

# OPERATOR'S MANUAL

# RICE TRANSPLANTER

**VP7D25** (en) Original instructions

# INTRODUCTION

#### Thank you for purchasing the Yanmar transplanter.

Please read the operator's manual before you use the transplanter.

It contains the operation procedures and notes of use.

It is necessary to read the manual carefully and understand it thoroughly in order to use the transplanter correctly.

After reading, put the manual near the machine so that the operator can always refer to it.

#### Requirements

- Do not use the product before understanding the instructions.
- Lend or transfer the manual together with the product.
- If this manual or a safety label are lost or damaged, contact a Yanmar dealer and order a replacement.
- Chapter 1 "Precautions for Safe Operation" contains important information on how to operate the machine safely.
   Read it before using the machine.
- If you are uncertain or concerned about a point, contact your Yanmar dealer for assistance.

#### **Declarations**

- Because the components of the machine may be changed for product improvement purposes, the contents and illustrations in this manual may differ from the actual product.
- Every effort has been made to ensure that the contents of this manual are complete and accurate. If any mistake or omission is found, it may not be corrected immediately.

According to road traffic regulations, the transplanter is a non-road vehicle. It may not be driven on a public road. Use a truck to transport the transplanter on public roads.

The truck must comply to the applicable road traffic regulations.

All information, descriptions, specifications, drawings, illustrations, and pictures in this manual are based on the latest information available at the time this manual was published. YANMAR reserves the right to make changes at any time without prior notice.

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# **SAFETY ALERT SYMBOLS**

#### Safety-alert symbol

This is the safety-alert symbol. When you see this symbol on your transplanter or in this manual, be alert to the possibility of personal injury and carefully read the messages that follow.



#### Signal words

The signal words "DANGER", "WARNING", and "CAUTION" are used with the safety-alert symbol.

"DANGER" indicates a hazardous situation which, if not avoided, will result in death or serious injury.

"WARNING" indicates a hazardous situation which, if not avoided, could result in death or serious injury.

"CAUTION" indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. It is also used to alert against unsafe practices.

# **A** DANGER

**▲** WARNING

**A** CAUTION

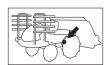
#### **IMPORTANT**

"IMPORTANT" calls attention to instructions which must be followed precisely to avoid damaging the product, process, or its surroundings.

**IMPORTANT** 

#### Reference

This is supplementary information to improve efficiency or to avoid wrong operation.



These symbols refer to an object of explanation and the viewing direction.

- refers to the object
- refers to the viewing direction

#### Intended use of the product

The function of this product is to transplant seedlings into a paddy field.

Do not use the product for other operations or purposes.

The use of the product for other operations or purposes is not covered by the warranty. (For more details, refer to the warranty.)

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# 1. PRECAUTIONS FOR SAFE OPERATION

- Observe the following instructions as they contain important safety information.
- Any violation of the precautions may cause accidents that lead to death or injury or damage to the machine.

# **Operator**

# **WARNING**

Use the machine only after carefully reading and understanding the instructions for use and the safety signs.

 Operate the machine carefully and observe the safety cautions stated in the manual.

Children or people who have no knowledge of the operator's manual and the safety labels on the machine are not allowed to operate the transplanter.

People who are physically unfit or otherwise not able to operate the machine are not allowed to operate the transplanter.

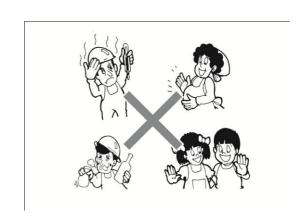
- People who are tired, sick, under the influence of drugs or otherwise not able to concentrate are not allowed to operate the transplanter.
- People under the influence of alcohol
- Pregnant women
- Tired people
- · People under 16 years of age
- The people mentioned above are not allowed to operate the transplanter.

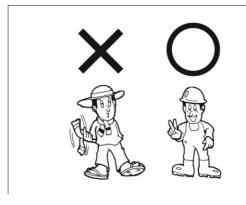
The operator and the assistants must be dressed appropriately for operation.

- Do not wear loose clothing or clothing with laces. Tighten the cuffs. Loose garments are easily dragged into the machine or catch on operation devices which may lead to an accident.
- Wear boots with anti-slipping soles (e.g. safety shoes); otherwise you may slip and fall. Put on a safety helmet. Do not put a towel around your head, neck or waist. It may be dragged into the machine and cause an accident.

# **A** CAUTION

When lending or transferring the transplanter, hand the operator's manual to the receiver, explain safety procedures and let the receiver read the operator's manual.







# **Transplanter in operation**

# **A** CAUTION

Before operating, do an inspection.

Operating a badly maintained transplanter will cause accidents and malfunctions.

- · Replace lost or damaged parts.
- Do an inspection on the clutch, brake, steering wheel and safety device. Make sure to replace damaged parts.
- · Check the bolts and nuts regularly.
- Each day before the operation, do an inspection of the electric wires to check whether they are connected to the other parts, the coating has damage or the connector is loose.

Clean the transplanter from time to time.

Dirt and fuel around the battery, electric wire, sound absorber, and engine will cause a fire.

Do not modify the transplanter. Any obstructions to the safety features of the transplanter may cause personal accidents, degradation of performance and shortening of the lifespan.

# **Caution during operation**

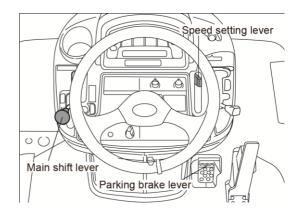
# **A** WARNING

The transplanter only can be started and operated after the cap (cover) of the filter element of the air cleaner is installed, otherwise tempering can cause flames to shoot out.

# **A** CAUTION

Before starting the transplanter, sit in the driver's seat and make sure that the brake is in the right place with the main shift lever at "N" (neutral) and the planting lifting lever at "N" (middle); otherwise the transplanter will run forward, turn over suddenly or collide with other objects.

 If you stand beside the transplanter and start the engine, you cannot take any measure to avoid these accidents if the transplanter runs forward.



# **WARNING**

The exhaust gas of the engine is harmful, so open the doors and windows for ventilation when starting the engine in a warehouse or garage.

- Starting the engine indoors or in a room with poor ventilation will lead to death caused by the exhaust gas.
- · Start the engine outside with good ventilation.

# **A** CAUTION

Before driving forward, check the position of the main shift lever and whether the transplanter is in the correct state of operation.

- Fold the side marker to avoid accidents with nearby objects.
- Lift the planting part, and set the hydraulic stop lever to "Stop". Lowering the planting part during driving will lead to injury and damage to the machine.

When starting and driving forward, make sure that the surroundings are safe.

- When starting and driving forward, inform all nearby persons.
- When driving forward, after making sure there is no person or obstacle nearby, depress the speed control pedal to make the machine run slowly. Pay attention to the blind spot of the machine and make sure that there are no people, especially children.
- When stopping the machine, first set the main shift lever to "Seedling feed", and then depress the brake pedal.



# **WARNING**

The transplanter is not allowed to run on public roads.

The transplanter does not meet the requirements on basic equipments stated in road traffic regulations, so it is not allowed to run on public roads. When moving on a road, a truck is needed for transportation.

The truck for transportation must comply with road traffic regulations.

If driving a long distance on the road, the transmission may be damaged by fire.

Drive slowly to avoid collision with nearby objects, especially pay attention to any contact of the seedling rack.

When driving, focus on where you are driving and keep your hands in the appropriate place.

Any inattention will lead to accidents.

If operating the machine for the first time, drive slowly until you learn to handle it.

Do not drive at high speeds, stop suddenly or make a sudden turn which may cause the transplanter to turn over and fall.

In a curve, turn-around, on a bumpy road and sloping field, slow down in advance and turn or drive carefully.

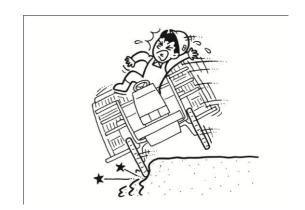
The transplanter can only transport one person. No other person except the operator is allowed to ride the transplanter.

It is not allowed to place goods on the pre-seedling rack.

Pay attention to the road shoulder. Farm roads often have ditches and slopes on both sides. The road shoulder can break off.

Get off the transplanter to check dangerous places, for example places where the road shoulder is not visible because of high grass or where the ground is not visible because of water puddles. Turn off the engine when you get off the transplanter.

When you come to an intersection, do not drive on the road shoulder, but rather stop and let other vehicles pass.



# Caution for movement in sloping fields and in and out of the fields

## **WARNING**

When driving on sloping fields, pay attention to the following matters to ensure safe driving.

Do not run at high speeds or stop suddenly, the transplanter may turn over.

Slow down when driving on a sloping field.

Do not operate the gear shift lever in a way that can cause the transplanter to run downhill uncontrolled.

