the HST forward travel pedal, 6, gradually to drive the front mower into the working site.
- Depress master brake pedal, 7, to stop the front mower.
- Shift the lift lever to the DOWN position(↓) to lower the mower deck on the ground.
- Shift the center PTO lever, 8, to the ON position(☛) and the mower blades start rotating.

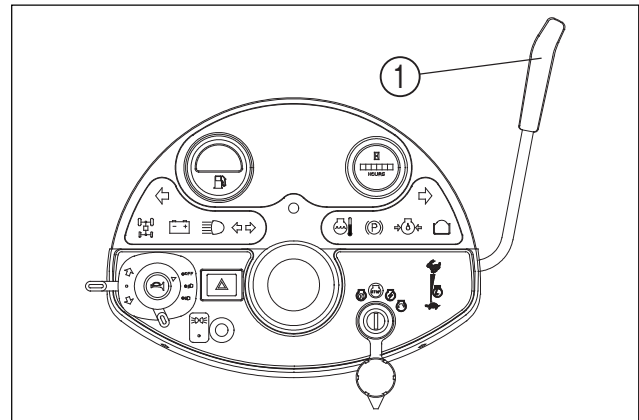
**IMPORTANT:** The lift height and PTO lever are interconnected with UP - STOP device.

**CAUTION:**

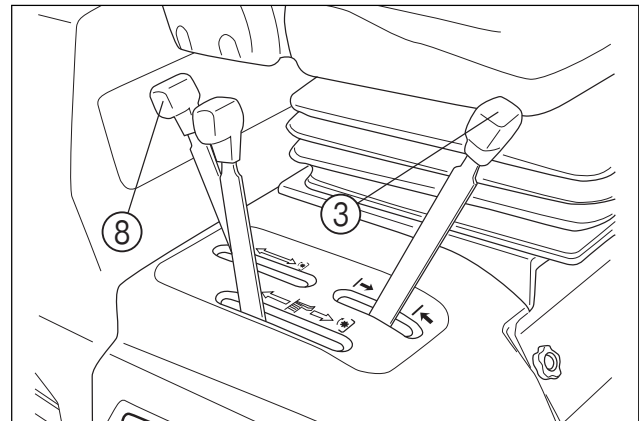
- Make sure that the UP - STOP device works properly before starting operation.
- Keep the mower height to a minimum to avoid accidents while the blades are rotating. Before raising the mower, be sure to shift the center PTO lever to the OFF position(☛). Never attempt to shift the center PTO lever while the mower is raised high.

**WARNING:**

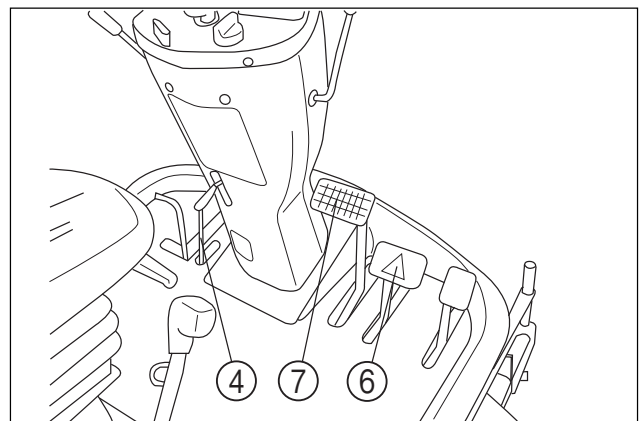
- Before starting the mower blades, be sure of the safety around the mower.

**FIG. 60**

(1) Throttle lever

**FIG. 61**

(3) Lift lever  
(8) center PTO lever

**FIG. 62**

(4) Parking brake lever (Except G type)  
(6) HST forward travel pedal  
(7) Master brake pedal

## SFH220,240

- h. Shift the throttle lever to the HIGH speed position(⚡) to accelerate the engine.
- i. Release the master brake and push down the HST forward travel pedal slowly, and then the front mower starts travelling.

**IMPORTANT:** *In case air intake box or radiator screen are clogged with dust or grass, clean it. Pull up the radiator screen,9 upward to remove it. Remove the knob bolt,11 and rotate the stay,12 to outside to remove the air intake box,10. Never keep operation with net clogged. It causes the overheat of engine.*



### CAUTION:

- When there are abnormal noises and vibrations, stop immediately and locate the source of the trouble. Never start operation without correcting the trouble, or serious trouble may result.
- When the source of the trouble is not located, consult your dealers.

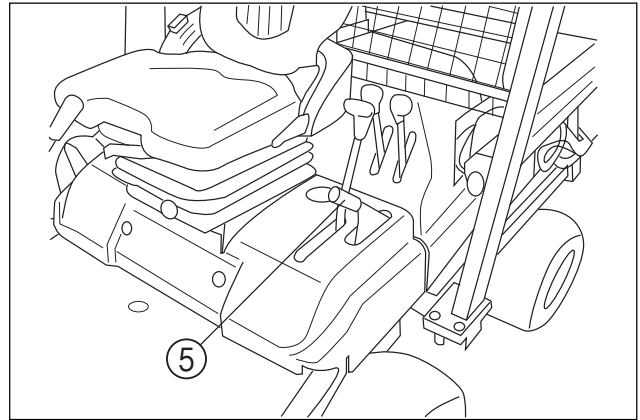


FIG. 63

(5) Parking brake lever (G type)

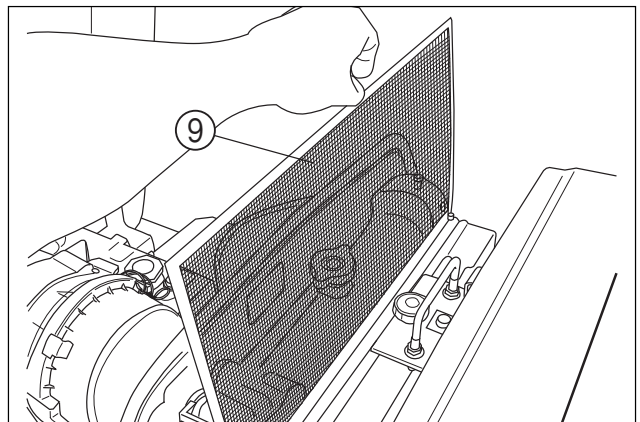


FIG. 64

(9) Radiator screen

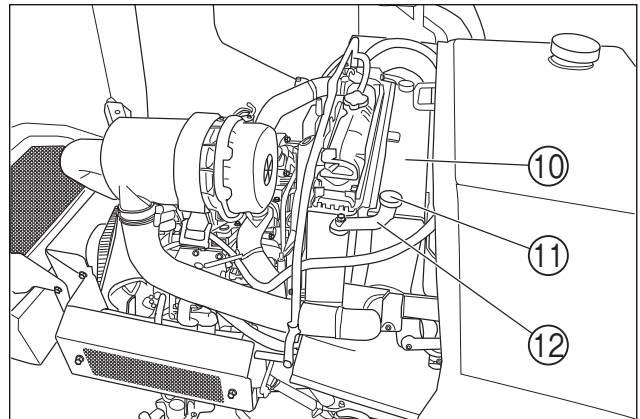


FIG. 65

(10) Air intake box  
(11) Knob bolt  
(12) Stay

**8. MOWING WITH SIDE DISCHARGE DECK****CAUTION:**

- Before moving the front mower into the working site, investigate the whole site and get rid of all obstacles such as stones, wood, empty tins, bottles, wires, etc for operation safety.
- Also investigate the site for pits, mounds, steps, slope angles, ground softness, water pools, etc to avoid turning over, falling down, and side-shifting.

- Start the engine and turn the throttle lever, 1, to the intermediate position between the LOW speed(↶) and HIGH speed(↷) positions.
- Shift the lift lever, 3, to the UP position(↑) to raise the mower deck.
- Release the parking brake, 4 or 5.
- Push down the HST forward travel pedal, 6, gradually to drive the front mower into the working site.
- Depress master brake pedal, 7, to stop the front mower.
- Shift the lift lever to the DOWN position(↓) to lower the mower deck on the ground.
- Shift the side PTO lever, 8, to the ON position(☛) and the mower blades start rotating.

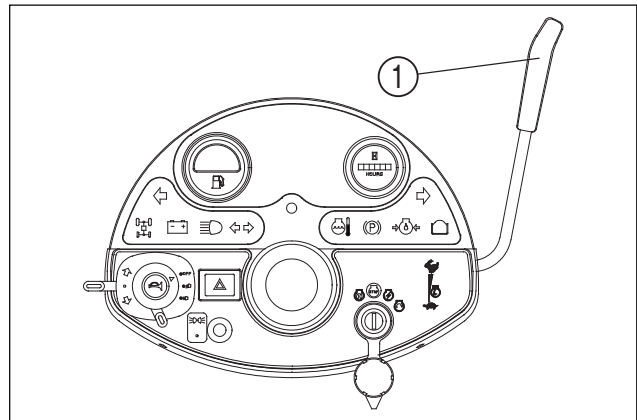
**IMPORTANT:** The lift height and PTO lever are interconnected with UP - STOP device.

**CAUTION:**

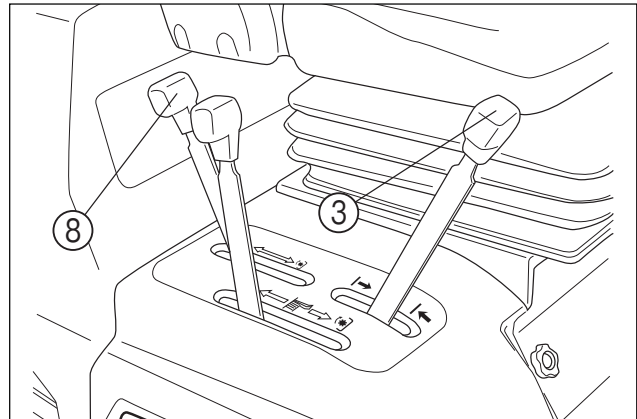
- Make sure that the UP - STOP device works properly before starting operation.
- Keep the mower height to a minimum to avoid accidents while the blades are rotating. Before raising the mower, be sure to shift the center PTO lever to the OFF position(☛). Never attempt to shift the center PTO lever while the mower is raised high.

**WARNING:**

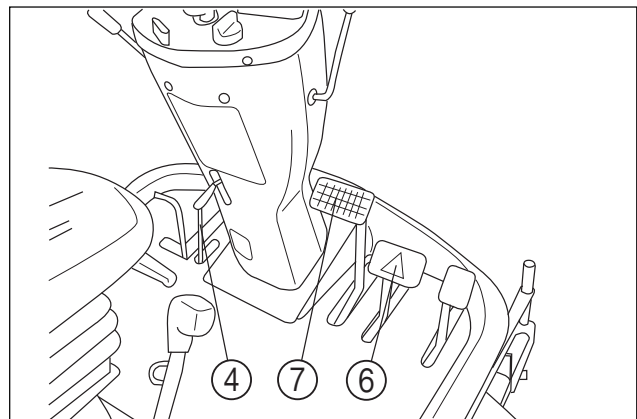
- When the blades start rotating, grass and pebbles start being ejected from the grass discharge. So before starting the mower blades, be sure of the safety around the mower.

**FIG. 66**

(1) Throttle lever

**FIG. 67**

(3) Lift lever  
(8) Center PTO lever

**FIG. 68**

(4) Parking brake lever (Except G type)  
(6) HST forward travel pedal  
(7) Master brake pedal

## SFH220,240

- h. Shift the throttle lever to the HIGH speed position(⚡) to accelerate the engine.
- i. Release the master brake and push down the HST forward travel pedal slowly, and then the front mower starts travelling.

**IMPORTANT:** In case air intake box or radiator screen are clogged with dust or grass, clean it. Pull up the radiator screen,9 upward to remove it. Remove the knob bolt,11 and rotate the stay,12 to outside to remove the air intake box,10. Never keep operation with net clogged. It causes the overheat of engine.



### CAUTION:

- When there are abnormal noises and vibrations, stop immediately and locate the source of the trouble. Never start operation without correcting the trouble, or serious trouble may result.
- When the source of the trouble is not located, consult your dealers.

- j. Mowing a large area
- i. Travel clockwise in spirals two or three times towards the center.
- ii. Then continue travelling counterclockwise to the end.

In this way, scattering of cut grass onto adjacent passes and mower clogging are prevented and even mowing is achieved.

When mowing irregular-shaped land, divide it roughly into square areas and apply the same method as above.

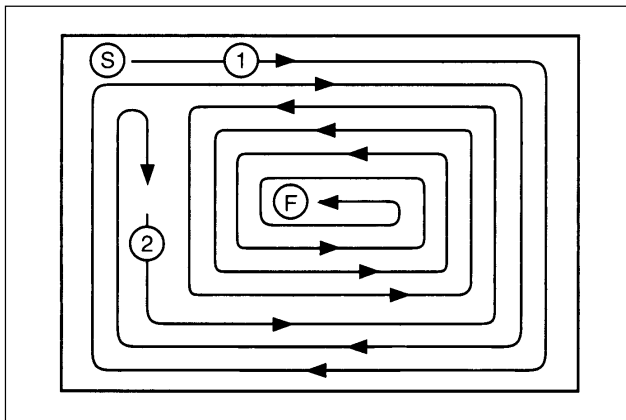


FIG. 72

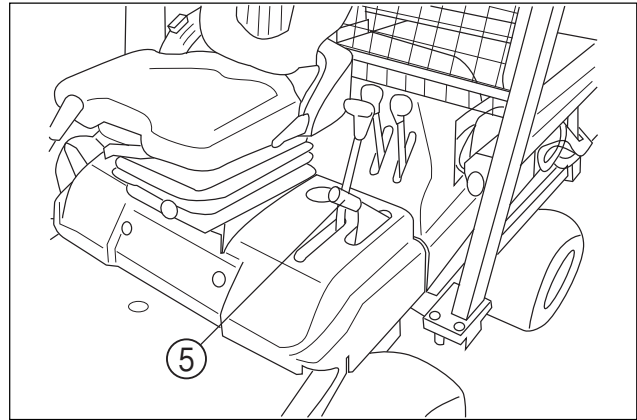


FIG. 69

(5) Parking brake lever (G type)

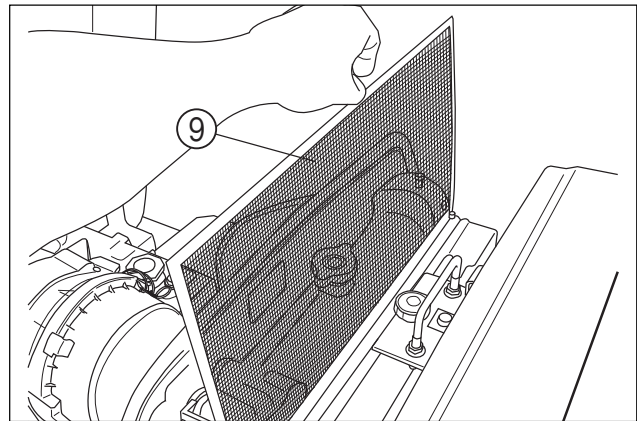


FIG. 70

(9) Radiator screen

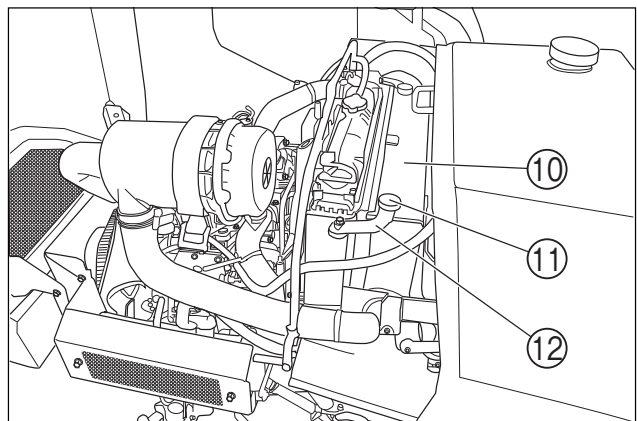


FIG. 71

(10) Air intake box  
(11) Knob bolt  
(12) Stay

**9. MOWING AND COLLECTING****CAUTION:**

- Before moving the front mower into the working site, investigate the whole site and get rid of all obstacles such as stones, wood, empty tins, bottles, wires, etc for operation safety.
- Also investigate the site for pits, mounds, steps, slope angles, ground softness, water pools, etc to avoid turning over, falling down, and side-shifting.

- Start the engine and turn the throttle lever, 1, to the intermediate position between the LOW speed(↶) and HIGH speed(↷) positions.
- Shift the lift lever, 3, to the UP position(↑) to raise the mower deck.
- Release the parking brake, 4 or 5.
- Push down the HST forward travel pedal, 6, gradually to drive the front mower into the working site.
- Depress master brake pedal, 7, to stop the front mower.
- Shift the center PTO lever, 2, to the ON position
- Shift the lift lever to the DOWN position(↓) to lower the mower deck on the ground.
- Shift the side PTO lever, 8, to the ON position(↶) and the mower blades start rotating.

**IMPORTANT:** The lift height and PTO lever are interconnected with UP - STOP device.

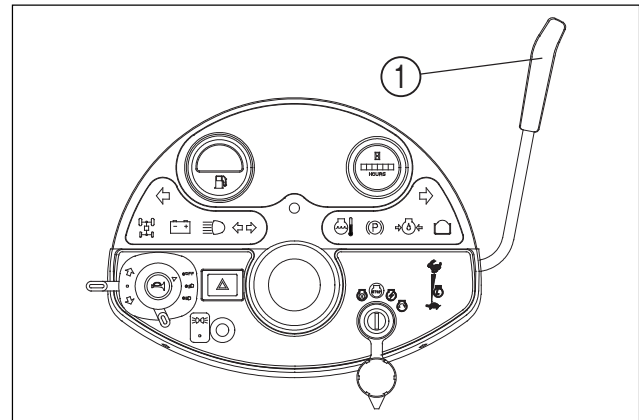
**CAUTION:**

- Make sure that the UP - STOP device works properly before starting operation.
- Keep the mower height to a minimum to avoid accidents while the blades are rotating. Before raising the mower, be sure to shift the side PTO lever to the OFF position(↷). Never attempt to shift the side PTO lever while the mower is raised high.

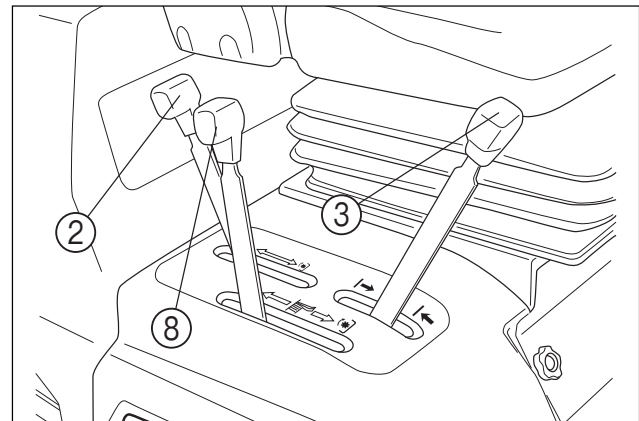
**WARNING:**

- When the blades start rotating, grass and pebbles start being ejected from the grass discharge. So before starting the mower blades, be sure of the safety around the mower.

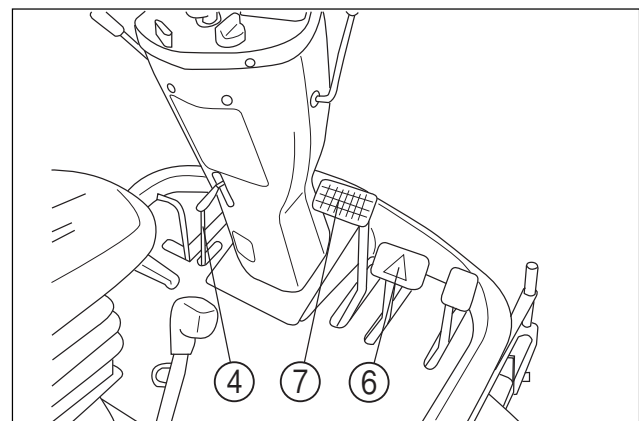
**IMPORTANT:** Before operating the front mower with collector, be sure to rotate the blower fan. Otherwise, it may cause the entrance hole of the blower to be clogged with grass.

**FIG. 73**

(1) Throttle lever

**FIG. 74**

- Center PTO lever
- Lift lever
- Side PTO lever

**FIG. 75**

- Parking brake lever (Except G type)
- HST forward travel pedal
- Master brake pedal

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- i. Shift the throttle lever to the HIGH speed position(⬅️) to accelerate the engine.
- j. Release the master brake and push down the HST forward travel pedal slowly, and then the front mower starts travelling.

**IMPORTANT:** In case air intake box or radiator screen are clogged with dust or grass, clean it. Pull up the radiator screen,9 upward to remove it. Remove the knob bolt,11 and rotate the stay,12 to outside to remove the air intake box,10. Never keep operation with net clogged. It causes the overheat of engine.



### CAUTION:

- When there are abnormal noises and vibrations, stop immediately and locate the source of the trouble. Never start operation without correcting the trouble, or serious trouble may result.
- When the source of the trouble is not located, consult your dealers.

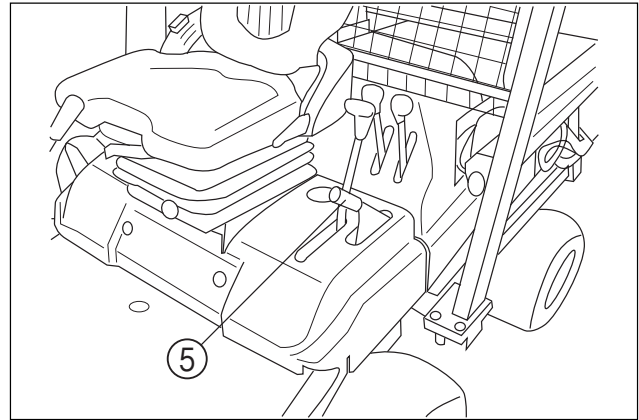


FIG. 76

(5) Parking brake lever (G type)

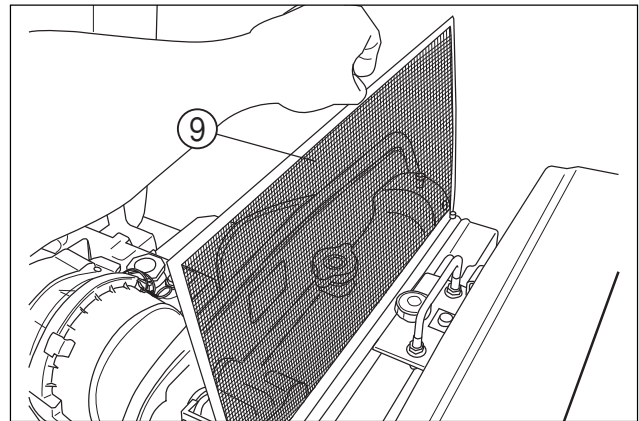


FIG. 77

(9) Radiator screen

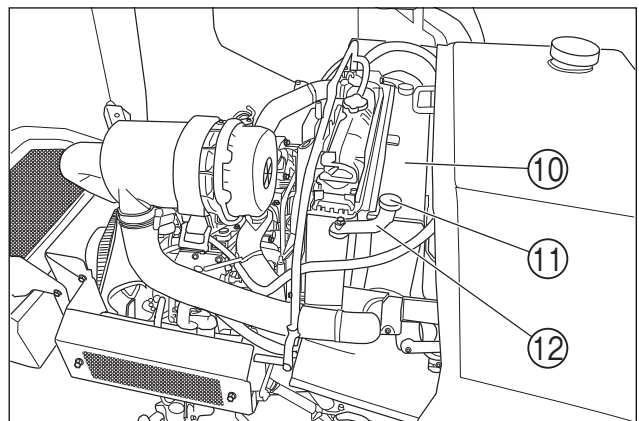


FIG. 78

(10) Air intake box  
(11) Knob bolt  
(12) Stay

## CHAPTER 8. MAINTENANCE

Concerning the machines equipped with collector, please lift up fully (high dump collector) or dump fully (low dump collector), and lock the lift cylinder, when you inspect the engine room or replenish a fuel.

What are explained hereunder are the maintenance items which you can cope with. When you encounter any abnormality or trouble which is not mentioned in this manual, please ask your dealer for service.



**WARNING: When lubricating or servicing the front mower:**

- Place it on level, hard ground.
- Stop the engine and remove the starter key.
- Apply the parking brake securely.
- Shift the lift lever to **DOWN** position to lower the mower deck onto the ground.
- Turn the PTO lever to the **OFF** position (✱).
- Service the front mower after the engine has cooled down sufficiently.

With these items in mind, confirm the safety conditions for maintenance operation without fail ahead of time.



**CAUTION: Lock the high dump collector without fail. Otherwise, when operator touch the lift lever by accident, it may cause to be caught in the falling container.**

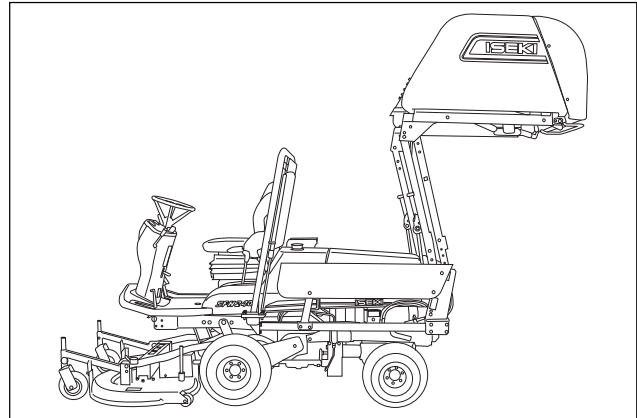


**FIG. 79**

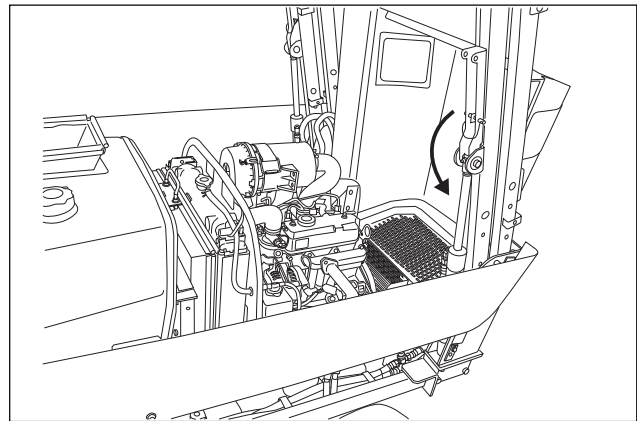


**FIG. 80**

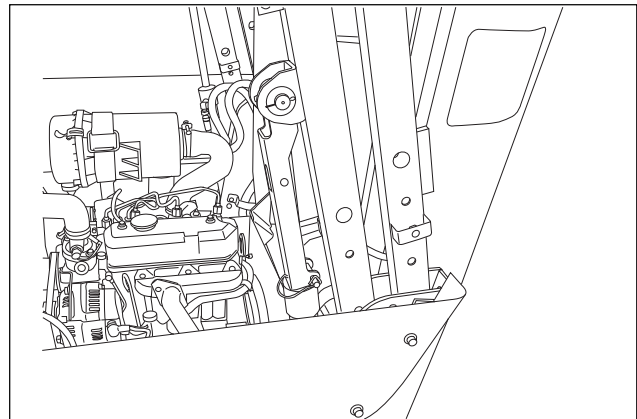


**FIG. 81 Lock the lift cylinder**

## **SFH220,240**

### **1. SERVICE ACCESS**

#### **Opening / Closing hood**

To unlock the hood, pull the open/close lever,1, to forward.

Open the hood by grasping and lifting up the front of the hood.



**WARNING: When opening / closing the hood, be sure to stop the engine and remove the starter key.**

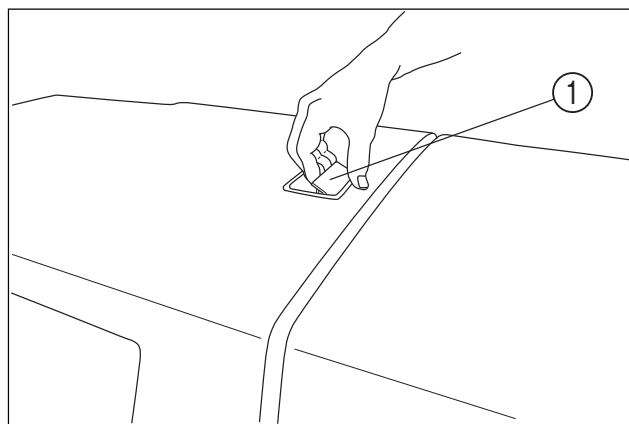


**FIG. 82**

(1) Hood open/close lever

#### **Opening / closing step floor**

Pull up the ring,2, at rear-middle of the step floor and open the floor forward.

Raise the front of hook rod,3, and insert it to the hole on reverse side of the step floor to lock.

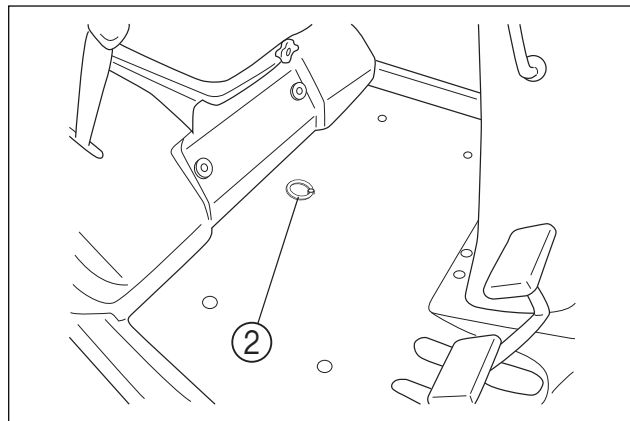


**FIG. 83**

(2) Floor open/close ring

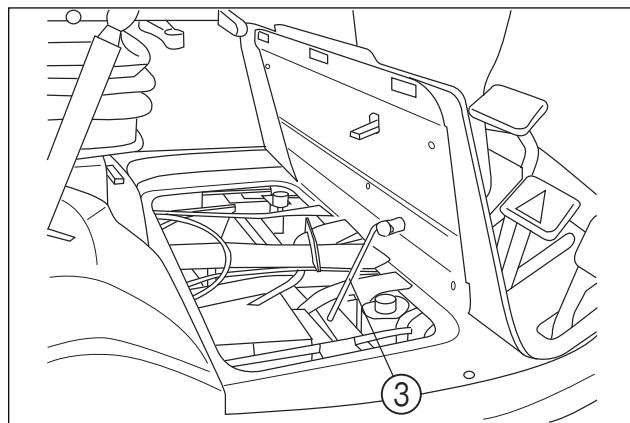


**FIG. 84**

(3) Hook rod

## 2. ENGINE OIL LEVEL

- a. Pull out the engine oil level gauge (dipstick),1, which is located on the right-side wall of the engine.
- b. Wipe the end of the dipstick with dry cloth.
- c. Then insert it into the engine properly.
- d. Pull it out again. Make sure that the oil level is between the upper,A, and lower,B, limits.
- e. If the level is lower than the lower limit, replenish through the engine oil filler,2, to the upper limit with the same kind of oil as that in the engine.



**CAUTION:** Stop the engine and wait around 5 minutes at least before checking the oil level. Engine oil is so hot just after operation as to cause burns and it takes some time as well for all the oil to return to the oil pan.

### IMPORTANT:

- Never replenish with a different kind of oil. The addition of different kind of oil will deteriorate the quality of the original oil.
- The oil level should not exceed the upper limit. Excessive oil will cause engine trouble.
- Use oil of the quality recommended by ISEKI or 10W-30 CC grade of SAE classification or higher quality.
- Use oil of proper viscosity in accordance with the atmospheric temperature.

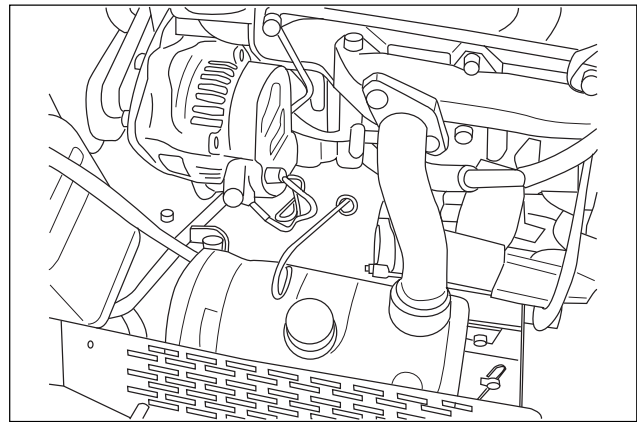
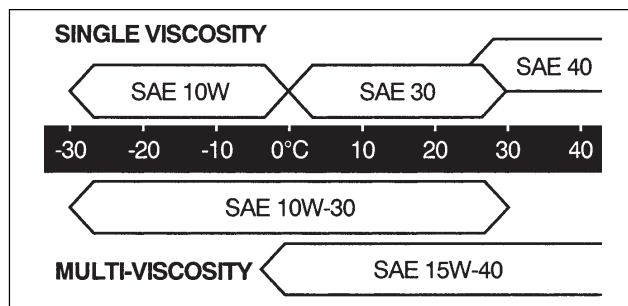


**FIG. 85**

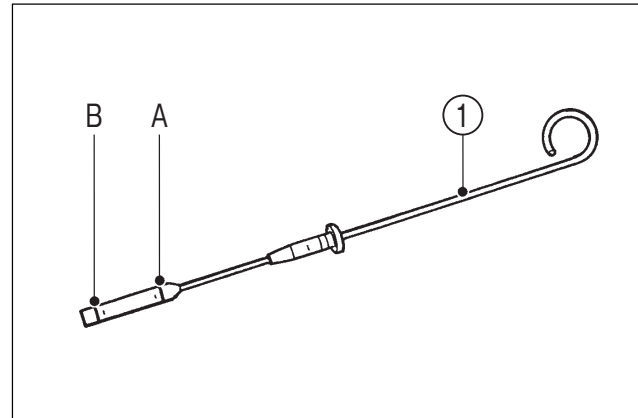


**FIG. 86**

- (1) Engine oil level gauge  
A: Upper limit      B: Lower limit

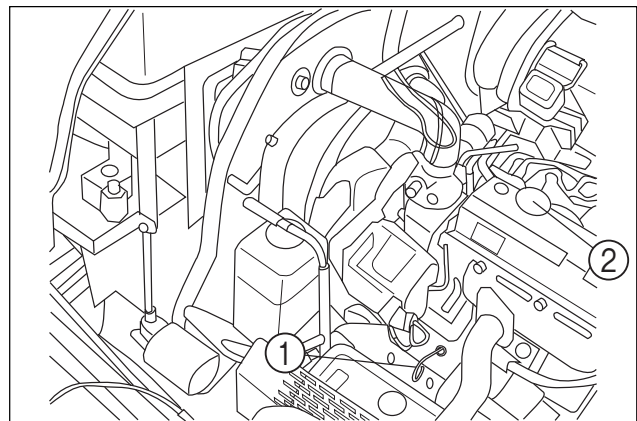


**FIG. 87**

- (1) Engine oil level gauge      (2) Engine oil filler

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### **3. TRANSMISSION OIL LEVEL**

Inspection window, 1, of oil level is located on the left side of the transmission case of the front mower. Park the machine on level ground. Oil level should be indicated in the window. And make sure that the level is between the upper and lower limits.

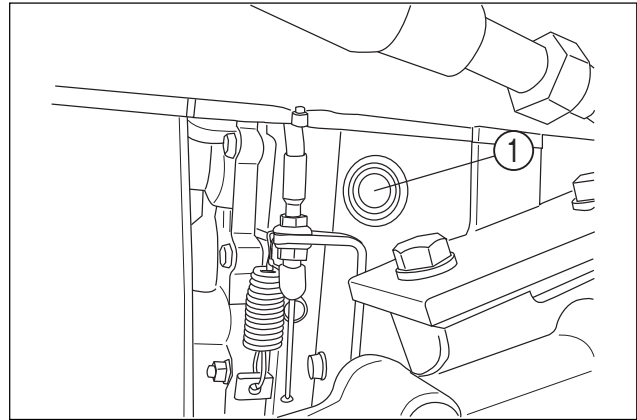


**FIG. 88**

(1) Transmission oil level inspection window

When replenishing, remove the cap on the left-top side of the fender and make sure the yellow oil filler cap, 2. Remove the cap and fill in oil.

**IMPORTANT:** *The transmission oil is common with oil for the hydrostatic transmission (HST) and the hydraulic lift cylinder, so pay sufficient attention not to allow dust, water, and other foreign matter to be trapped in the oil.*

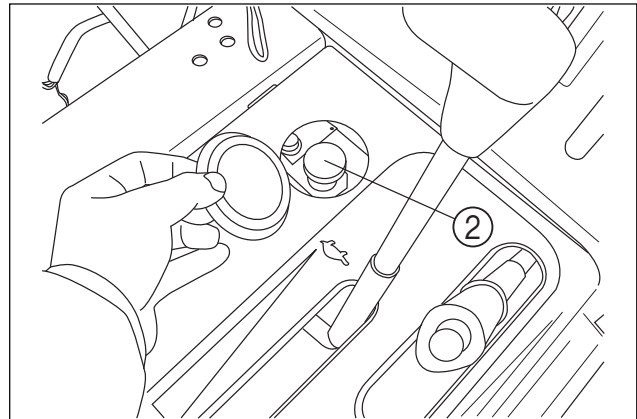


**FIG. 89**

(2) Transmission oil filler

#### 4. REAR AXLE OIL LEVEL

1. Place the front mower on the flat ground and remove the oil filler,3, make sure check the oil level through this hole and it should be in center of the axle housing.

If oil level is lower than specified, Replenish with the same kind of oil as that in the case through the oil filler,3, located on the top of the rear axle until the oil becomes center of the axle housing. Use gear oil of SAE80 on this time remove the plug of the top,1, in order to breath the air inside of case.