If you need to operate the speed shift, first step on the brake and then use the main shift lever.

If you need to stop on a sloping field, step on the brake.

Reckless driving on a slope can cause the transplanter to turn over.

Do not turn the steering wheel abruptly.

Movements of the side clutch of the rear wheel on the steering side and the machine can turn the transplanter over.

If the slope is very steep, climb the slope in reverse and with the lowest speed. If you try climbing the slope by driving forward, the transplanter will turn over.

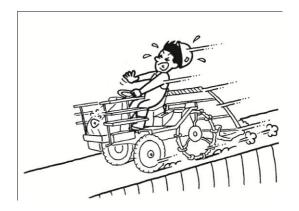
# **A** WARNING

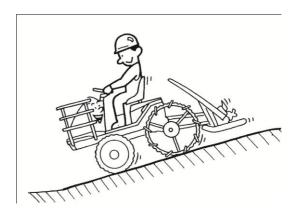
When crossing a ridge or ditch, lower the planting part, step on the differential lock device with the lowest speed and make the transplanter run forward slowly at a right angle to the ridge. When the rear wheel reaches the ridge, lift the planting part.

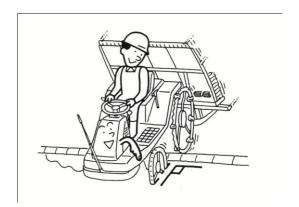
When running on a slope with a huge gap, a ramp is needed to cross the ridge and ditch.

#### Standards of the spring board

Length	At least 3.5 times of the height of the truck	
Width At least 30 cm		
Strength	Each plate can withstand 750 kg at least	
Surface	Anti-slip processing	







Do not forget to step on the differential lock pedal before driving on the spring board.

When you lay the spring board, make sure that the transplanter is at a right angle with the ridge and ditch. The two spring boards must align with the wheels of the transplanter and be parallel to each other.

When you get off the machine, stop it in a flat place, set the main shift lever to "Seedling feed", set the brake and turn off the engine.

If it is necessary to stop the transplanter on a slope, put the main shift lever to "Forward' or "Reverse", lower the planting part to the ground, set the brake and set the wheel stopper. Any violation will lead to the transplanter running forward.



Before leaving the transplanter, pull out the key.

# **WARNING**

Caution when stopping for a short time

If stopping for a short time, set the main shift lever to "Seedling feed" or "N" (neutral), set the brake and stop.

# **Caution for truck transportation**

# **A** WARNING

Load and unload the transplanter on flat land.

Turn off the engine of the truck, put the gear to "P"or "R", set the brake and put the wheel stopper under the wheel to prevent movement.

Drive the transplanter backwards when getting on the truck, and drive forward at the lowest speed when getting off. If you drive the transplanter forward to get on the truck, the truck may turn over.

Make sure that you keep the wheels of the transplanter in the middle of the ramp.

Also make sure that the wheels do not drive off the ramp.

When loading the transplanter on the truck, step on the differential lock pedal.

# **WARNING**

Do not operate the main shift lever when the transplanter is on the ramp.

If you step on the brake when the transplanter is on the ramp, the transplanter will move forward without control.

If you must change the gear in order to avoid danger, depress the brake pedal quickly, and use the main shift lever to change the gear. Do not set it to "Neutral" or "Seedling feed" at this time.

In order to avoid danger when stopping the transplanter during loading or unloading, depress the brake pedal quickly.

If the engine stops running during loading or unloading, depress the brake pedal immediately and start the engine again.

Do not turn the steering wheel abruptly when the transplanter is on the ramp.

This causes the side clutch of the rear wheel on the steering side and the machine to move.

If the transplanter has been loaded on the truck, put the main shift lever to "Forward" or "Reverse", set the parking brake, and fix the machine on the truck with strong ropes. If fixed insufficiently, the transplanter will fall from the truck's cargo area.

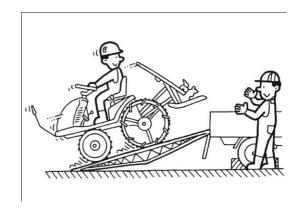
Unload the objects on the seedling rack and space seeding rack; otherwise they can fall and cause an accident.

Fold the side lineation lever, line marker and land preparation roller, make sure that the land preparation roller and seedling rack are folded; otherwise a collision with nearby objects may happen.

# **A** CAUTION

An assistant is needed when loading and unloading the transplanter to make sure that the nearby environment is safe.

The assistant is not allowed to stand directly in front or directly behind the transplanter.



# **Caution for operation**

# **A** WARNING

When adding seedlings to the transplanter, slow down the engine speed with the accelerator lever, set the main shift lever to "Seedling feed" and let the engine stop.

# **WARNING**

During operation, do not touch any rotating parts, operation parts or parts with high temperature. They can pull your hand in or burn your hand.

If there are foreign objects in the planting tine, first stop the engine, and then remove the contamination after making sure that all of the parts have stopped moving. If the machine starts to operate, your hand may be pulled into the machine.

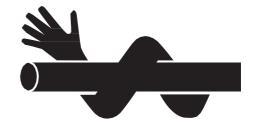
# **A** CAUTION

When turning on a ridge, pay attention to the people and objects on the ridge.

During operation, people are not allowed to enter the paddy field or come close to the transplanter, especially children.

Do not use people or objects as an additional balance weight on the transplanter.

Do not operate at night, poor sight can lead to accidents.



# **Caution for storing**

# **WARNING**

When covering the transplanter, make sure that all hot parts of the transplanter have cooled. Covering the transplanter when it is hot may cause a fire.

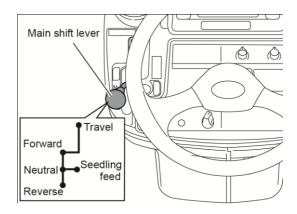
# **A** CAUTION

If you store the transplanter for a long time, park it in a flat and stable place, set the main shift lever to "Seedling feed", lower the planting part to the ground, set the parking brake and put the chock under the wheel.

Take out the battery.

Fill the fuel tank with fuel oil, and close the fuel cock.

Do not park the transplanter near inflammable materials. A fire can occur.



# Caution for inspection, oiling and maintenance

# **A** DANGER

When adding fuel, do not smoke or light a flame.

After adding fuel, make sure that the tank has been covered appropriately and wipe up the overflowing fuel. If the fuel ignites, a fire can happen and cause injury.

# **A** DANGER

Do not start the engine when the dilute sulfuric acid index of the battery is transparent.

Otherwise the flames caused by starting the engine may burst out and ignite the gas in the battery, resulting in a malfunction of the battery.

# **WARNING**

During inspection, oiling, maintenance and repairing, park the transplanter in a flat and stable place without danger from traffic, and turn off the engine.

Set the hydraulic stopping lever to "Stop" and set the parking brake.

When stopped, set the main shift lever to "Seedling feed".

When lifting the planting part for inspection and maintenance of the planting tines, set the hydraulic stop lever to "Stop" and use the rack to support the planting part and prevent it from falling.

When inspecting and adjusting the planting tines, pay attention to the planting tines to avoid injury.

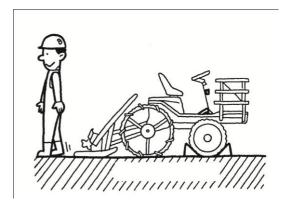
# **▲** WARNING

During inspection and battery maintenance, follow the precautions for safe operation stated below.

When unloading the battery, first remove the electric cable of the negative terminal. When loading the battery, first install the electric cable of the positive terminal.

Any violation may cause a short circuit which may lead to burn injury and fire.

When handling the battery, be careful of flames and other sources of fire. The hydrogen in the battery can ignite and cause an explosion.





# **A** CAUTION

When doing an inspection, oiling, maintenance and repairing, people are not allowed to come close to the transplanter, especially children. It is very dangerous if a person is near the blind area of the machine.

Install the cover that you disassembled from the machine during inspection and maintenance. If operating without the cover, you may be pulled into the machine.



# **A** CAUTION

Inspection, oiling and maintenance can only be carried out after the hot parts of the sound depressor and engine have cooled; otherwise burn injury can occur.

# **A** CAUTION

Do an inspection of the silencer and connecting pipe.

Before operating, make sure that there are no cracks, corrosion and other abnormal conditions on the sound depressor and connecting pipe and that there is no dirt build-up on their hightemperature parts. Any violation may lead to fire.

The fuel pipe, oil discharging pipe and other rubber pipes must be replaced every two years. The electrical wire must be checked every 50 hours or every year (whichever is earlier). The rubber pipe deteriorates over time.

Any violation may cause accidents and mechanical malfunction.

# **A** CAUTION

Do an inspection on the axle and the wheels.

Check whether the wheels are loose. If they are, adjust the tightening bolts and nuts, because loose wheels will lead to accidents.

Check whether there are cracks, brittle parts on the axle and wheels (on the rubber). They will lead to injury and malfunction of the machine.

# **WARNING**

Use the battery only for starting the engine, not for other uses.

Before charging or replacing the battery, read the precautionary labels on the battery.

The battery needs to be unloaded from the transplanter for charging. Charging in a badly ventilated area may cause the battery to break.

Be careful because the battery electrolyte is dilute sulfuric acid.

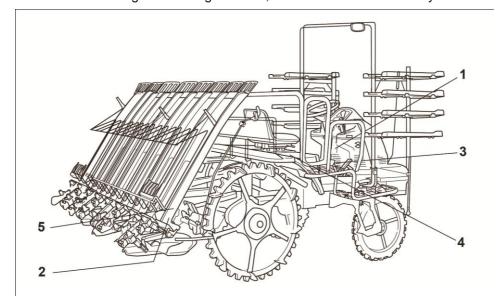
If the electrolyte splashes into your eyes, flush the eyes with running water and go to a hospital for treatment.

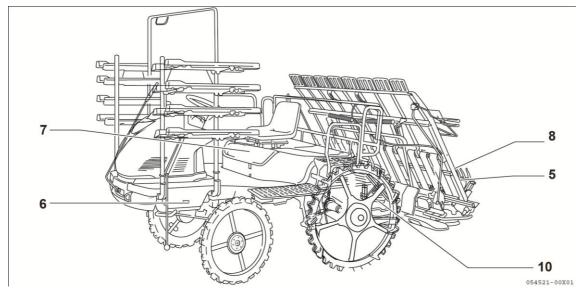
If you ingest the electrolyte, drink a lot of water and go to the hospital for treatment. If you get electrolyte on your clothes or skin, wash it with soap immediately. Any violation will lead to blindness and burn injury.

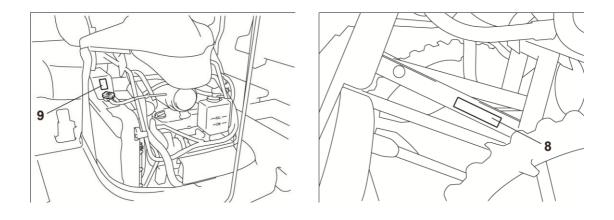
When you replace the battery, replace it with a battery that has the volume specified in the operating manual. Any violation will lead to burn injury and fire caused by short circuiting.

# Location of the safety labels

The safety labels must not be damaged. If damaged or lost, order and attach new safety labels.







- 1.1C739C-95700 Caution (cover)
- 2. 1C739C-95770 Caution (brake)

- 3.1C739C-95860 Caution (hydraulic lock)
- 5. 1C739C-95940 Warning (planting part)
- 6. 1E6B35-97660 Caution (hot part)

- 7. 1C739C-95710 Safety label (overall)
- 8. 1C739C-95740 Warning (rotating shaft)
- 9. 1E6B35-97610 Danger (radiator)
- 9.1C739C-95780 Warning

# Maintenance of the safety labels

The safety labels must be clean and without damage. If one is dirty, wipe it with a cloth soaked with soap water first and then wipe off the water with a soft cloth.

Do not wash the label with a high pressure cleaner. The label can peel off.

If lost or damaged, order a new label from your dealer and attach it in the original position.

# 2. SERVICE AND WARRANTY

# Keep the warranty card in a safe place

The warranty card is necessary to claim the warranty. After reading, take good care of it.

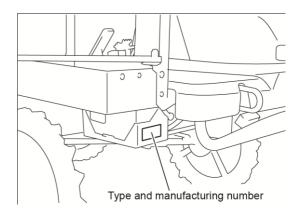
# Accepting the after service

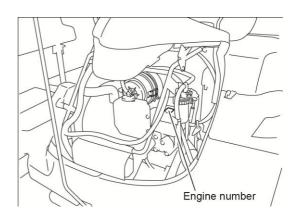
If the machine runs abnormally, do an inspection and repair according to Page 125 "TROUBLESHOOTING". If the machine still runs abnormally, prepare the following information and then contact your dealer.

#### Damage report details

- Type and manufacturing number
- Working condition (speed, working content)
- Service life (about ---- hours)
- · Explain the details of the abnormal condition

Remove the front cover of the engine, and check the engine number on the front part of the engine body.





# Supplying period for replacement parts

The supplying period for replacement parts extends five years after the termination of production. But the delivery date of some special parts can only be decided after consultation. The supplying period for replacement parts is in principle as stated above. But if the replacement parts are needed after the supplying period, the delivery date and price can be discussed.

# Genuine replacement parts and oil

The replacement parts and oil have undergone a number of tests and are qualified after strict quality testing to make them safe for the users.

When replacing parts and oil, only use genuine replacement parts and oil.



# 3. SEEDLINGS AND PADDY FIELDS APPROPRIATE FOR THE TRANSPLANTER

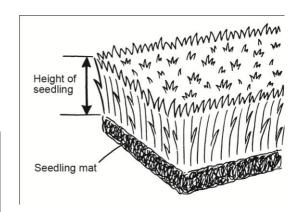
If the seedlings and paddy fields are not appropriate for the transplanter, the further growth of the seedlings is directly effected. Read the following conditions to understand and identify seedlings and paddy fields suitable for the transplanter.

# Seedlings

Seedlings that meet the following requirements are suitable for the transplanter.

In seedling culturing, the condition of the bet soil, culturing method and the condition of the seedling mat are very important.

Item	Unit	Conformability	
Culturing method		Box and frame culturing	
Types of seedling		Young seedling	Middle seedling
Leafage	Leaf	2.0 to 2.5	2.5 to 4.5
Height of seedling	cm	10 to 15	15 to 25
Size of the seedbed	cm	Length 58 width 28 depth 2 to 3	



#### **Bed soil**

Choose a soil that is suitable for the seedling culturing.

The soil for the bed soil must be screened with a filter or sieve. Any violation may cause foreign objects to jam the machine. In that case, you have to stop the machine for cleaning which may effect the operation efficiency. Severe cases can result in damage to the machine.

For more details, consult with the promotion center for planting with a transplanter.

#### Seedling mat

Before planting, water the seedbed, and pay attention that no water drops from the seedlings when taken out from the nursery box.

If the seedling mat is too dry, the sliding movement is hindered which causes vacancy of the seedlings.

If the seedling mat is too wet, it will become loose which may cause seedling floating.

# The condition of the seedlings and undesirable results when planting

Seedlings in a bad condition will cause the following undesirable results.

#### Possible undesirable results

Condition of the seedlings	Undesirable results	
Uneven seedling Uneven sprouting	Serious deviation of a single hole or vacancy	
Weak seedlings Old seedlings	<ul> <li>Serious deviation of a single hole or vacancy.</li> <li>The seedling is badly injured, the planting posture is not straight.</li> </ul>	
The seedbed is too thick or thin. (correct thickness is 2 cm to 3 cm)	<ul> <li>Serious deviation of a single hole or vacancy.</li> <li>The planting posture is not straight.</li> <li>Breaking of the seedbed (too thin).</li> <li>The seedlings or the roots are cut.</li> </ul>	
The roots in the seedbed are entangled and break	<ul> <li>Serious deviation of a single hole or vacancy.</li> <li>Floating seedlings and the planting posture is not straight.</li> </ul>	
	<ul> <li>Serious deviation of a single hole or vacancy</li> <li>Seedlings fall.</li> <li>The consumption of seedlings of each row varies greatly.</li> </ul>	
The leaf of the grain is not straight	Cut seedlings     Floating seedlings	

# **Paddy fields**

Plough the fields evenly, turn the soil and flatten it to the appropriate hardness. A water depth of 1 cm to 2 cm is suitable for the transplanter.

Plough and soil aeration and water control are very important to prepare the paddy fields.

#### Rough plough

The rough plough must be even, and all wheat straws and crop residue should be removed or deeply ploughed under.

A lot of wheat straws and crop residue will influence the planting and can cause seedling floating, irregular order of the seedlings, and seedling damage.

#### **Pudding soil**

The pudding soil must be even and without bumps.

If the soil pudding is rough with a lot of wheat straws and soil block, it will cause irregular planting of the seedlings which may affect their further growth.

The soil may not be over-pudding.

Over-pudding soil has a negative influence on operation.

Approximate aeration date based on the planting date

Soil property	Date of aeration
Sandy soil	The same day or 1 day before
Silty loam	2 days to 3 days before
Soil-planting soil (standard paddy field)	4 days to 5 days before
Clay soil	5 days to 6 days before
Volcanic soil	6 days to 7 days before

The date of aeration further varies by weather and region.