**IMPORTANT:** Before re-installing the plug, wrap the threads with sealing tape, or oil may leak out.

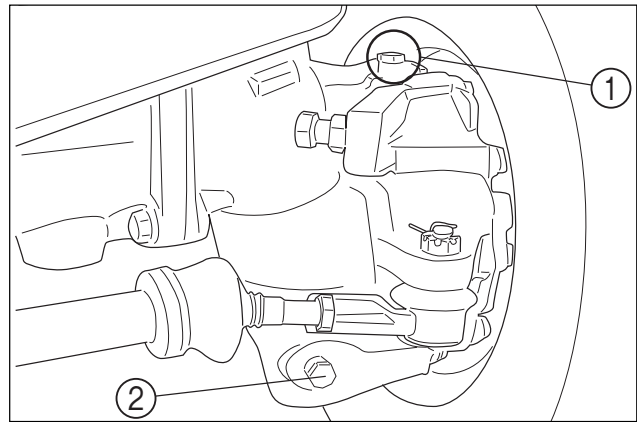


**FIG. 90**

- (1) Plug of the top
- (2) Drain plug

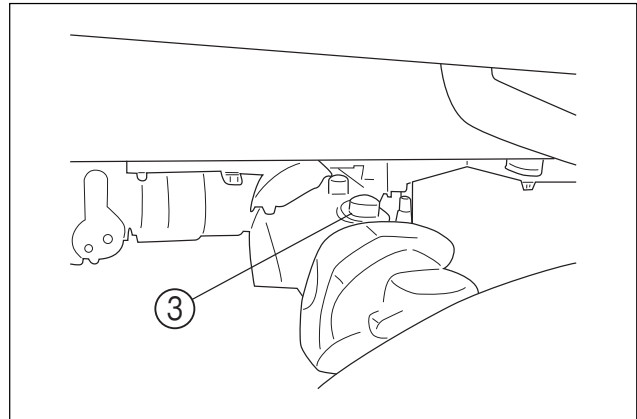


**FIG. 91**

- (3) Rear axle oil filler

#### 5. COOLANT LEVEL



**WARNING:** Never remove the radiator cap and reserve tank cap during or just after operation. The water in the radiator is very hot and highly pressurized, so it may cause burns. Allow the engine to cool down sufficiently before inspecting coolant level.

- a. Open the engine hood.
- b. Make sure that the coolant level in the reserve tank,1, is between the upper,A, and lower,B, limits. If the level is lower than the lower limit, replenish the reserve tank with coolant.

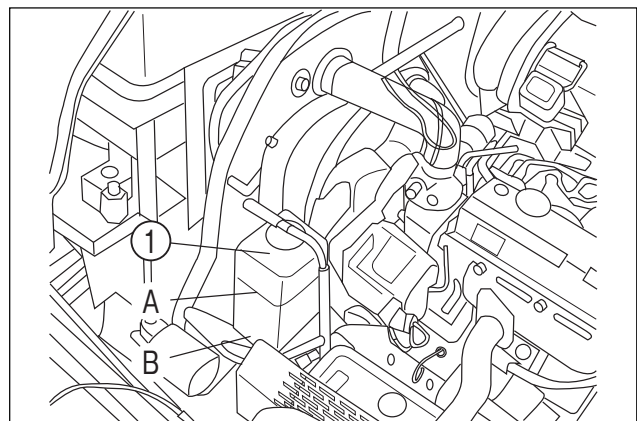


**FIG. 92**

- (1) Reserve tank
- A: Upper limit
- B: Lower limit

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### 6. FUEL LEVEL

Check to see the fuel level with the fuel gauge, 1, on the control panel.

The letter "F" shows the upper limit.  
The letter "E" shows the lower limit.

Fuel replenishment should be done before operation if required.

---

|                     |                           |
|---------------------|---------------------------|
| Fuel tank capacity: | 30 litres (6.6 imp. gal.) |
|---------------------|---------------------------|

---



**DANGER:** When replenishing fuel, avoid the following items, or a fire may be caused.

- Before replenishing with fuel, be sure to stop the engine and wait until the engine and heated parts cool down sufficiently.
- Keep sparks, open flames, etc. away from the fuel tank.
- No smoking!
- Spilt fuel should be wiped away immediately.

**IMPORTANT:**

- As soon as the fuel gauge shows "E", replenish with fuel. Never attempt to keep on operating with fuel level lower than E, or air may be trapped in the fuel system, which will cause hard engine starting and poor engine power.
- Use diesel fuel. Never use heavy oil or gasoline (petrol). Use of fuel other than diesel fuel will cause fuel injection pump trouble.

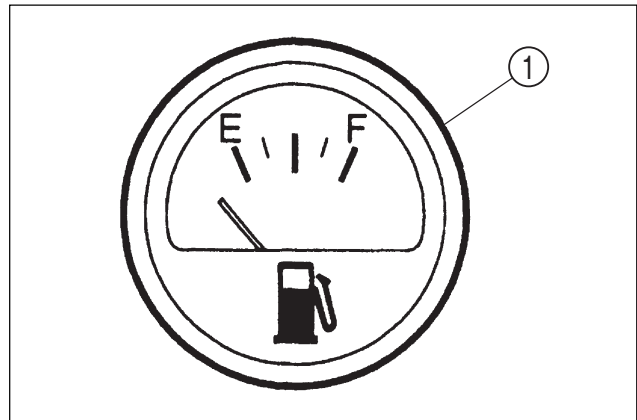


FIG. 93

(1) Fuel gauge

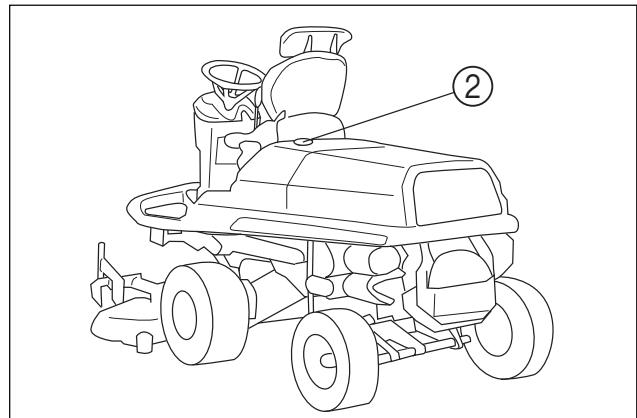


FIG. 94

(2) Fuel filler

**7. AIR-CLEANER**

- a. The air-cleaner, 1, is held on the engine with the rubber band. Untie this band and draw out the intake hose of radiator net and pick up the air-cleaner by hand.
- b. Pinch the vacuum valve, 2, to eject the dust accumulated inside. When the dust is wet, wipe it off with dry cloth.
- c. Draw the element, 3, out of the air-cleaner.
- d. Dust it off by patting lightly while holding it with the other hand.
- e. When the element does not become clean only by patting, blow dust off the element with compressed air. Apply compressed air from inside to outside of the element.
- f. When the element does not become sufficiently clean only by blowing, dip it in neutral detergent solution for about 30 minutes and then rinse it in fresh water. Then dry it in the atmospheric temperature.
- g. After cleaning install the element in reverse order of disassembly.

**IMPORTANT:**

- *Never hit the element against a hard object like a concrete wall.*
- *An element which has already been washed five times or is damaged should be replaced with a new one.*
- *Never attempt to start the engine without the air-cleaner element. Such operation will cause engine trouble.*
- *Never fail to insert the intake hose to radiator net.*

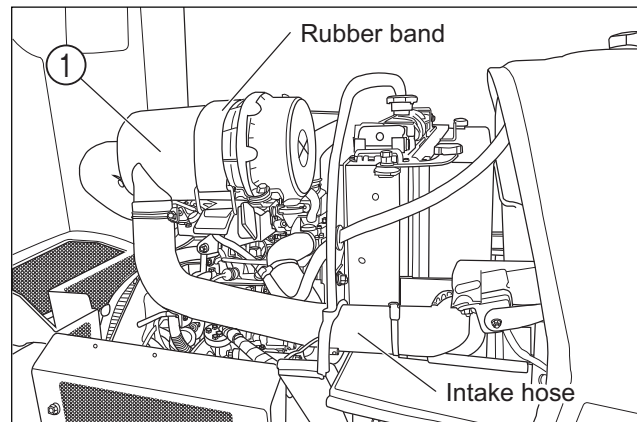
**8. FUEL STRAINER**

The fuel strainer, 1, is located at middle lower on the left side of the front mower. Check the strainer for accumulated dust or water in the bottom of the strainer cup.

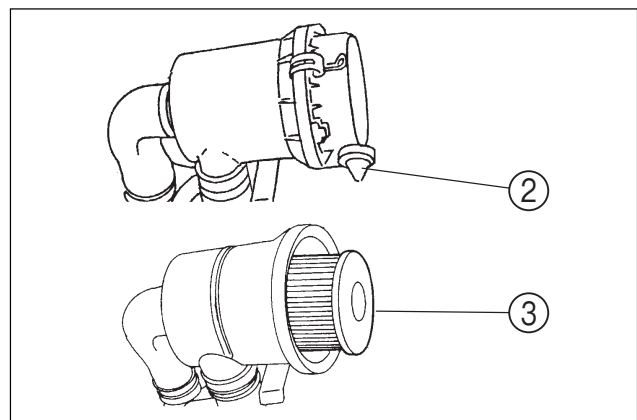
- a. When dust or water is found accumulated in the bottom, turn the fuel cock lever, 2, by 180 degrees towards the bolt to stop fuel flowing.
- b. Remove the ring nut, 3, to remove the strainer cup and element.
- c. Wash the inside of the strainer cup and element in diesel fuel.

**DANGER:**

- **Smoking is prohibited when the fuel strainer is being cleaned or inspected.**
- **Keep away sparks and open flames from the strainer.**
- **Spilled fuel should be wiped away immediately.**

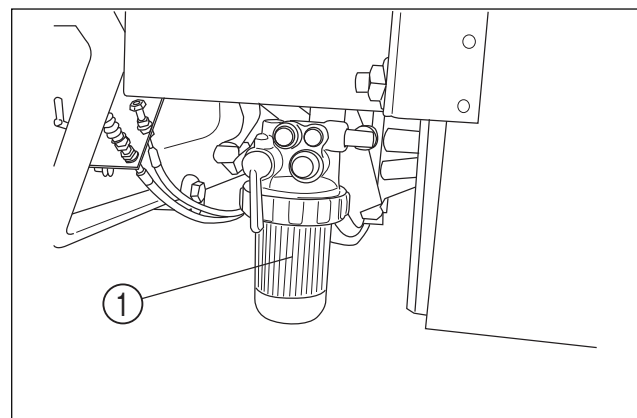
**FIG. 95**

(1) Air-cleaner

**FIG. 96**

(2) Vacuum valve

(3) Element

**FIG. 97**

(1) Fuel strainer

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### IMPORTANT:

- Be sure to install the O-ring when re-installing the strainer.
- When the fuel tank is emptied and air is trapped in the fuel system, bleed the air as follows:
  - Open the fuel filter cock and loosen the air-bleeding screw, 4. And evacuate trapped air completely along with fuel out of the strainer cup. Re-tighten the air-bleeding screw. The air trapped between the fuel pump and injectors is evacuated automatically when the starter switch is turned to the ON position (Ⓒ).

## 9. FUEL HOSES

Check the fuel hoses for cracks and fuel leak after every 100 hours of operation. A damaged hose should be replaced with a new one.

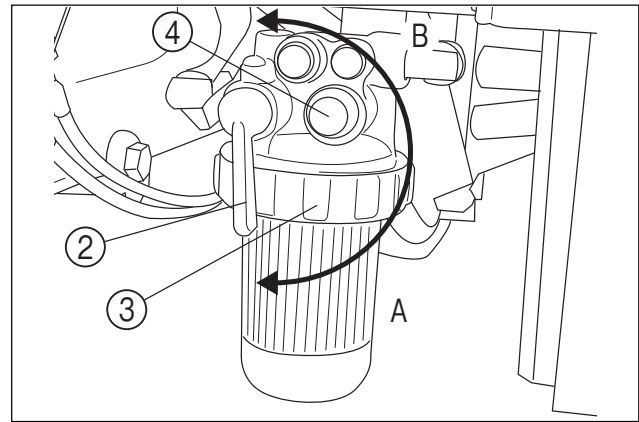


FIG. 98

- |                        |                  |
|------------------------|------------------|
| (2) Fuel cock lever    | (3) Ring nut     |
| (4) Air-bleeding screw | A: Open B: Close |

## 10. FAN BELT



### WARNING:

- Before checking the fan belt, stop the engine and remove the starter key without fail.
- Wait until the engine and accessories cool down completely to prevent burns.

The fan belt, 1, is accessible from the right rear of the engine room by opening the engine hood. Check the belt for tension and damage.

Push down the belt with a finger at the intermediate point between the alternator, 2, and crankshaft pulley, 3, with a force of 10 kgf (22 lb) and see its deflection, A. If it deflects by about 10 mm (0.4 in.), the tension is proper.

When the belt deflection is improper, correct in the following procedure:

- a. Loosen the lock bolt, 4, and adjust bolt, 5, of the alternator.
- b. Pull the alternator outward to apply more tension to the belt. Tighten the lock bolt and adjust bolt temporarily while pulling the alternator.
- c. Check for the belt deflection to see if the tension is proper. If so, tighten the lock bolt and adjust bolt securely.

**IMPORTANT:** When the belt is found to be defective, ask your dealer for replacement.

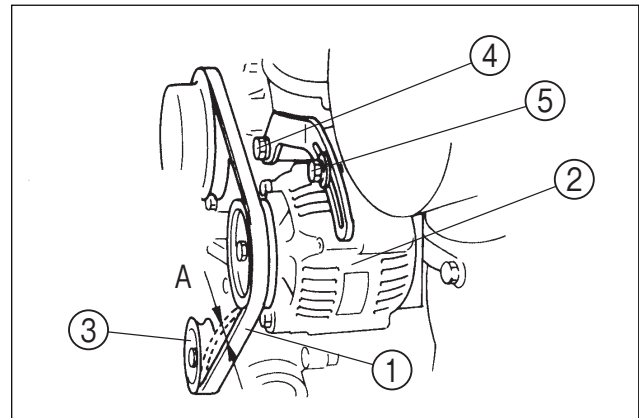


FIG. 99

- |                       |                 |
|-----------------------|-----------------|
| (1) Fan belt          | (4) Lock bolt   |
| (2) Alternator        | (5) Adjust bolt |
| (3) Crankshaft pulley |                 |

## 11. MASTER BRAKE PEDAL PLAY

(Except for G-type) Depress the brake pedal, 1, and fix the pedal with the parking knob, 2. Adjust the length of brake rod, 4, as the spring, 3, clearance on brake rod becomes 0.5mm. Release the parking knob and make sure that there is play on the brake arm.



### **DANGER:**

- As the front mower is used, the master brake pedal play becomes larger. Excessive play will affect the proper brake performance, which is very dangerous.
- Before operation, be sure to check the master brake system.

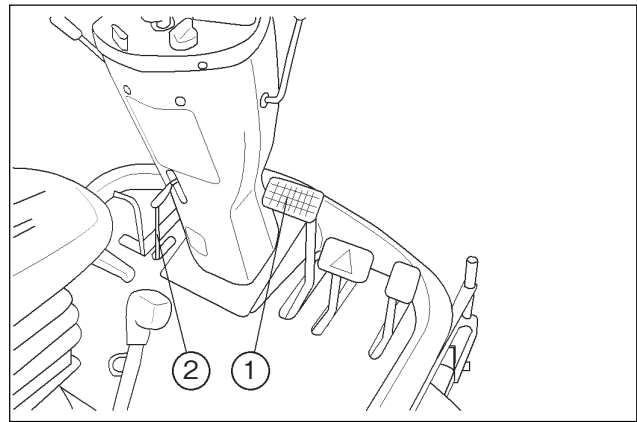


**FIG. 100**

- (1) Master brake pedal  
(2) Parking knob

**Except G type**

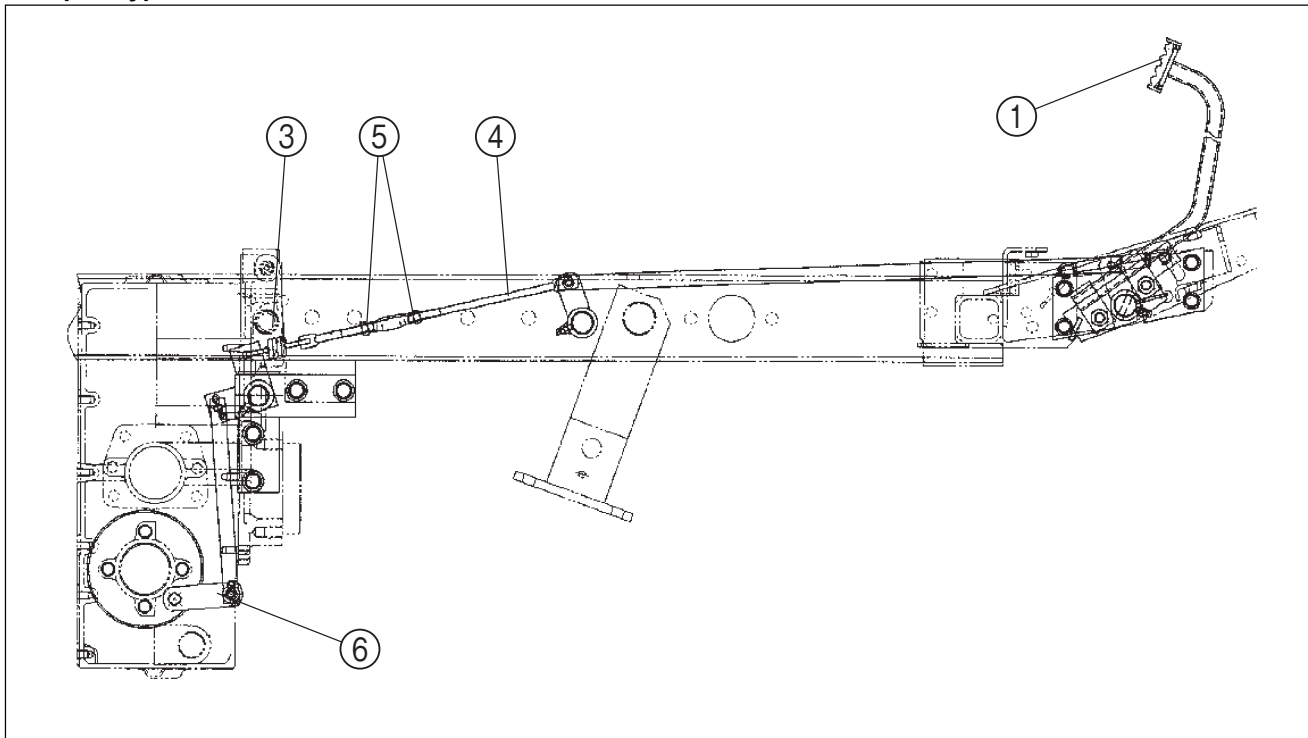


**FIG. 101**

- (1) Master brake pedal      (3) Spring      (4) Brake rod  
(5) Lock nuts      (6) Brake arm

**SFH220,240**

**G type (see from top)**

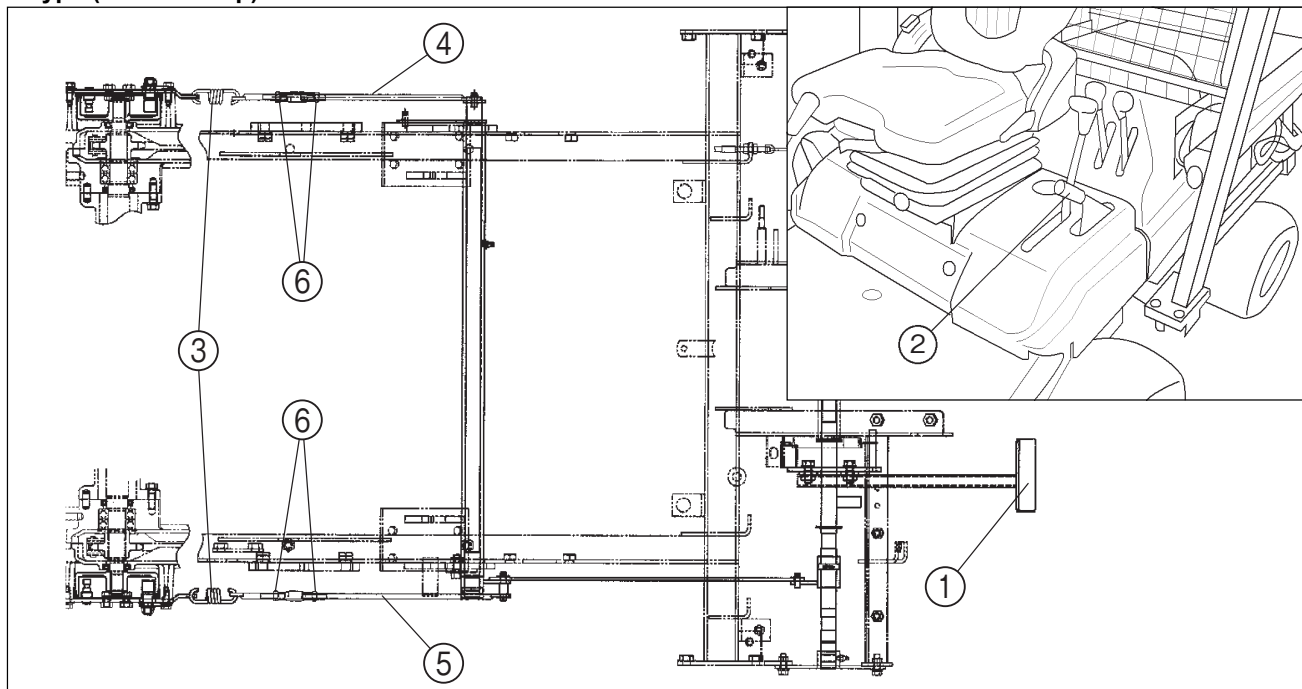


**FIG. 102**

- |                        |                         |               |
|------------------------|-------------------------|---------------|
| (1) Master brake pedal | (2) Parking brake lever | (3) Spring    |
| (4) Brake rod (LH)     | (5) Brake rod (RH)      | (6) Lock nuts |

(G-type) Depress the master brake pedal, 1, and shift the parking brake lever, 2, to ON position. Adjust the length of brake rod, 4 and 5, as the spring clearance on brake rod becomes 0.5mm. Release the parking brake lever and make sure that there is play on the brake arm.

**G type (see from right side)**

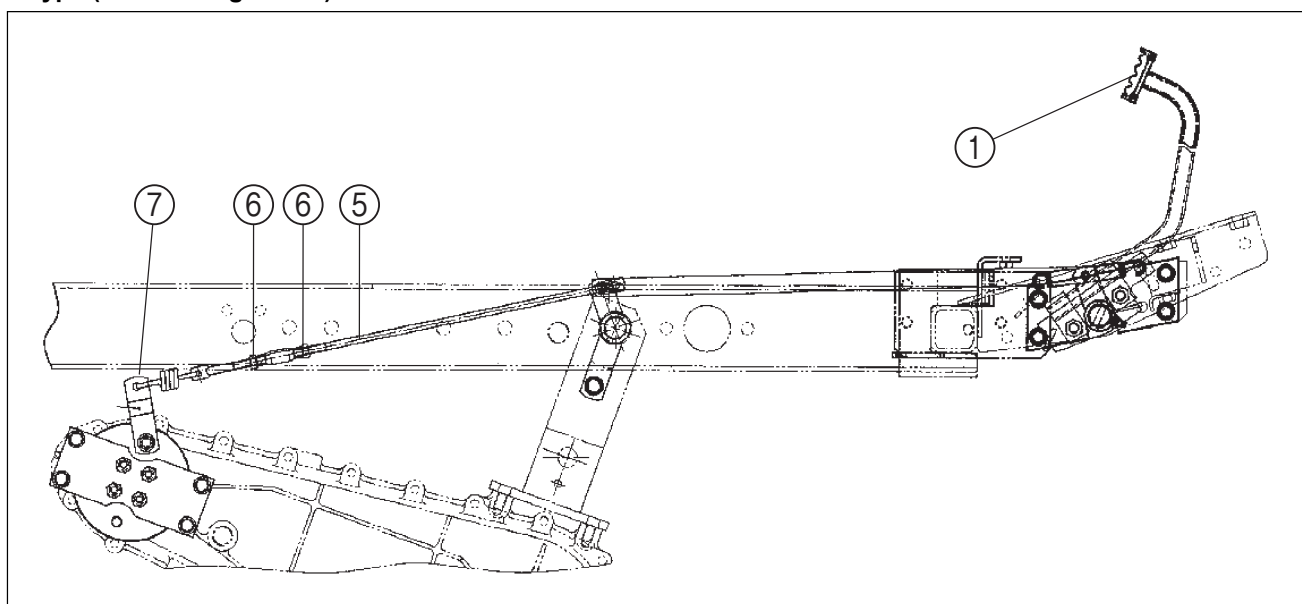


**FIG. 103**

- |                        |                    |               |               |
|------------------------|--------------------|---------------|---------------|
| (1) Master brake pedal | (5) Brake rod (RH) | (6) Lock nuts | (7) Brake arm |
|------------------------|--------------------|---------------|---------------|

**12. NEUTRAL POSITION OF HST****WARNING:**

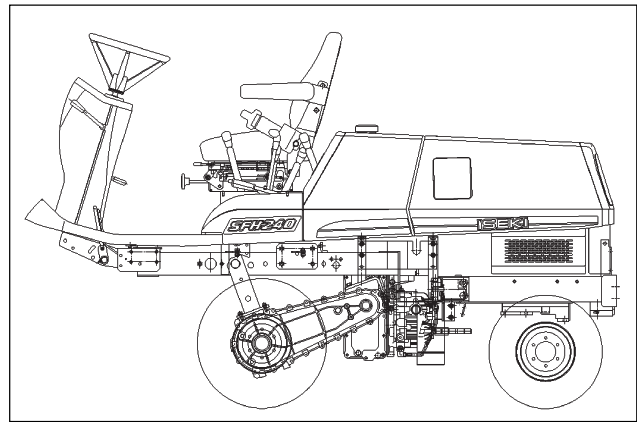
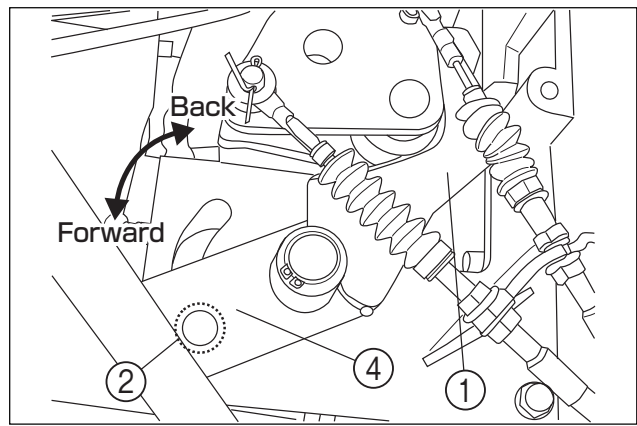
- After a long time of use, the neutral position of the HST unit can shift, which will cause various troubles such as difficulty in stopping the machine, changing over between forward travel and reverse travel, etc., which is very dangerous.

**IMPORTANT:**

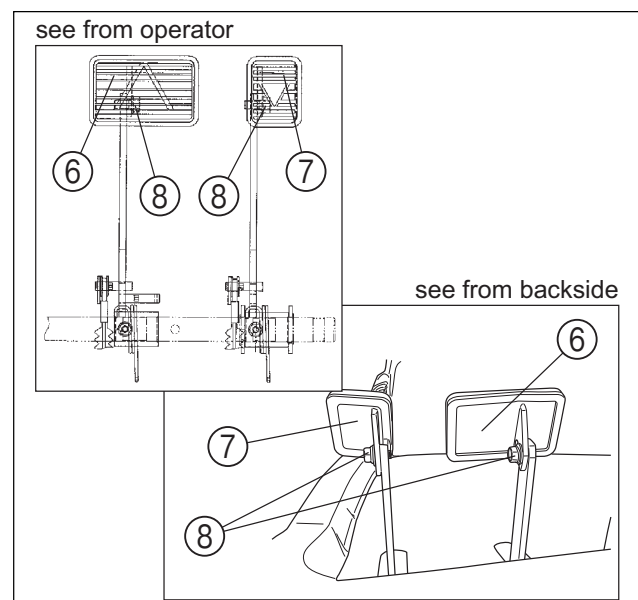
- When the HST unit is out of order, ask your dealers to repair it. But when there is no alternative but for the user to adjust it, follow the next instructions.

The neutral arm, 1, of the HST unit is located around the center on the right side of the front mower. With this arm the neutral position can be adjusted.

- Detach the mower deck from the front mower.
- Place the front mower on level, hard ground. Put tire chocks in the positions a little apart from the front wheels and rear wheels.
- Turn the PTO lever to the OFF position (☒). Before adjustment make sure that the engine is stopping to prevent accidents.
- Loosen the lock nut, 2, and adjust the adjust plate, 4.
- When the front mower creeps forward, move the adjust plate upwards, and when creeps reverse, move the adjust plate downwards. Then tighten it temporarily with the lock nut.
- Start the engine and hold the throttle lever in an intermediate position between the HIGH speed position (☛) and the LOW speed position (☛).
- Release the parking brake.
- When the front mower does not start moving, it shows that the neutral position is properly set.
- Stop the engine and apply the parking brake. Tighten the temporarily tightened lock nut securely.
- Next, align both HST pedals, 6-7, in height by loosening the adjust bolt, 8, of respective pedal. Be sure to tighten the adjust bolts securely after adjustment.

**FIG. 104****FIG. 105**

- (1) Neutral arm                      (2) Lock nut  
(4) Adjust plate

**FIG. 106**

- (6) HST forward travel pedal  
(7) HST reverse travel pedal  
(8) Adjust bolt

## SFH220,240

### 13. ADJUSTMENT OF HST STOPPER BOLT

- Loosen the lock nut, 2, of the HST pedal stopper bolt, 1, and screw in the bolt slightly to shorten the effective length.
- Push the forward pedal until it stops.
- Then adjust the effective length of the stopper bolt until the head comes into contact with the pedal.
- Then tighten the lock nut.

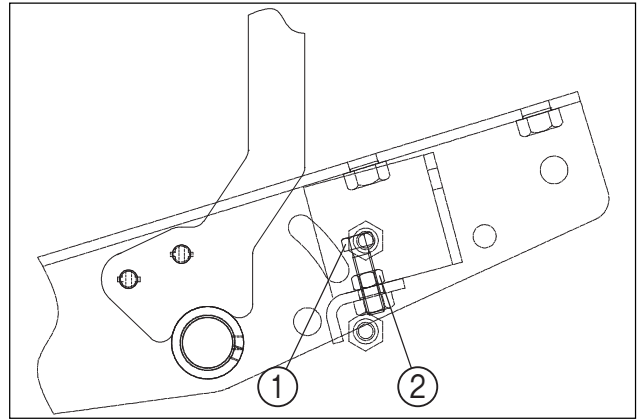


FIG. 107

(1) Stopper bolt

(2) Lock nut

### 14. HST NEUTRAL SPRING ADJUSTMENT



**WARNING:** After use of long period, following malfunction sometimes happen because the resistance of HST unit increases.

- It becomes late for HST pedal to return when releasing it.
- HST pedal does not return to neutral position completely, and lawn mower keeps moving slowly.

#### IMPORTANT:

- When the HST unit is out of order, ask your dealers to repair it. But when is no alternative but for the user to adjust it, follow the next instructions.

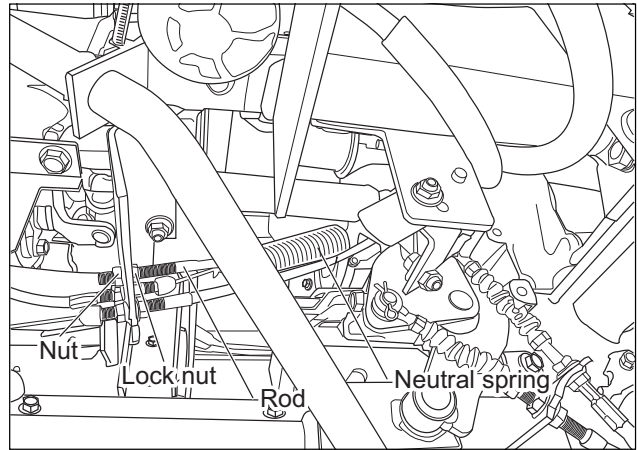


FIG. 108

Loosen the lock nut, tighten up the nut, adjust the tension of neutral spring.

Neutral spring adjustment length:  
spring clearance 0.5~1.0 mm (center of spring)

If the spring clearance becomes larger, returning of HST pedal becomes fast and stopping performance becomes better.

If the spring clearance becomes too much larger, the shock when stopping becomes big, so adjust little by little.

**15. WHEEL TIGHTENING BOLTS AND NUTS**

Check the wheel tightening bolts and nuts for looseness. All loose bolts should be tightened to the specified level.

**Specified tightening torque:**

|                      |                                                 |
|----------------------|-------------------------------------------------|
| Front wheel:         | 45.1N · m ~ 57.9 · m(460kgf · cm ~ 590kgf · cm) |
| Rear wheel: (SFH240) | 45.1N · m ~ 57.9 · m(460kgf · cm ~ 590kgf · cm) |
| (SFH220)             | 41.2N · m ~ 58.8 · m(420kgf · cm ~ 600kgf · cm) |

Tighten the bolts near the maximum level and tighten again so that the groove and hole aligned together, insert the cotter pin through the hole and groove, split the edge of it.

**16. ADJUSTMENT OF BELT TENSION OF THE SIDE PTO (SFH240)**

Stop the engine.

Shift the side PTO clutch lever to the ON position.

Adjust the wire so that the clearance between the spring coil in expanded state is 0.5mm.

**16. ADJUSTMENT OF BELT TENSION OF THE SIDE PTO (F-type)**

Stop the engine.

Remove the cover.

Shift the side PTO clutch lever to the ON position.

Adjust the wire so that the clearance between the spring coil in expanded state is 0.5mm.

Assemble the cover.

**17. ADJUSTMENT OF SIDE PTO BRAKE**

When the machine is delivered, blade is adjusted to stop within 7 seconds with shifting the side PTO lever to the OFF position.

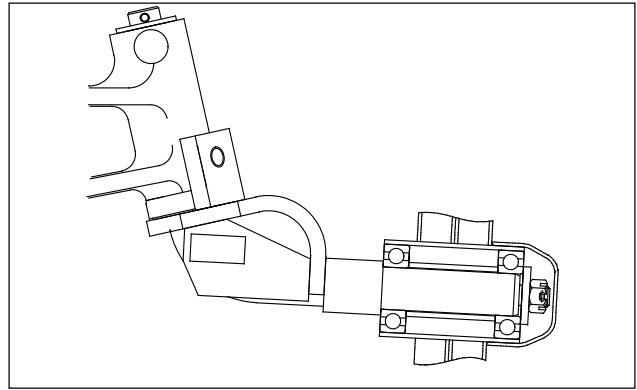
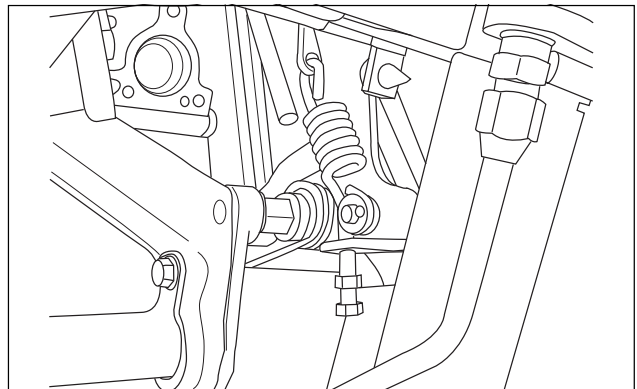
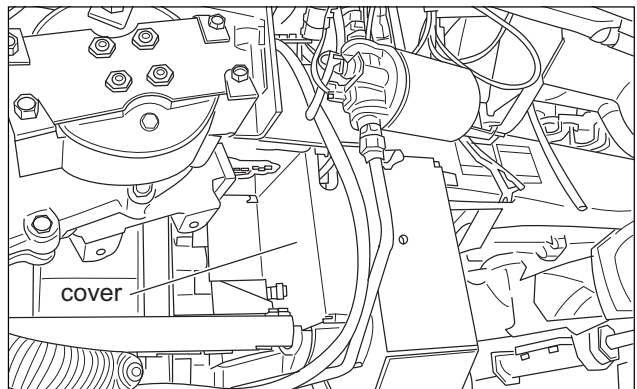
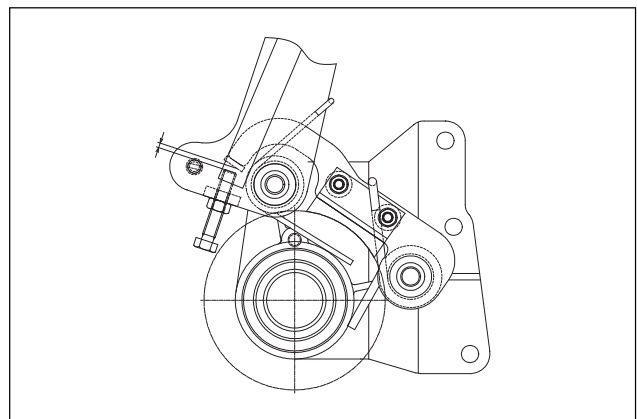
If it takes much time more than 7seconds, needs adjustment.

Adjust the length of bolt as the clearance between the bolt on the tension arm and brake arm becomes 3 mm at the side PTO lever OFF position.

In case it takes more than 7 seconds after adjustment, please consult your ISEKI dealer.

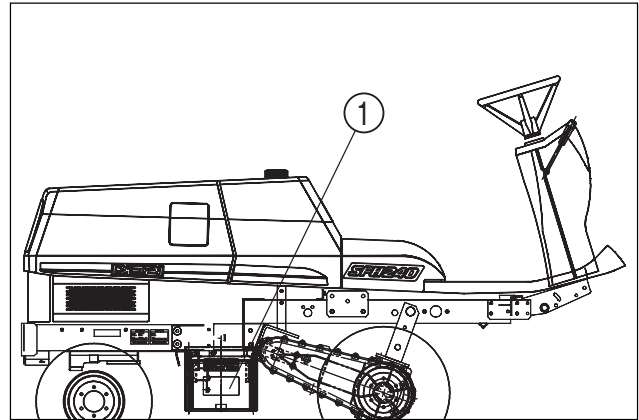
**18. EXCHANGE OF SIDE PTO BELT**

In case the side PTO belt is wearing, please consult your ISEKI dealer.

**FIG. 109****FIG. 110****FIG. 111****FIG. 112**

**SFH220,240****19. BATTERY****DANGER:**

- The battery generates very explosive gasses, so avoid smoking and keep sparks and open flames away from the battery. Charging the battery should be done in a place well ventilated to disperse explosive gasses as quickly as possible.
- Battery electrolyte is very corrosive and will cause burns, so if it splashes on skin or clothes, wash it off immediately. If acid contacts eyes, flush immediately with clean water and get medical attention.
- When using booster cables, take sufficient safety measures.

**FIG. 113**

(1) Battery

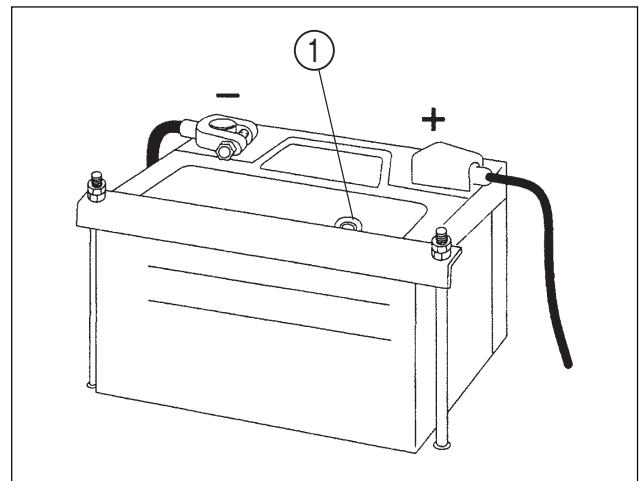
■ **INSPECTION OF BATTERY**

The battery, 1, is installed on the middle of the left hand side of the front mower.

Battery indicator (1) with colors shows battery condition. When checking battery, park machine in a horizontal place and check the indicator at top of battery.

If indicator shows clear or light green color, tap battery body to remove bubble inside indicator.

| Indicator Color |       | Condition       | Countermeasure  |
|-----------------|-------|-----------------|-----------------|
|                 | Green | Charged         | Usable          |
|                 | Black | Discharged      | Need to charge  |
|                 | Clear | Low Electrolyte | Need to replace |

**FIG. 114**

(1) Battery indicator

■ **HANDLING OF THE BATTERY****WARNING:**

- Be sure to connect the battery terminals correctly.
- The wiring from the battery should be kept clean and connectors tight. Dirty or loose wiring may cause a fire.
- When disconnecting the battery, disconnect the negative terminal first and vice versa when connecting.
- When replacing the battery, use a battery of the same capacity as that of the current one (55B24R).

- As atmospheric temperature lowers, the performance of the battery also lowers. Consequently the battery should be serviced with special care in wintertime.

- b. As the battery discharges even when it is not used, it should be charged every month or every other month at the maximum.
- c. When the front mower is not used for a long time, remove the battery from the front mower and store it in a place dry and shaded from direct sunshine.

**IMPORTANT:** Quick charging should be avoided, for it will shorten the service life of the battery.

## 20. TIRE PRESSURE (INFLATION)

Improper tire pressure causes the tires to wear abnormally and affects the front mower performance. Too high pressure causes the front mower to bounce too much and too low pressure increases travelling resistance, which leads to power loss.

Tire pressure should be checked everyday.

|       | Tire size  | Pressure |
|-------|------------|----------|
| Front | 20×10.00-8 | 150kPa   |
| Rear  | 18X8.50-8  | 150kPa   |



### **WARNING:**

- Tire inflation should be set to the values specified in this manual. Excessive inflation may cause certain types to explode, which may result in serious accidents.
- Never use a tire with a cut or crack which reaches tire cords as such a tire may explode.
- When a tire, tube, or rim is required for replacement, ask your dealer. Such operation should be done by a trained mechanic especially for tire handling.
- Insufficient pressure in the tires causes uneven tire friction that can shorten tire lifetime.

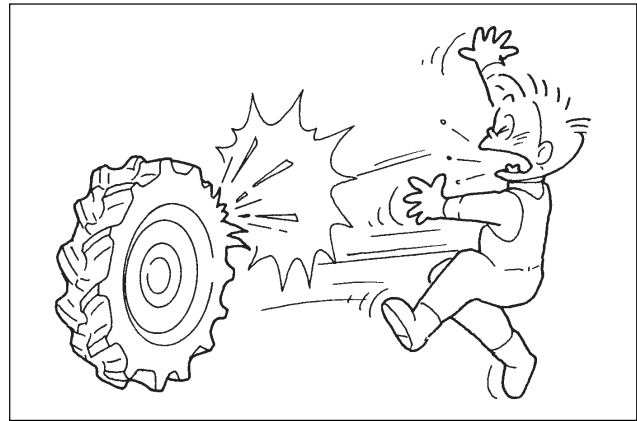


**FIG. 115**

## 21. STEERING WHEEL (TOE-IN)

Start the engine and turn the steering wheel lightly in both directions to check to see the wheel turns smoothly.

Make sure that the tire toe-in is properly set. Improper toe-in causes unstable steering of the front mower: the front mower has a tendency to turn in one direction, right or left or the steering wheel turns unexpectedly.

Proper toe-in:  $A - B = 2 \text{ to } 6 \text{ mm}$  (0.08 to 0.23 in.)



**CAUTION:** When any abnormality is found with the steering wheel or toe-in of the tires, ask your dealer to correct it, because correction of the steering system requires special tools and special training.

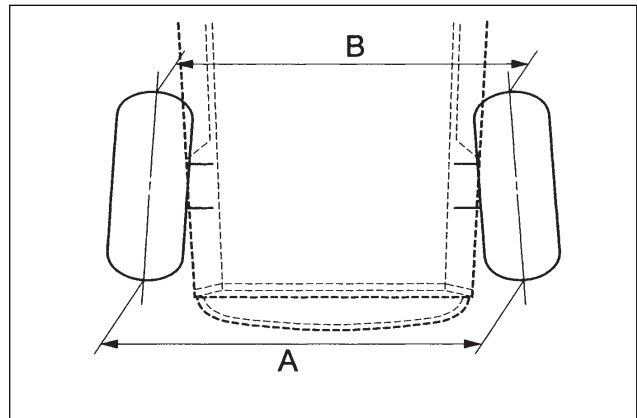


**FIG. 116**

**SFH220,240****22. ENGINE OIL REPLACEMENT****IMPORTANT:**

- The engine oil should be replaced with fresh oil in accordance with operation hours. If not, overly used oil will cause engine troubles.
- The first replacement should be done after the initial 50 hours of operation and then after every 100 hours of operation.

When replacing engine oil, place the front mower on level, hard ground.

The engine oil drain is located bottom of the engine oil pan, 2, which is accessible from the back side of the front mower.

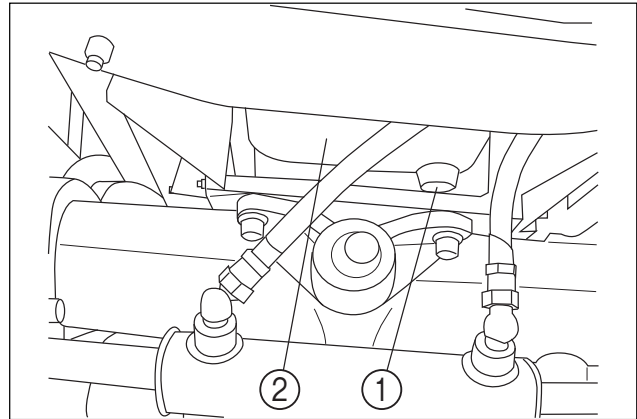
- Place a tray or the like under the oil drain to receive drained oil.
- The engine should be warmed up for 10 minutes or so ahead of time to heat the oil to lower its viscosity for complete drainage.
- Remove the drain plug, 1, allowing the used oil drain out completely.
- When the used oil has drained out completely, screw the drain plug back in securely.
- Remove the oil filler cap, 3, at the top of engine and pour in fresh engine oil through the oil filler. Be sure to use oil recommended by ISEKI. Refer to " 2. ENGINE OIL LEVEL ".

|                     |                            |
|---------------------|----------------------------|
| Engine oil capacity | 2.6 litres (0.6 imp • gal) |
|---------------------|----------------------------|

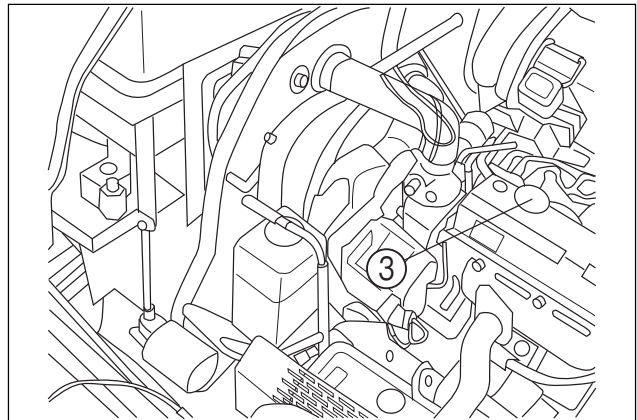
- After engine oil replacement, start the engine and let it idle for a while.
- Then stop it and wait for a while until the engine oil comes down into the oil pan, 2. Now check the oil level to check to see if it is at the upper limit or not. When the level is low, replenish until the level reaches the upper limit.

**IMPORTANT:** Never fill over the upper limit, or it may cause engine trouble.

- Make sure that there is no oil leakage through the drain plug and oil filter.

**FIG. 117**

- (1) Drain plug      (2) Oil pan

**FIG. 118**

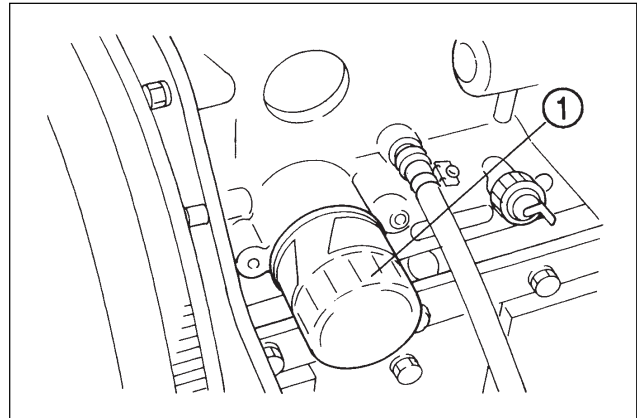
- (3) Engine oil filler

**23. ENGINE OIL FILTER****IMPORTANT:**

- The engine oil filter should be replaced after the initial 50 hours of operation and then after every 300 hours of operation.
- It is recommended to ask your dealer to replace the engine oil filter, because this operation requires a special tool. But when there is no alternative but to replace the filter by yourself, observe following instructions.

The engine oil filter, 1, is located on the left-hand wall of the cylinder block.

- Drain engine oil completely following the instructions of "22. ENGINE OIL REPLACEMENT."
- Place some rags under the engine oil filter to receive dripping oil when the filter is replaced.
- Loosen the filter using a filter spanner and remove it.
- Install a new filter with the O-ring lubricated with fresh engine oil. Screw in the filter until its packing comes into contact with the sealing surface of the engine and then tighten it by a 2/3 turn with the filter spanner.
- Pour oil in referring to "23. ENGINE OIL REPLACEMENT."

**FIG. 119**

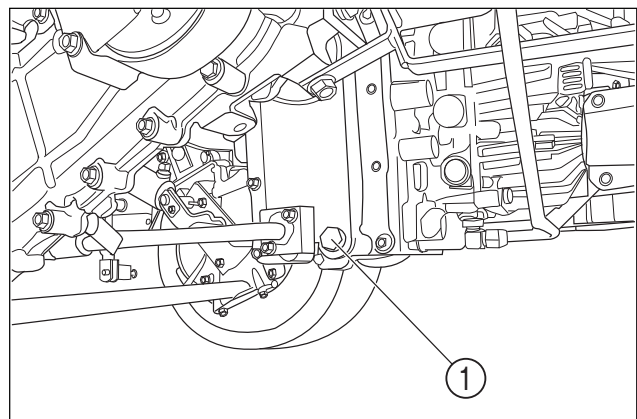
(1) Engine oil filter

**24. TRANSMISSION OIL REPLACEMENT****IMPORTANT:**

- The transmission oil should be replaced after the initial 50 hours of operation and then after every 200 hours of operation.
  - It is recommended to ask your dealer to replace the transmission oil, because this operation also requires replacement of the hydraulic oil filter and washing or replacement of the suction filter.
- But when there is no alternative but to replace the filter by yourself, observe the following instructions.

The transmission oil drain is located under the center of transmission case.

- Place a tray under the drain plug, (1), (2).
- Remove the drain plug, (1), (2) and let the oil drain out.
- Wrap the seal tape and reinstall the drain plug, (1), (2) and tighten it securely.
- Pour fresh transmission oil through the oil filler on top of the transmission case until the level reaches the upper limit on the level gauge (oil level check window) in referring to "3. TRANSMISSION OIL LEVEL".

**FIG. 120**

(1) Drain plug

**SFH220,240**

|                           |         |
|---------------------------|---------|
| Transmission oil capacity | :15.0 L |
|---------------------------|---------|

- e. After replacement, start the engine and let it idle for a while. Then stop it and wait for a while until the oil comes down into the oil pan. Now check the oil level to check to see if it is at the upper limit or not. When the level is low, replenish until the level reaches the upper limit.
- f. Make sure that there is no oil leaking through the oil filter, suction filter, rubber hoses, or drain plug,2.

**25. HYDRAULIC OIL FILTER****IMPORTANT:**

- The hydraulic oil filter should be replaced after the initial 50 hours of operation and then after every 200 hours of operation. It should also be changed every time the transmission oil is replaced.
- It is recommended to ask your dealer to replace the hydraulic oil filter. But when there is no alternative but to replace the filter by yourself, observe the following instructions.

The hydraulic oil filter,1, is located center of the right-hand side of the front mower.

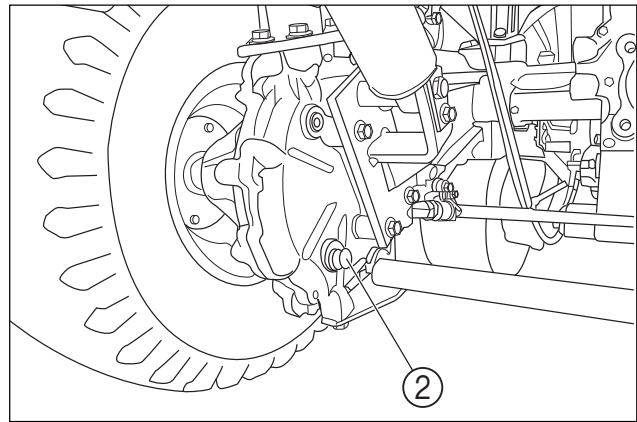
- a. After the transmission oil has drained out completely, remove the filter using the filter spanner. When removing the filter, a small amount of oil may spill, so place waste cloth under the filter to receive spilt oil.
- b. Apply thin coat of oil to the O-ring of the new oil filter cartridge ahead of time. Then install the filter. Screw in the filter by hand until the rubber packing comes into contact with the sealing surface, and then screw in it by a 2/3 turn with the filter spanner.

**26. SUCTION FILTER****IMPORTANT:**

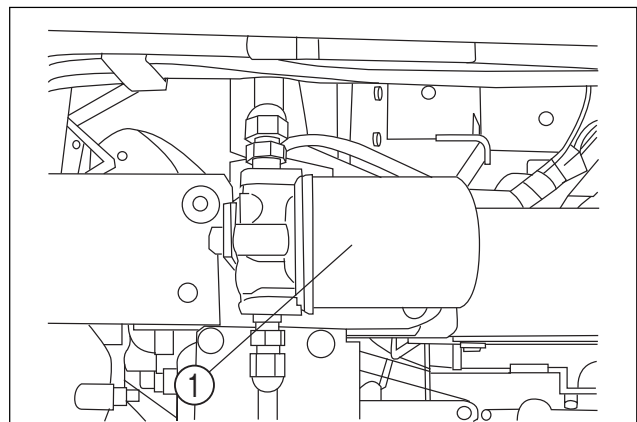
- The suction oil filter should be cleaned after the initial 50 hours of operation and then after every 200 hours of operation. It should also be cleaned every time the transmission oil is replaced.
- It is recommended to ask your dealer to replace the suction filter. But when there is no alternative but to replace the filter by yourself, observe the following instructions.

The suction filter,1, is located bottom left of the transmission case.

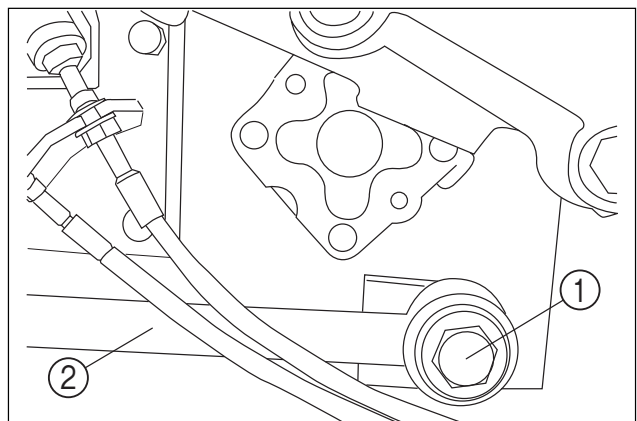
Suction filter and O ring should be replaced when the transmission oil is replaced.

**FIG. 121**

(2) Drain plug

**FIG. 122**

(1) Hydraulic oil filter

**FIG. 123**

(1) Suction filter

(2) Suction pipe

Hydraulic oil filter should be replaced with cartridge.

## 27. REAR AXLE OIL REPLACEMENT

### IMPORTANT:

- The rear axle oil should be replaced after the initial 50 hours of operation and after 300 hours of operation.

The rear axle drain is located on the bottom of the right and left gear cases.

- Place a tray under the drain plug, 1.
- Remove the drain plug using a spanner or wrench.
- Let all oil drain out from both the gear cases.
- Wrap the threads of the drain plug with sealing tape and screw it back in securely.

**IMPORTANT:** Before re-installing the drain plug, wrap the threads of the plug with sealing tape. If not, oil may leaks through the plug.

- Pour fresh gear oil through the oil filler on the top of the right-hand rear axle in referring to "5. REAR AXLE OIL LEVEL".

|          |                             |
|----------|-----------------------------|
| Oil      | Gear oil SAE 80             |
| Capacity | 2.5 litres (0.5 Imp, gal. ) |

## 28. AIR-INTAKE BOX

### IMPORTANT:

- Air - intake box clogged with dust or dirt causes overheating of the engine due to deteriorated cooling efficiency of the radiator. The air - intake screen should be checked for clogging everyday before operation.
- When mowing dead grass or operating under extremely dusty conditions, check the air - intake screen several times a day to avoid clogging.

- Open the engine hood and clean the radiator net using a piece of cloth or the like.

Remove the knob bolt, 11 and rotate the stay, 12 to outside to remove the air intake box, 10.

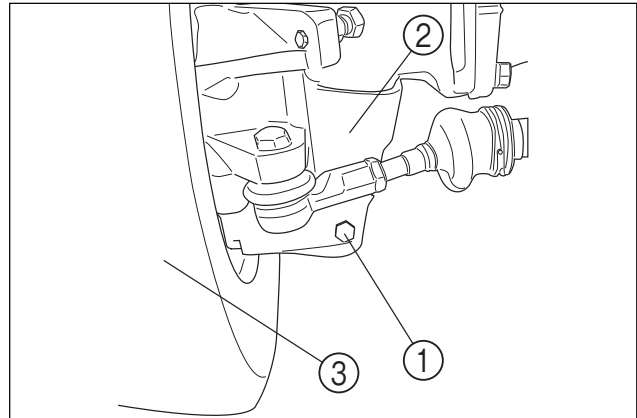


**FIG. 124**

- (1) Drain plug                      (2) Gear case  
(3) Rear wheel

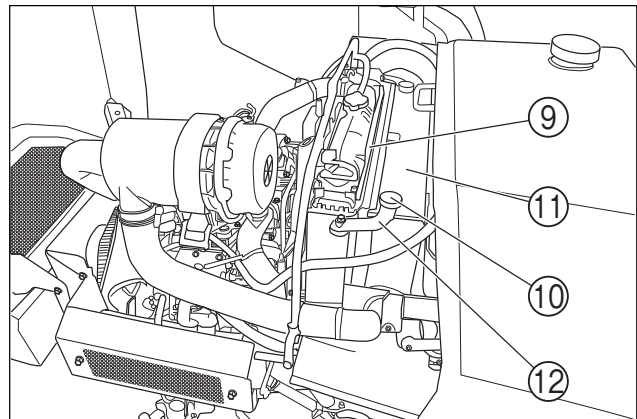


**FIG. 125**

- (9) Radiator net                      (10) Knob bolt  
(11) Air intake box                  (12) Stay

## SFH220,240

### 29. RADIATOR

#### IMPORTANT:

- The radiator screen and radiator clogged with dust or dirt causes overheating of the engine due to deteriorated cooling efficiency of the radiator. The radiator and radiator screen should be checked for clogging everyday before operation.
- When mowing dead grass or operating under extremely dusty conditions, check the radiator screen and radiator several times a day to avoid clogging.

The radiator is located front the engine and the radiator net,9, is located between air intake box,11, and the radiator.

- Dust off the radiator screen with a soft brush.
- The clogged radiator fins should be cleaned by applying compressed air or water from both sides alternatively.
- Re-install the radiator screen.

#### IMPORTANT:

- Avoid using excessively compressed air or water, which may deform the cooling fan blades.
- Avoid applying water directly to the wiring and electric apparatus.
- After washing the radiator using water from a tap, let it dry by itself.

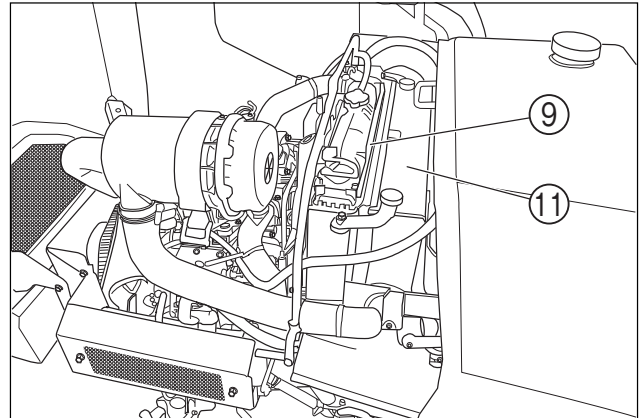


FIG. 126

(9) Radiator net

(11) Air intake box

### 30. COOLANT REPLACEMENT



**WARNING:** Never attempt to remove the radiator cap during or just after operation, or pressurized vapor and hot water will gush out, which may cause burns. So wait until the engine cools down sufficiently.

The drain plug of the engine coolant is located under the reserve tank on the left side of the engine.

- Place a coolant receiver under the drain plug,1.
- Remove the radiator cap,2, and the drain plug to let all coolant drain out of the radiator and engine cylinder block.
- When all coolant completely drained out, wash the inside of the radiator and tighten the drain plug securely.

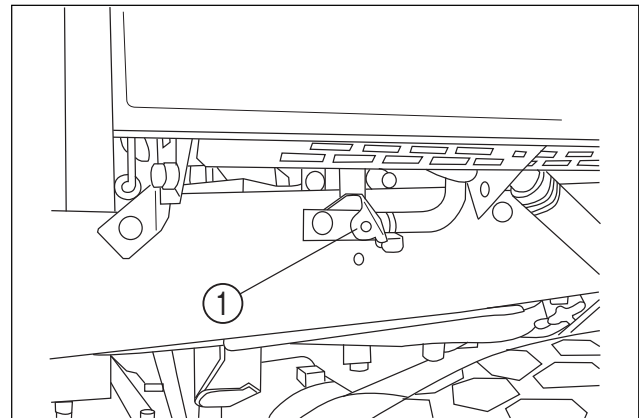


FIG. 127

(1) Drain plug

- d. Pour the coolant which has a specified antifreeze concentration until it starts overflowing through the coolant filler. Retighten the radiator cap securely.

|                  |                            |
|------------------|----------------------------|
| Coolant capacity | 4.7 litres (1.0 Imp. gal.) |
| Radiator         | 2.1 litres (0.4 Imp. gal.) |
| Reserve tank     | 0.7 litres (0.2 Imp. gal.) |
| Engine block     | 1.9 litres (0.4 Imp. gal.) |



**WARNING:** Be sure to tighten the radiator cap securely, or boiling coolant may shoot out, which is very dangerous.

**IMPORTANT:**

- Frozen coolant may damage the engine.
- Mixing ratio of water and antifreeze is different by antifreeze manufacturers and atmospheric temperatures.
- Water and antifreeze should be blended sufficiently ahead of time.

- e. After filling, start the engine and let it idle for 5 minutes or so. Then check the coolant level. If the level is low, replenish the reserve tank with coolant in referring to "6. COOLANT LEVEL".

**IMPORTANT:**

- Never attempt to run the engine without coolant, or the engine will seize, leading to its complete damage.

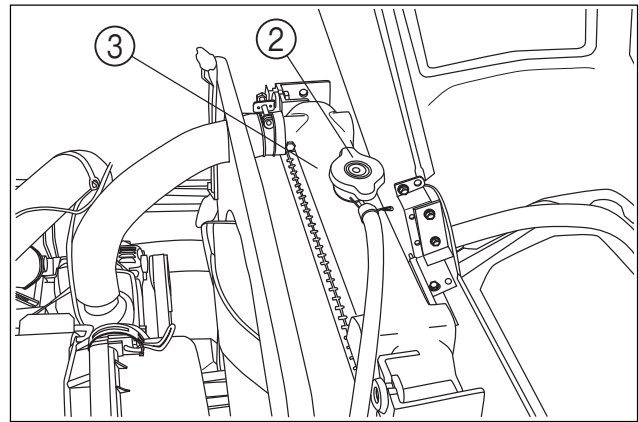


**FIG. 128**

(2) Radiator cap

(3) Radiator

## SFH220,240

### 31. FUSES AND WIRING

The fuse box, 1, is located inside the front cover, 4.

Except for G-type

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| A | B | C | D | E | F |
| G | H |   |   |   |   |

| Ref | Fuse capacity | Application                                   |
|-----|---------------|-----------------------------------------------|
| A   | 5A            | Option 12V<br>(Max: 40W ACC: Accessory)       |
| B   | 5A            | Fuel pump                                     |
| C   | 10A           | Engine start parts<br>Relays and Panels       |
| D   | 5A            | Engine stop relay                             |
| E   | 10A           | Work lamp                                     |
| F   | 20A           | Option 12V<br>(Max: 160W STD: Battery direct) |
| G   | 5A            | Spare                                         |
| H   | 10A           | Spare                                         |

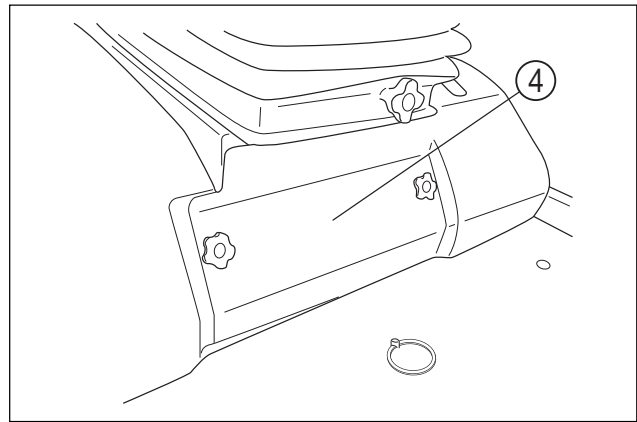


FIG. 129

(4) Front cover

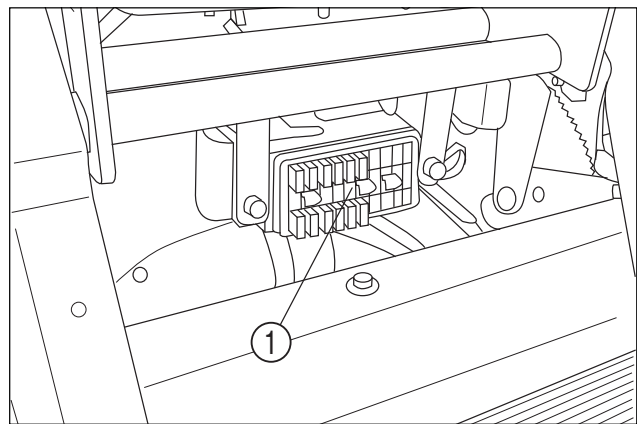


FIG. 130

(1) Fuse box

G-type

|      |   |  |   |   |   |   |   |
|------|---|--|---|---|---|---|---|
| TOOL | J |  | A | B | C | D | E |
| L    |   |  |   |   |   |   |   |
|      | K |  | F | G | H | I |   |
| L    |   |  |   |   |   |   |   |

※ Sum total of A,B,C,D,E,G must not exceed 380W

| Ref | Fuse capacity | Application                                                             | Ref | Fuse capacity | Application                             |
|-----|---------------|-------------------------------------------------------------------------|-----|---------------|-----------------------------------------|
| A   | 10A           | Work lamp<br>Small lamps and EC horn (Opt)<br>EC Head lamp (Opt) relays | G   | 5A            | Option 12V<br>(Max: 40W ACC: Accessory) |
| B   | 10A           | Stop Lamps (Opt)                                                        | H   | 5A            | Fuel pump                               |
| C   | 20A           | Brinker(Opt)                                                            | I   | 10A           | Engine start parts<br>Relays and Panels |
| D   | 20A           | EC Head lamps(Opt)                                                      | J   | 5A            | Spare                                   |
| E   | 20A           | Option 12V<br>(Max: 160W STD: Battery direct)                           | K   | 10A           | Spare                                   |
| F   | 5A            | Engine stop relay                                                       | L   | 20A           | Spare                                   |



#### CAUTION:

- Never replace blown fuses or slow-blow fuse with wire.

The slow-blow fuse box,2 is located at left side of radiator.

**IMPORTANT:**

- When a fuse or a slow-blow fuse is blown, be sure to locate the trouble and correct it. When the cause is not clear, consult your dealer.
- Be sure to use specified fuses. Larger-capacity fuses will cause burn-out of electric accessories and wiring.
- When a slow-blow fuse has been blown out, use genuine slow-blow fuse.

| Slow - blow fuse | Parts code      |
|------------------|-----------------|
| 40A              | 1650-650-222-00 |

**WARNING:**

- Damaged wire covers should be mended with insulation tape immediately.

**CAUTION:**

- The wiring of the front mower should be checked every year at your dealer to avoid electrical fires.
- Grass and dust around the battery, wiring, muffler and engine should be removed. Otherwise they may catch fire.

**IMPORTANT:**

- When a wire harness has come off its clamp, it should be re-clamped immediately.

**32. HYDRAULIC SYSTEM PARTS**

When hydraulic system parts such as the HST unit, hydraulic pump, control valve, hydraulic cylinder, piping, etc. are required to be adjusted or repaired, consult your ISEKI dealers. Users are advised not to adjust or repair hydraulic system parts by themselves.

**33. SAFETY SWITCHES (SFH240F-B)**

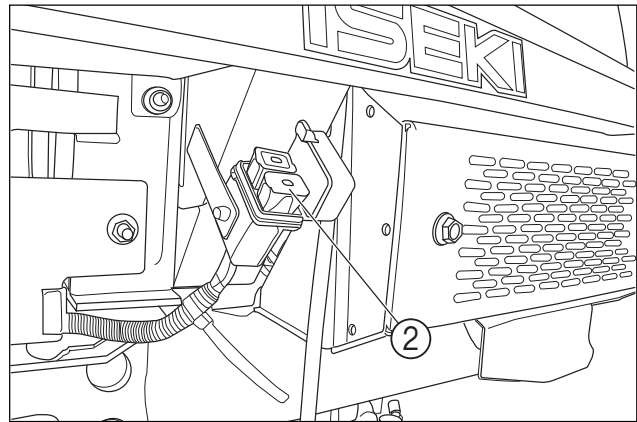
Safety devices are installed for safe operation. Make sure that each device works properly before operation following the next procedures.



**CAUTION:** When the engine does not start due to a defective safety switch or does not stop when the operator has left the operator's seat, consult your dealer without fail.

**INSPECTION 1**

- Be seated in the operator's seat.
- Shift the side PTO lever to the OFF (OFF) position.
- Shift the center PTO lever to the OFF (OFF) position.
- Turn the key switch to the START (START) position without depressing the master brake pedal.

**FIG. 131**

- Slow-blow fuse box

Make sure that the engine is not cranked.

**INSPECTION 2**

- Be seated in the operator's seat.
- Shift the side PTO lever to the ON (ON) position.
- Shift the center PTO lever to the OFF (OFF) position.
- Depress the master brake pedal fully.
- Turn the key switch to the START (START) position.

Make sure that the engine is not cranked.

**INSPECTION 3**

- Be seated in the operator's seat.
- Shift the side PTO lever to the OFF (OFF) position.
- Shift the centre PTO lever to the ON (ON) position.
- Depress the master brake pedal fully.
- Turn the key switch to the START (START) position.

Make sure that the engine is not cranked.

## SFH220,240

### INSPECTION 4

- Be seated in the operator's seat.
  - Shift the side PTO lever to the OFF (☒) position.
  - Shift the centre PTO lever to the OFF (☒) position.
  - Depress the master brake pedal fully.
  - Turn the key switch to the START (🔑) position.
- Make sure that the engine is cranked and started.
- Leave from the operator's seat.

Make sure that the engine should stop.

### INSPECTION 5 (Lawn mower with collector)

- Be seated in the operator's seat
- Start the engine with dumped container.
- Shift the center PTO lever to the ON (☒) position.



**CAUTION:**Idle the engine and be careful of scattering foreign objects from mower deck.

- Make sure that the engine stops.

### 34. SAFETY SWITCHES (SFH240F/SFH220T)

Safety devices are installed for safe operation. Make certain that each device works properly before operation following the next procedures.



**CAUTION:**When the engine does not start due to a defective safety switch or does not stop when the operator has left the operator's seat, consult your dealer without fail.

### INSPECTION 1

- Be seated in the operator's seat.
- Shift the center PTO lever to the OFF (☒) position.
- Turn the key switch to the START (🔑) position without depressing the master brake pedal.

Make sure that the engine is not cranked.

### INSPECTION 2

- Be seated in the operator's seat.
- Shift the center PTO lever to the ON (☒) position.

- Depress the master brake pedal fully.
- Turn the key switch to the START (🔑) position.

Make sure that the engine is not cranked.

### INSPECTION 3

- Be seated in the operator's seat.
- Shift the center PTO lever to the OFF (☒) position.
- Depress the master brake pedal fully.
- Turn the key switch to the START (🔑) position.

Make sure that the engine is cranked and started.

- Leave from the operator's seat.

Make sure that the engine should stop.

### 35. SAFETY SWITCHES (F2-type)

Safety devices are installed for safe operation. Make certain that each device works properly before operation following the next procedures.



**CAUTION:**When the engine does not start due to a defective safety switch or does not stop when the operator has left the operator's seat, consult your dealer without fail.

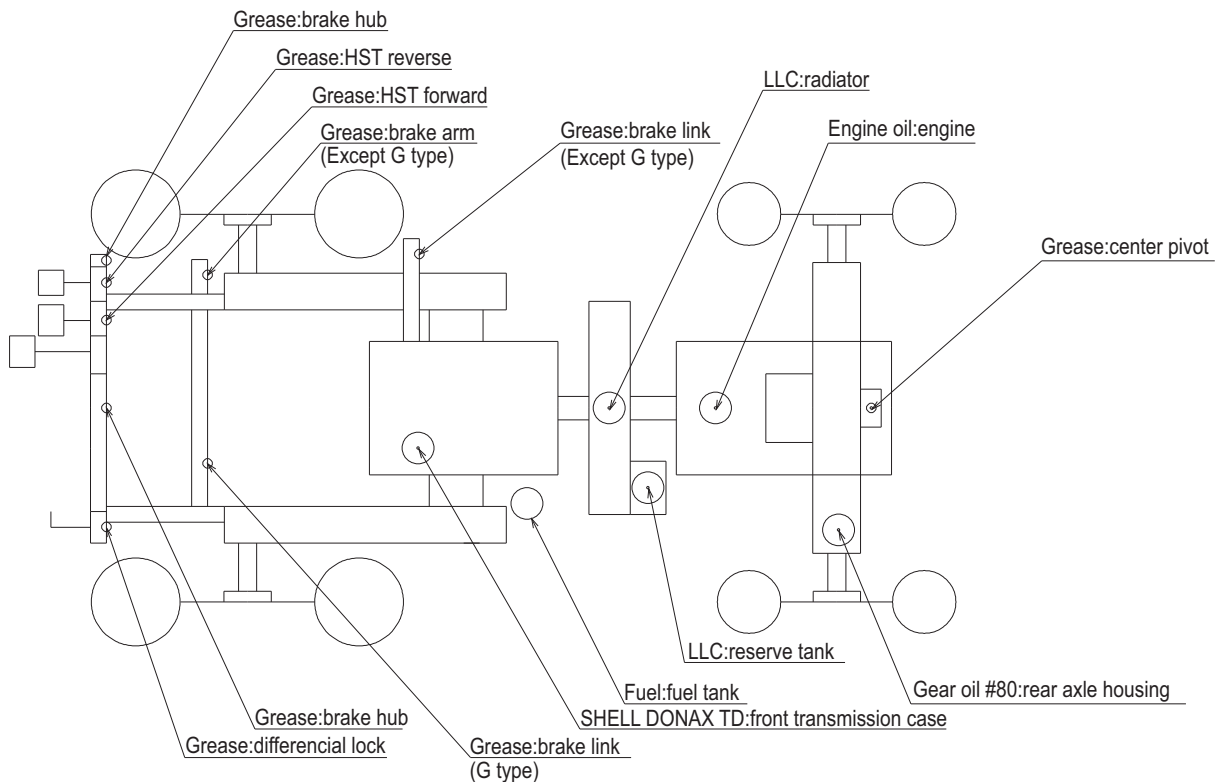
### INSPECTION 1

- Open the engine hood.
- Be seated in the operator's seat.
- Shift the center PTO lever to the OFF (☒) position. (SFH240F-B)
- Shift the center PTO lever to the ON (☒) position.
- Depress the master brake pedal fully.
- Turn the key switch to the START (🔑) position.