# Hardness of the paddy field surface

The hardness of the paddy field surface is shown in the following figures. The images show a piece of earth the size of a golf ball dropped from a height of 1 m.

If the surface is too hard, seedling floating and falling will occur. If the surface is too soft, the seedlings will be planted in disorder, and soil will get into the machine.

# Suitable Soft Hard

#### Depth of the water

The water depth should be 1 cm to 2 cm to be suitable for seedling planting.

Deep water will cause the seedlings to be planted in disorder and floating seedlings.

Shallow water will cause the seedlings to be planted in disorder.

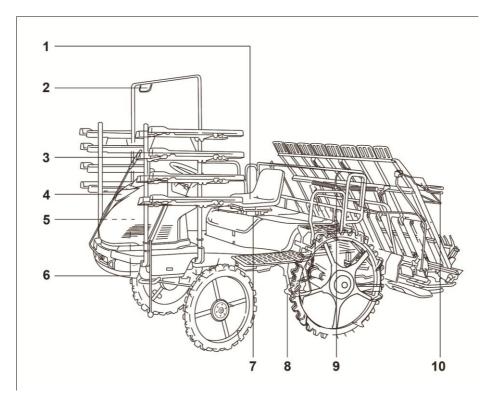
#### Depth of the paddy field

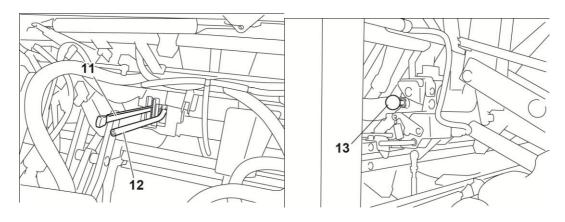
- The plough depth of the paddy field should be under 25 cm.
- · If the paddy field is too deep and the machine sinks to the axle of the rear wheel, install wheel aids (choosing the accessory parts). If the paddy field is too deep, it will affect the operation efficiency and even damage the machine.
- If there are open trenches or blind trenches in the fields, make sure that the wheels do not sink into the trenches, otherwise the machine will be damaged.
- If the front wheel is floating, the machine will be underpowered and difficult to drive.
  - Install a balance weight (choosing the accessory parts) on the installing set in the front of the machine to prevent the front wheel from floating.

# 4. NAME OF THE COMPONENTS

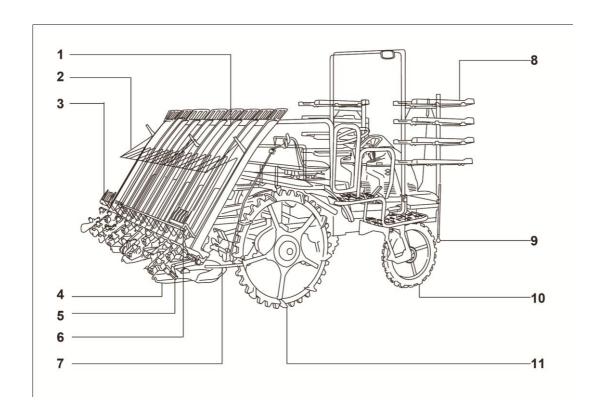
For more details on the function and using methods of each device, refer to the related reference page.

# **Appearance**





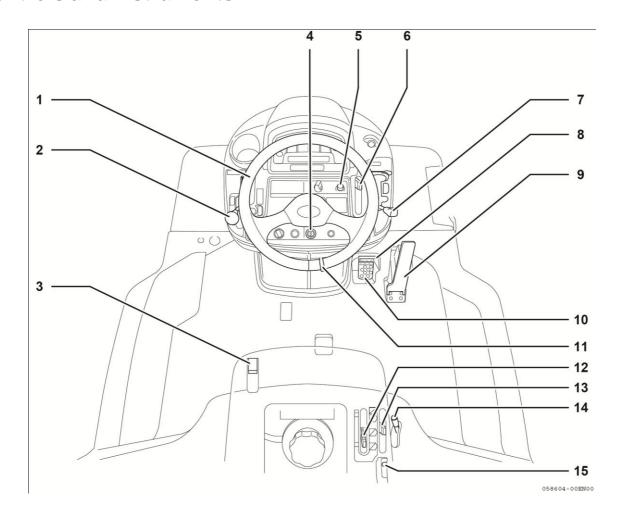
Referen	nce page		Reference page
1. Driver's seat	44	8. Step	
2. Rear view mirror		9. Assist bar	
3. Center marker	45	10. Line marker	42
4. Head light		11. Vertical feed adjusting lever	r40
5. Engine		12. Planting depth control lever	·38
6. Fuel strainer	32	<ol><li>Lateral feed adjusting lever</li></ol>	40
7 Fuel supply port	45		



	Reference page
1. Seedling rack	42
2. Seedling mat stopper	
3. Seedling feed stopper	
4. Float	
5. Planting tine	
6. Seedling press rod	44

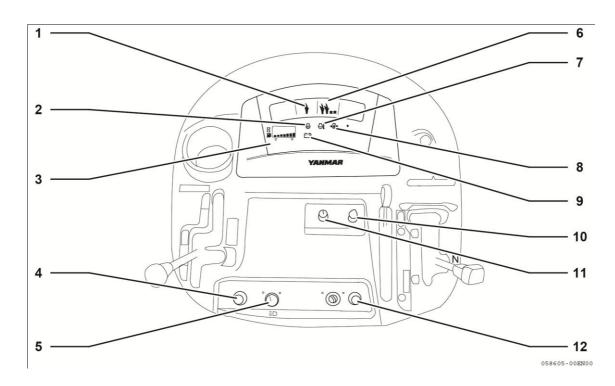
	Reference page
7. Side bumper and stand	44
8. Spare seeding rack	
9. Side marker	44
10. Front wheel	
11. Rear wheel	

# **Controls and instruments**



	Reference page
1. Steering wheel	34
2. Main shift lever	35
3. Differential lock pedal	39
4. Key switch	31
5. UFO automatic adjustment kn	ob41
6. Speed setting lever	37
7. Planting lifting lever	36
8. Parking brake lever	39

Reference	page
9. Speed control pedal	36
10. Brake pedal	38
11. Accelerator lever	31
12. Sub planting number changing lever	39
13. Planting number changing lever	39
14. Hydraulic stop lever	40
15. Hydraulic sensing adjustment lever	38



Reference page	Reference	page
Seedling adding lamp33	7. Engine coolant warning lamp	34
Preheating pilot lamp33	8. Engine oil pressure warning lamp	34
LED panel33	9. Battery charging lamp	34
Horn button32	10. Automatic planting depth control switch	38
Head light switch32	11. UFO Automatic adjusting knob	41
Unit clutch pilot lamp33	12. Buzzer stop switch	32
	Reference page Seedling adding lamp	Seedling adding lamp337. Engine coolant warning lampPreheating pilot lamp338. Engine oil pressure warning lampLED panel339. Battery charging lampHorn button3210. Automatic planting depth control switchHead light switch3211. UFO Automatic adjusting knob

# 5. FUNCTION OF EACH OPERATIONAL PART

# **Engine control**

#### Key switch

The key switch is used for starting and stopping the engine.

"OFF" position: The engine stops, and all electric current is

stopped. (You can remove the key.)

"ON" position: Voltage is supplied to the electrical

components.

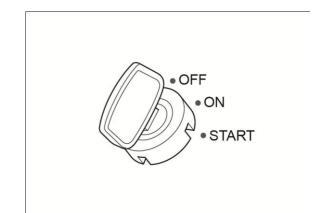
"Start" position: The starter motor runs to start the engine.

Once the engine has started, take your hand off the key. The key will automatically return to

the "ON" position.

#### Reference

- When the key switch is moved to "ON", the LED panel will display "Overheating" for 3 seconds.
- After this, the hour meter and fuel meter start to work. (For more details, refer to Page 33.)
- 6 seconds after the key switch is set to "ON" and if there are no seedlings on the seedling rack, the seedling adding alarm starts to illuminate. (For more details, refer to Page 33.)
- 10 seconds after the key switch is set to "ON" and if the engine has not been started, the LED panel displays "NO CHANGE" and "Err: Eng/Oil PRESSURE".



#### **Accelerator lever**

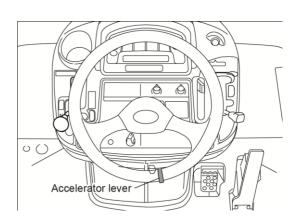
This lever is used to adjust the engine speed.

"High speed" (pull down): increase the engine speed

"Low speed" (pull up): decrease the engine speed

#### Reference

When working in a paddy field with deep water, increase the engine speed in advance in order to prevent the engine from stopping due to the slow operation on the speed control pedal.