Make sure that the engine is not cranked.

**36. FILLING DIAGRAM**

**SFH240/220**



**SFH220,240****37. PERIODICAL INSPECTION TABLE**

○ :Inspection, replenishment, and adjustment    △ :Cleaning and washing  
● :Replacement    ★ :Consult your dealer.

| Check points                  | Pre-operation | Inspection and servicing intervals<br>hours of operation |     |     |     |     |     |     |     | Intervals<br>after that                                           | Judgement<br>criteria                                      | Ref.<br>page |
|-------------------------------|---------------|----------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-------------------------------------------------------------------|------------------------------------------------------------|--------------|
|                               |               | 50                                                       | 100 | 150 | 200 | 250 | 300 | 350 | 400 |                                                                   |                                                            |              |
| Engine oil                    | ○             | ★                                                        |     | ●   |     | ●   |     | ★   |     | Replace after initial 50 hr<br>and then every 100 hr.             | Maintain the specified level.                              | 53           |
| Air cleaner                   |               | △                                                        | △   | △   | △   | △   | △   | △   | △   | Clean after every 50hr.                                           |                                                            | 57           |
| Engine coolant                | ○             |                                                          |     |     |     |     |     |     |     | Replace every year.                                               | Maintain the specified level.                              | 55<br>70     |
| Fuel                          | ○             |                                                          |     |     |     |     |     |     |     |                                                                   | Keep fuel tank always full.                                | 56           |
| Fuel strainer                 | ○             |                                                          | △   |     | △   |     | ●   |     | △   | Clean after every 100hr.<br>Replace element after every<br>300hr. | There should be no dust or<br>water in filter.             | 57           |
| Fan belt                      | ○             |                                                          |     |     |     |     |     |     |     |                                                                   | 10mm (0.4 in.) deflection                                  | 58           |
| Electrolyte level             |               | ○                                                        | ○   | ○   | ○   | ○   | ○   | ○   | ○   | Inspect after every 50hr.                                         | Maintain the specified level                               | 64           |
| Engine oil filter             |               | ★                                                        |     |     |     |     |     | ★   |     | Replace after initial 50hr.<br>Replace after every 300hr.         |                                                            | 67           |
| Transmission oil              | ○             | ★                                                        |     |     |     | ★   |     |     |     | Replace after initial 50hr.<br>Replace after every 200hr..        | Maintain the specified level.                              | 54<br>67     |
| Transmission oil filter       |               | ★                                                        |     |     |     | ★   |     |     |     | Replace after initial 50hr.<br>Replace after every 200hr.         |                                                            | 67           |
| Side PTO belt                 | ○             |                                                          |     |     |     |     |     |     |     |                                                                   | When the PTO is ON position,<br>spring clearance is 0.5mm. | 62           |
| Spring of brake rod           | ○             |                                                          |     |     |     |     |     |     |     |                                                                   | When depressing pedal 0.5 mm                               | 59           |
| Steering wheel                | ○             |                                                          |     |     |     |     | ★   |     |     | Inspect after every 300hr.                                        | There should be no<br>abnormality.                         | 65           |
| Tire pressure                 | ○             |                                                          |     |     |     |     |     |     |     | 20X10.00-8<br>210/60D-8                                           | Front: 1.4 kgf · cm<br>Rear: 1.6 kgf · cm                  | 65           |
| Toe-in                        |               |                                                          |     |     |     |     | ★   |     |     | Adjust after every 300hr.                                         | 2 to 6 mm (0.08 to 0.23 in. )                              | 65           |
| Wheel tightening bolts        | ○             |                                                          |     |     |     |     |     |     |     |                                                                   | There should be no loose.                                  | 62           |
| Rear axle oil<br>(SFH240)     | ○             | ●                                                        |     |     |     |     |     | ●   |     | Replace after initial 50hr.<br>and then every 300hr.              | Maintain the specified level.                              | 69           |
| Grease-up                     |               | ○                                                        | ○   | ○   | ○   | ○   | ○   | ○   | ○   | Inject grease after every 50hr.                                   |                                                            | 74           |
| Engine hood and rear<br>cover | △             |                                                          |     |     |     |     |     |     |     |                                                                   | There should be no clogging.                               | 52           |
| Radiator screen               | △             |                                                          |     |     |     |     |     |     |     |                                                                   | There should be no clogging.                               | 70           |
| Radiator                      | △             |                                                          |     |     |     |     |     |     |     |                                                                   | There should be no clogging.                               | 70           |
| Electrical apparatus          | ○             |                                                          |     |     |     |     |     |     |     |                                                                   | All should work properly.                                  | 71           |
| Safety switches               | ○             |                                                          |     |     |     |     |     |     |     |                                                                   | All should work properly.                                  | 72,73        |
| Air intake openings           | △             |                                                          |     |     |     |     |     |     |     |                                                                   | There should be no clogging                                | 69           |
| Bolts and nuts                | ○             |                                                          |     |     |     |     |     |     |     |                                                                   | There should be no loose ones.                             |              |
| Rubber pipes                  |               |                                                          | ○   |     | ○   |     | ○   |     | ○   | Check after every 100hr.                                          |                                                            | —            |
| Side PTO brake                | ○             | ○                                                        |     | ○   |     | ○   |     | ○   |     |                                                                   |                                                            | 63           |

**IMPORTANT:**

- Above mentioned service intervals should be regarded as reference criteria. If working conditions are harder, earlier service is recommended.
- When special technique or special tools is required, consult your dealers.

## CHAPTER 9. STORAGE

### ■ DAILY AND SHORT TERM STORAGE

- a. Clean the front mower.

**IMPORTANT:** When washing the front mower, avoid applying compressed water directly to the electric apparatus, oil and fuel fillers. Remove the starter key and cap the switch key hole to prevent short circuits.

- b. Lower the mower deck on the ground.



**CAUTION:** A lifted up mower deck may go down unexpectedly if the lift lever is manipulated by children or unauthorised people, which may lead to serious accidents.

- c. The front mower should be stored indoors if possible. When it has to be left outdoors, cover it with tarpaulin or the like.



**WARNING:** When covering the front mower with tarpaulin, wait until heated components such as the engine, muffler, etc. have completely cooled down. Otherwise a fire may be caused.

- d. When the ambient temperature is very low, remove the battery and store it in a warm shaded dry place. This will contribute greatly to easy starting of the engine the following morning.



**CAUTION:** Remove the starter key without fail before storage.

### ■ LONG TERM STORAGE

- a. Clean the front mower and correct all troubles such as repair, replacement of defective parts, readjustment, etc.
- b. Top up the fuel tank and close the fuel cock.
- c. Replace the engine oil with new and let the engine idle for about 5 minutes to lubricate every part sufficiently.
- d. Lubricate all lubrication points.
- e. Grease up all greasing points.
- f. Check bolts and nuts for looseness and re-tighten loose ones.

- g. Inflate each tire a little higher than specified.

- h. Dismount the mower deck or lower it to the ground.



**CAUTION:** A lifted up mower deck may go down unexpectedly if the lift lever is manipulated by children or unauthorised people, which may lead to serious accidents.

- i. Cover the front mower with tarpaulin or the like in order to protect it from rainfall and dust.



**WARNING:** When covering the front mower with tarpaulin, wait until heated components such as the engine, muffler, etc. have completely cooled down. Otherwise a fire may be caused.

- j. Remove the battery, charge it, and store it in a shaded dry place with no access to children.

- k. Charge the battery completely every month.



**CAUTION:** Remove the starter key without fail before storage.

### ■ OPERATION AFTER A LONG TIME OF STORAGE

- a. Perform the pre-operation inspection without fail.
- b. Let the engine idle for about 30 minutes before applying any load, to ensure maximum engine performance and service life.



**WARNING:** Provide sufficient ventilation for exhaust fumes when starting the engine, because such fumes are very poisonous.

## CHAPTER 10. TROUBLESHOOTING

### 1. ENGINE

| Troubles                                                                                          | Presumable causes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Remedies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Starter motor does not work.</li> </ul>                    | <ul style="list-style-type: none"> <li>Operator is not sitting on the seat.</li> <li>Engine food is opened. (F2-type only)</li> <li>Master brake pedal is not depressed.</li> <li>PTO lever is not in OFF (OFF) position.</li> <li>Battery is not charged fully.</li> <li>Battery terminals are poorly connected.</li> <li>Defective internal wiring in connector</li> <li>Defective safety switch of seat</li> <li>Broken starter switch</li> <li>Broken starter motor</li> </ul>                                             | <ul style="list-style-type: none"> <li>Operator sits on the seat.</li> <li>Close the engine food completely. (F2-type only)</li> <li>Depress it fully.</li> <li>Shift it to OFF position.</li> <li>Charge it.</li> <li>Clean the terminal posts and connect them securely.</li> <li>Rewire.</li> <li>Consult your dealer.</li> <li>Consult your dealer.</li> <li>Consult your dealer.</li> </ul>                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>Starter motor works but engine does not start.</li> </ul>  | <ul style="list-style-type: none"> <li>Cock of fuel strainer is closed.</li> <li>No fuel</li> <li>Water trapped in fuel</li> <li>Air trapped in fuel</li> <li>Clogged fuel hoses</li> <li>Clogged fuel strainer</li> <li>Slow cranking speed</li> <li>Insufficient pre-heating</li> <li>Throttle lever is in low speed (LOW) position.</li> <li>Too high engine oil viscosity</li> <li>Clogged air-cleaner</li> <li>Insufficient compression</li> <li>Incorrect injection timing</li> <li>Clogged injection nozzles</li> </ul> | <ul style="list-style-type: none"> <li>Open it.</li> <li>Replenish with fuel.</li> <li>Drain trapped water from fuel strainer.</li> <li>Bleed injection pump.</li> <li>Clean fuel hose inside.</li> <li>Wash or replace it.</li> <li>Charge battery.</li> <li>Preheat for specified time.</li> <li>Shift the throttle lever to middle speed position.(middle of "Hi" and "Low")</li> <li>Replace it with one of lower viscosity.</li> <li>Clean element.</li> <li>Consult your dealer.</li> <li>Consult your dealer.</li> <li>Consult your dealer.</li> </ul> |
| <ul style="list-style-type: none"> <li>Engine runs at irregular speeds or stalls soon.</li> </ul> | <ul style="list-style-type: none"> <li>Air trapped in fuel system</li> <li>Improper earthing</li> <li>Clogged fuel strainer</li> <li>Leaking fuel system</li> <li>Defective injection pump</li> </ul>                                                                                                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>Locate cause of air-trapping and bleed system of air.</li> <li>Polish earthing points and re-connect.</li> <li>Clean or replace it.</li> <li>Tighten joints securely or replace damaged hose.</li> <li>Consult your dealer.</li> </ul>                                                                                                                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>Engine knocks.</li> </ul>                                  | <ul style="list-style-type: none"> <li>Too low engine oil level</li> <li>Engine is overheated.</li> <li>Coolant temperature does not rise.</li> <li>Defective injection pump</li> </ul>                                                                                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Add oil to upper limit.</li> <li>Consult your dealer.</li> <li>Consult your dealer.</li> <li>Consult your dealer.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                           |

| Troubles                         | Presumable causes                                                                                                                                                                                                                                                                                                                                                                                                                                | Remedies                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • Engine knocks.                 | <ul style="list-style-type: none"> <li>• Defective injection nozzles</li> <li>• Incorrect valve clearances</li> </ul>                                                                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> </ul>                                                                                                                                                                                                                                                                                                                      |
| • Engine output is insufficient. | <ul style="list-style-type: none"> <li>• No fuel</li> <li>• Clogged air cleaner</li> <li>• Engine is overloaded.</li> <li>• Improper fuel</li> <li>• Engine is overheated.</li> <li>• Throttle lever is not in the high speed (H) position.</li> <li>• Insufficient compression</li> <li>• Improper valve clearances</li> <li>• Defective injection pump</li> <li>• Defective injection nozzles</li> <li>• Incorrect injection timing</li> </ul> | <ul style="list-style-type: none"> <li>• Supply with fuel.</li> <li>• Clean element.</li> <li>• Raise cutting height or slow down front mower.</li> <li>• Use proper diesel fuel.</li> <li>• Cool down engine.</li> <li>• Shift it there securely.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> </ul> |
| • Engine is overheated.          | <ul style="list-style-type: none"> <li>• Low engine coolant level</li> <li>• Loose fan belt</li> <li>• Clogged radiator fins and screen</li> <li>• Low engine oil level</li> <li>• Clogged air-intake openings</li> <li>• Engine is overloaded.</li> <li>• Clogged engine oil filter</li> </ul>                                                                                                                                                  | <ul style="list-style-type: none"> <li>• Replenish</li> <li>• Tighten it properly.</li> <li>• Clean them.</li> <li>• Replenish engine oil to upper limit.</li> <li>• Clean air-intake.</li> <li>• Raise cutting height or slow down front mower.</li> <li>• Ask your dealer to replace it with a new one.</li> </ul>                                                                                                          |
| • Oil pressure lamp is blinking  | <ul style="list-style-type: none"> <li>• Low engine oil level</li> <li>• Low engine oil viscosity</li> <li>• Clogged engine oil filter</li> <li>• Defective oil pump</li> <li>• Defective oil pressure switch</li> </ul>                                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>• Add oil to upper limit.</li> <li>• Replace with oil of higher viscosity.</li> <li>• Ask your dealer to replace it with a new one.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> </ul>                                                                                                                                                                         |
| • Exhaust fumes are white.       | <ul style="list-style-type: none"> <li>• Clogged air cleaner</li> <li>• Too high engine oil level</li> <li>• Insufficient fuel injection</li> </ul>                                                                                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>• Clean element.</li> <li>• Drain oil to upper limit.</li> <li>• Consult your dealer.</li> </ul>                                                                                                                                                                                                                                                                                       |
| • Exhaust fumes are black.       | <ul style="list-style-type: none"> <li>• Defective fuel</li> <li>• Clogged intake system</li> </ul>                                                                                                                                                                                                                                                                                                                                              | <ul style="list-style-type: none"> <li>• Use proper fuel.</li> <li>• Clean air cleaner element.</li> </ul>                                                                                                                                                                                                                                                                                                                    |

## SFH220,240

| Troubles                      | Presumable causes                                                                                                                                                                                           | Remedies                                                                                                                                                                                                                                                                                            |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • Exhaust fumes are black.    | <ul style="list-style-type: none"> <li>• Clogged exhaust system</li> <li>• Excessive fuel injection rate</li> <li>• Insufficient injection nozzle pressure</li> <li>• Incorrect injection timing</li> </ul> | <ul style="list-style-type: none"> <li>• Check muffler for clogging and clean it.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> </ul>                                                                                                        |
| • Engine stalls at low speed. | <ul style="list-style-type: none"> <li>• Defective injection pump</li> <li>• Defective injection nozzles</li> <li>• Incorrect valve clearance</li> </ul>                                                    | <ul style="list-style-type: none"> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> </ul>                                                                                                                                                            |
| • Engine races.               | <ul style="list-style-type: none"> <li>• Clogged governor</li> <li>• Engine oil leaks into cylinder.</li> </ul>                                                                                             | <ul style="list-style-type: none"> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> </ul>                                                                                                                                                                                            |
| • Excessive fuel consumption  | <ul style="list-style-type: none"> <li>• Defective fuel</li> <li>• Clogged air-intake line</li> <li>• Engine is overloaded.</li> <li>• Fuel leaks</li> <li>• Incorrect valve clearances</li> </ul>          | <ul style="list-style-type: none"> <li>• Use proper fuel.</li> <li>• Clean air cleaner and air-intake hose inside.</li> <li>• Raise cutting height or slow down front mower.</li> <li>• Replace damaged parts with new ones and tighten joints securely.</li> <li>• Consult your dealer.</li> </ul> |
| • Charge lamp is blinking.    | <ul style="list-style-type: none"> <li>• Defective wiring</li> <li>• Lower electrolyte level</li> <li>• Loose fan belt</li> <li>• Defective alternator</li> <li>• Defective regulator</li> </ul>            | <ul style="list-style-type: none"> <li>• Correct loose, dirty, short, improperly earthed terminals.</li> <li>• Replenish with distilled water to upper limit.</li> <li>• Tighten it properly.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> </ul>                            |

## 2. BRAKE SYSTEM

|                                                |                                                                                                                                                               |                                                                                                                                         |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| • Defective braking effect or uneven braking   | <ul style="list-style-type: none"> <li>• Excessive master brake pedal play</li> <li>• Worn brake linings</li> <li>• Improperly adjusted brake rods</li> </ul> | <ul style="list-style-type: none"> <li>• Correct pedal play.</li> <li>• Consult your dealers.</li> <li>• Correct rod length.</li> </ul> |
| • Master brake pedal does not return smoothly. | <ul style="list-style-type: none"> <li>• Fatigued or broken return spring</li> <li>• Defective lubrication of linkage</li> </ul>                              | <ul style="list-style-type: none"> <li>• Replace it.</li> <li>• Grease grease up points.</li> </ul>                                     |

## 3. LIFT SYSTEM

|                       |                                                                                                                               |                                                                                                             |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| • Lift does not rise. | <ul style="list-style-type: none"> <li>• Low transmission oil level</li> <li>• Air trapped inside hydraulic piping</li> </ul> | <ul style="list-style-type: none"> <li>• Fill up to upper limit.</li> <li>• Consult your dealer.</li> </ul> |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|

| Troubles                                                                 | Presumable causes                                                                                                                                                                                                                 | Remedies                                                                                                                                                                                                 |
|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Lift does not rise.</li> </ul>  | <ul style="list-style-type: none"> <li>• Clogged hydraulic oil filter</li> <li>• Clogged suction filter</li> <li>• Defective hydraulic pump</li> <li>• Defective control valve</li> <li>• Defective hydraulic cylinder</li> </ul> | <ul style="list-style-type: none"> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> </ul> |
| <ul style="list-style-type: none"> <li>• Lift does not lower.</li> </ul> | <ul style="list-style-type: none"> <li>• Lift lock is engaged</li> <li>• Defective control valve</li> <li>• Seized lift shaft</li> </ul>                                                                                          | <ul style="list-style-type: none"> <li>• Release it.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> </ul>                                                                          |

**4. STEERING SYSTEM**

|                                                                                                             |                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Steering wheel is very heavy to turn.</li> </ul>                   | <ul style="list-style-type: none"> <li>• Low tire pressure</li> <li>• Low transmission oil level</li> <li>• Air trapped inside hydraulic piping</li> <li>• Clogged hydraulic oil filter</li> <li>• Clogged suction filter</li> <li>• Defective hydraulic pump</li> <li>• Defective power-steering unit</li> </ul> | <ul style="list-style-type: none"> <li>• Correct it as specified.</li> <li>• Fill up to upper limit.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> </ul> |
| <ul style="list-style-type: none"> <li>• Steering wheel has a tendency to turn in one direction.</li> </ul> | <ul style="list-style-type: none"> <li>• Uneven tire inflation</li> <li>• Improper toe-in</li> <li>• Excessively worn tie-rod ends</li> </ul>                                                                                                                                                                     | <ul style="list-style-type: none"> <li>• Inflate both front and rear tires to specified pressure.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> </ul>                                                                                                    |
| <ul style="list-style-type: none"> <li>• Excessive steering wheel play</li> </ul>                           | <ul style="list-style-type: none"> <li>• Excessively worn tie-rod ends</li> <li>• Excessively worn steering wheel column shaft</li> <li>• Defective power-steering unit</li> </ul>                                                                                                                                | <ul style="list-style-type: none"> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> </ul>                                                                                                                                        |

**5. HST (Hydrostatic transmission)**

|                                                                                                          |                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                               |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Front mower does not start travelling.</li> </ul>               | <ul style="list-style-type: none"> <li>• Parking brake is applied.</li> <li>• Too low engine speed</li> <li>• Low transmission oil level</li> <li>• Air trapped inside hydraulic piping</li> <li>• Improperly adjusted HST pedals</li> <li>• Clogged hydraulic oil filter</li> <li>• Clogged suction filter</li> <li>• Defective HST unit</li> </ul> | <ul style="list-style-type: none"> <li>• Release it.</li> <li>• Accelerate engine.</li> <li>• Fill to upper limit.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> </ul> |
| <ul style="list-style-type: none"> <li>• Front mower creeps without HST pedals being operated</li> </ul> | <ul style="list-style-type: none"> <li>• Stuck neutral arm</li> <li>• Incorrect neutral point of HST</li> <li>• Improperly positioned neutral arm</li> <li>• Defective HST unit</li> </ul>                                                                                                                                                           | <ul style="list-style-type: none"> <li>• Lubricate.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> <li>• Consult your dealer.</li> </ul>                                                                                                                                |

## SFH220,240

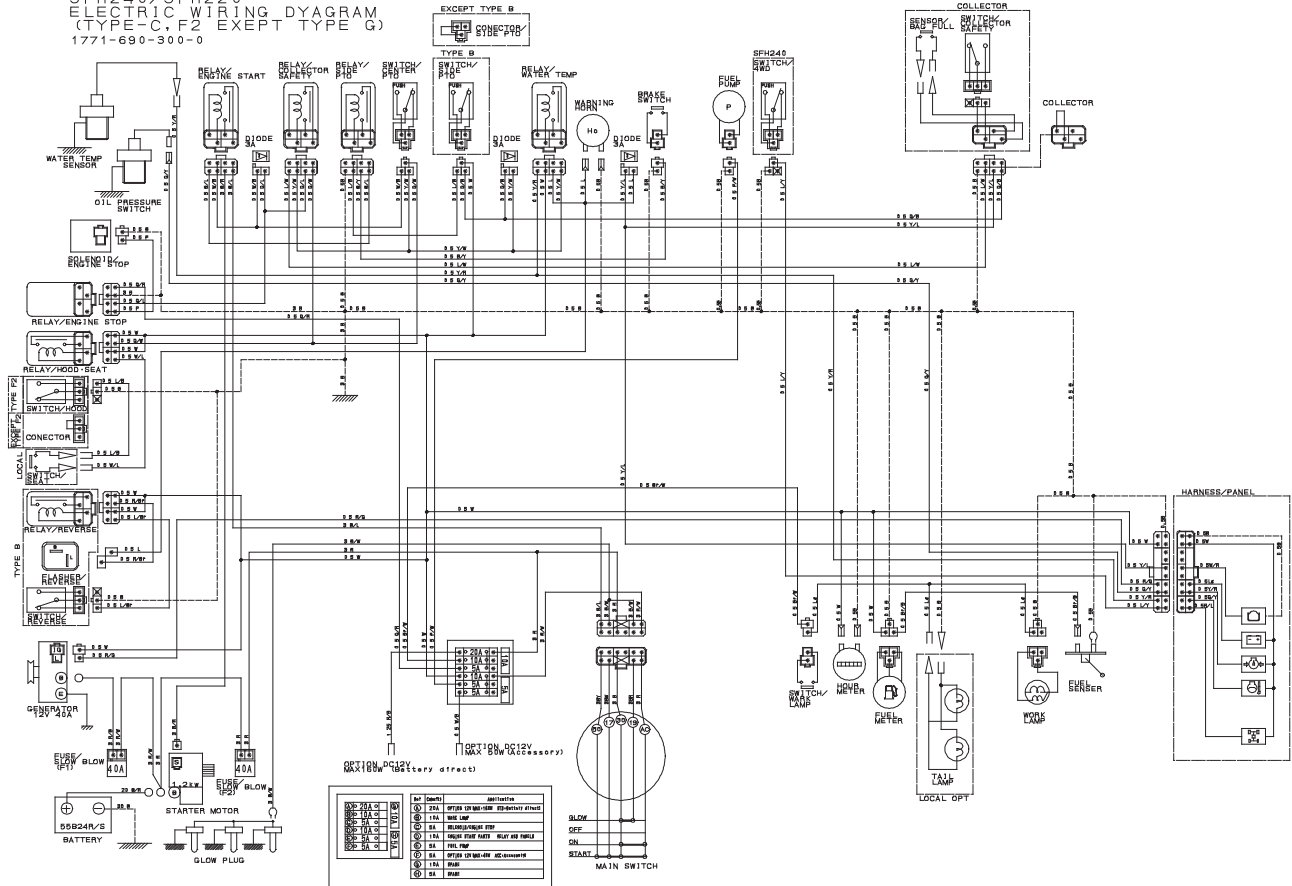
### 6. ELECTRICAL ACCESSORIES

| Troubles                                                                               | Presumable causes                                                                                                                                                                  | Remedies                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Battery is not charged.</li> </ul>              | <ul style="list-style-type: none"> <li>Melted slow-blow fuse</li> <li>Defective wiring</li> <li>Loose fan belt</li> <li>Defective battery</li> <li>Defective alternator</li> </ul> | <ul style="list-style-type: none"> <li>Locate and repair cause of trouble, and install a new slow-blow fuse.</li> <li>Check wiring for loose terminals and earth, and short circuit. Repair defective parts.</li> <li>Tighten belt as specified.</li> <li>Correct loose terminals, corroded parts, and electrolyte level. Otherwise, install a new battery.</li> <li>Consult your dealer.</li> </ul> |
| <ul style="list-style-type: none"> <li>Head lamps are dim.</li> </ul>                  | <ul style="list-style-type: none"> <li>Low battery capacity</li> <li>Defective contact of switch or wiring</li> </ul>                                                              | <ul style="list-style-type: none"> <li>Charge battery.</li> <li>Clean contact points and earthing point, and tighten them.</li> </ul>                                                                                                                                                                                                                                                                |
| <ul style="list-style-type: none"> <li>Head lamps do not light up.</li> </ul>          | <ul style="list-style-type: none"> <li>Burnt-out bulb</li> <li>Blown fuse</li> <li>Defective contact</li> </ul>                                                                    | <ul style="list-style-type: none"> <li>Replace the burnt-out bulb.</li> <li>Check the wiring and replace the blown fuse with a new one.</li> <li>Clean each contact and tighten securely.</li> </ul>                                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>Moniator lamps do not light up.</li> </ul>      | <ul style="list-style-type: none"> <li>Defective contact</li> </ul>                                                                                                                | <ul style="list-style-type: none"> <li>Re-connect connector.</li> </ul>                                                                                                                                                                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>Fuel pump does not work.</li> </ul>             | <ul style="list-style-type: none"> <li>Blown fuse</li> <li>Defective fuel pump</li> </ul>                                                                                          | <ul style="list-style-type: none"> <li>Check the wiring and replace the blown fuse with a new one.</li> <li>Consult your dealer.</li> </ul>                                                                                                                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>Fuel cut-off solenoid does not work.</li> </ul> | <ul style="list-style-type: none"> <li>Blown fuse</li> <li>Defective solenoid</li> </ul>                                                                                           | <ul style="list-style-type: none"> <li>Check the wiring and replace the blown fuse with a new one.</li> <li>Consult your dealer.</li> </ul>                                                                                                                                                                                                                                                          |

## WIRING HARNESS CABLE

Exept "G" type

SFH240/SFH220  
ELECTRIC WIRING DIAGRAM  
(TYPE-C, F2 EXCEPT TYPE G)  
1771-690-300-0





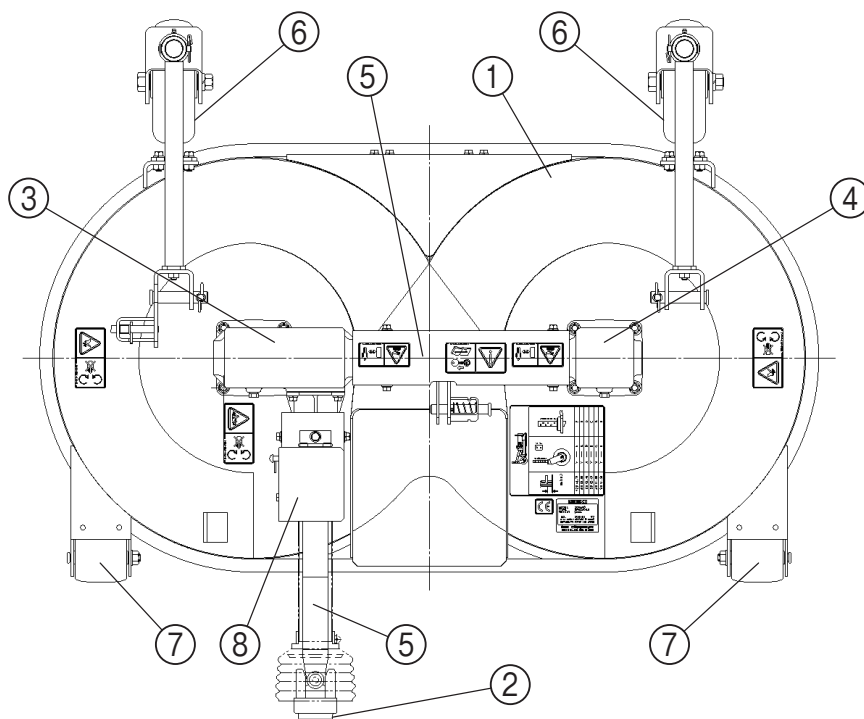
# ***ISEKI FRONT MOWERS MOWER DECK SECTION***

|         | SFH240F-B | SFH240F<br>SFH220T |
|---------|-----------|--------------------|
| SCMA54F | ○         | —                  |
| SCMA48F | ○         | —                  |
| SMM54F  | ○         | ○                  |
| SSM54F  | ○         | ○                  |



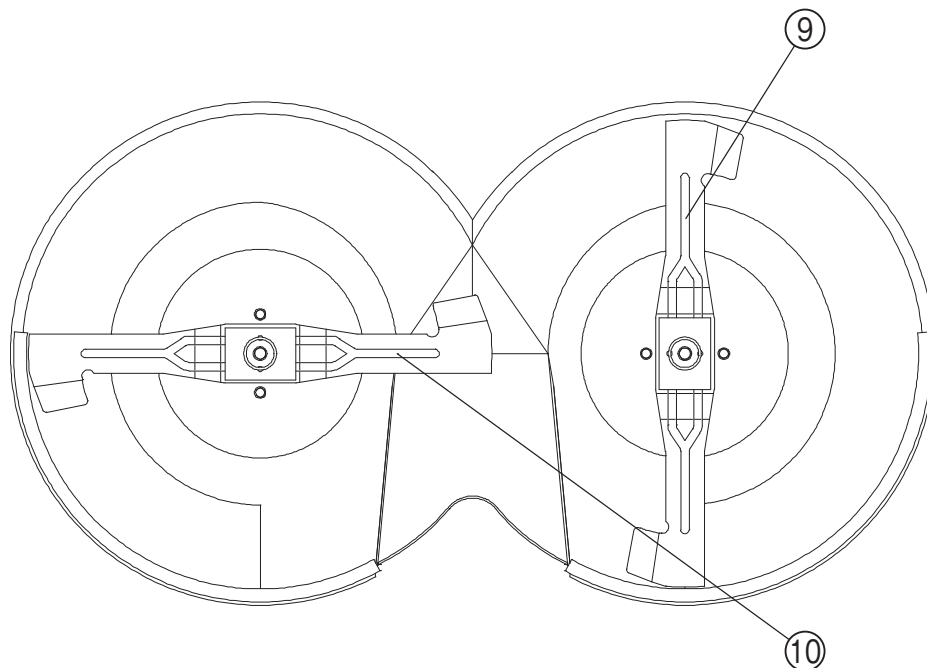
## CHAPTER 1. NAMES OF MAJOR COMPONENTS

SCMA54F,48F



- (1) Mower deck
- (2) Drive shaft
- (3) Bevel gear case (LH)
- (4) Bevel gear case (RH)
- (5) Drive shaft cover
- (6) Gauge wheel
- (7) Roller
- (8) Joint cover

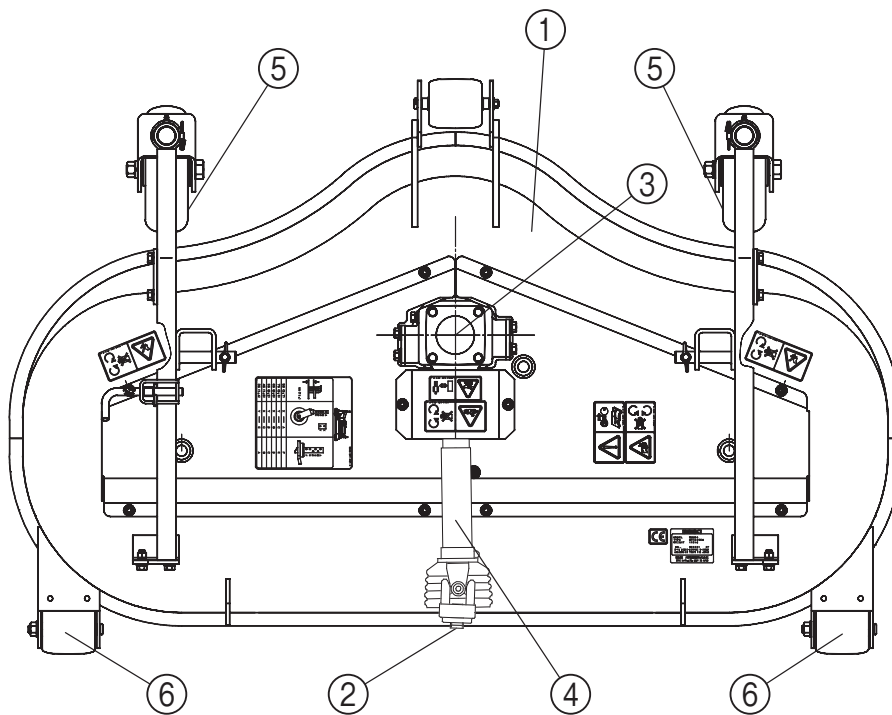
SCMA54F,48F



- (9) Blade (LH)
- (10) Blade (RH)

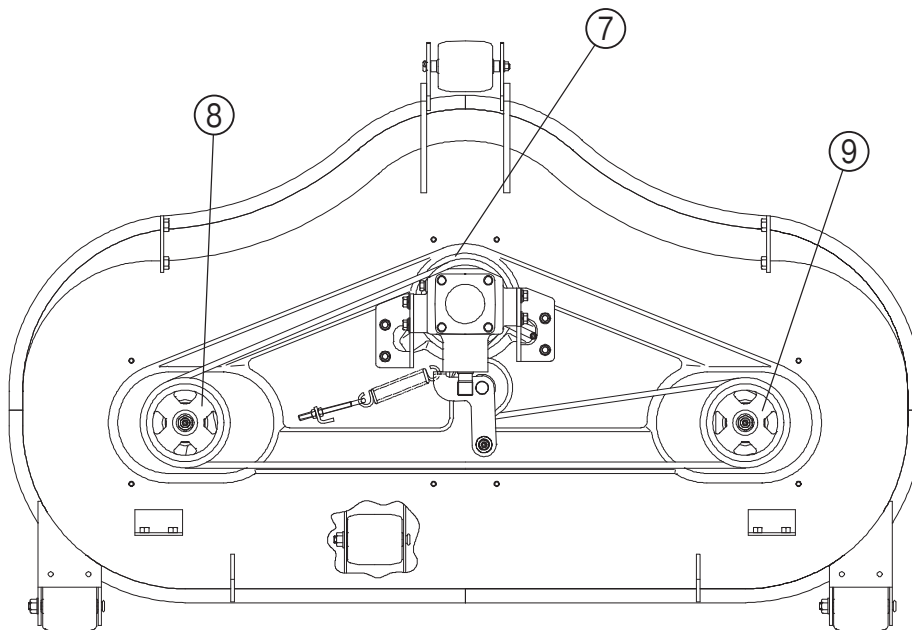
**SFH220,240**

**SMM54F**



- (1) Mower deck
- (2) Drive shaft
- (3) Gear case
- (4) Drive shaft cover
- (5) Gauge wheel
- (6) Roller

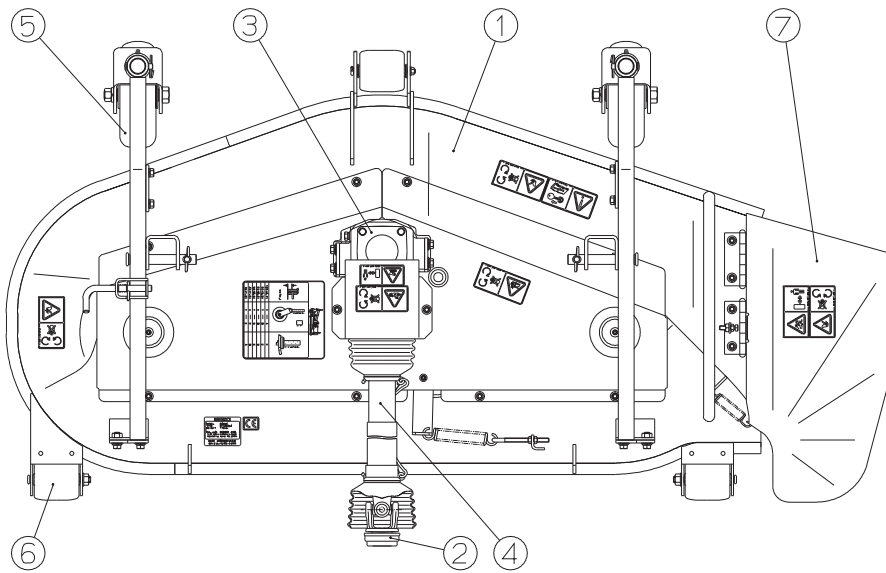
**SMM54F**



- (7) Blade pulley (middle)
- (8) Blade pulley (LH)
- (9) Blade pulley (RH)

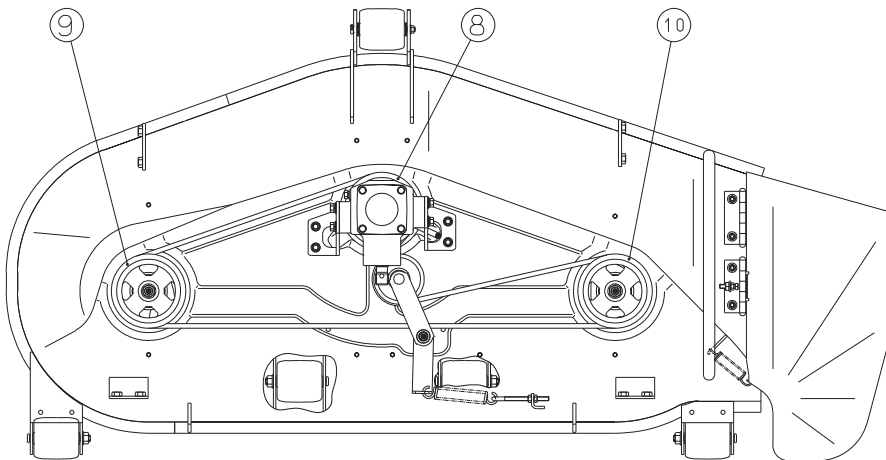
## CHAPTER 1. NAMES OF MAJOR COMPONENTS

### SSM54F



- (1) Mower deck
- (2) Drive shaft
- (3) Gear case
- (4) Drive shaft cover
- (5) Gauge wheel
- (6) Roller
- (7) Discharge cover

### SSM54F



- (8) Blade pulley (middle)
- (9) Blade pulley (LH)
- (10) Blade pulley (RH)

## CHAPTER 2. ATTACHING AND DETACHING MOWER DECK

SCMA54F,48F



**WARNING:** When attaching or detaching the mower deck to the front mower:

- Place the front mower on level, hard ground.
- Apply the parking brake securely.
- Shift the PTO lever to the STOP (⛔) position.
- Do not start the engine except for operating the lift lever.