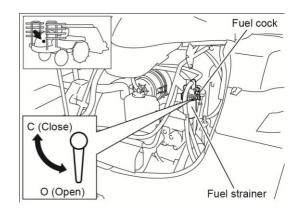


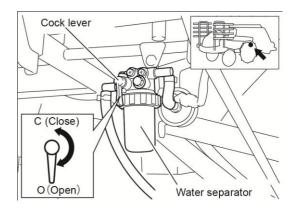
## Fuel strainer, Water separator

The Fuel strainer is located on the left side of the engine. The water separator is under the left of the machine. They are used to control the fuel supply and stopping supply.

"Open": Fuel is supplied to the engine. (While the engine is running)

"Closed": Fuel is not supplied to the engine. (When the machine will be stored for a long period of time)





# **Electric system**

# **Head light switch**

This switch is used to control the head light.

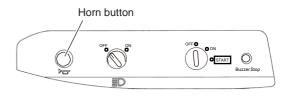
Turn the key switch to "ON", and then turn the head light switch to the right to "ON": the head light turns on. Turn the switch to the left to "OFF": the head light turns off.



#### Horn button

This button is used to sound the horn.

Turn the key switch to "ON" and press the horn button to sound the horn.

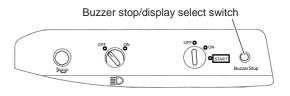


# Buzzer stop/display select switch

This switch is used to stop the alarm buzzer. It is also used to change the display on the LCD panel.

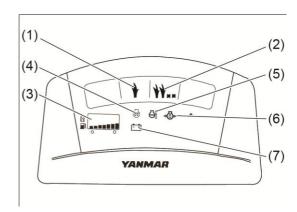
The alarm buzzer will sound when either of the following happens.

- When the remaining seedlings in the planting part are running low.
- When the planting lifting lever is in the "DOWN" position, the unit clutch lever is in the "Stop" position and the planting lifting lever is first put in the "OFF" position and then back in the "ON" position again.



# Instrument panel

The panel is mainly used to display information necessary for operation and planting. The LED panel also displays fuel consumption and time.



# **Seedling adding lamp** (1)

The alarm lamp turns on and the buzzer makes a sound to remind you when you need to add more seedlings to the seedling rack. When you need to add more seedlings to the seedling rack, the LED panel shows "SEEDLING EMPTY" and the buzzer makes a sound.



## Unit clutch pilot lamp (2)

When the unit clutch lever is put in the "Stop" position, this lamp will come on. When the unit clutch lever is put in the planting "ON" position, the alarm buzzer will sound to prevent you from forgetting to engage the unit clutch. Then, the lamp will flash, and "OFF: UNIT CLUTCH" will be displayed on the LCD panel.

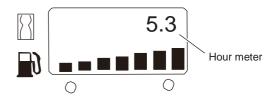


#### LED panel (3)

#### Hour meter

The hour meter displays the accumulative operation time of the transplanter, accurate to 1/10 hour.

The meter only counts the time while the engine is running. The meter display changes every 6 minutes.

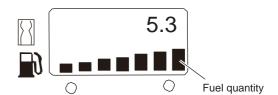


#### Reference

The accumulated time cannot be reset.

#### ■ Fuel meter

The fuel meter displays the amount of fuel left.



## Preheater pilot lamp (glow lamp) (4)

If the key switch is set to "ON", the light turns on, indicating that the glow lamp operates.

After the lamp goes out and the switch is set back to "Start", the engine is started.

The preheater pilot lamp lasts for 3-4 seconds.



## **Engine coolant warning lamp (5)**

The lamp turns on when the temperature of the cooling water rises.



#### **Engine oil pressure warning lamp** (6)

When the key switch is set to "ON", the indicating lamp turns on and it turns off after starting the engine. If the oil pressure is not sufficient during operation or if there is some abnormality regarding the lubricating oil, the light turns on.



#### **Battery charging lamp** (7)

When the key switch is set to "ON" or the engine stops charging the battery, the lamp turns on.



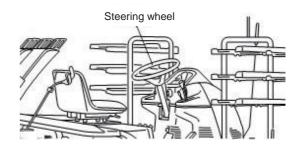
# Working and operating parts

#### Steering wheel

The steering wheel is used to turn the transplanter.

When the steering wheel is turned to right, the machine will turn to right. When it is turned to left, the machine will turn to left.

When the steering wheel is turned all the way to right or left, power to the rear wheel on the turning side will be disengaged, so that the turn can be made smoothly.



#### Main shift lever

The lever is used to change the running direction and speed. You can shift to 2 forward gears, neutral, reverse and seedling feed. Change the position of the lever after pushing the brake pedal to the bottom and stopping the machine.

"Travel":

Run at a high speed on farm roads.

Do not use in the paddy fields, because the transmission may be damaged.

"N":

Cut the power of the wheel and stop the machine. Use when operating the planting part only.

"Forward" (moving in the paddy field):

Use when planting and moving in the paddy field, loading and unloading from the truck, in and out of the paddy fields, and driving at a low speed on farm roads.

"Seedling feed":

Use when getting off the machine and adding seedlings, the power of the running and planting part is cut off and the machine is stopped.

"Reverse" (moving in the paddy field):

Use to drive the machine backwards.

#### Reference

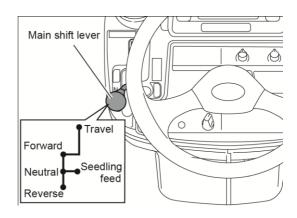
<Backup mechanism>

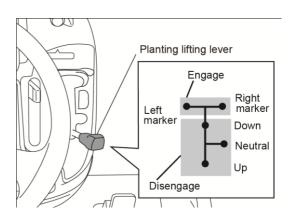
When the main shift lever is put in the "Reverse" position with the planting part lowered, the power to the planting part is stopped and the planting part is lifted at the same time.

#### Reference

Take the following measures when you want the machine to drive slowly with the planting part in the higher position.

- 1. Use the planting lifting lever to adjust the planting part to the desired height and set the hydraulic stop lever to "Stop".
- 2. Put the main shift lever to "Reverse".





## **Planting lifting lever**

The lever is used for lifting the planting part, disengaging and engaging of planting and to control the line marker.

#### Lifting

This is used to lift, lower or fix the planting part.

"Up": Lift the planting part

"Neutral": Fix the planting part at any arbitrary height

"Down": Lower the planting part, adjust the hydraulic sensitivity automatically

#### Planting

This is used to start or stop the operation of the planting part.

"Engage": Power is sent to the planting part.

"Disengage": The planting part stops.

#### ■ Line marker

This lever moves the line marker.

"Left": The left line marker is lowered and it is ready to use.

"Right": The right line marker is lowered and it is ready to use.

# Planting lifting lever Engage Left marker Down Neutral Up Disengage

## Speed control pedal

This pedal is used to control the traveling speed when planting or traveling and to stop traveling.

"Press down":

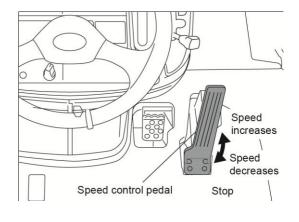
The traveling speed is increased. The variable speed transmission goes to the high speed side and the engine speed is increased at the same time.

#### "Release":

The traveling speed decreases and the machine stops. When the variable speed transmission is on the low speed side and the speed control pedal is returned all the way up, the variable speed transmission stops and the engine speed decreases.

#### **IMPORTANT**

- When pressing down or releasing the speed control pedal, operate it gradually.
- Once the machine has stopped, put the main shift lever in the "N" (Neutral) or "Seedling feed" position. If you take your foot off the speed control pedal with the main shift lever still in the "Travel", "Forward" or "Reverse" position, the machine may creep slowly due to the oil temperature at the time. However, this is normal.



### Speed setting lever

This lever is used to fix the driving speed.

"Stop": Traveling stops. (The speed setting is released)

"Low": The traveling speed decreases.

"High": The traveling speed increases.

If the speed setting lever is set to "High", the speed remains unchanged even if the foot leaves the speed control pedal.

In order to release the speed fix, put the speed setting lever to "Stop", or depress the brake pedal.

The speed control pedal returns to the original position and the speed fix is released.

### **IMPORTANT**

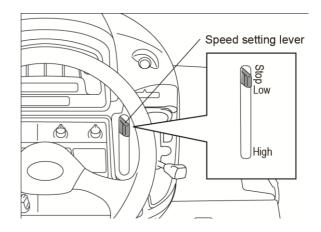
- Do not step on the brake pedal with force or the machine will stop suddenly.
- Step on the brake pedal to decrease the speed. Press the brake pedal if you want to stop completely.
- If the speed is not fixed, set the speed setting lever to "Stop".
- Do not operate the speed setting lever when stopped with the brake applied.