### 1. ATTACHING THE MOWER DECK

Attach the mower deck first to the front mower and then connect the drive shaft.

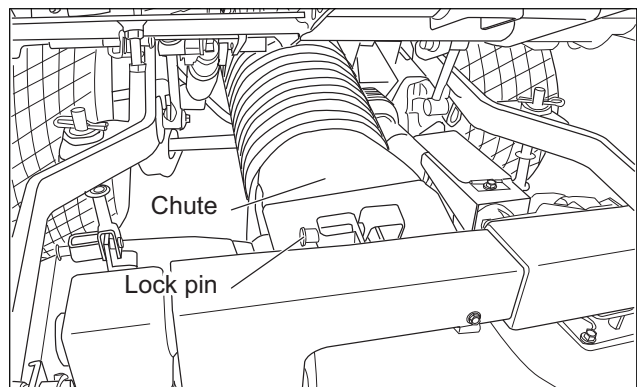
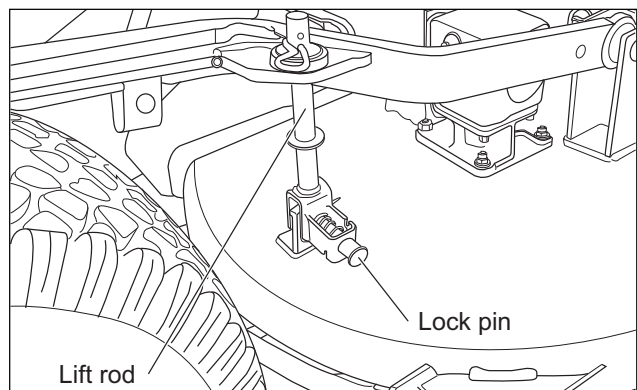
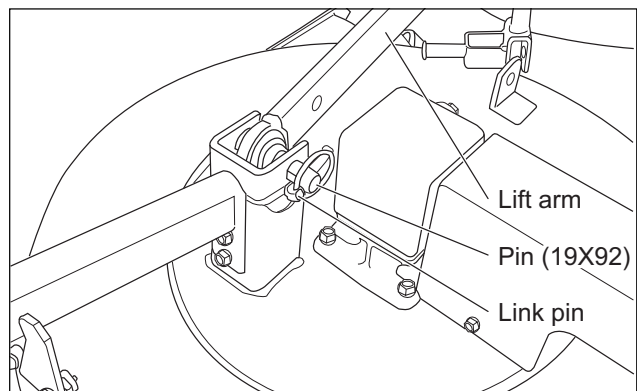
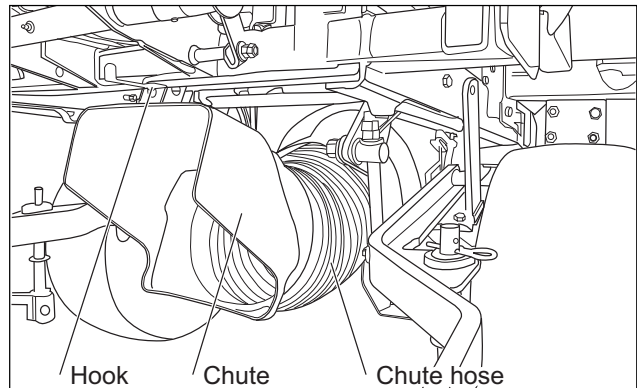
#### ■ INSTALLATION OF MOWER DECK

SCMA54F,48F / SMM54 / SSM54

- a. Start the engine and shift the lift lever to "UP" position to lift up the lift arm, then stop the engine.  
Only for SCMA mower decks  
Insert the chute hose into the blower hall, hook the chute on lower frame.
- b. Put the mower deck in front of SFH, shift the lift lever to "DOWN" position, then lift down the lift arm.
- c. Insert the right-hand and left-hand arms into the ends of their respective lift links. Align the setting holes in the arm and lift link, pass the pin (19x92) through both setting holes, insert the link pin for retention.

**IMPORTANT:** When it is difficult to align the hole in the lift bracket and the hole in the link ball, never attempt to insert the pin forcibly. But sway the mower deck right and left and the pin can be inserted easily.

- d. Start the engine and lift up the mower deck. Stop the engine and fix the fulcrum plate in the back of the mower deck to the fork under the lift rod in the back of the lawn mower by inserting lock pin. Lower the mower deck onto the ground.
- e. Only for SCMA mower decks  
Attach the chute on mower deck, fix it by lock pin.

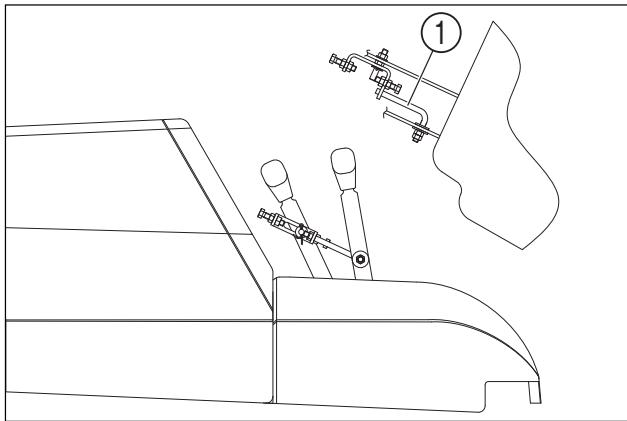


## **CHAPTER 2. ATTACHING AND DETACHING MOWER DECK**

### **SMM54F, SSM54F**

(In case of attaching SMM54, SSM54F with the lawn mower already using SCMA)

- A. Preparation for center PTO
  - a. Detaching the SCMA54, 48 (center discharge mower deck).  
(Refer to the section of SCMA DETACHING OF THE MOWER DECK)
  - b. Disassemble the mower shooter and tube.  
(Refer to the COLLECTOR SECTION)
  - c. Loosen the nuts and disassemble the cover in front of the blower.
  - d. Loosen the center bolt of the blower, and remove the blower. After that grease up the spline part of the shaft for easy operation.
- B. UP-STOP connection of center PTO lever
  - a. Check both side PTO lever and center PTO lever are in the OFF position.
  - b. Connect the both levers with connecting rod, 1.  
(Connecting rod is attached as standard.)



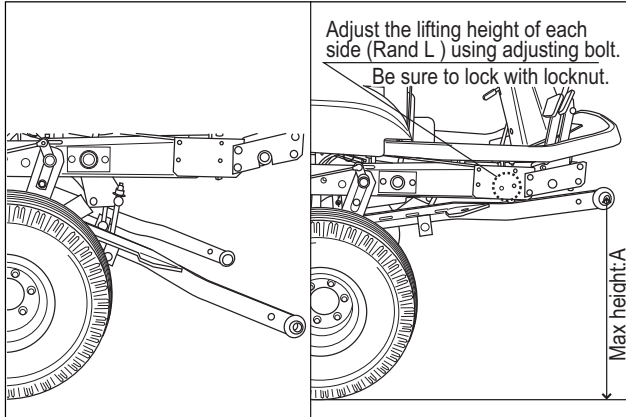
(1) Connecting rod

## SFH220,240

### 2. ADJUSTMENT OF LINKAGE

#### 2.1. ADJUSTMENT OF MAXIMUM LIFTING HEIGHT

Be sure to adjust the lifting height of each side as follows.



Max.height:A

SCMA54F } A=490mm    SMM54F } A=495mm  
SCMA48F }



**CAUTION:**  
Incorrect adjustment may lead hitting between the step and gear box of mower deck or shortening of the minimum ground clearance.

#### 2.2. ADJUSTMENT OF UP-STOP HEIGHT

- Shut off the engine.
- Turn the PTO lever to the ON position to lift up the lower link.
- Measure the ground clearance of the middle of lower link pin at which the PTO lever completely turn to the OFF position and adjust the height.

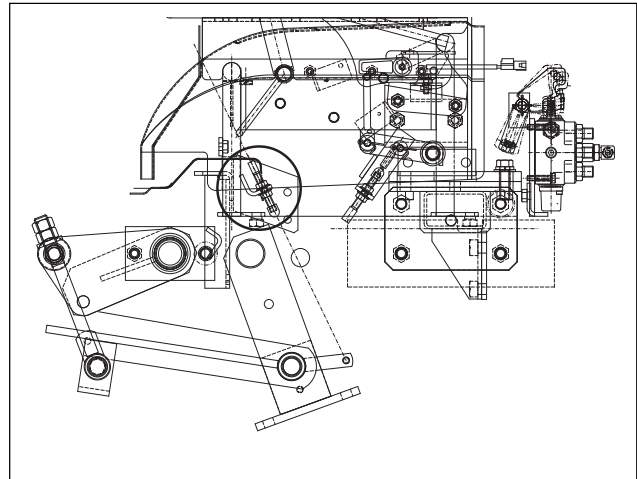
#### UP-STOP function check (SFH220/240)

side PTO lever is ON position with lift arm lowest position



Operate the lift lever to UP.

- When the height of hole center to attach the mower deck is at 400mm from ground, the side PTO lever is in the off position
- Not be able to turn to the ON position at over 400 mm from ground.



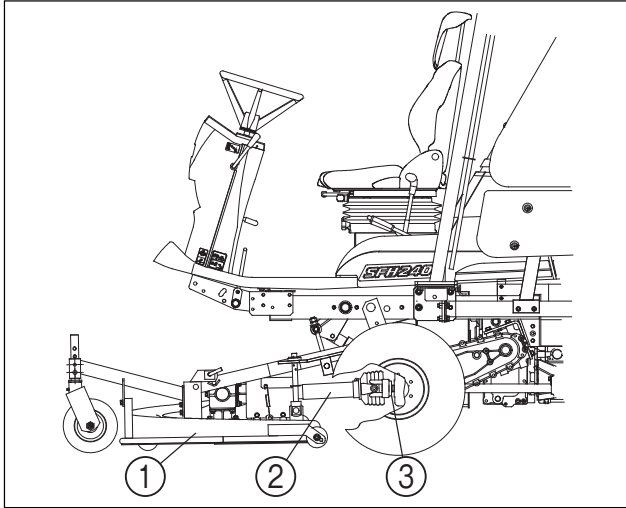
Adjust the UP-STOP cable as the height to the position becomes 400 mm from the ground.

## CHAPTER 2. ATTACHING AND DETACHING MOWER DECK

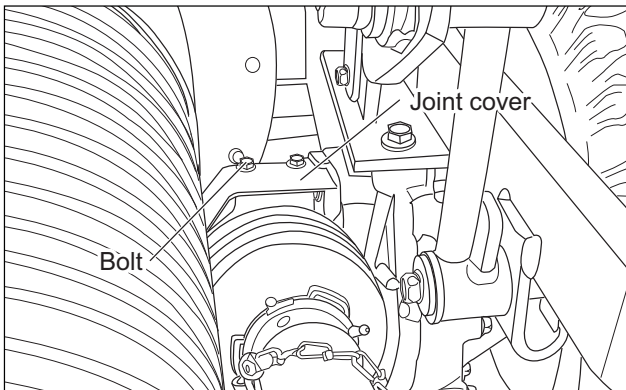
### 3. ATTACHING THE DRIVE SHAFT

#### SCMA54,48F

Hold the ring of the universal joint pressed in one side the joint onto the PTO shaft while aligning the splines. Assemble the joint cover with four bolts (type-F2)



- (1) Mower deck (3) Ring  
(2) Drive shaft



**IMPORTANT:** After inserting the universal joint of the drive shaft onto the side PTO shaft of the front mower, make sure that the ring of the universal joint is pushed out by spring force, seated in the groove in the PTO shaft, and the universal joint does not come out.

### 4. DETACHING THE MOWER DECK

Detach the mower deck in reverse order of attaching: Remove the drive shaft first and then the mower deck.



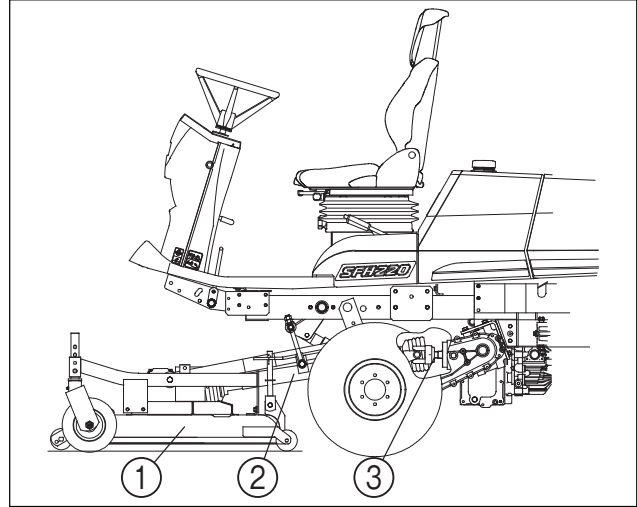
**CAUTION:**  
Be sure to disconnect the universal joint on the PTO shaft of the front mower.

**IMPORTANT:** Be sure to keep the removed parts.

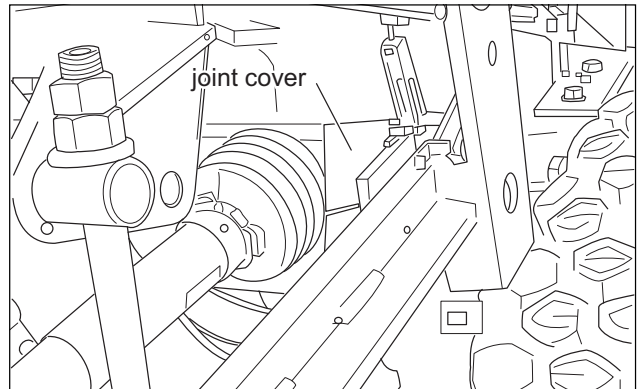
### 5. ATTACHING THE DRIVE SHAFT

#### SMM54F

Hold the ring of the universal joint pressed in one side the joint onto the PTO shaft while aligning the splines. Assemble the joint cover with four bolts.



- (1) Mower deck (3) Ring  
(2) Drive shaft



**IMPORTANT:** After inserting the universal joint of the drive shaft onto the center PTO shaft of the front mower, make sure that the ring of the universal joint is pushed out by spring force, seated in the groove in the PTO shaft, and the universal joint does not come out.

### 6. DETACHING THE MOWER DECK

Detach the mower deck in reverse order of attaching: Remove the drive shaft first and then the mower deck.



**CAUTION:**  
Be sure to disconnect the universal joint on the PTO shaft of the front mower.

**IMPORTANT:** Be sure to keep the removed parts.

## CHAPTER 3. MOWER OPERATION

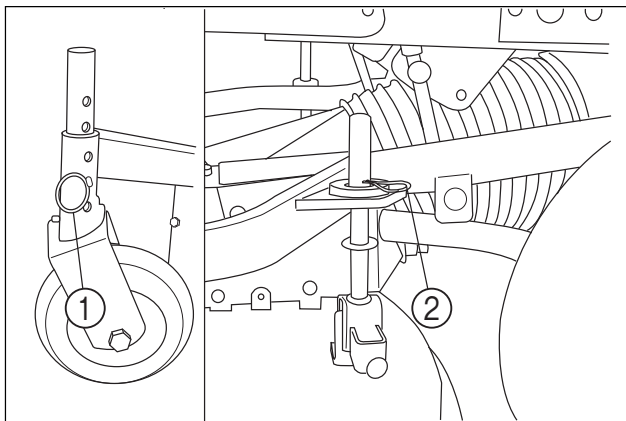
### 1. BEFORE OPERATION



#### CAUTION :

- Become familiar with how to operate the front mower and understand safety instructions by reading this manual carefully.
- Make sure that all safety covers and guards are installed in position.
- Make sure that the blade nuts are tightened securely.
- Make sure that the two V-belts are tensioned evenly as specified.
- Before moving the front mower into the working site, check the whole area and get rid of all obstacles such as stones, wood, empty tins, bottles, wires, etc to assure safe operation.
- Make sure that the mower operation will not cause any injury to children, animals, bystanders, or damage to trees, buildings, etc.
- Check the place to mow for bumps, ditches, mounds, steps, slopes, inclination, softness, water pools, etc. ahead of time to avoid accidents such as turnover, fall, side-sliding of the front mower.

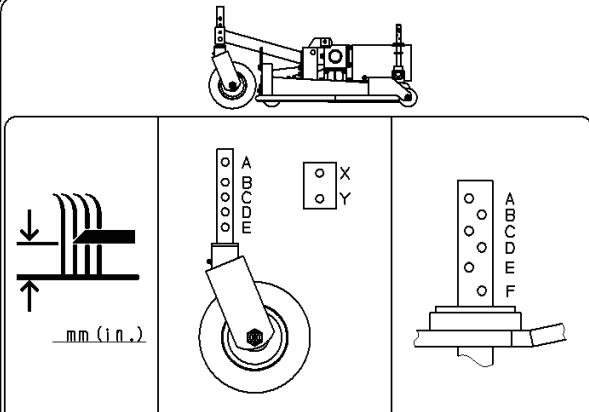
### 2. CUTTING HEIGHT ADJUSTMENT



(1) Pin (10x53)

(2) Spring clip

- Depress the master brake pedal and shift the PTO lever to the STOP (✱) position. Then start the engine.
- Raise the mower with the lift. Then stop the engine.
- Remove the spring clip of the front gauge wheel setting pin. Remove the pin (10x53) while holding the gauge wheel with the other hand.
- Select one of the setting holes to get the required cutting height, insert the pin, and retain it with the spring clip. The label that is showing the relationships between the setting holes and cutting heights is stuck on the mower deck.



|           |       |   |
|-----------|-------|---|
| 120 (4.7) | Y — A | F |
| 90 (3.5)  | Y — B | E |
| 60 (2.4)  | X — B | D |
| 50 (2.0)  | Y — D | C |
| 40 (1.6)  | X — C | B |
| 30 (1.2)  | Y — E | A |

- Also set the cutting height of the rear gauge wheels by re-setting the setting hole for the setting pin with the ring clip removed.
- The right and left gauge wheels should be set to the same cutting height.
- Shift the lift lever to the DOWN (↓) position to lower the mower deck.



#### CAUTION :

Before operating the lift lever, be seated in the operator's seat and make sure of the safety conditions when lowering the mower deck.

**3. STARTING MOWING OPERATION****CAUTION :**

- Read the contents of this manual thoroughly and carefully and keep safe operation in mind.
- Before moving the front mower into the working site, investigate the whole site and get rid of all obstacles such as stones, wood, empty tins, bottles, wires, etc for operation safety.
- Investigate the site for pits, mounds, steps, slope angles, ground softness, water pools, etc to avoid turning over, falling down, and side-shifting.
- Also make sure there is no danger of hurting children, animals, by-standers, etc. and damaging nearby trees, buildings, etc.

- a. Start the engine and turn the throttle lever to the intermediate position between the low speed (↙) and high speed (↘) positions.
- b. Move the lift lever to the up position (↑) to raise the mower deck.
- c. Release the parking brake.
- d. Push down the HST forward travel pedal gradually to drive the front mower into the working site.
- e. Release the HST pedal gradually to stop the front mower.
- f. Move the lift lever to the down position (↓) to lower the mower on the ground.

SFH240 with collector

Shift the center PTO lever to "ON" position.

After the torque of blower increasing, shift the side PTO lever to "ON" position.

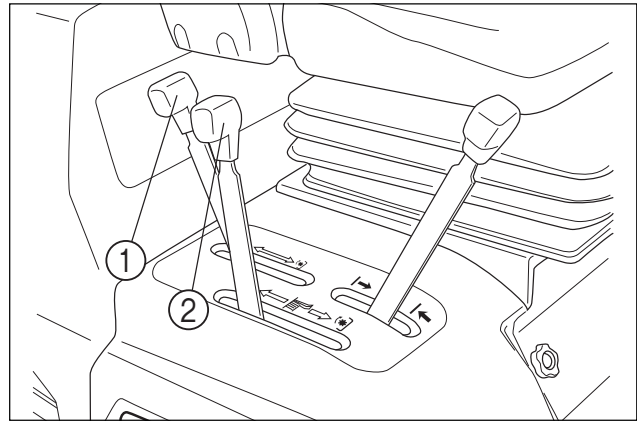
SFH240,220 without collector

Shift the center PTO lever to "ON" position.

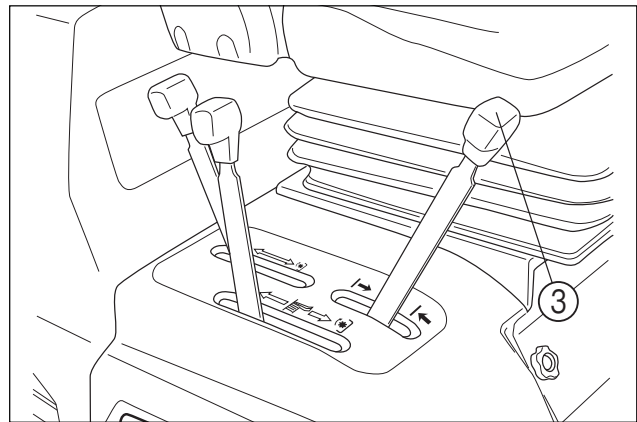
**IMPORTANT:**

The lift height and PTO lever position are interconnected for safety as follows:

- When the mower is lifted up higher than specified with the PTO lever shifted in the ON (☛) position, the lever is automatically shifted to the OFF (☚) position.
- When engaging the PTO clutch, slow down the engine speed sufficiently for safety.
- With the lift raised to the maximum height, the PTO lever cannot be shifted to the ON (☛) position. Never attempt to move the lever forcibly, or the lever linkage may be damaged.



(1) Center PTO lever      (2) Side PTO lever



(3) Lift lever

**CAUTION :**

- PTO restriction mechanism works only while the PTO lever is in the ON (☛) position.
  - Before starting to mow, make sure that this mechanism works properly. Be sure to detach the drive shaft before checking the PTO restriction mechanism.
  - Be restricted from lift up the mower deck excessively while the mower blades are rotating.
- When you want to lift up the mower deck high, shift the PTO lever to the OFF (☚) position. Never attempt to shift the PTO lever to the ON (☛) position while the mower deck is lift up high.
- Before starting to mow, make sure that the lift cylinder is set properly.
  - Whenever you encounter with any trouble of the front mower, ask your dealer for repair immediately.

## SFH220,240



### WARNING:

- As soon as the PTO lever is shifted to the ON (☛) position, the mower blades start rotating and eject cut grass or stones through the discharge opening. Consequently, before operating the PTO lever make sure that there is no people, animals, or physical properties like buildings, cars, etc. within a range where ejected grass or stones may reach.
- The mower blades should be turned only on turf or grassland with the mower deck lowered.

- Turn the throttle lever to the high speed (☛) position to raise engine speed.
- As the HST forward travel pedal is depressed gradually, the front mower starts to travel.



**CAUTION :** Be sure to start moving at sufficiently low speeds and increase travelling speed gradually.

**IMPORTANT:** *The screens of the air-intake box provided in the engine hood, the radiator screen and air intake screen should be kept clean. Never keep on operating with clogged screens, or the engine may be overheated, which may result in engine seizure.*

- The front mower is equipped with a system called "Up-stop" device, which stop the mower blades when the mower deck is pushed up while the front mower is travelling on rugged terrain with the PTO lever shifted in the ON (☛) position.



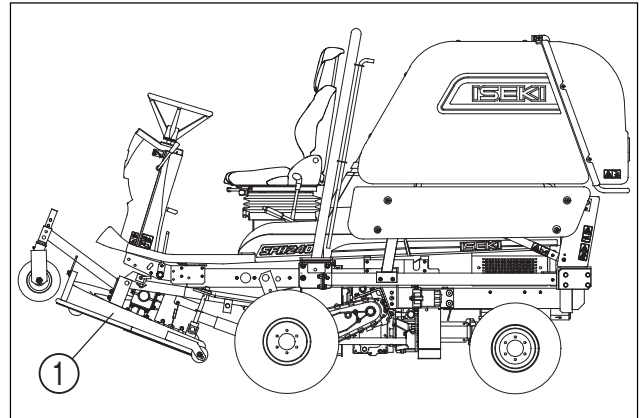
### DANGER:

- The up-stop device is installed to prevent accidents. Never attempt to activate the system by operating the lift lever.
- The mower blades of the mower deck stopped by this device are subject to turning very slowly even when the mower deck is lifted up, which is very dangerous and may shorten the service life of the drive shaft.

- Before travelling at a constant speed set by the cruise lever, be sure to be familiar with the operation of the cruise system.

## 4. CLEANING A MOWER DECK CLOGGED WITH GRASS

When mowed grass is not ejected from the mower deck, the inside of the deck is most probably clogged with grass. Stop operation immediately and remove clogging grass.



### (1) Mower deck

- Shift the PTO lever to the OFF (☛) position and move the lift lever backward to raise the mower deck in the highest position.
- Stop the engine.
- Remove clogged grass completely.



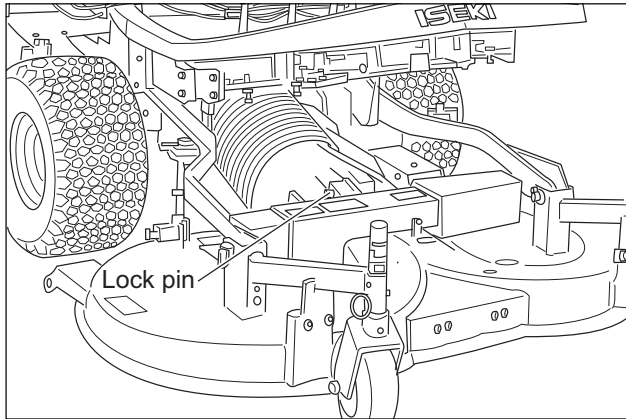
### CAUTION :

**Exercise sufficient cares not to be cut by the blades.**

- Check the blades for deformation or damage and make sure that the blades turn smoothly by hand.
- Referring to the paragraph for blade replacement, turn back the mower deck.

## 5. CLEANING A MOWER DECK AND CHUTE CLOGGED WITH GRASS

When mowed grass is not ejected from the mower deck or clogs the mower chuter, stop operation immediately and remove clogged grass.



When the discharge chuter is clogged:

- Shift the PTO lever to the OFF (☒) position and lift down the mower deck on the ground.
- Stop the engine.
- Pull out the lock pin of chute, remove the chute from mower deck.
- Scrape the grass clogged in the mower chuter with a scraper.

## 6. EMERGENCY STOP

• When any of the following abnormalities is encountered, stop the front mower and mower deck immediately.

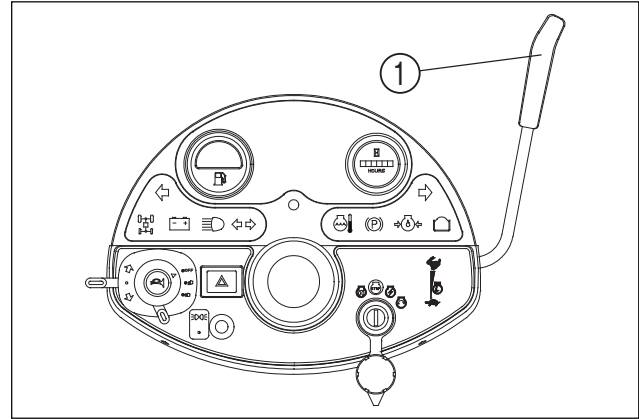
- Abnormal noise
- Abnormal vibration
- Abnormal smell
- Blade hitting an obstacle
- The front mower hitting an obstacle

• The cause of trouble should be located and corrected immediately. If not, consult your dealers. Never attempt to keep on operating the front mower without locating and correcting the cause of trouble.

• When the operator leaves the seat, the safety system automatically stops the engine. When leaving the front mower to remove obstacles such as twigs, pebbles, etc., the PTO lever must be shifted to the neutral position and the parking brake applied, and then the engine keeps on running.

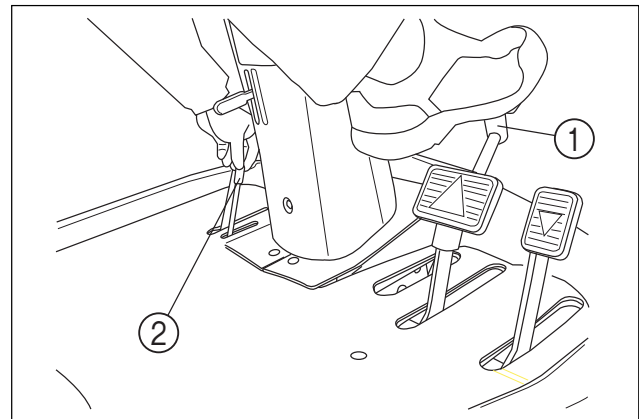
## 7. STOPPING MOWING OPERATION

- Release the HST pedal.
- Turn the throttle lever to the low speed position (☒) to reduce engine speeds.



(1) Throttle lever

- Depress the master brake pedal fully and apply the parking brakes.



(1) Master brake pedal

(2) parking brake lever



### CAUTION :

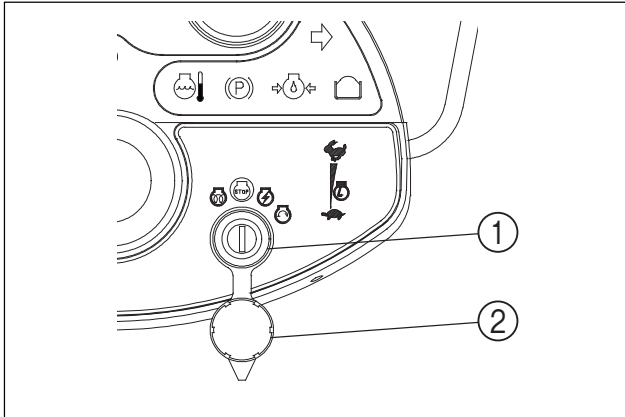
**Park the front mower on level, hard ground and make sure that the parking brake is applied securely.**

- Shift the PTO lever to the STOP (☒) position.
- Turn the key switch to the STOP (☒) position to stop the engine.

## SFH220,240

### IMPORTANT:

- Never attempt to stop the engine abruptly when it is running at high speeds.
  - Be sure to let the engine idle for about 5 minutes after long operation and then stop the engine. Abrupt engine stopping may lead to overheating causing seizure.
- f. Remove the starter key and put cap,2, over the key hole without fail.



(1) Key switch (2) Cap



### CAUTION :

**When you leave the front mower, be sure to stop the engine and remove the starter key to prevent the front mower from being started unexpectedly by children or unauthorised people.**

**IMPORTANT:** Be sure to put the cap over the key hole after having removed the starter key. Otherwise, water or dust may enter into the switch, which may cause trouble.

## 8. EFFICIENT MOWING

### IMPORTANT:

- Be sure to mow at full throttle (⚡).
- Choose an adequate travelling speed in accordance with the height or other conditions of grass to be cut.
- When the screens for the air-intake box and radiator are clogged with dust, clean them at once. Never go on operating with clogged screens.
- Mowing is desirable when the grass is dew-free: in the afternoon or late afternoon, this preventing the mower from heavy clogging.
- Always keep the mower deck clean.
- Check the blade ends for damage.

- Repeated mowing is recommended before the grass grows too high.
- Cutting grass too short may damage the grass. To maintain a green lawn, never mow more than one-third off the height of the grass in one mowing.
- A slower travelling speed will result in improved mowing. Avoid selecting such a travelling speed that causes the front mower to bounce.
- Short, fast turns will damage turf. Slow down sufficiently when turning.

### A. For mowing tall grass

- a. Mow grass twice.

First, mow the grass to a height low enough for the next finishing pass. Then finish to the desired grass height.

The second travelling pass should be shifted side ways by 20 cm (8 in.) or so, or travel perpendicular to the first passes, which will result in a beautiful even finish.

- b. When trying to finish in one pass, select a sufficiently slow travelling speed. It may also be required to set the cutting width to half or one-third of that for normal operation.

### B. For mowing highly moist grass or on wet ground

- a. If the turf could be damaged by the tyres, wait until the grass and land have dried sufficiently.
- b. Wet grass requires a higher grass cutting height setting than when mowing dry grass, as the cutting height is often lower than expected during operation because the front mower sinks.
- c. Select a sufficiently slow travelling speed and avoid sudden starts, turns, and stops. If not, the turf may be damaged.

**C. For mowing low moist content grass or when there is a lot of dead grass**

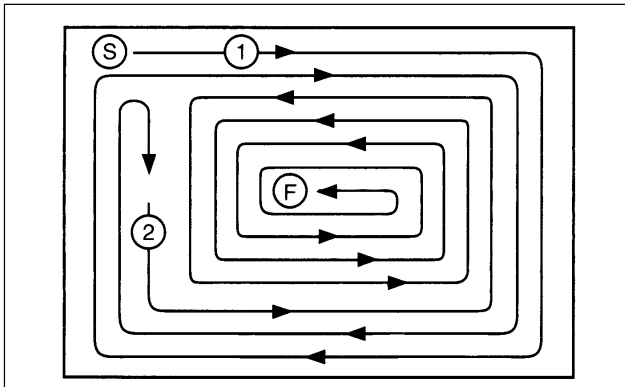
- a. Drive in a direction so that the dust does not hit the operator by taking the direction of the wind into consideration.
- b. When the air-intake screens are clogged, clean them at once.

**IMPORTANT:**

- *When operating the front mower in dusty circumstances, keep on paying attention to the coolant temperature warning lamp.*
- *Never continue operating when screens are clogged, or an engine breakdown may result.*

**D. Mowing a large area (SSM54)**

- a. Travel clockwise in spirals two or three times towards the center.



- b. Then continue travelling counterclockwise to the end.

In this way, scattering of cut grass onto adjacent passes and mower clogging are prevented and even mowing is achieved.

- c. When mowing irregular-shaped land, divide it roughly into square areas and apply the same method as above.

## CHAPTER 4. SCMA54F,48F INSPECTION AND MAINTENANCE OF MAJOR PARTS

### SCMA48,54



#### CAUTION:

- When servicing the lawn mower, place it on level, hard ground.
- Stop the engine and remove the starter key.
- Apply the parking brake securely.
- Push down (↓) the lift lever to lower the mower to the ground.
- Shift the PTO lever to the STOP position (\*).
- Service the lawn mower after the engine has cooled down sufficiently.

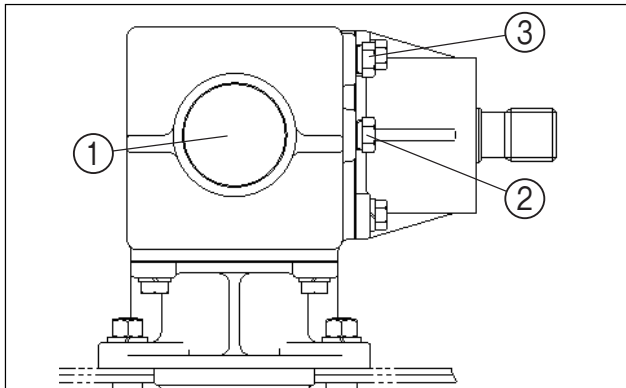
With these items in mind, confirm the safety conditions for maintenance operation without failing ahead of time.

### 1. INSPECTION AND REPLACEMENT OF BEVEL GEAR CASE OIL

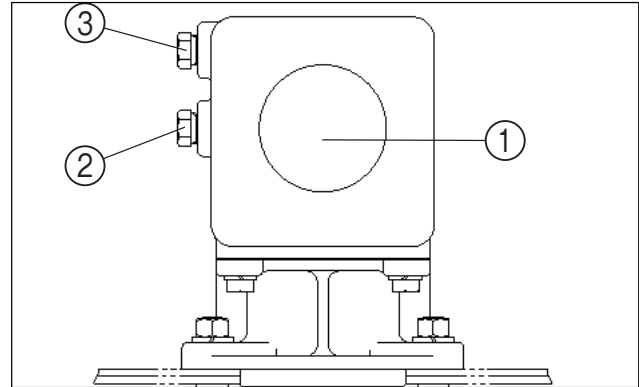
- Inspection of oil level in the bevel gear case

**IMPORTANT:** Check the oil level after every 50 hours of operation.

- Bevel gear case (LH) and (RH) : Remove the level plug located on the back side of the bevel gear case.



- (1) Bevel Gear case (LH) (3) Oil filler plug  
(2) Level plug



- (1) Bevel Gear case (RH) (3) Oil filler plug  
(2) Level plug

- Check to see if a small amount of oil overflows through the plug hole. If so, the level is normal. If not, replenish with gear oil SAE80 through the filler hole using an oil pitcher or the like.

|         | Gear oil SAE 80 |        |
|---------|-----------------|--------|
|         | LH              | RH     |
| SCMA48F | 0.5 L           | 0.35 L |
| SCMA54F | 0.8 L           | 0.35 L |

**IMPORTANT:** Before reassembling the level plug, be sure to wrap the threads with sealing tape without fail, or oil may leak through the plug.