### Reference

- Stepping on the speed control pedal lightly does not release the speed fix.
- If it is difficult to operate the speed setting lever, operate it while stepping on the speed control pedal.
- Once the speed is fixed, you must set the speed setting lever to "Stop" to completely release it. If you set the speed setting lever to "Low" without pressing the speed control pedal, the driving speed will decrease and the speed will be fixed at the speed that the lever has been stopped.

### **WARNING**

- Do not use the speed setting lever when the main shift lever is set to "Travel"; otherwise when released, the transplanter will stop suddenly which may cause injury.
- When releasing the speed fix, set the speed setting lever to "Stop". If not, the transplanter will run forward slowly.



### Hydraulic sensing adjustment lever

When the float is needed to level off the paddy field, this lever is used to adjust the hydraulic control sensitivity according to the hardness of the field.

It can be adjusted steplessly.

"Soft paddy field": The sensitivity increases.

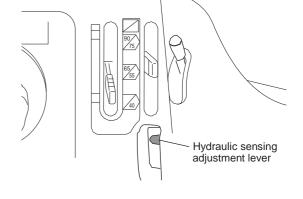
(Sensitive: float rises)

"Hard paddy field": The sensitivity decreases.

(Slow: float lowers)

### Reference

Step on the speed control pedal to accelerate the planting speed. Then adjust the hydraulic sensitivity to "Hard paddy field" and the component can ensure the appropriate planting depth.

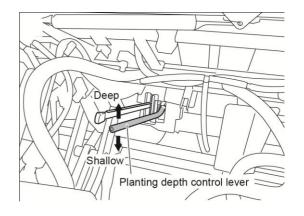


### Planting depth control lever

This lever is used to adjust the planting depth.

### Reference

The planting depth can be set to 6 levels.



### Automatic planting depth control switch

This switch is used to adjust the planting depth automatically.

"ON": The automatic control of planting depth starts.

"OFF": The automatic control of planting depth stops.

(Automatic adjusting planting depth component)

Set the automatic control switch of the planting depth to "ON", depress on the speed control pedal and the planting speed is accelerated.

The part can adjust the planting depth automatically.

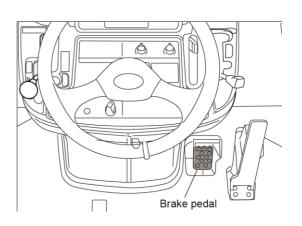
# Fine adjustment Left-Down Right-Down Planting Depth Fit Synchro LEVELING DEVICE

### **Brake pedal**

This pedal is used to stop or park the transplanter when driving or operating.

### Reference

When the brake pedal is pressed down, the main clutch will be disengaged and the power from the engine will not be transferred to the transmission.

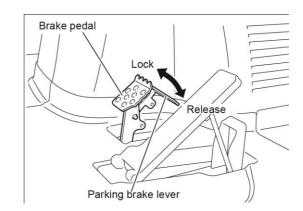


### Parking brake lever

This lever is used to park the machine.

Push the brake pedal to the bottom and set the parking brake lever to "Stop" and the parking brake will be engaged.

To release the parking brake, press the brake pedal softly and set the parking brake lever to "Release".



### Differential lock pedal (front wheels)

This pedal is used when the transplanter crosses a ridge, moves in the paddy field and the front wheel on one side slips. This makes it difficult to drive the transplanter forward.

This differential lock only affects the front wheel.

"Lock":

Connects the axles on the left and right side of the front wheel which makes the axles rotate synchronously and protects the axle on one side from idling and slipping. To lock, step on the brake pedal continually.

"Release":

Releases the connection of the left and right axles automatically.

- Decrease the speed when operating the differential lock.
- Even if you step on it, the differential lock cannot work when its salient points inside the transmission are opposite to each other.
   Only when the speed of the left and right axle differs from each other can the differential lock take effect.
- For more details on the practical use of the differential lock, refer to Page 68 "Getting in or out of the paddy field".

# Differential lock pedal Lock Release

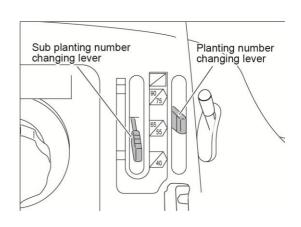
### Planting number changing lever

The lever is used to adjust the planting number. (It is on the right side of the operating space.)

The control is composed of 2 levers and 6 grades.

### Reference

The planting number varies with the paddy field. Adjust it according to the desired planting.



### Hydraulic stop lever

This lever is used to stop and prevent the planting part from dropping when moving, repairing and storing the transplanter.

"Stop": Stops the lifting hydraulic of the planting part. No matter whether the planting lifting lever is set to "Up" or "Down", the planting part will not be lifted or lowered.

"Release": Set the planting lifting lever to "Up" or "Down" and the planting part will be lifted or lowered accordingly.

### **IMPORTANT**

- Put the hydraulic stop lever to the two ends of the guide slot. If it is placed in the middle, the machine may run abnormally.
- Put the hydraulic stop lever to "Stop". No matter if the planting lifting lever is set to "Up" or "Down", the planting part will not be lifted or lowered.
- Do not set the planting lifting lever to "Up" on the planting lifting when setting the hydraulic stop lever to "Stop", otherwise the oil temperature of the transmission will increase which may cause damage.



### Vertical feed adjusting lever

This lever is used to adjust the seeding number in a hill.

The seedling number for each hole can be adjusted in 10 grades hill according to the status of the seedlings. (Refer to Page 85.)

"More": Increase the seedling number in each hill.

"Less": Decrease the seedling number in each hill.

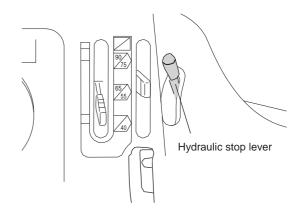
### Lateral feed adjusting lever

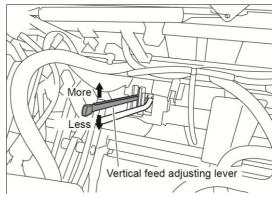
This lever is used to adjust the amount the seedling mat is fed laterally.

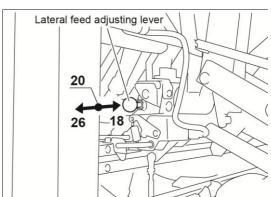
The seedling amount of the lateral feed can be adjusted in 3 levels.

### Reference

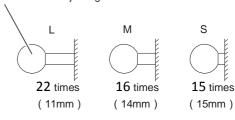
If the seedling amount of the lateral feed is reduced, the planting fingers chucks the seedling. The seedling will not be pressed into the soil by the seedling prevention block, but it is cut and floats on the water.







Lateral feed adjusting lever



### Unit clutch lever

This lever is used to stop the operation of the planting fingers in 6 rows (every 2 rows). It also stops the operation of the seedling feed belt.

This lever is used to stop planting fingers and the seedling feed belt in use in a previous process and to adjust the number of rows, so that all the rows can be planted in the final process.

"Planting": The planting fingers and the seedling feed belt operate normally.

"Stop": Stops the planting fingers and the seedling feed belt.



Do not operate the unit clutch lever when the planting section is running at high speed. It may cause the machine to malfunction.

### Reference

- When the unit clutch lever and the seedling feed stopper are used together, the number of rows can be adjusted by stopping the planting fingers and the seedling feed belt used in a previous process.
- Move the unit clutch lever all the way to the "Planting" or "Stop" position.

### **Automatic balance UFO**

### UFO automatic adjusting knob

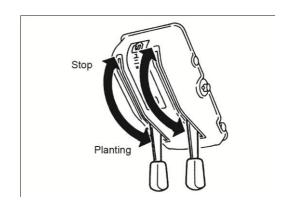
This knob is used to balance the planting part when it leans to the left or right. Besides this, it is also used when the planting part leans on the ridge.

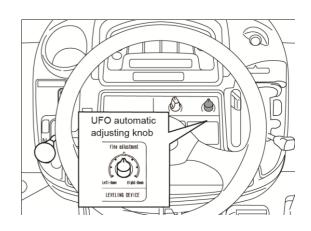
### Reference

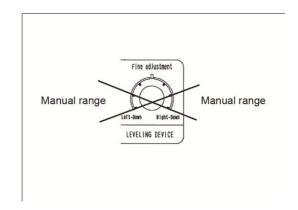
When setting the planting lifting lever to "Down", the UFO adjusts the horizontal action.

### Manual operation of the UFO

Set the planting lifting lever to "Up". After putting the planting part to the original place, turn the UFO automatic adjusting knob to "Manual range", then you can adjust the planting part to the desired position manually.







# Seedling rack

### Line marker

This marker is used to put lines on the surface of the paddy fields in order to keep the appropriate adjacent distance and decide the driving direction in operating.