- Replacement of oil

**IMPORTANT:** Replace oil after the initial 50 hours of operation and then after every 200 hours of operation.

## CHAPTER 4. SCMA54F,48F INSPECTION AND MAINTENANCE OF MAJOR PARTS

- a. Remove the bolt LH & RH of blades and blade collars. (Refer to "2. INSPECTION & REPLACEMENT OF BLADES")
- b. Loosen the bolts, then remove the drive shaft cover. Remove the bolt and spring, then remove the joint cover.
- c. Slide the snapping fixing the coupling, gather both couplings close, take out the drive shaft.
- d. Loosen the fixing nuts of gear cases, remove both LH & RH gear cases.



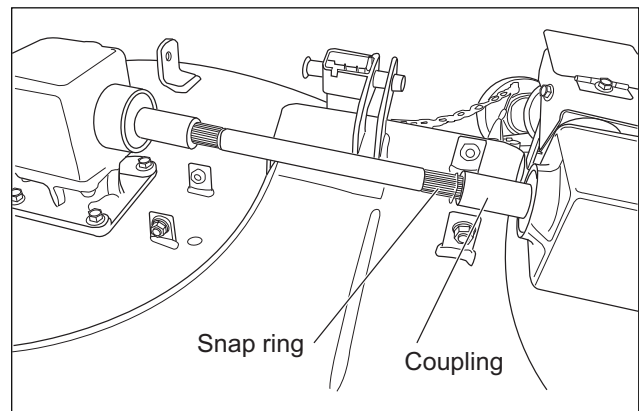
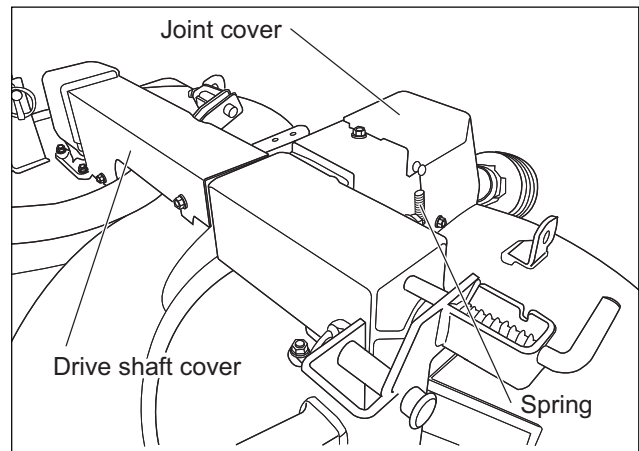
**CAUTION:** There is a possibility that there are shims for height adjustment between gear case and deck, so that confirm the assembling position and number of shims.

- e. Remove the level plug and oil filler plug. Then drain all the oil by tilting the gear case.
- f. Wrap the threads of both plugs with sealing tape and pour new oil using an oil pitcher.
- g. Make sure that the oil leaks through the level plug. Then screw both plugs in.
- h. Assemble both LH & RH gear cases on deck.



**CAUTION:** In case there are shims for height adjustment, reinstall the shims into same position by same pieces as before.

- i. Assemble the drive shaft, fix the couplings by snap rings.
- j. Assemble the drive shaft cover and joint cover.
- k. Assemble the both LH & RH blades and blade collars. (Refer to "2. INSPECTION & REPLACEMENT OF BLADES")



## SFH220,240

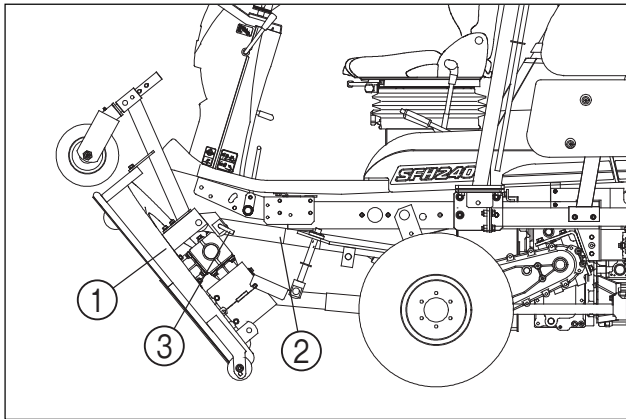
### 2. INSPECTION & REPLACEMENT OF BLADES

- a. Apply the parking brakes.



**CAUTION:** Be sure to apply the parking brakes securely.

- b. Start the engine and turn the throttle lever to the low speed (↩) position to decelerate the engine.
- c. Shift the lift lever to the UP (↑) position and raise the mower deck to the highest position.
- d. Stop the engine.
- e. Set the cutting height at lowest position.
- f. Lower the mower deck onto the ground.
- g. Remove the rear linkage of mower deck by pull out the pin.  
Pull out the lock pins and disconnect the chute and mower deck.  
And hang the chute on the hook of under frame.
- h. Start the engine and lift up the mower deck to the highest position.
- i. Stop the engine.



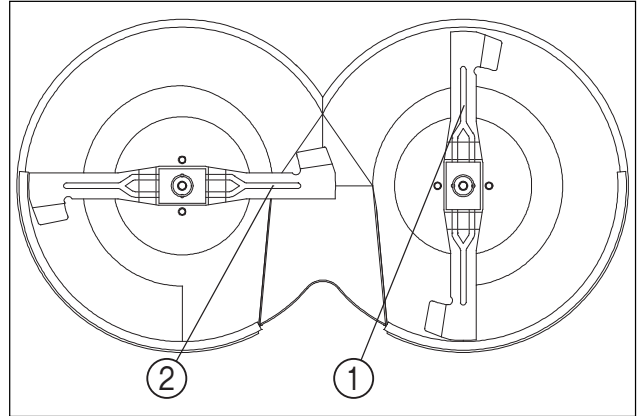
- (1) Mower deck (3) Stopper pin  
(2) Lift arm (LH)



**CAUTION:** When turning the mower deck, take care not to allow it to hit your feet.

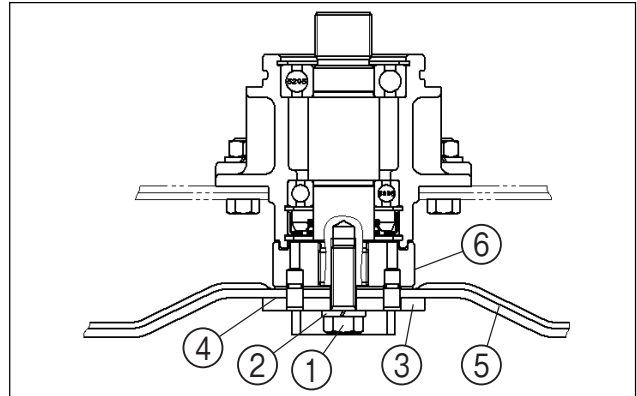
- j. Lock the mower deck by inserting the stopper pin into the hole in the left-hand lift arm.
- k. Check the mower blades for deformation and damage.

#### • Inspection of blades and phase position LH & RH.



- (1) Blade (LH) (2) Blade (RH)

- a. Confirm that blade LH(1) and blade RH(2) are at right angles to each other.
- b. When these blades are not at right angles to each other, straighten them by following ways.



- (1) Bolt (M12) (3) Plate (5) Blade  
(2) Spring washer (4) Shims (1.2) (6) Collar (blade)

1. Remove one of both bolts(1) of the blades(5).
2. Remove the collar(6) assembly.
3. Install the collar(6) assembly so that blade LH(1) and blade RH(2) are at right angles to each other.
4. Fix wood between blade and mower deck to tighten the bolt(1)

Tightening torque: 1000kgf • cm (72ft.lb)

5. After installing the blade, be sure to confirm that it has no trouble by turning the blade with hand.



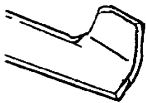
**DANGER:**

- Don't touch the blade. Before handling the blade, put on gloves.

• **Inspection of blades**

**IMPORTANT:**

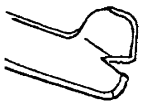
- *If the blade ends have become round due to wear, enlarged clearance between blades leave uncut grass behind. The blade should be checked timely and worn ones should be replaced immediately*
- *Low cutting height or the operation just after soil has been applied will wear blades rapidly. The blades should be checked more frequently.*



a. New Blade



b. Blade with rounded edge



c. Excessively worn blades are very dangerous. So replace such blades with new ones at once.

- c. The blade bolts should be tightened to the specified torque with the blades chocked respectively.

---

|                    |                          |
|--------------------|--------------------------|
| Tightening torque: | 1000kg • cm (72 ft • lb) |
|--------------------|--------------------------|

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**SFH220,240**

**DANGER:** Be sure to use new bolts when changing blades.

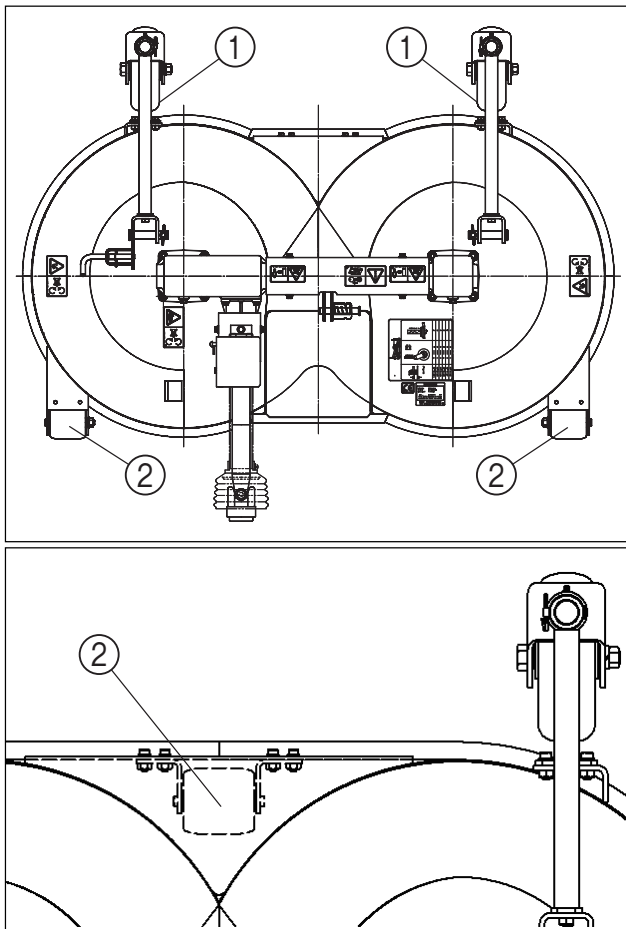
**IMPORTANT:** Make sure that the blades are not in contact with the mower deck by turning them by hand.

- d. There are two kinds of blades for respective mower decks. Be sure to install the blades in the proper positions.

|         |              |                                    |                    |
|---------|--------------|------------------------------------|--------------------|
| SCMA48F | Std          | 8667-306-011-00<br>8667-306-012-00 | ⊗ 8667C<br>⊗ 8667D |
|         | Opt<br>(Dry) | 8667-306-001-00<br>8667-306-002-00 | ⊗ 8668A<br>⊗ 8668B |
| SCMA54F | Std          | 8668-306-011-00<br>8668-306-012-00 | ⊗ 8668C<br>⊗ 8668D |
|         | Opt<br>(Dry) | 8668-306-001-00<br>8668-306-002-00 | ⊗ 8668A<br>⊗ 8668B |

- e. Connect the mower deck to the lawn mower properly, referring to the paragraph for "attaching and detaching the mower deck" at page 89.

### 3. INSPECTION OF GAUGE WHEELS / ROLLERS



- (1) Gauge wheel  
(2) Roller

As the gauge wheels and rollers are installed on the front and rear ends of the mower, they are vulnerable to being hit and deformed by obstacles. When a wheel or roller does not turn smoothly or is deformed, replace it with a new one immediately.

### 4. INSPECTION OF THE GAUGE WHEELS

Check and adjust the inflation of gauge wheels.  
Specified air pressure: 2.1kg/cm<sup>2</sup>

### 5. INSPECTION OF THE ROLLERS

Make sure that the roller turns smoothly.

**IMPORTANT:**

- When the wheels and rollers are hard to turn, disassemble them and clean them.
- After re-assembly, be sure to grease them sufficiently:

### 6. CLEANING OF MOWER DECK

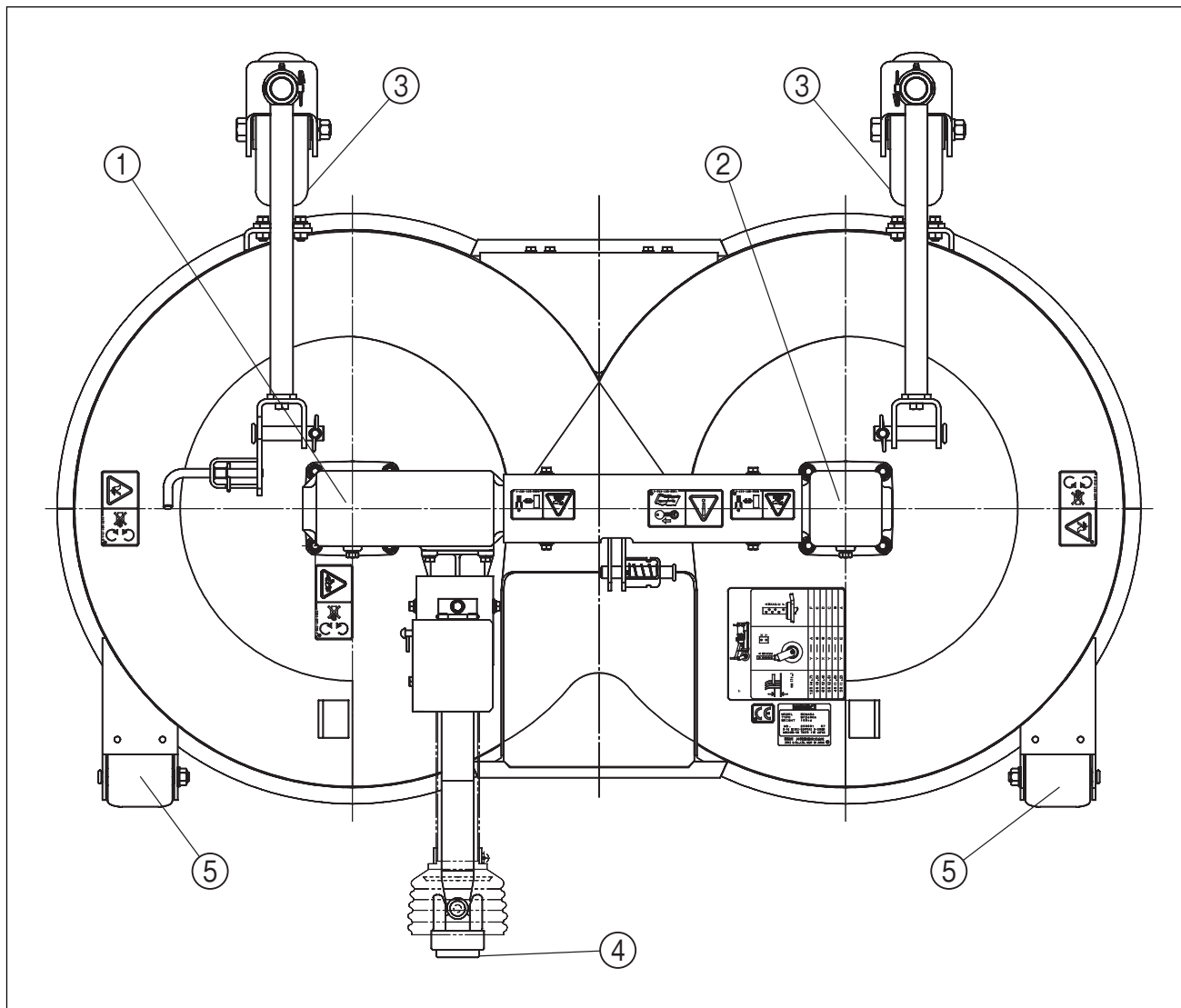
- a. After mowing, clear the underside of the mower deck and blades from accumulated grass and dirt. Especially after operation in wet grass, wash them without failing, otherwise accumulated wet grass and dirt will cause performance deterioration.



**CAUTION:** When pouring the water onto the mower deck to clean, be sure to make revolution of engine low.

## 6. FILLING DIAGRAM

All the shafts mentioned below have a grease fitting on their end. Grease them up periodically. The gear case should also be serviced periodically for oil replenishment and replacement.



| Ref. No. | Filling points       | Lubricants      | Quantity:<br>litres (Imp. gal.)  |
|----------|----------------------|-----------------|----------------------------------|
| 1        | Bevel gear case (LH) | Gear oil SAE 80 | 0.3 (0.07)                       |
| 2        | Bevel gear case (RH) | Gear oil SAE 80 | 0.3 (0.07)                       |
| 3        | Gauge wheel          | Grease          | Inject until grease<br>overflows |
| 4        | Drive shaft          |                 |                                  |
| 5        | Roller               |                 | As required                      |

## SFH220,240

### 7. PERIODICAL INSPECTION TABLE

○ : Inspection, replenishment, and adjustment    △ : Cleaning and washing  
● : Replacement    ★ : Consult your dealer.

| Check points                  | Pre-operation | Inspection and servicing intervals (hours of operation) |     |     |     |     | Intervals after that                                        | Judgement criteria                                           | Ref. page |
|-------------------------------|---------------|---------------------------------------------------------|-----|-----|-----|-----|-------------------------------------------------------------|--------------------------------------------------------------|-----------|
|                               |               | 50                                                      | 100 | 150 | 200 | 250 |                                                             |                                                              |           |
| Blade                         | ○             |                                                         |     |     |     |     |                                                             | Deformed, broken, worn, and cracked ones should be replaced. | 99        |
| Bevel gear case (LH) and (RH) |               | ●                                                       | ○   | ○   | ○   | ●   | Replace oil after initial 50 h. and then after every 200 h. | Maintain the specified level.                                | 98        |
| Inflation of gauge wheel      | ○             |                                                         |     |     |     |     |                                                             | 2.1 kgf/cm <sup>2</sup>                                      | —         |
| Roller and gauge wheels       | ○             |                                                         |     |     |     |     |                                                             | They should turn smoothly.                                   | 100       |
| Greasing points               |               | ○                                                       | ○   | ○   | ○   | ○   | Grease up after every 50 h.                                 |                                                              | 101       |
| Bolls and nuts                | ○             |                                                         |     |     |     |     |                                                             | There should be no loose ones.                               | —         |
| Pins and crips                | ○             |                                                         |     |     |     |     |                                                             | There should be no lost or deformed ones.                    | —         |

#### IMPORTANT:

- Above mentioned service intervals should be used as reference criteria. If working conditions are harder, earlier service is recommended.
- When special technology and special tools are required, consult your dealer.

## **CHAPTER 5. SCMA54F,48F STORING THE MOWER**

When the mower deck is to be stored for a long period of time, service the deck as mentioned below before storing it.

- a. Clean the mower deck. Take special care to remove grass and dirt from the blades and the underside of the mower deck.
- b. Also clean the underside of the discharge cover of accumulated grass and dirt.
- c. Remove grass or other objects tangled around the rollers and shafts.
- d. Remove the drive shaft cover, and clean the mower deck top. Be sure to remove grass and other objects tangled around the shaft.
- e. Remove all rust and touch up where paint has peeled off with touch-up paint supplied by ISEKI.
- f. Be sure to replace all the removed parts.
- g. Lost pins and clips should be replaced with new ones.
- h. Check each part for damage and repair or replace damaged ones with new ones for the next operation.

*IMPORTANT: Insist on ISEKI genuine parts when replacing.*

- i. Grease up all grease points.
- j. All loose bolts and nuts should be tightened properly and lost ones should be replaced with new ones.
- k. Store the mower deck in a dry place with wooden blocks placed under it and cover with tarpaulin or the like.



**CAUTION:** When storing the mower deck installed on the front mower, be sure to lower it on ground to prevent unexpected accidents caused by manipulation of the lift lever by children or unauthorised people.

## CHAPTER 6. SCMA54F,48F TROUBLESHOOTING

| Troubles                                                                               | Presumable causes                                                                                                                                                                                                                                                                                                                                                            | Remedies                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Improper discharging</li> </ul>               | <ul style="list-style-type: none"> <li>• Side PTO belts and drive</li> <li>• Blades are installed upside down.</li> <li>• Grass is too moist.</li> <li>• Too tall grass</li> <li>• Too fast travelling speed</li> <li>• Too low engine speed</li> <li>• Clogged discharge or mower deck inside</li> <li>• Too dense grass</li> <li>• Improperly installed blades</li> </ul>  | <ul style="list-style-type: none"> <li>• Check belt and correct.</li> <li>• Re-install them correctly.</li> <li>• Wait until grass becomes dry.</li> <li>• Mow it in two steps.</li> <li>• Slow down sufficiently.</li> <li>• Run engine at full throttle (🔥).</li> <li>• Clean.</li> <li>• Mow it in two steps or narrow cutting width.</li> <li>• Slow down sufficiently.</li> <li>• Install blades properly.</li> </ul> |
| <ul style="list-style-type: none"> <li>• Grass is not mowed.</li> </ul>                | <ul style="list-style-type: none"> <li>• Side PTO belts and drive</li> <li>• Too fast travelling speed</li> <li>• Too low engine speed</li> <li>• Worn or broken blades</li> <li>• Blades are installed upside down.</li> <li>• Improperly installed blades</li> </ul>                                                                                                       | <ul style="list-style-type: none"> <li>• Adjust belt tension spring or replace belt with new one.</li> <li>• Slow down.</li> <li>• Run engine at full throttle (🔥).</li> <li>• Replace them with new ones.</li> <li>• Re-install them correctly.</li> <li>• Install blades properly.</li> </ul>                                                                                                                            |
| <ul style="list-style-type: none"> <li>• Uneven cutting heights</li> </ul>             | <ul style="list-style-type: none"> <li>• Mower is not parallel to ground.</li> <li>• Too fast travelling speed</li> <li>• Worn blades</li> <li>• Clogged grass inside of mower deck</li> <li>• Improperly adjusted gauge wheels</li> <li>• Too tall grass</li> <li>• Two blades are not installed on the same level and correct angle.</li> <li>• Deformed blades</li> </ul> | <ul style="list-style-type: none"> <li>• Adjust mower mounting.</li> <li>• Slow down.</li> <li>• Replace them with new ones.</li> <li>• Clean.</li> <li>• Adjust them properly.</li> <li>• Mow it in two steps.</li> <li>• Correct by shimming and set the blades properly.</li> <li>• Replace them with new ones.</li> </ul>                                                                                              |
| <ul style="list-style-type: none"> <li>• Turf is peeled off in some places.</li> </ul> | <ul style="list-style-type: none"> <li>• Too low cutting height.</li> <li>• Mower is not parallel to ground.</li> <li>• Too fast turning speed</li> <li>• Too bumpy ground</li> </ul>                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>• Correct it with gauge wheels.</li> <li>• Adjust mower mounting.</li> <li>• Turn slowly.</li> <li>• Shift mowing direction.</li> </ul>                                                                                                                                                                                                                                             |
| <ul style="list-style-type: none"> <li>• Excessive noise and vibration</li> </ul>      | <ul style="list-style-type: none"> <li>• Broken or unbalanced blades</li> <li>• Loose blade tightening bolts</li> </ul>                                                                                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>• Replace them with new ones.</li> <li>• Re-tighten them to 1300 kgf·cm.</li> </ul>                                                                                                                                                                                                                                                                                                 |

| Troubles                        | Presumable causes                                                                                                                                                                                                                                                                                                  | Remedies                                                                                                                                                                                                                                             |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • Excessive noise and vibration | <ul style="list-style-type: none"> <li>• Clogged grass inside of mower or foreign matter caught in a pulley</li> <li>• Deformed or interfering shaft cover</li> <li>• Damaged bevel gears</li> <li>• Broken or unbalanced blades</li> <li>• Loose blade tightening bolts</li> <li>• Slipping blade belt</li> </ul> | <ul style="list-style-type: none"> <li>• Clean.</li> <li>• Repair it.</li> <li>• Consult your dealer.</li> <li>• Replace them with new ones.</li> <li>• Re-tighten them to 1000 kgf • cm.</li> <li>• Adjust belt tension spring properly.</li> </ul> |
| • Too low engine output         | <ul style="list-style-type: none"> <li>• Too low engine speed</li> <li>• Too fast travelling speed</li> <li>• Foreign matter caught between blade and blade support</li> <li>• Defective engine</li> </ul>                                                                                                         | <ul style="list-style-type: none"> <li>• Mow at full throttle (🔊).</li> <li>• Slow down.</li> <li>• Clean.</li> <li>• Consult your dealer.</li> </ul>                                                                                                |
| • Gauge wheels do not turn.     | <ul style="list-style-type: none"> <li>• Foreign matter caught in shaft</li> <li>• Broken wheel</li> <li>• Short of grease</li> </ul>                                                                                                                                                                              | <ul style="list-style-type: none"> <li>• Clean.</li> <li>• Replace it with a new one.</li> <li>• Inject grease.</li> </ul>                                                                                                                           |
| • Blades do not rotate.         | <ul style="list-style-type: none"> <li>• Loose blade tightening bolts</li> <li>• Foreign matter caught in blades or blade supports</li> <li>• Broken bevel gears</li> <li>• Broken blade pulley</li> <li>• Side PTO belts and drive</li> </ul>                                                                     | <ul style="list-style-type: none"> <li>• Re-tighten them to 1000 kgf • cm.</li> <li>• Clean.</li> <li>• Consult your dealer.</li> <li>• Replace it with a new one.</li> <li>• Check belt and correct.</li> </ul>                                     |
| • Mower does not rise.          | <ul style="list-style-type: none"> <li>• Inside of the mower deck is clogged with too much grass or mud.</li> <li>• Defective hydraulic system</li> </ul>                                                                                                                                                          | <ul style="list-style-type: none"> <li>• Clean.</li> <li>• Consult your dealer.</li> </ul>                                                                                                                                                           |

## CHAPTER 7. INSPECTION AND MAINTENANCE OF MAJOR PARTS

### SMM54 MOWER DECK



#### CAUTION:

- When servicing the front mower, place it on level, hard ground.
- Stop the engine and remove the starter key.
- Apply the parking brake securely.
- Shift the lift lever to the DOWN position (↓) and lower the mower to the ground.
- Shift the PTO lever to the STOP position (⊞).
- Service the front mower after the engine has cooled down sufficiently.

With these items in mind, confirm the safety conditions for maintenance operation without fail ahead of time.

#### 1. INSPECTION AND REPLACEMENT OF GEAR CASE OIL

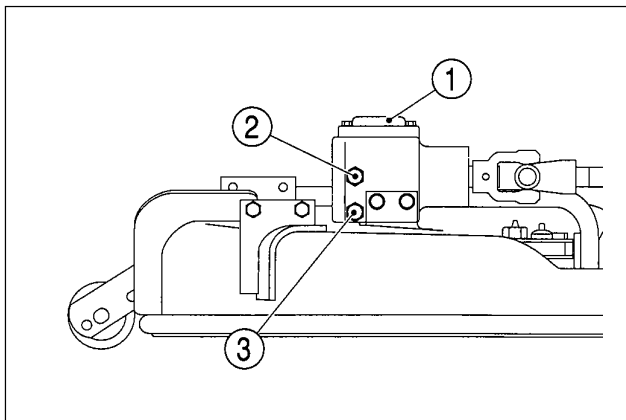
##### • Inspection of oil level

**IMPORTANT:** Check the oil level after every 50 hours of operation.

Remove the level plug located on the left side wall of the gear case.

Check to see if a small amount of oil overflows through the plug hole. If so, the level is normal. If not, replenish with gear oil SAE80 through the plug hole using an oil pitcher or the like.

|          |                            |
|----------|----------------------------|
| Oil      | Gear oil SAE80             |
| Capacity | 0.4 liter (0.09 Imp. gal.) |



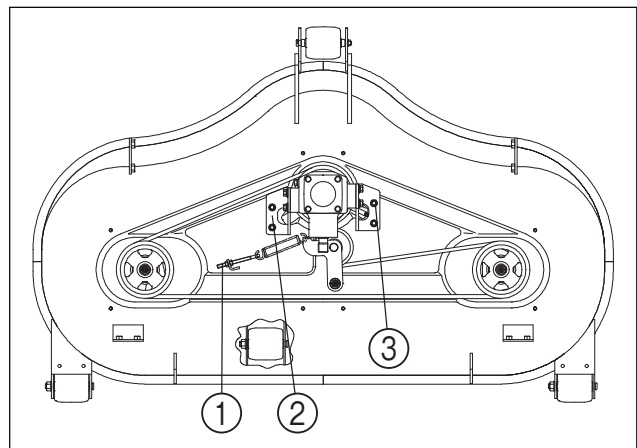
- (1) Gear case      (3) Drain plug  
(2) Level plug

**IMPORTANT:** Before replacing the level plug, be sure to wrap the threads with sealing tape without fail, or oil may leak through the plug.

##### • Replacement of oil

**IMPORTANT:** Replace oil after the initial 50 hours of operation and then after every 200 hours of operation.

- Remove the mower blade which is attached to the shaft of the gear case referring to the instructions for the replacement of the mower blades (p. 108).
- Detach the drive shaft cover and both belt covers (LH and RH) by loosening the tightening nuts.
- Loosen the lock nut for the tension rod and remove the tension spring.



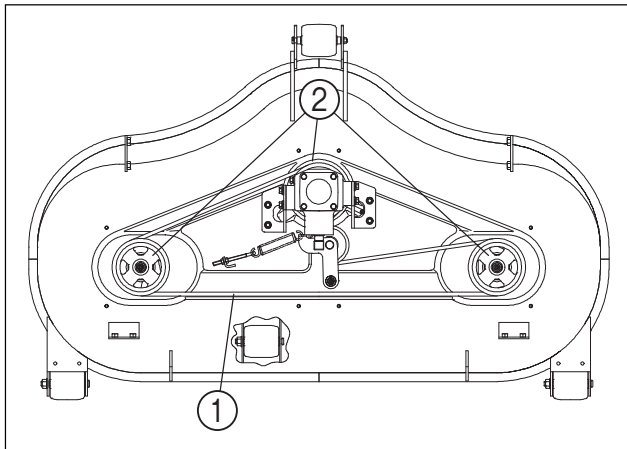
- (1) Tension adjustment rod      (3) Bolts  
(2) Gear case mount

## CHAPTER 7. INSPECTION AND MAINTENANCE OF MAJOR PARTS

- d. Remove the gear case mount by removing the four bolts.
- e. Remove the level plug and drain plug. Then drain all oil by tilting the gear case.
- f. Wrap the threads of the drain plug with sealing tape and screw it in and supply with fresh oil through the level plug hole using an oil pitcher. [Gear oil SAE80, capacity: 0.4 liter (0.09 IMP gal.)].
- g. Wrap the threads of the level plug with sealing tape and re-install it.

**IMPORTANT:** All oil spilled on the gear case mount should be wiped off completely with cloth. If it is not, the belt may be smeared with oil and become slippery.

- h. Tighten the gear case mounting plates securely with bolts.
- i. Make sure that the belt runs around the pulleys as shown and it is completely seated in the belt ways of each pulley. Then give proper tension to the tension spring with the tension rod.



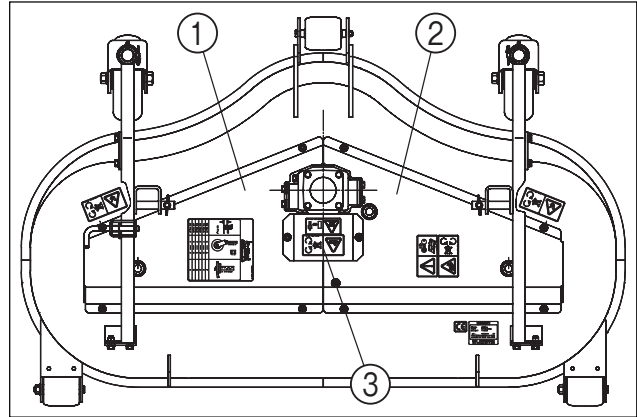
(1) Belt (2) Pulley

- j. Re-install the drive shaft cover and the belt covers.
- k. Replace the removed blade.

## 2. INSPECTION AND REPLACEMENT OF V-BELTS

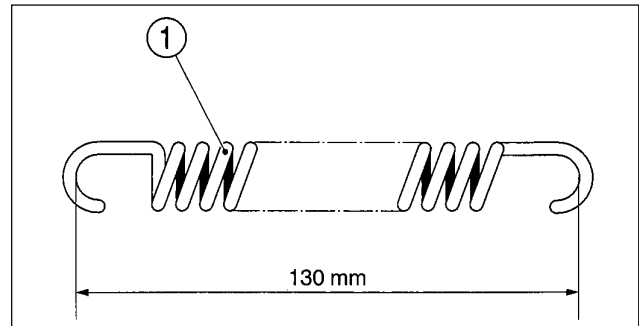
### • Inspection of belt tension

- a. Remove the drive shaft cover and both the belt covers installed on the mower deck.



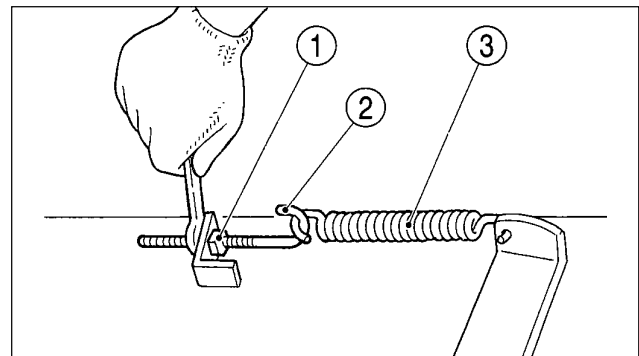
(1) Belt cover (LH) (3) Drive shaft cover  
(2) Belt cover (RH)

- a. Check the tension of each belt. Measure the length Specified spring length: 130mm



(1) Tension spring

- b. If the measured spring length deviates from the specified value, correct the length by loosening the tension rod nut and turning the rod.

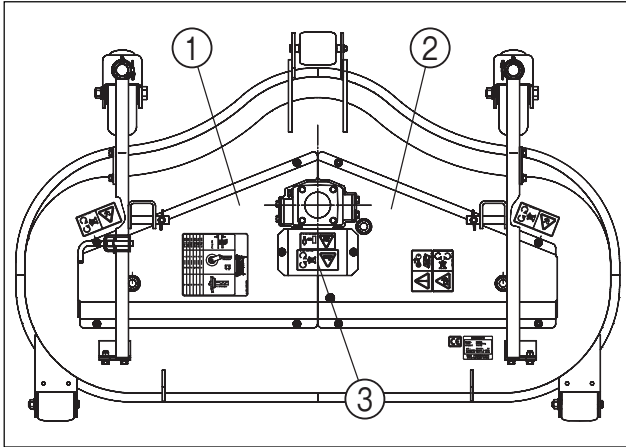


(1) Lock nut (3) Tension spring  
(2) Tension adjustment rod

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### • Inspection of belt

- Remove the drive shaft cover and both the belt covers installed on the mower deck.



- (1) Belt cover (LH)      (3) Drive shaft cover  
(2) Belt cover (RH)

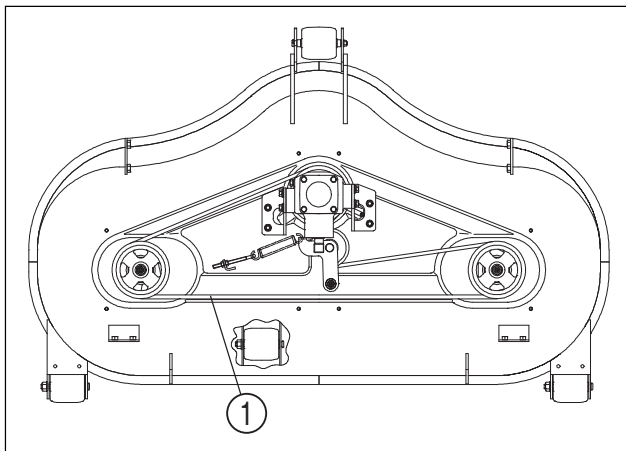
- Check the belt for damage and dirt. If it is smeared with oil or dirt, or wet with water, wipe it clean with a dry cloth. When damaged, install a new belt.



**CAUTION: Never forget to replace all the removed covers.**

### • Replacement of the belt

- Remove the drive shaft cover and belt covers (RH and LH) from the mower deck.
- Loosen the lock nut of the tension rod and remove the tension spring.



- (1) Belt

- Remove the belt and install a new belt.

### IMPORTANT:

- Be sure to install the belt as illustrated.
- An improperly installed belt will not work as expected but also may result in the belt breaking right away.
- Be sure to use following ISEKI's genuin belts:  
SSM54 8657-203-001-00 Belt (VB101)  
SSM48 8595-203-003-00 Belt (VB92)

- Make sure the belt is seated properly in the groove of each pulley and apply tension to it by expanding the tension spring properly with the tension rod referring to the paragraph for "Inspection of belt tension."

- Re-install the drive shaft cover and belt covers.



**CAUTION: Never forget to replace the removed belt covers and drive shaft cover.**

## 3. INSPECTION & REPLACEMENT OF BLADES

### • Inspection of blades

- Apply the parking brakes.

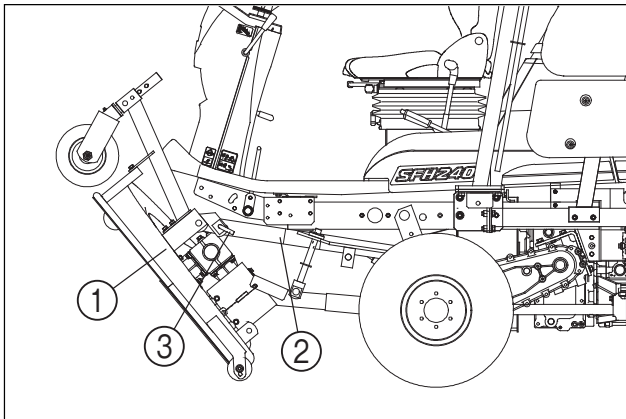


**CAUTION: Be sure to apply the parking brakes securely.**

- Start the engine and turn the throttle lever to the low speed (↩) position to decelerate the engine.
- Shift the lift lever to the UP (↑) position and raise the mower deck to the highest position.
- Stop the engine.

## CHAPTER 7. INSPECTION AND MAINTENANCE OF MAJOR PARTS

- e. Set the cutting height at lowest position.
- f. Lift down the mower deck onto the ground.
- g. Remove the mower chute from the mower deck, and hook it on the lawn mower. (only for SCMA54F, 48F)
- h. Remove the rear linkage of mower deck by pull out the pin.
- i. Start the engine and lift up the mower deck to the highest position.
- j. Stop the engine.