### **A** CAUTION

- Do not lower the line marker when the seedling rack is lifted; otherwise injury may occur.
- Fix the line marker feed adjusting lever on the hook when transporting and moving.

# Hook Line marker

### Seedling feed stopper

The seedling feed stopper is used to stop feeding the seedlings for 1 row.

By using the seedling feed stopper with a unit clutch mechanism, only 1 row can be planted.

When using a seedling feed stopper, move the seedling mat to the upper position and put the seedling feed stopper into the set position to stop feeding the seedlings.

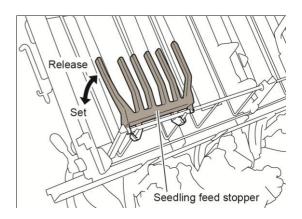
### Reference

- The seedling feed stopper can be removed. Remove or install the seedling feed stopper as necessary.
- When releasing the seedling feed stopper, securely insert the hook section to the seedling mat stopper.

### **IMPORTANT**

When folding the seedling rack on the VP8DN model, install the seedling feed stopper to rows other than the 4th or 5th row.

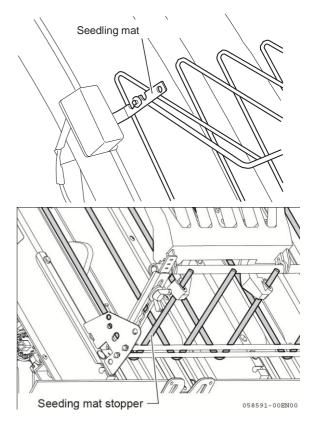
If the seedling feed stopper is installed to the 4th or 5th row, the seedling rack cannot be folded.



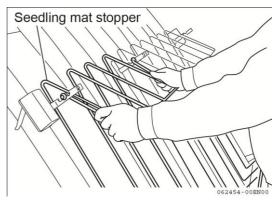
### Seedling mat stopper

Hold the seedling mat so that the mat will not break.

Adjust the seedling mat stopper depending on the seedling condition or the seedling mat thickness.



When adjusting the seedling mat stopper position or releasing the lock, hold the seedling mat stopper as shown in the figure to the right.

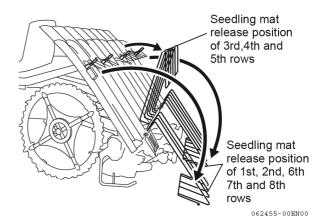


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Releasing the seedling mat stopper will allow you to remove the remaining seedlings on the seedling rack after planting.

The seedling mat stopper can be released from the upper side.

<How to release the seedling mat stopper>
Release the seedling mat stopper from the seedling mat lock bracket located on the upper side.

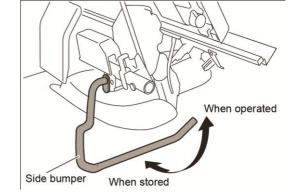


### Seedling press board

### Side bumper and stand

The side bumper and stand can be used as support to protect the planting part. Unfold it when operating.

Release the lock by pulling out the fixed pin of the bumper, then turn the bumper to fold and unfold it.



### Other devices

### Side marker

When it is difficult to see the line drawn by the line marker while planting seedling near the ridge, this marker is used as a guide to maintain the appropriate distance between adjacent rows.

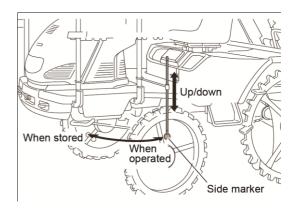
### Reference

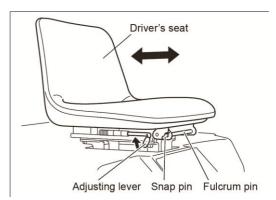
Before transporting and traveling, rotate the side marker forward to store it facing the front.

### Driver's seat

The seat can be adjusted by sliding forward or backward to ensure that the operator is in a comfortable position.

The position of the seat can be adjusted by adjusting the hole position of the fulcrum pin and using the adjusting lever. Besides this, the seat can be tilted forward.

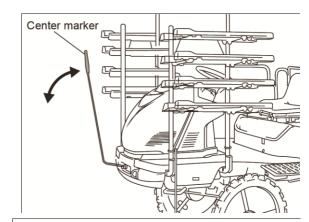




### Center marker

When planting with the center marker aligned with the line in the field drawn by the line marker, the center marker provides a guide to let you travel straight ahead and maintain the appropriate distance between adjacent rows.

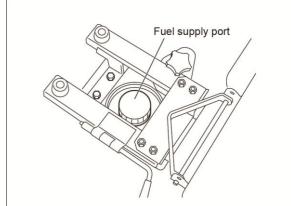
Also, since the center marker can rotate forward, it can be adjusted to a position where the driver can see it easily.



### **Fuel supply port**

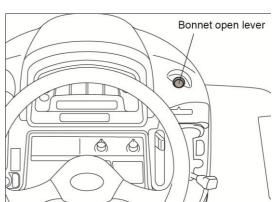
This port is used to add fuel.

Tilt the seat forward to find it.



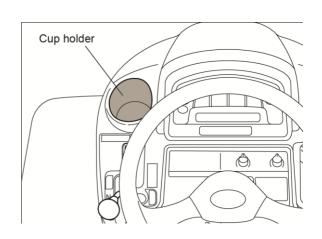
### **Bonnet open lever**

The lever is used to remove the bonnet.



### **Cup holder**

The cup holder is used to hold a cup or other beverage container.



# 6. PREPARATIONS BEFORE OPERATING

### **A** DANGER

- · When fueling, do not smoke or use open flames for illumination.
- After fueling, tighten the cover and wipe off the spilled oil; otherwise a fire can occur.

### **WARNING**

When doing an inspection, park the transplanter in a flat and safe area, and turn off the engine.

### **A** CAUTION

- Install the covers that you removed during checking or disassembling the transplanter to their original position. If driving with the cover disassembled, your hand may be dragged into the machine.
- Clean the transplanter. Any dirt or fuel on the battery, line, sound depressor and engine may cause a fire or accident.

# Inspection before operating

Do the inspection according to the following order before operating and working

Checking order	Checking part	Page for reference
Abnormalities of the day before	The abnormal part in the operation of the day before	
Check around the machine	Whether there is deformation, damage, dirt marks, whether the bolts are loose	
	The quantity of the fuel, whether there is fuel leakage, oil leakage	
	Whether there is damage or wear on the wheel	
	Whether there is wear on the planting fingers	
Check inside the bonnet	Whether the surface of the wire is peeled off, whether the joint parts are loose	
	Whether there is damages on the belt	113
	The quantity of the engine oil, the amount of dirt, whether there is oil leakage	104
	Whether the air filter element is dirty	109
Check on the driver's seat	Whether the position of the driver's seat is comfortable	
	Effect and play in the brake pedal	
	Play in the steering wheel	
Start the engine	Whether the engine makes an abnormal sound	
	Whether the color of the exhaust gas is normal	
	Whether the light works normally	
	Whether the levers function normally	
	Whether there is abnormal information displayed on the LED panel	
Start slowly	Whether the brake functions normally	38
	Whether the main shift lever functions normally	35
	Whether the speed control pedal functions normally	36

# 7. OPERATION METHOD

### **WARNING**

- Read Chapter 1 "Precautions for Safe Operation" and the safety labels on the machine, and start the machine only after fully understanding the precautions.
- When starting the engine, make sure that you are properly seated in the driver's seat, set the parking brake, and that the main shift lever is set to "Seedling feed"; otherwise any wrong operation on the speed control pedal may cause the transplanter to drive forward, turn over or collide.
- Set the parking brake before getting off the transplanter, otherwise any wrong operation on the speed control pedal may cause the transplanter to drive forward, turn over or collide.
- Make sure that the surrounding is safe when getting on or off the transplanter.

# Adjusting the driver's seat

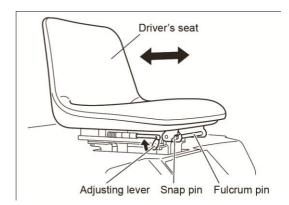
The position of the seat can be adjusted by adjusting the hole position of the fulcrum pin and using the lever.

### Adjusting by using the fulcrum pin

- 1. Take down the cotter and pull out the fulcrum pin.
- 2. Move the seat, insert the cotter and fix the fulcrum pin.

### Adjusting by using the adjusting lever

- 1. Pull up the adjusting lever in the direction of the arrow.
- 2. Adjust the seat forward or backward.
- 3. Release the adjusting lever, then the seat is fixed.