- (1) Mower deck (3) Stopper pin  
(2) Lift arm (LH)



**CAUTION:** When turning the mower deck, take care not to allow it to hit your feet.

- k. Lock the mower deck by inserting the stopper pin into the hole in the left-hand lift arm.
- l. Check the mower blades for deformation and damage.

### IMPORTANT:

- If the blade ends have become round due to wear, enlarged clearance between blades leave uncut grass behind. The blade should be checked timely and worn ones should be replaced immediately.
- Low cutting height or the operation just after soil has been applied will wear blades rapidly. The blades should be checked more frequently.



a. New blade



b. Blade with rounded edge



c. Excessively worn blades are very dangerous. So replace such blades with new ones at once.

|        |                |          |
|--------|----------------|----------|
| SMM54F | IE01-306-211-0 | DI IE01C |
|        | IE01-306-211-0 | DI IE01B |
|        | IE01-306-211-0 | DI IE01A |

### • Replacement of blades

Lift up the mower deck and stop the engine or remove the mower deck from the front mower.



**CAUTION:** As blade edges are very sharp, be sure to wear gloves to avoid being cut.

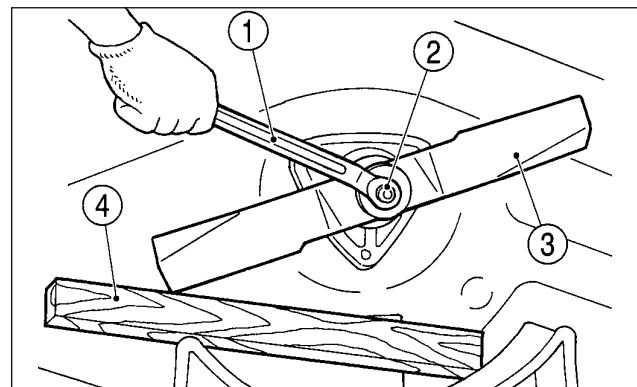
- a. Chock a blade by inserting a piece of wood between the blade and mower deck to prevent the blades from rotating. Loosen the blade tightening nut.



### CAUTION:

- Never attempt to loosen the blade tightening nut by holding the blade by hand.
- The chocking wood should be held securely so as not to become dislocated. During this operation, always pay sufficient care not to be hurt even when the wood is removed.

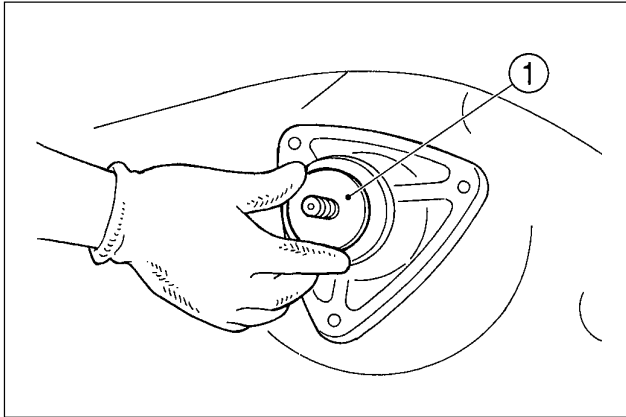
As the blades are tightened along with washers and shims, take care not to lose them when the blades are disassembled.



- (1) Spanner (3) Blade  
(2) Nut (4) Wood

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- b. Install a new blade, insert the washer and tighten blade nuts temporarily to determine the height difference between blades. If more than 2 mm (0.08 inch), correct with adjusting shims. The clearance should be measured in all cases: original position and the position with the blades respectively turned by 180 degrees.  
Excessive difference in blade positioning will result in poor mowing finish.



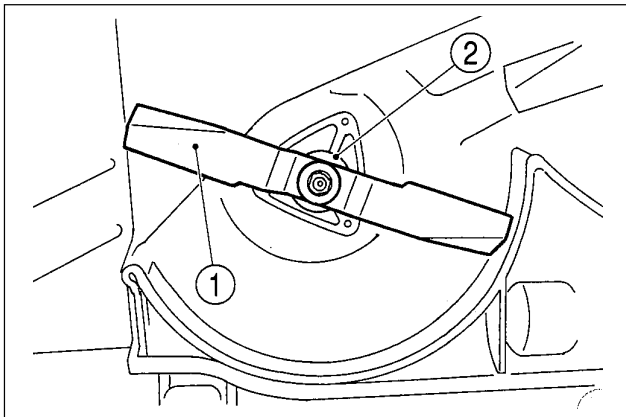
(1) Shim

- c. The blade nuts should be tightened to the specified torque with the blades chocked respectively.

Tightening torque: 1000 kg · cm (72 ft · lb)



**DANGER:** Be sure to use new nuts when changing blades.



(1) Blade

(2) Washer

**IMPORTANT:** Make sure that the blades are not in contact with the mower deck by turning them by hand.

- d. While lifting up the mower deck in the center, turn it back to the original position.

- e. Replace the rear gauge wheels and set them in the proper position with the setting pin.  
f. Shift the lift lever to the DOWN (↓) position to lower the mower deck.



**CAUTION:** Before operating the lift lever, be seated on the operator's seat and make sure of the safety conditions around the front mower.

### 4. INSPECTION OF GAUGE WHEELS

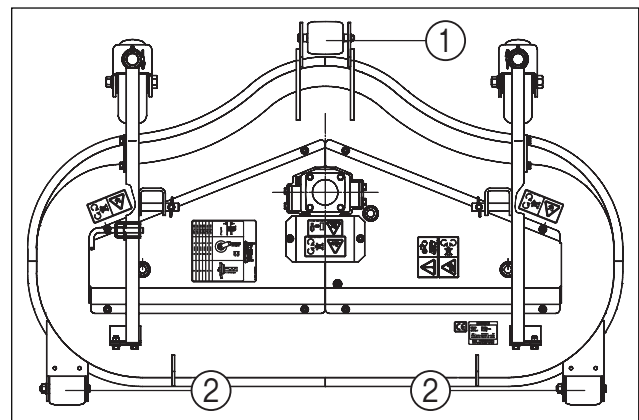
As the gauge wheels are installed on the front end of the mower, they are vulnerable to being hit and deformed by obstacles. When a wheel does not turn smoothly or is deformed, replace it with a new gauge wheel immediately.

### 5. INSPECTION OF THE GAUGE WHEELS

Check and adjust the inflation of gauge wheels.  
Specified air pressure: 2.1kg/cm<sup>2</sup>

### 6. INSPECTION OF ROLLERS

Make sure that the front roller and rear rollers turn smoothly.



(1) Front roller

(2) Rear rollers

#### IMPORTANT:

- When the wheels and rollers are hard to turn, disassemble them and clean them.
- After re-assembly, be sure to grease them sufficiently.

### 7. CLEANING OF MOWER DECK

- a. Remove each belt cover and drive-shaft cover, and clear the grass and dust accumulated under the cover before operation, or shorter service life of the belts and damage to bearings and oil seals will be caused.

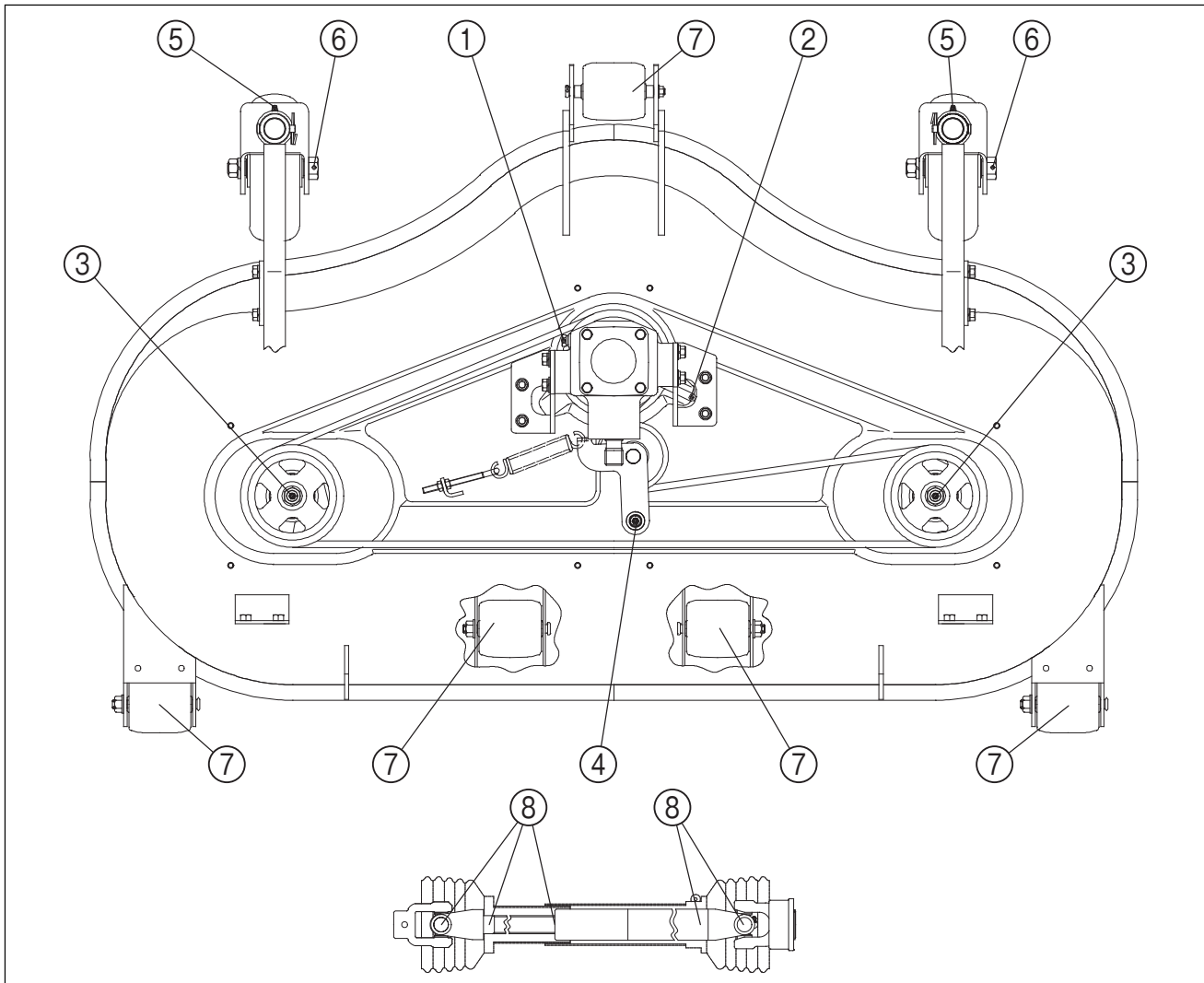
## CHAPTER 7. INSPECTION AND MAINTENANCE OF MAJOR PARTS



**CAUTION:** Be sure to replace the removed covers after cleaning.

- b. Each blade shaft end and tension pulley end are equipped with a grease fitting. Inject grease through these fittings periodically and make sure that each part rotates smoothly.
- c. After mowing, clear the underside of the mower deck and blades from accumulated grass and dirt. Especially after operation in wet grass, wash them without fail, or accumulated wet grass and dirt will cause performance deterioration.

### 8. FILLING DIAGRAM



| Ref. No. | Filling points     | Lubricants      | Quantity:<br>litres (Imp. gal.) |
|----------|--------------------|-----------------|---------------------------------|
| 1        | Bevel gear case    | Gear oil SAE 80 | 0.4 (0.09)                      |
| 2        | Center metal       | Grease          | Inject until grease overflows   |
| 3        | Side metal         |                 |                                 |
| 4        | Tension arm        |                 |                                 |
| 5        | Gauge wheel (fork) |                 | As required                     |
| 6        | Gauge wheel        |                 |                                 |
| 7        | Roller             |                 | Inject until grease overflows   |
| 8        | Drive shaft        |                 |                                 |

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### 9. PERIODICAL INSPECTION TABLE

○ : Inspection, replenishment, and adjustment    △ : Cleaning and washing  
● : Replacement    ★ : Consult your dealer.

| Check points             | Pre-operation | Inspection and servicing intervals (hours of operation) |     |     |     |     | Intervals after that                                    | Judgement criteria                                                                                        | Ref. page |
|--------------------------|---------------|---------------------------------------------------------|-----|-----|-----|-----|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------|
|                          |               | 50                                                      | 100 | 150 | 200 | 250 |                                                         |                                                                                                           |           |
| Blade                    | ○             |                                                         |     |     |     |     |                                                         | Deformed, broken, worn, and cracked ones should be replaced.                                              | 107       |
| Gear case oil            |               | ●                                                       | ○   | ○   | ○   | ●   | Replace after initial 50 h. and then after every 200 h. | Maintain the specified level.                                                                             | 105       |
| Belt tension             | ○             |                                                         |     |     |     |     |                                                         | Spring length: 137mm                                                                                      | 106-B     |
| Inflation of gauge wheel | ○             |                                                         |     |     |     |     |                                                         | 2.1 kgf/cm <sup>2</sup>                                                                                   | —         |
| Rollers and gauge wheels | ○             |                                                         |     |     |     |     |                                                         | They should turn smoothly.                                                                                | 109-A     |
| Belt cover inside        |               | △                                                       | △   | △   | △   | △   | Clean after every 50 h.                                 | There should be no grass or dust accumulated.                                                             | 107       |
| Belt                     |               | ○                                                       | ○   | ○   | ○   | ○   | Clean after every 50 h.                                 | Criteria for replacement:<br>• Deep crack over half the thickness of belt.<br>• Worn out side wall canvas | 107       |
| Greasing points          |               | ○                                                       | ○   | ○   | ○   | ○   | Grease up after every 50 h.                             |                                                                                                           | 00        |
| Bolts and nuts           | ○             |                                                         |     |     |     |     |                                                         | There should be no loose ones.                                                                            | —         |
| Pins and crips           | ○             |                                                         |     |     |     |     |                                                         | There should be no lost or deformed ones.                                                                 | —         |

#### IMPORTANT:

- Above mentioned service intervals should be used as reference criteria. If working conditions are harder, earlier service is recommended.
- When special technology and special tools are required, consult your dealers.

## **CHAPTER 8. SMM54 STORING THE MOWER**

When the mower deck is to be stored for a long period of time, service the deck as mentioned below before storing it.

- a. Clean the mower deck. Take special care to remove grass and dirt from the blades and the underside of the mower deck.
- b. Also clean the underside of the discharge cover of accumulated grass and dirt.
- c. Remove grass or other objects tangled around the rollers and shafts.
- d. Remove the drive shaft cover and belt covers, and clean the mower deck top. Be sure to remove grass and other objects tangled around the pulleys and shaft.
- e. Check the V-belt. If the belt is normal, loosen the tension spring. (SMM54)
- f. Remove all rust and touch up where paint has peeled off with touch-up paint supplied by ISEKI.
- g. Be sure to replace all the removed parts.
- h. Lost pins and clips should be replaced with new ones.
- i. Check each part for damage and repair or replace damaged ones with new ones for the next operation.

*IMPORTANT: Insist on ISEKI genuine parts when replacing.*

- j. Grease up all grease points.
- k. All loose bolts and nuts should be tightened properly and lost ones should be replaced with new ones.
- l. Store the mower deck in a dry place with wooden blocks placed under it and cover with tarpaulin or the like.



**CAUTION : When storing the mower deck installed on the front mower, be sure to lower it on ground to prevent unexpected accidents caused by manipulation of the lift lever by children or unauthorised people.**

## CHAPTER 9 .SMM54 TROUBLESHOOTING

| Troubles                                                                               | Presumable causes                                                                                                                                                                                                                                                                                                                                          | Remedies                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Improper mulching</li> </ul>                  | <ul style="list-style-type: none"> <li>• Drive belt is not installed properly.</li> <li>• Blades are installed upside down.</li> <li>• Grass is too moist.</li> <li>• Too tall grass</li> <li>• Too fast travelling speed</li> <li>• Too low engine speed</li> <li>• Clogged discharge or mower deck inside</li> <li>• Too dense grass</li> </ul>          | <ul style="list-style-type: none"> <li>• Check belt and correct.</li> <li>• Re-install them correctly.</li> <li>• Wait until grass becomes dry.</li> <li>• Mow it in two steps.</li> <li>• Slow down sufficiently.</li> <li>• Run engine at full throttle (🔥).</li> <li>• Clean.</li> <li>• Mow it in two steps or at the narrow cutting width.</li> <li>• Slow down sufficiently.</li> </ul> |
| <ul style="list-style-type: none"> <li>• Grass is not mowed.</li> </ul>                | <ul style="list-style-type: none"> <li>• Drive belt is slipping or broken.</li> <li>• Broken tension spring</li> <li>• Too fast travelling speed</li> <li>• Too low engine speed</li> <li>• Worn or broken blades</li> <li>• Blades are installed upside down.</li> </ul>                                                                                  | <ul style="list-style-type: none"> <li>• Adjust belt tension spring or replace belt with new one.</li> <li>• Replace it with a new one.</li> <li>• Slow down.</li> <li>• Run engine at full throttle (🔥).</li> <li>• Replace them with new ones.</li> <li>• Re-install them correctly.</li> </ul>                                                                                             |
| <ul style="list-style-type: none"> <li>• Uneven cutting heights</li> </ul>             | <ul style="list-style-type: none"> <li>• Mower is not parallel to ground.</li> <li>• Too fast travelling speed</li> <li>• Worn blades</li> <li>• Clogged grass inside of mower deck</li> <li>• Improperly adjusted gauge wheels</li> <li>• Too tall grass</li> <li>• The blades are not installed on the same level.</li> <li>• Deformed blades</li> </ul> | <ul style="list-style-type: none"> <li>• Adjust mower mounting.</li> <li>• Slow down.</li> <li>• Replace them with new ones.</li> <li>• Clean.</li> <li>• Adjust them properly.</li> <li>• Mow it in two steps.</li> <li>• Correct by shimming.</li> <li>• Replace them with new ones.</li> </ul>                                                                                             |
| <ul style="list-style-type: none"> <li>• Turf is peeled off in some places.</li> </ul> | <ul style="list-style-type: none"> <li>• Too low cutting height</li> <li>• Mower is not parallel to ground.</li> <li>• Too fast turning speed</li> <li>• Too bumpy ground</li> </ul>                                                                                                                                                                       | <ul style="list-style-type: none"> <li>• Correct it with gauge wheels.</li> <li>• Adjust mower mounting.</li> <li>• Turn slowly.</li> <li>• Shift mowing direction.</li> </ul>                                                                                                                                                                                                                |

| Troubles                        | Presumable causes                                                                                                                                                                                                                                                                                                               | Remedies                                                                                                                                                                                                                                                      |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| • Excessive noise and vibration | <ul style="list-style-type: none"> <li>• Clogged grass inside of mower or foreign matter caught in a pulley</li> <li>• Deformed or interfering belt cover or shaft cover</li> <li>• Damaged bevel gears</li> <li>• Broken or unbalanced blades</li> <li>• Loose blade tightening nuts</li> <li>• Slipping blade belt</li> </ul> | <ul style="list-style-type: none"> <li>• Clean.</li> <li>• Repair it.</li> <li>• Consult your dealer.</li> <li>• Replace them with new ones.</li> <li>• Re-tighten them to 1300 kgf • cm.</li> <li>• Adjust belt tension spring properly.</li> </ul>          |
| • Too low engine output         | <ul style="list-style-type: none"> <li>• Too low engine speed</li> <li>• Too fast travelling speed</li> <li>• Foreign matter caught between blade and blade support</li> <li>• Foreign matter caught in a pulley</li> <li>• Defective engine</li> </ul>                                                                         | <ul style="list-style-type: none"> <li>• Mow at full throttle (🔊).</li> <li>• Slow down.</li> <li>• Clean.</li> <li>• Clean.</li> <li>• Consult your dealer.</li> </ul>                                                                                       |
| • Gauge wheels do not turn.     | <ul style="list-style-type: none"> <li>• Foreign matter caught in shaft</li> <li>• Broken wheel</li> <li>• Short of grease</li> </ul>                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>• Clean.</li> <li>• Replace it with a new one.</li> <li>• Inject grease.</li> </ul>                                                                                                                                    |
| • Blades do not rotate.         | <ul style="list-style-type: none"> <li>• Loose blade tightening nuts</li> <li>• Foreign matter caught in blades or blade supports</li> <li>• Broken bevel gears</li> <li>• Broken blade pulley</li> <li>• Slipping blade belt</li> <li>• Center PTO clutch is slipping or not engaging.</li> </ul>                              | <ul style="list-style-type: none"> <li>• Re-tighten them to 1300 kgf • cm.</li> <li>• Clean.</li> <li>• Consult your dealer.</li> <li>• Replace it with a new one.</li> <li>• Adjust belt tension spring properly.</li> <li>• Consult your dealer.</li> </ul> |
| • Mower does not rise.          | <ul style="list-style-type: none"> <li>• Inside of the mower deck is clogged with too much grass or mud.</li> <li>• Defective hydraulic system</li> </ul>                                                                                                                                                                       | <ul style="list-style-type: none"> <li>• Clean.</li> <li>• Consult your dealer.</li> </ul>                                                                                                                                                                    |

## CHAPTER 7. SSM54 INSPECTION AND MAINTENANCE OF MAJOR PARTS

### SSM54 MOWER DECK


**CAUTION:**

- When servicing the front mower, place it on level, hard ground.
- Stop the engine and remove the starter key.
- Apply the parking brake securely.
- Shift the lift lever to the DOWN position (↓) and lower the mower to the ground.
- Shift the PTO lever to the STOP position (⊞).
- Service the front mower after the engine has cooled down sufficiently.

With these items in mind, confirm the safety conditions for maintenance operation without fail ahead of time.

#### 1. INSPECTION AND REPLACEMENT OF GEAR CASE OIL

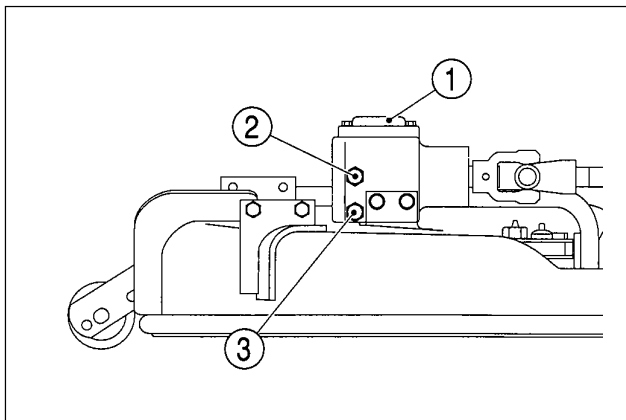
##### • Inspection of oil level

**IMPORTANT:** Check the oil level after every 50 hours of operation.

Remove the level plug located on the left side wall of the gear case.

Check to see if a small amount of oil overflows through the plug hole. If so, the level is normal. If not, replenish with gear oil SAE80 through the plug hole using an oil pitcher or the like.

|          |                            |
|----------|----------------------------|
| Oil      | Gear oil SAE80             |
| Capacity | 0.4 liter (0.09 Imp. gal.) |



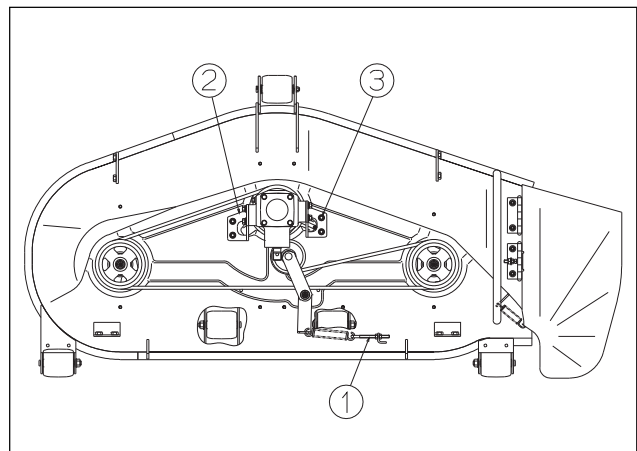
- (1) Gear case      (3) Drain plug  
(2) Level plug

**IMPORTANT:** Before replacing the level plug, be sure to wrap the threads with sealing tape without fail, or oil may leak through the plug.

##### • Replacement of oil

**IMPORTANT:** Replace oil after the initial 50 hours of operation and then after every 200 hours of operation.

- a. Remove the mower blade which is attached to the shaft of the gear case referring to the instructions for the replacement of the mower blades (p. 121).
- b. Detach the drive shaft cover and both belt covers (LH and RH) by loosening the tightening nuts.
- c. Loosen the lock nut for the tension rod and remove the tension spring.



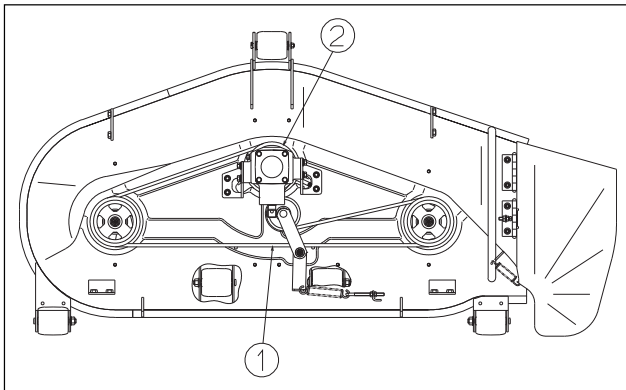
- (1) Tension adjustment rod      (3) Bolts  
(2) Gear case mount

## CHAPTER 7. SSM54 INSPECTION AND MAINTENANCE OF MAJOR PARTS

- d. Remove the gear case mount by removing the four bolts.
- e. Remove the level plug and drain plug. Then drain all oil by tilting the gear case.
- f. Wrap the threads of the drain plug with sealing tape and screw it in and supply with fresh oil through the level plug hole using an oil pitcher. [Gear oil SAE80, capacity: 0.4 liter (0.09 IMP gal.)].
- g. Wrap the threads of the level plug with sealing tape and re-install it.

**IMPORTANT:** All oil spilled on the gear case mount should be wiped off completely with cloth. If it is not, the belt may be smeared with oil and become slippery.

- h. Tighten the gear case mounting plates securely with bolts.
- i. Make sure that the belt runs around the pulleys as shown and it is completely seated in the belt ways of each pulley. Then give proper tension to the tension spring with the tension rod.



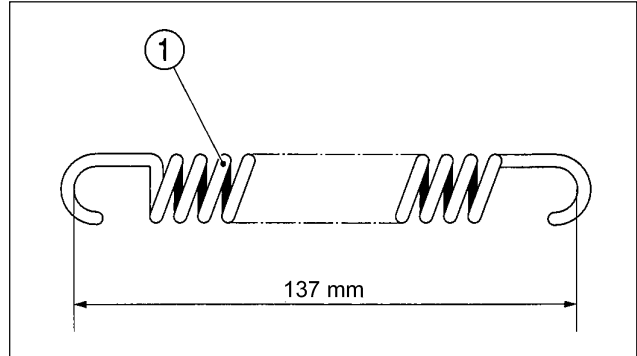
- (1) Belt                      (2) Pulley

- j. Re-install the drive shaft cover and the belt covers.
- k. Replace the removed blade.

## 2. INSPECTION AND REPLACEMENT OF V-BELTS

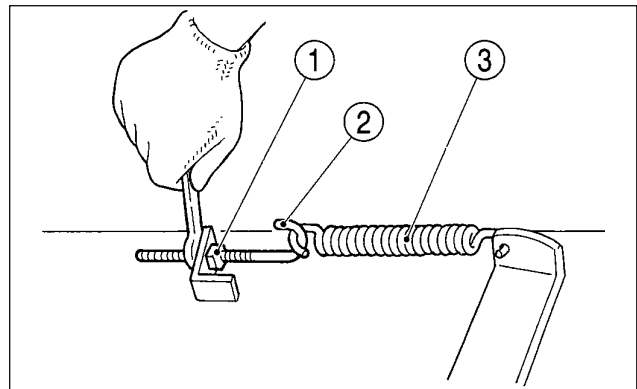
### • Inspection of belt tension

- a. Check the tension of each belt. Measure the length Specified spring length: 137mm



- (1) Tension spring

- b. If the measured spring length deviates from the specified value, correct the length by loosening the tension rod nut and turning the rod.

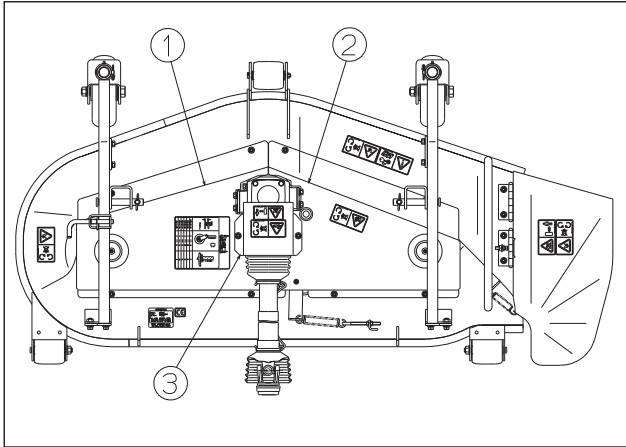


- (1) Lock nut                      (3) Tension spring  
(2) Tension adjustment rod

## SFH220,240

### • Inspection of belt

- Remove the drive shaft cover and both the belt covers installed on the mower deck.



- (1) Belt cover (LH)      (3) Drive shaft cover  
(2) Belt cover (RH)

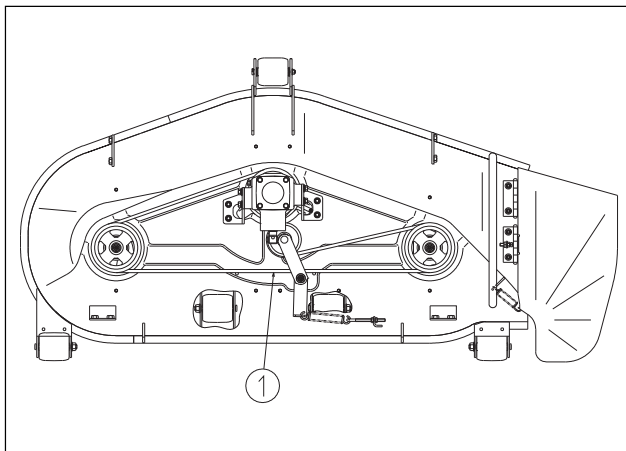
- Check the belt for damage and dirt.  
If it is smeared with oil or dirt, or wet with water, wipe it clean with a dry cloth. When damaged, install a new belt.



**CAUTION: Never forget to replace all the removed covers.**

### • Replacement of the belt

- Remove the drive shaft cover and belt covers (RH and LH) from the mower deck.
- Loosen the lock nut of the tension rod and remove the tension spring.



- (1) Belt

- Remove the belt and install a new belt.

### IMPORTANT:

- Be sure to install the belt as illustrated.
- An improperly installed belt will not work as expected but also may result in the belt breaking right away.
- Be sure to use following ISEKI's genuin belts:  
SSM54 8657-203-001-00 Belt (VB101)

- Make sure the belt is seated properly in the groove of each pulley and apply tension to it by expanding the tension spring properly with the tension rod referring to the paragraph for "Inspection of belt tension."

- Re-install the drive shaft cover and belt covers.



**CAUTION: Never forget to replace the removed belt covers and drive shaft cover.**

## 3. INSPECTION & REPLACEMENT OF BLADES

### • Inspection of blades

- Apply the parking brakes.

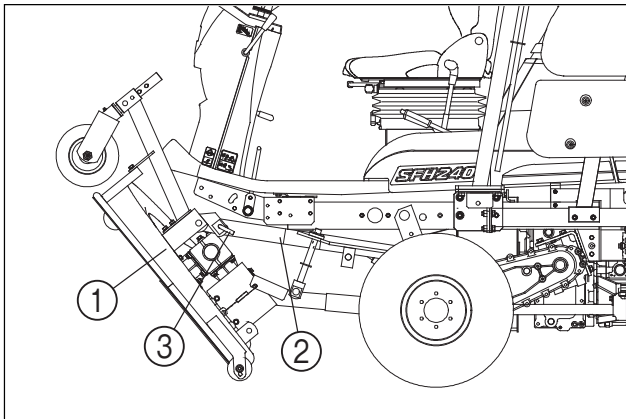


**CAUTION: Be sure to apply the parking brakes securely.**

- Start the engine and turn the throttle lever to the low speed (↩) position to decelerate the engine.
- Shift the lift lever to the UP (↑) position and raise the mower deck to the highest position.
- Stop the engine.

## CHAPTER 7. SSM54 INSPECTION AND MAINTENANCE OF MAJOR PARTS

- e. Set the cutting height at lowest position.
- f. Lift down the mower deck onto the ground.
- g. Remove the mower chute from the mower deck, and hook it on the lawn mower. (only for SCMA54F, 48F)
- h. Remove the rear linkage of mower deck by pull out the pin.
- i. Start the engine and lift up the mower deck to the highest position.
- j. Stop the engine.



- (1) Mower deck                      (3) Stopper pin  
(2) Lift arm (LH)



**CAUTION:** When turning the mower deck, take care not to allow it to hit your feet.

- k. Lock the mower deck by inserting the stopper pin into the hole in the left-hand lift arm.
- l. Check the mower blades for deformation and damage.

### IMPORTANT:

- If the blade ends have become round due to wear, enlarged clearance between blades leave uncut grass behind. The blade should be checked timely and worn ones should be replaced immediately.
- Low cutting height or the operation just after soil has been applied will wear blades rapidly. The blades should be checked more frequently.



a. New blade



b. Blade with rounded edge



c. Excessively worn blades are very dangerous. So replace such blades with new ones at once.

|       |                 |        |
|-------|-----------------|--------|
| SSM54 | 8657-306-005-00 | Ⓔ8657D |
|-------|-----------------|--------|

### • Replacement of blades

Lift up the mower deck and stop the engine or remove the mower deck from the front mower.



**CAUTION:** As blade edges are very sharp, be sure to wear gloves to avoid being cut.

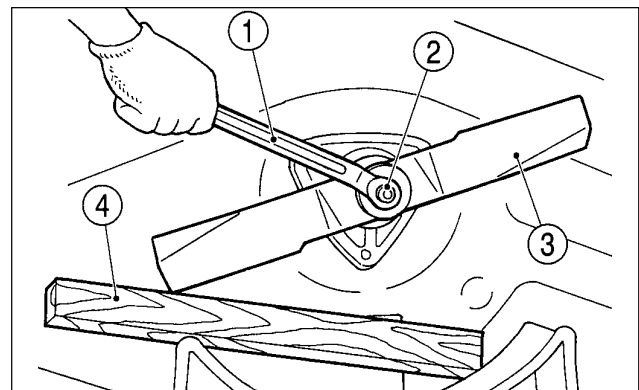
- a. Chock a blade by inserting a piece of wood between the blade and mower deck to prevent the blades from rotating. Loosen the blade tightening nut.



### CAUTION:

- Never attempt to loosen the blade tightening nut by holding the blade by hand.
- The chocking wood should be held securely so as not to become dislocated. During this operation, always pay sufficient care not to be hurt even when the wood is removed.

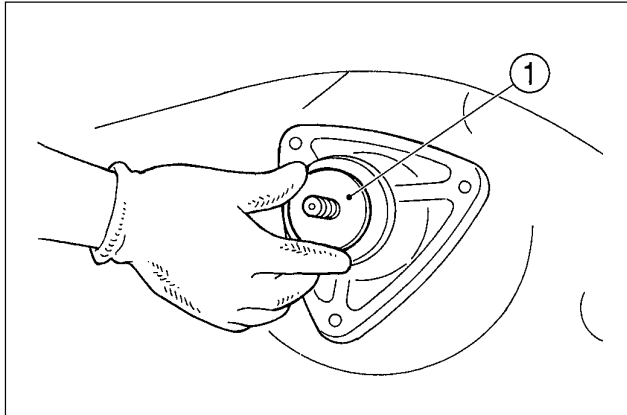
As the blades are tightened along with washers and shims, take care not to lose them when the blades are disassembled.



- (1) Spanner                      (3) Blade  
(2) Nut                          (4) Wood

## SFH220,240

- b. Install a new blade, insert the washer and tighten blade nuts temporarily to determine the height difference between blades. If more than 2 mm (0.08 inch), correct with adjusting shims. The clearance should be measured in all cases: original position and the position with the blades respectively turned by 180 degrees.  
Excessive difference in blade positioning will result in poor mowing finish.



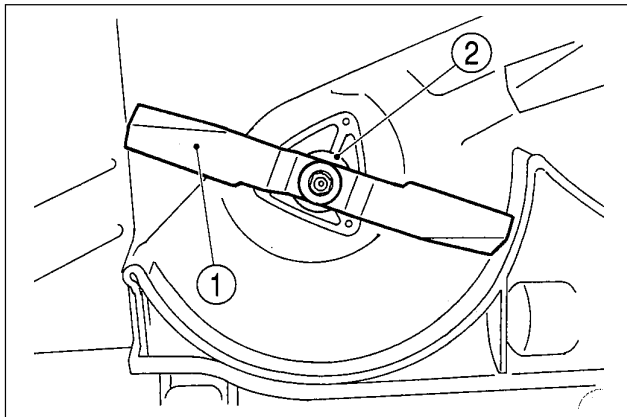
(1) Shim

- c. The blade nuts should be tightened to the specified torque with the blades chocked respectively.

Tightening torque: 1000 kg · cm (72 ft · lb)



**DANGER:** Be sure to use new nuts when changing blades.



(1) Blade

(2) Washer

**IMPORTANT:** Make sure that the blades are not in contact with the mower deck by turning them by hand.

- d. While lifting up the mower deck in the center, turn it back to the original position.

- e. Replace the rear gauge wheels and set them in the proper position with the setting pin.  
f. Shift the lift lever to the DOWN (↓) position to lower the mower deck.



**CAUTION:** Before operating the lift lever, be seated on the operator's seat and make sure of the safety conditions around the front mower.

### 4. INSPECTION OF GAUGE WHEELS

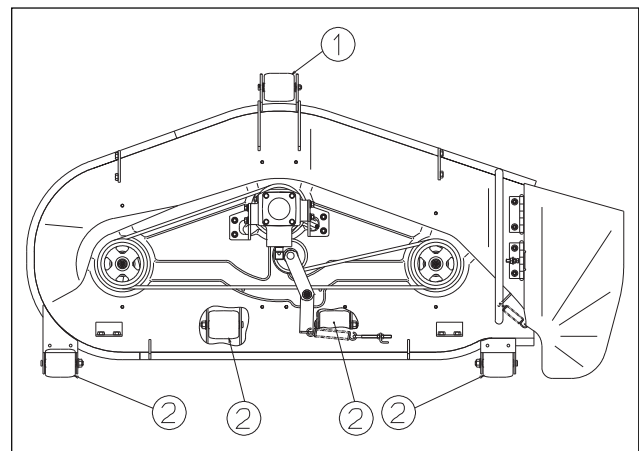
As the gauge wheels are installed on the front end of the mower, they are vulnerable to being hit and deformed by obstacles. When a wheel does not turn smoothly or is deformed, replace it with a new gauge wheel immediately.

### 5. INSPECTION OF THE GAUGE WHEELS

Check and adjust the inflation of gauge wheels.  
Specified air pressure: 2.1kg/cm<sup>2</sup>

### 6. INSPECTION OF ROLLERS

Make sure that the front roller and rear rollers turn smoothly.



(1) Front roller

(2) Rear rollers

#### IMPORTANT:

- When the wheels and rollers are hard to turn, disassemble them and clean them.
- After re-assembly, be sure to grease them sufficiently.

### 7. CLEANING OF MOWER DECK

- a. Remove each belt cover and drive-shaft cover, and clear the grass and dust accumulated under the cover before operation, or shorter service life of the belts and damage to bearings and oil seals will be caused.

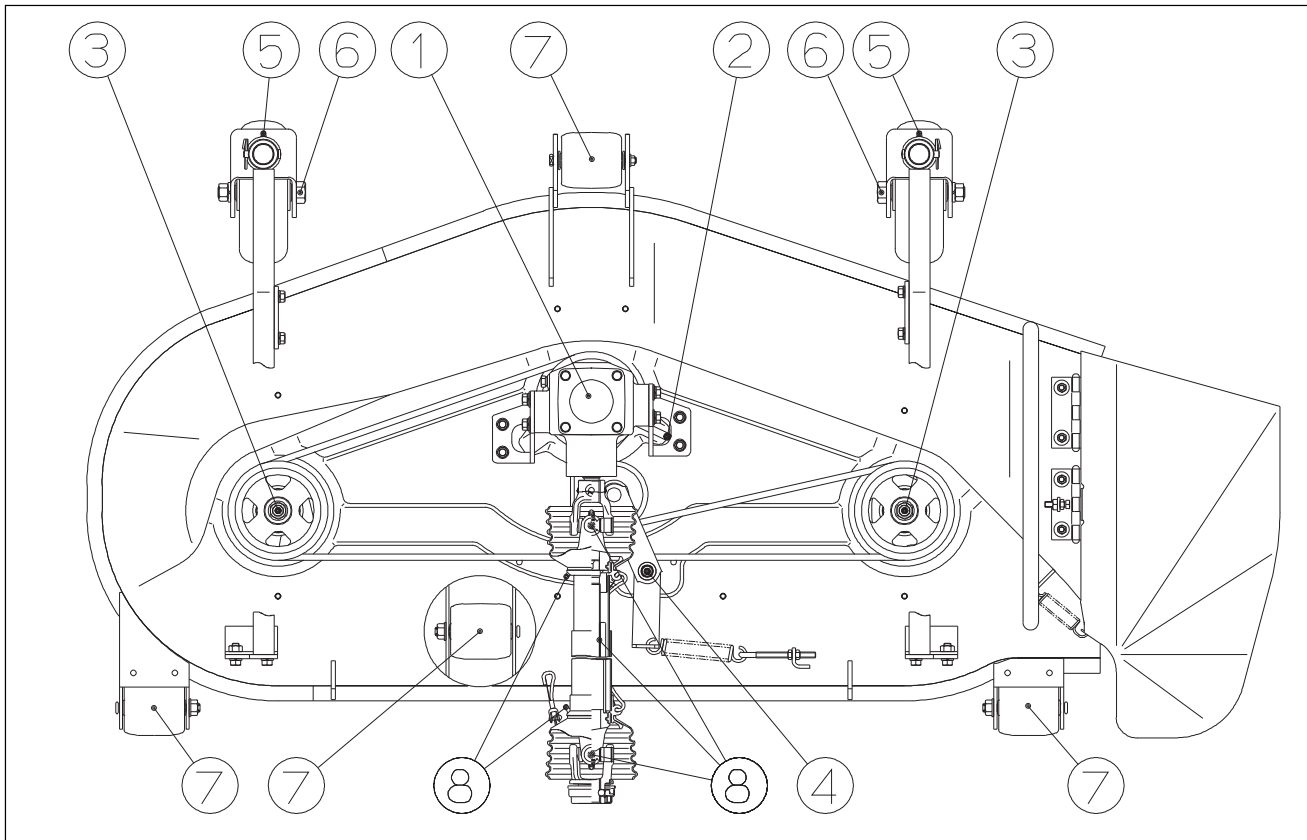
## CHAPTER 7. SSM54 INSPECTION AND MAINTENANCE OF MAJOR PARTS



**CAUTION:** Be sure to replace the removed covers after cleaning.

- b. Each blade shaft end and tension pulley end are equipped with a grease fitting. Inject grease through these fittings periodically and make sure that each part rotates smoothly.
- c. After mowing, clear the underside of the mower deck and blades from accumulated grass and dirt. Especially after operation in wet grass, wash them without fail, or accumulated wet grass and dirt will cause performance deterioration.

### 8. FILLING DIAGRAM



| Ref. No. | Filling points     | Lubricants      | Quantity:<br>litres (Imp. gal.) |
|----------|--------------------|-----------------|---------------------------------|
| 1        | Bevel gear case    | Gear oil SAE 80 | 0.4 (0.09)                      |
| 2        | Center metal       | Grease          | Inject until grease overflows   |
| 3        | Side metal         |                 |                                 |
| 4        | Tension arm        |                 |                                 |
| 5        | Gauge wheel (fork) |                 | As required                     |
| 6        | Gauge wheel        |                 |                                 |
| 7        | Roller             |                 | Inject until grease overflows   |
| 8        | Drive shaft        |                 |                                 |

## **CHAPTER 8. SSM54 STORING THE MOWER**

When the mower deck is to be stored for a long period of time, service the deck as mentioned below before storing it.

- a. Clean the mower deck. Take special care to remove grass and dirt from the blades and the underside of the mower deck.
- b. Also clean the underside of the discharge cover of accumulated grass and dirt.
- c. Remove grass or other objects tangled around the rollers and shafts.
- d. Remove the drive shaft cover and belt covers, and clean the mower deck top. Be sure to remove grass and other objects tangled around the pulleys and shaft.
- e. Check the V-belt. If the belt is normal, loosen the tension spring.
- f. Remove all rust and touch up where paint has peeled off with touch-up paint supplied by ISEKI.
- g. Be sure to replace all the removed parts.
- h. Lost pins and clips should be replaced with new ones.
- i. Check each part for damage and repair or replace damaged ones with new ones for the next operation.

*IMPORTANT: Insist on ISEKI genuine parts when replacing.*

- j. Grease up all grease points.
- k. All loose bolts and nuts should be tightened properly and lost ones should be replaced with new ones.
- l. Store the mower deck in a dry place with wooden blocks placed under it and cover with tarpaulin or the like.



**CAUTION : When storing the mower deck installed on the front mower, be sure to lower it on ground to prevent unexpected accidents caused by manipulation of the lift lever by children or unauthorised people.**

## CHAPTER 9 .SSM54 TROUBLESHOOTING

| Troubles                                                                               | Presumable causes                                                                                                                                                                                                                                                                                                                                          | Remedies                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Improper mulching</li> </ul>                  | <ul style="list-style-type: none"> <li>• Drive belt is not installed properly.</li> <li>• Blades are installed upside down.</li> <li>• Grass is too moist.</li> <li>• Too tall grass</li> <li>• Too fast travelling speed</li> <li>• Too low engine speed</li> <li>• Clogged discharge or mower deck inside</li> <li>• Too dense grass</li> </ul>          | <ul style="list-style-type: none"> <li>• Check belt and correct.</li> <li>• Re-install them correctly.</li> <li>• Wait until grass becomes dry.</li> <li>• Mow it in two steps.</li> <li>• Slow down sufficiently.</li> <li>• Run engine at full throttle (🔊).</li> <li>• Clean.</li> <li>• Mow it in two steps or at the narrow cutting width.</li> <li>• Slow down sufficiently.</li> </ul> |
| <ul style="list-style-type: none"> <li>• Grass is not mowed.</li> </ul>                | <ul style="list-style-type: none"> <li>• Drive belt is slipping or broken.</li> <li>• Broken tension spring</li> <li>• Too fast travelling speed</li> <li>• Too low engine speed</li> <li>• Worn or broken blades</li> <li>• Blades are installed upside down.</li> </ul>                                                                                  | <ul style="list-style-type: none"> <li>• Adjust belt tension spring or replace belt with new one.</li> <li>• Replace it with a new one.</li> <li>• Slow down.</li> <li>• Run engine at full throttle (🔊).</li> <li>• Replace them with new ones.</li> <li>• Re-install them correctly.</li> </ul>                                                                                             |
| <ul style="list-style-type: none"> <li>• Uneven cutting heights</li> </ul>             | <ul style="list-style-type: none"> <li>• Mower is not parallel to ground.</li> <li>• Too fast travelling speed</li> <li>• Worn blades</li> <li>• Clogged grass inside of mower deck</li> <li>• Improperly adjusted gauge wheels</li> <li>• Too tall grass</li> <li>• The blades are not installed on the same level.</li> <li>• Deformed blades</li> </ul> | <ul style="list-style-type: none"> <li>• Adjust mower mounting.</li> <li>• Slow down.</li> <li>• Replace them with new ones.</li> <li>• Clean.</li> <li>• Adjust them properly.</li> <li>• Mow it in two steps.</li> <li>• Correct by shimming.</li> <li>• Replace them with new ones.</li> </ul>                                                                                             |
| <ul style="list-style-type: none"> <li>• Turf is peeled off in some places.</li> </ul> | <ul style="list-style-type: none"> <li>• Too low cutting height</li> <li>• Mower is not parallel to ground.</li> <li>• Too fast turning speed</li> <li>• Too bumpy ground</li> </ul>                                                                                                                                                                       | <ul style="list-style-type: none"> <li>• Correct it with gauge wheels.</li> <li>• Adjust mower mounting.</li> <li>• Turn slowly.</li> <li>• Shift mowing direction.</li> </ul>                                                                                                                                                                                                                |

**SFH220,240**

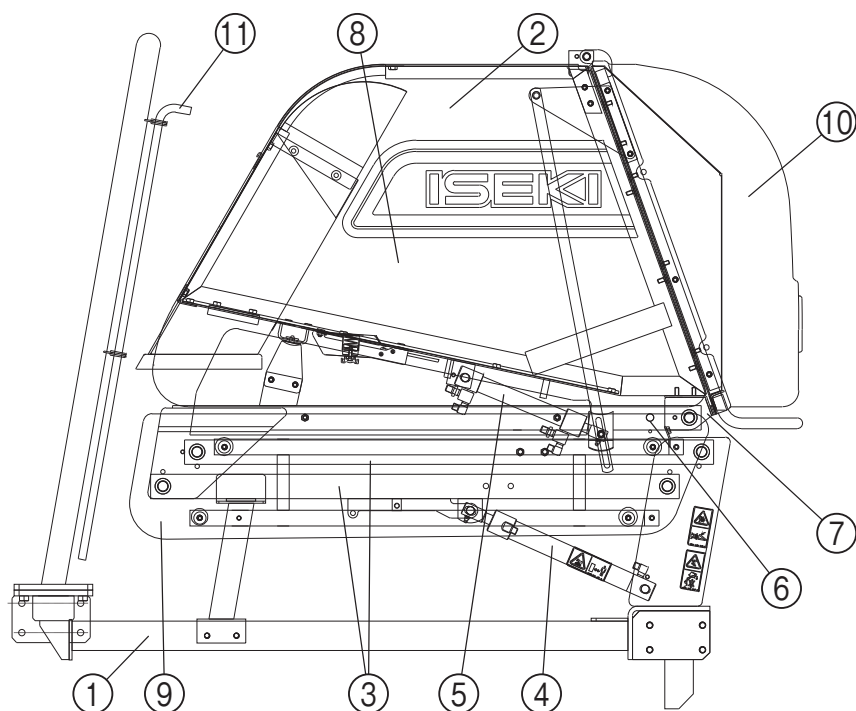
| Troubles                                                                          | Presumable causes                                                                                                                                                                                                                                                                                                               | Remedies                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Excessive noise and vibration</li> </ul> | <ul style="list-style-type: none"> <li>• Clogged grass inside of mower or foreign matter caught in a pulley</li> <li>• Deformed or interfering belt cover or shaft cover</li> <li>• Damaged bevel gears</li> <li>• Broken or unbalanced blades</li> <li>• Loose blade tightening nuts</li> <li>• Slipping blade belt</li> </ul> | <ul style="list-style-type: none"> <li>• Clean.</li> <li>• Repair it.</li> <li>• Consult your dealer.</li> <li>• Replace them with new ones.</li> <li>• Re-tighten them to 1300 kgf • cm.</li> <li>• Adjust belt tension spring properly.</li> </ul>          |
| <ul style="list-style-type: none"> <li>• Too low engine output</li> </ul>         | <ul style="list-style-type: none"> <li>• Too low engine speed</li> <li>• Too fast travelling speed</li> <li>• Foreign matter caught between blade and blade support</li> <li>• Foreign matter caught in a pulley</li> <li>• Defective engine</li> </ul>                                                                         | <ul style="list-style-type: none"> <li>• Mow at full throttle (🔥).</li> <li>• Slow down.</li> <li>• Clean.</li> <li>• Clean.</li> <li>• Consult your dealer.</li> </ul>                                                                                       |
| <ul style="list-style-type: none"> <li>• Gauge wheels do not turn.</li> </ul>     | <ul style="list-style-type: none"> <li>• Foreign matter caught in shaft</li> <li>• Broken wheel</li> <li>• Short of grease</li> </ul>                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>• Clean.</li> <li>• Replace it with a new one.</li> <li>• Inject grease.</li> </ul>                                                                                                                                    |
| <ul style="list-style-type: none"> <li>• Blades do not rotate.</li> </ul>         | <ul style="list-style-type: none"> <li>• Loose blade tightening nuts</li> <li>• Foreign matter caught in blades or blade supports</li> <li>• Broken bevel gears</li> <li>• Broken blade pulley</li> <li>• Slipping blade belt</li> <li>• Center PTO clutch is slipping or not engaging.</li> </ul>                              | <ul style="list-style-type: none"> <li>• Re-tighten them to 1300 kgf • cm.</li> <li>• Clean.</li> <li>• Consult your dealer.</li> <li>• Replace it with a new one.</li> <li>• Adjust belt tension spring properly.</li> <li>• Consult your dealer.</li> </ul> |
| <ul style="list-style-type: none"> <li>• Mower does not rise.</li> </ul>          | <ul style="list-style-type: none"> <li>• Inside of the mower deck is clogged with too much grass or mud.</li> <li>• Defective hydraulic system</li> </ul>                                                                                                                                                                       | <ul style="list-style-type: none"> <li>• Clean.</li> <li>• Consult your dealer.</li> </ul>                                                                                                                                                                    |

# ***ISEKI FRONT MOWERS COLLECTOR SECTION***



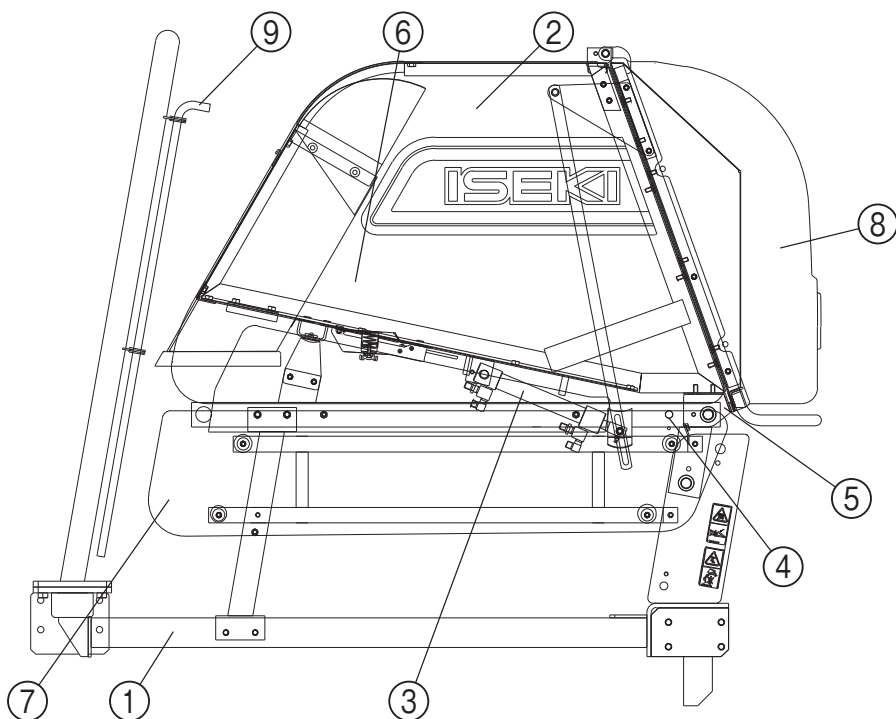
# CHAPTER 1. NAMES OF MAJOR COMPONENTS

## 1. SBC550F-HE4



- (1) Collector frame
- (2) Container
- (3) Lift link
- (4) Lift cylinder
- (5) Dump cylinder
- (6) Container limit sensor
- (7) Dump pivot
- (8) Container cover
- (9) Side cover
- (10) Rear cover
- (11) Cleaning stick

## 2. SBC550F-LE4



- (1) Collector frame
- (2) Container
- (3) Dump cylinder
- (4) Container limit sensor
- (5) Dump pivot
- (6) Container cover
- (7) Side cover
- (8) Rear cover
- (9) Cleaning stick

## CHAPTER 2. DETACHING AND ATTACHING COLLECTOR

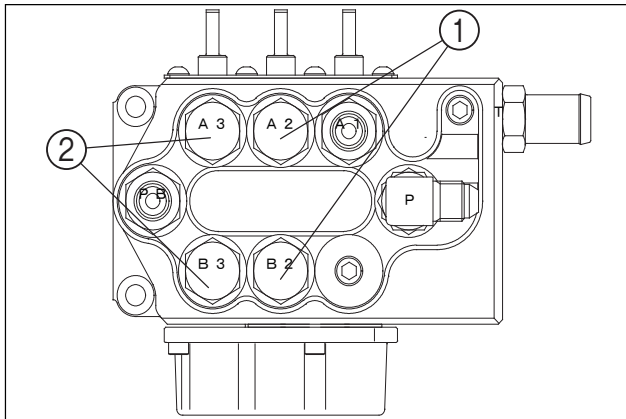


### WARNING:

When attaching or detaching the collector to the lawn mower:

- Place the lawn mower on level, hard ground.
- Apply the parking brake securely.
- Shift all PTO levers to the STOP (☒) position.

### 1. DETACHING THE HIGH DUMP COLLECTOR



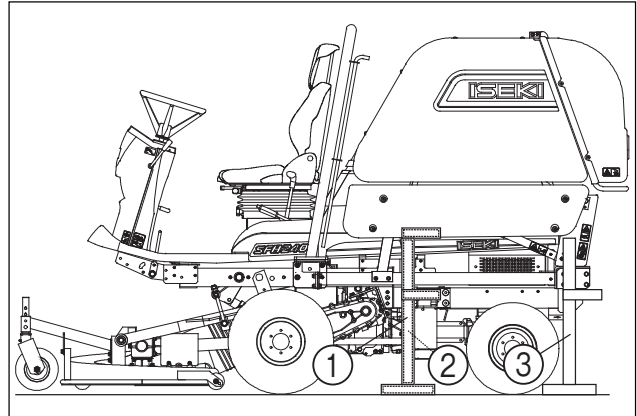
- (1) Lift port      (2) Dump port

- a. Set the collector 50mm upper position by using lift and dump lever.
- b. Put stoppers on three sides of the collector.
- c. Separate the connection of grass limit sensor and safety switch wiring, it is located in left hand side on lawn mower.
- d. Remove the hose from lift and dump port of valve connecting with collector. After removing the hose, cover the port with a plug on four places.



### CAUTION:

Separate the connection of grass limit sensor and safety switch wiring, it is located in left hand side on lawn mower.



- (1) stand (LH)  
(2) stand (RH)  
(3) stand (Rear)

- e. Loosen the both right and left connecting bolts of the lower frame and rear frame of the lawn mower.
- f. Make sure that collector is perfectly detached from the lawn mower.

Release the parking brake and move the lawn mower to frontward and detach it from the collector.

- g. Shift the parking brake to the ON position.

### 2. ATTACHING THE HIGH DUMP COLLECTOR

Attach the collector in reverse order of the detaching operation

**IMPORTANT:** Be sure to keep the removed parts.



**DANGER:** Use a strong and stable stand.

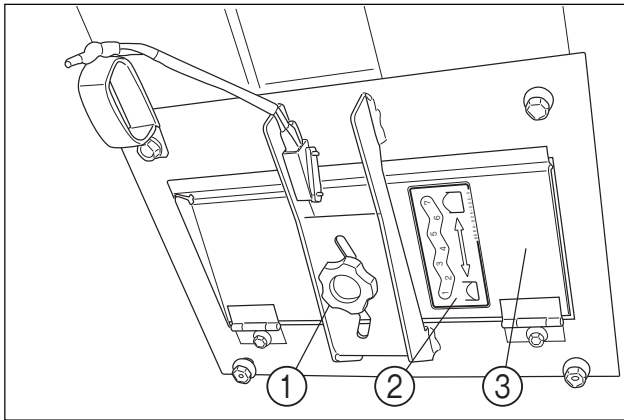
## CHAPTER 3. COLLECTOR OPERATION

### 1. BEFORE OPERATION


**CAUTION:**

- Become familiar with how to operate the lawn mower and understand safety instructions by reading this manual carefully.
- Make sure that all safety covers and guards are installed in position.
- Before operating the collector, be sure to confirm that collector move up and down smoothly.
- When operating the collector, be sure to confirm that hydraulic hose is not pulled and interfered.

### 2. ADJUSTING THE GRASS LIMIT SENSOR



- (1) adjuster bolt  
(2) adjustment position label

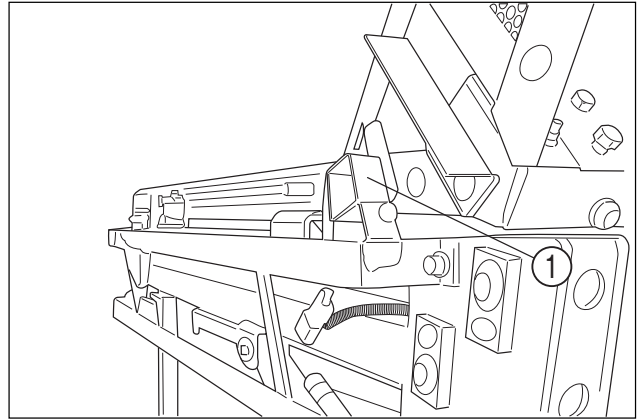
- a. Filler rate of container is changed with adjusting the adjuster bolt(1).
- b. Check the buzzer of grass limit sensor. Set the starter switch ON position (Don't start engine) and set the PTO lever on. Check that buzzer sounds by pushing the sensor plate(3).


**CAUTION:**

After checking the buzzer, be sure to turn starter switch and PTO lever off.

### 3. INSPECTION BEFORE OPERATION

- Before operating, inspect the points as follows.



- (1) safety switch

The safety switch of the collector is designed to prevent the blower from rotating with lifted container.

In condition that no stones or any objects and also on the concrete ground, refer to the items mentioned below.

- a. Apply the parking brake to the ON position and start the engine.
- b. Lift up or dump the collector a little.
- c. Shift the center PTO to the ON position with the engine stopping.
- d. Be sure to confirm that starter motor doesn't start with starting the engine.


**CAUTION:**

After checking the safety switch, be sure to turn starter switch and PTO lever off.

## **SFH220,240**

### **4. CLEANING A COLLECTOR**

If net of container is clogged with grass, the power would go down.

Clean the net of container frequently.



**DANGER:** It is a danger to operate the lawn mower with damaged rear net.  
Repair or exchange rear net.

### **5. EFFICIENT COLLECTING**

#### **IMPORTANT:**

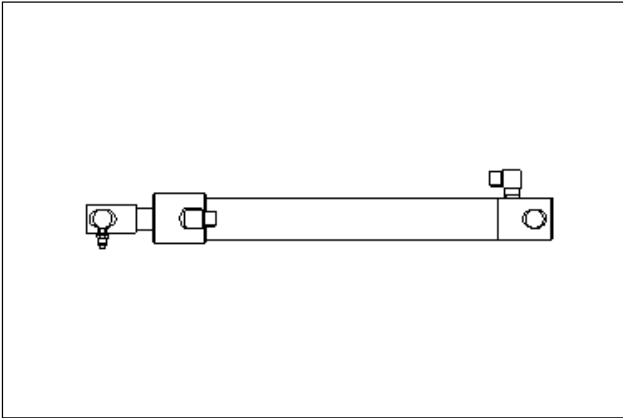
- *Keep rear net of container clean always.*
- *When mowing the wet or long grass, filling rate of container would go down. Slow down lawn mower.*
- *Adjust the grass limit sensor as a necessary (refer to page.119).*
- *Stop operating the lawn mower as soon as the buzzer sounds and dump grass of container.*



**DANGER:** Dump grass of container on the level and hard ground.

## CHAPTER 4. INSPECTION AND MAINTAINANCE OF MAJOR PARTS

### 1. INSPECTION OF CYLINDER



Inspect each part of the cylinders and check the oil leak.  
If you found an oil leak, immediately stop to use the machine and consult your ISEKI dealer.

### 2. INSPECTION OF HYDRAULIC HOSES

- a When operating the collector, be sure to confirm that hydraulic hose is not pulled and interfered.
- b. When the hydraulic hose is damaged, exchange it as soon as possible.



**DANGER:**

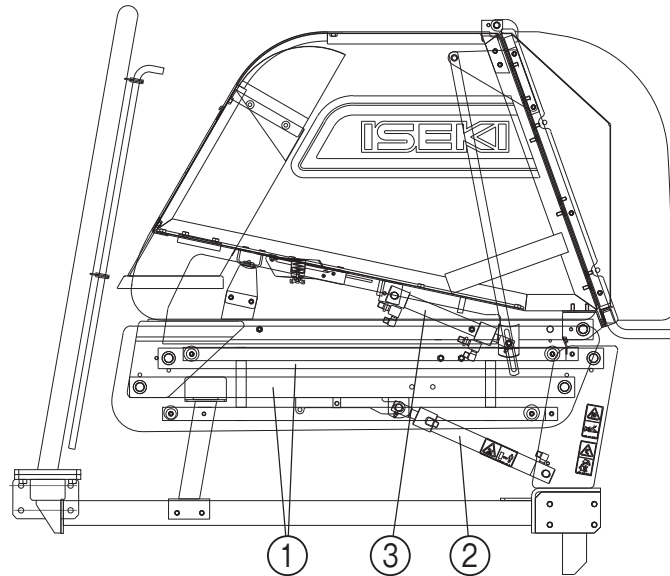
It is dangerous to operate the lawn mower with damaged hydraulic hose.  
It may cause the collector to fall down or a hydraulic line to burst suddenly.

## SFH220,240

### 3. FILLING DIAGRAM

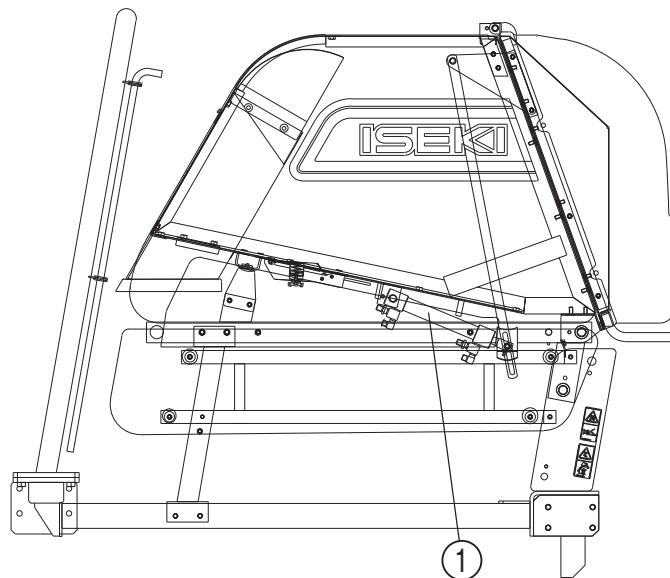
Grease up the points mentioned below periodically.

#### SBC550F-H



| Ref. No. | Filling points | Lubricants | Quantity                      |
|----------|----------------|------------|-------------------------------|
| 1        | Lift link      | Grease     | Inject until grease overflows |
| 2        | Lift cylinder  |            | As required                   |
| 3        | Dump cylinder  |            |                               |

#### SBC550F-L



| Ref. No. | Filling points | Lubricants | Quantity    |
|----------|----------------|------------|-------------|
| 1        | Dump cylinder  | Grease     | As required |

## CHAPTER 4. INSPECTION AND MAINTAINANCE OF MAJOR PARTS

### 4. PERIODICAL INSPECTION TABLE

#### SBC550XH and SBC550XL

○ : Inspection, replenishment, and adjustment

△ : Cleaning and washing

● : Replacement

★ : Consult your dealer.

| Check points    | Pre-operation | Inspection and servicing intervals (hours of operation) |     |     |     |     | Intervals after that       | Judgement criteria                               | Ref. page |
|-----------------|---------------|---------------------------------------------------------|-----|-----|-----|-----|----------------------------|--------------------------------------------------|-----------|
|                 |               | 50                                                      | 100 | 150 | 200 | 250 |                            |                                                  |           |
| Greasing points |               | ○                                                       | ○   | ○   | ○   | ○   | Greas up after every 50hrs |                                                  | —         |
| Bolts and nuts  | ○             |                                                         |     |     |     |     |                            | There should be no loose ones.                   | —         |
| Pins and clips  | ○             |                                                         |     |     |     |     |                            | There should be no lost or deformed ones.        | —         |
| Rear net        | ○             |                                                         |     |     |     |     |                            | There should be no clogginess.                   | 120       |
| Blower          | ○             |                                                         |     |     |     |     |                            | There should be no looseness and bend and noise. | —         |

#### IMPORTANT:

- Above mentioned service intervals should be used as reference criteria. If working conditions are harder, earlier service is recommended.
- When special technology and special tools required, consult your dealer.

## **CHAPTER 5. STORING THE COLLECTOR**

When the collector is to be stored for a long period of time, service the collector as mentioned below before storing it.

- a. Clean the collector. Take special care to remove grass and dirt from the container net.
- b. Remove grass or other objects tangled around the link and hydraulic hose.
- c. Remove all rust and touch up where paint has peeled off with touch-up paint supplied by ISEKI.
- d. Be sure to replace all the removed parts.
- e. Lost pins and clips should be replaced with new ones.
- f. Check each part for damage and repair or replace damaged ones with new ones for the next operation.

*IMPORTANT: Insist on ISEKI genuine parts when replacing.*

- g. Grease up all grease points.
- h. All loose bolts and nuts should be tightened properly and lost ones should be replaced with new ones.
- i. Store the collector in a dry place with wooden blocks placed under it and cover with tarpaulin or the like.



**CAUTION :**

**When storing the collector installed on the lawn mower, be sure to settle it at the lowest position so as to prevent unexpected accidents caused by manipulation of the lift and dump lever by children or unauthorised people.**

## CHAPTER 6. TROUBLESHOOTING

| Troubles                                                                                  | Presumable causes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Remedies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• The filling rate of container is poor</li> </ul> | <ul style="list-style-type: none"> <li>• Blower clutch disk is worn out</li> <li>• Hydraulic pressure of clutch is low</li> <li>• Tension of belt is poor</li> <li>• Net of container is clogged</li> <li>• Shooter is clogged with grass</li> <li>• Mower deck is clogged with grass</li> <li>• Location of cleaning plate is bad</li> <li>• Too low engine speed</li> <li>• Engine power is down</li> <li>• Grass is too moisty</li> <li>• Too tall grass</li> <li>• Too fast traveling</li> <li>• Too dense grass</li> <li>• Adjustment of grass limit sensor is poor</li> <li>• Blower blade is bended</li> </ul> | <ul style="list-style-type: none"> <li>• Consult your dealer</li> <li>• Consult your dealer.</li> <li>• Check belt and correct it</li> <li>• Clean</li> <li>• Clear the clogged grass</li> <li>• Clear the clogged grass</li> <li>• Set the cleaning plate properly</li> <li>• Mow at full throttle (🔊)</li> <li>• Check engine oil, air cleaner, coolant and clean radiator net, intake net, fuel filter</li> <li>• Wait until grass becomes dry</li> <li>• Try to mow in two steps</li> <li>• Slow down sufficiently</li> <li>• Try to mow in two steps</li> <li>• Adjust it properly</li> <li>• Ask your ISEKI dealer to exchange the blade.</li> </ul> |
| <ul style="list-style-type: none"> <li>• Excessive noise and vibration</li> </ul>         | <ul style="list-style-type: none"> <li>• Loose bolts and nuts</li> <li>• Fulcrum of collector link is poor</li> <li>• Cramp of hydraulic hose is loosen</li> <li>• Short of grease with collector link</li> <li>• Blower blade is bended</li> </ul>                                                                                                                                                                                                                                                                                                                                                                   | <ul style="list-style-type: none"> <li>• Retighten them properly</li> <li>• Check and consult your dealer if necessary</li> <li>• Cramp it properly</li> <li>• Inject grease with collector link</li> <li>• Ask your ISEKI dealer to exchange blade.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                            |
| <ul style="list-style-type: none"> <li>• Collector does not move.</li> </ul>              | <ul style="list-style-type: none"> <li>• Short of grease with collector link</li> <li>• Install hydraulic hose by mistake</li> <li>• Too low engine speed</li> <li>• Defective hydraulic system</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>• Inject grease with collector link</li> <li>• Check and correct</li> <li>• Raise engine speed</li> <li>• Consult your dealer</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

**SFH220,240**

## NOISE & VIBRATION

**NOISE:**

|                                     |        |                         | SFH240F+SCMA48F<br>+SBC550FL | SFH240F+SCMA54F<br>+SBC550FL | SFH240F+SCMA48F<br>+SBC550FH | SFH240F+SCMA54F<br>+SBC550FH | SFH240F+SMM54F | SFH220F+SMM54F |
|-------------------------------------|--------|-------------------------|------------------------------|------------------------------|------------------------------|------------------------------|----------------|----------------|
| Sound power level                   |        |                         | db(A)                        | 105                          | 105                          | 105                          | 105            | 105            |
| Sound power level at operator's ear |        |                         | db(A)                        | 90                           | 90                           | 90                           | 90             | 90             |
| Speed of rotation                   | Engine | min <sup>-1</sup> (rpm) | 2810                         | 2810                         | 2810                         | 2810                         | 2810           | 2810           |
|                                     | Blade  | min <sup>-1</sup> (rpm) | 2146                         | 1942                         | 2146                         | 1942                         | 3128           | 3128           |
| Blower                              |        |                         | min <sup>-1</sup> (rpm)      | 1900                         | 1900                         | 1900                         | —              | —              |
| Test code                           |        |                         | EEC 84/538                   |                              |                              |                              |                |                |

**VIBRATION:**

|                                                                                        | SFH240                       | SFH220                       |
|----------------------------------------------------------------------------------------|------------------------------|------------------------------|
| Weighted root mean square acceleration less than value to which the arms are subjected | Max. 15 m/s <sup>2</sup>     | Max. 15 m/s <sup>2</sup>     |
| Weighted root mean square acceleration less than value to which the body is subjected  | Max. 5 m/s <sup>2</sup>      | Max. 5 m/s <sup>2</sup>      |
| Speed of rotation of the engine                                                        | 2810 min <sup>-1</sup> (rpm) | 2810 min <sup>-1</sup> (rpm) |
| Test code                                                                              | ISO 5349                     |                              |

# DECLARATION OF CONFORMITY

We

**ISEKI & CO., LTD.**

3-14 Nishi-Nippori 5-Chome Arakawa-ku  
116-8541 Tokyo Japan

declare under our sole responsibility that the products described below.

Generic denomination:

Lawnmower

Function:

Ground care

**SFH220**

from and after serial number

**SFH220 :100001**

**SFH240**

**SFH240 : 100001**

**SCMA48**

**SCMA48 : 100001**

**SCMA54**

**SCMA54: 100001**

**SMM54**

**SMM54 : 100001**

**SSM54**

**SSM54 : 000001**

**SBC550**

**SBC550 : 000001**

to which this declaration relates are in conformity with the following directives:

2006/42/EC Machinery Directive

2004/108/EC EMC Directive

2000/14/EC amended by 2005/88/EC. Annex VI

Guaranteed sound power level:

**105 db (A)**

Engine /Engine type

ISEKI

E3112-VG04

Engine power

16.1kw

at 2600 min-1

Notified Body:

**TÜV Rheinland Luxemburg GmbH.**

Reference to harmonized standards:

EN836

whose technical file compiled by

**N.V. ISEKI EUROPE S.A.**

Sterrebeekstraat 179 D4

B-1930 Zaventem Belgium

**Tokyo 28/12/2009**

Place and date of issue

*E. Kinoshita*

**E. KINOSHITA**

Executive Managing director,

Development and Production Division

This image shows a full page of handwriting practice paper. It features approximately 30 horizontal dashed lines spaced evenly across the page, providing a guide for letter height and placement. The background is plain white, and there are no margins or additional markings.

**SFH220**  
**SFH240**

## **ISEKI & CO., LTD.**

### **Overseas Business Division**

5-3-14, Nishi-Nippori, Arakawa-ku,

Tokyo 116-8541, Japan

Phone: (03) 5604-7658

Fax: (03) 5604-7703