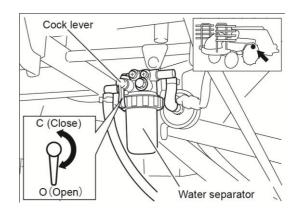


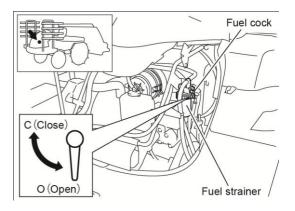
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# Starting the engine

### Checks and preparation before starting the engine

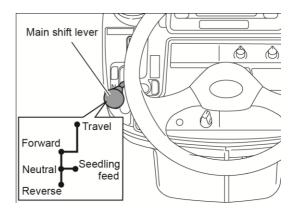
1. Set the cock of fuel strainer and water separator to "Open".

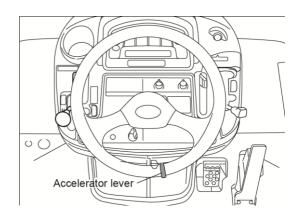




2. Set the main shift lever to "Seedling feed".

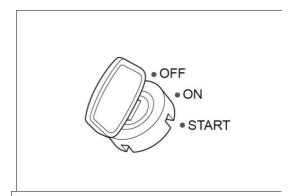
Set the accelerator lever between "High speed" and "Low speed".





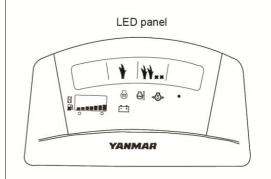
### Starting and operating the engine

- 1. Make sure that the parking brake has been set.
- 2. Put the key into the key switch, and turn it to "ON".



### Reference

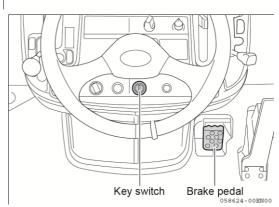
The alarm lamp turns on when the key switch is turned to "ON".



Make sure the preheater pilot lamp turns off, then depress the brake pedal, turn the key switch to "Start" and the engine starts.

### Reference

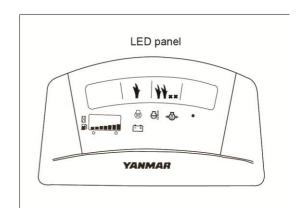
- Depress on the brake pedal to release the parking brake.
- When the parking brake is pushed to the bottom and locked, the engine can be started even without stepping on the brake.



4. After starting the engine, release the key switch and it will return to "ON" automatically.

### Reference

- At this time, if there is no seedling on the seedling rack, the seedling feed indicating lamp turns on, and the buzzer makes a sound.
- Press on the button of the buzzer to stop the alarm.
- If the engine has not started after 10 seconds, the alarm lamp indicates "NO CHARGE", "Err: Eng/Oil PRESSURE".
   Do not consider this situation to be abnormal, the alarm will disappear after the engine starts.



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5. Set the accelerator lever back to "Low speed".

If the engine has not started within 10 seconds when the key switch is set to "Start".

- 1- Set the key switch back to "OFF".
- 2- After one minute, set the key switch to "Start".

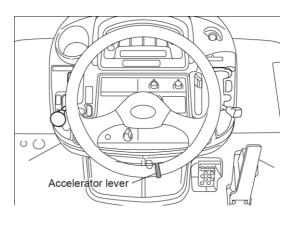
### **IMPORTANT**

- Do not turn the key switch to "Start" for more than 10 seconds. The engine consumes a lot of electricity during starting. Turning the key switch for too long can lead to damage to the electric system, the battery may cause a fire. After turning the key switch to "Start" for 10 seconds, set it to "Off", let the battery rest for one minute and then start the engine.
- Do not use an external power supply to start the engine, it will damage the electric system and lead to a malfunction.
- When the engine is working, do not turn the key switch to "Start"; otherwise the electric system may be damaged.

# Warming up the machine

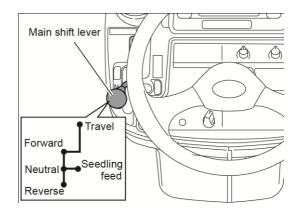
### **A** CAUTION

- The exhaust gas of the engine is harmful to the human body, so open doors and windows for good ventilation when starting the engine inside a warehouse or garage.
- When heating the engine, set the parking brake and set the main shift lever to "Seedling feed".
- 1. Set the parking brake after starting the engine.
- 2. Make sure that the accelerator lever is set to "Low speed" and decrease the rotation speed of the engine.
- 3. Make the engine idle for 5 minutes (to heat the machine).



# Stopping the machine

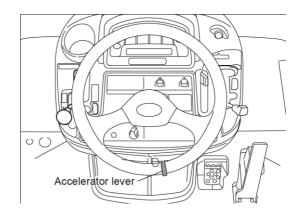
Set the main shift lever to "Seedling feed".
 Make sure that the accelerator lever is set to "Low speed".



2. Set the key switch to "OFF", and stop the engine.

### Reference

When driving in the paddy field, lift the planting part, and set the hydraulic stop lever to "Stop", and then start the engine.



# Starting and speed adjusting

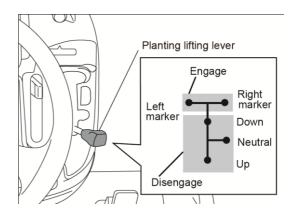
### **WARNING**

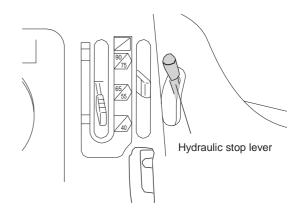
- Do not operate the main shift lever during operation.
   Operate it quickly because the transplanter slides backwards easily on slopes.
- For safety, put on your safety helmet when operating and moving.
- 1. Start the engine.

### Reference

When working in deep paddy fields, raise the rotation speed of the engine to "High speed" in advance to prevent the engine from stopping when you operate the speed control pedal.

- 2. Set the planting lifting lever to "Lift" to lift the plating part to the highest position.
- 3. Set the hydraulic stop lever to "Stop".





4. Set the main shift lever to the appropriate position.

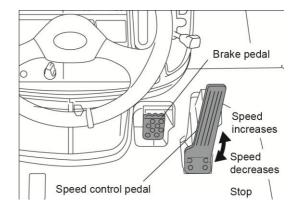
### Important points

When moving in a paddy field, only use "Forward" and "Reverse", do not use "Travel"; otherwise the transmission may be damaged.

Main shift lever

Travel
Forward
Neutral
Seedling
feed
Reverse

- 5. Release the brake pedal.
- 6. Depress on the speed control pedal slowly to start the transplanter.
- 7. Adjust the speed by applying force on the speed control pedal.



# Operating the main shift lever

### **WARNING**

When it is necessary to change the speed on the slope, depress the brake pedal to the bottom, set the parking brake first, and then change the speed. Do not set the main shift lever to "Neutral" or "Seedling feed"; otherwise the machine may move which will lead to an accident.

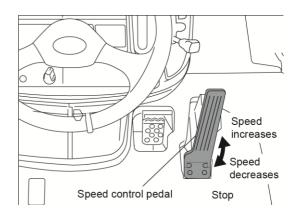
### **A** CAUTION

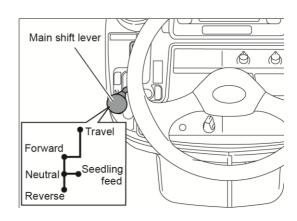
When driving in reverse, make sure that the area behind the transplanter is safe.

- 1. Release your foot from the speed control pedal and then depress the brake pedal to stop the machine.
- 2. Change the speed with the main shift lever.

### **IMPORTANT**

Make sure that the machine has stopped before you change the speed. Operating when the machine has not stopped will damage the transmission.



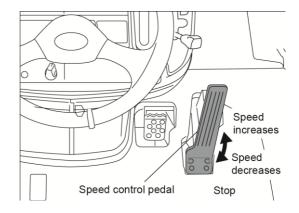


# **Turning**

### **WARNING**

When driving at a high speed, do not turn suddenly; otherwise the machine may turn over or fall.

- 1. Move your foot slowly from the speed control pedal to lower the speed.
- 2. Turn the steering wheel to turn the transplanter.



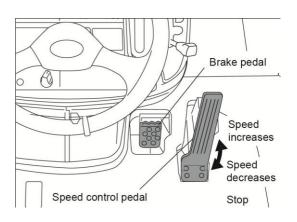
# **Stopping**

### **A** CAUTION

- Move your foot slowly from the speed control pedal to stop the machine.
- If stepping on the brake pedal suddenly while driving, the machine will stop suddenly.
   Pay attention and operate carefully.
- 1. Move your foot from the speed control pedal slowly and then depress on the brake pedal to make the machine stop.

### Reference

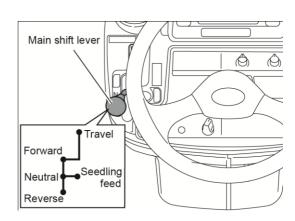
When the accelerator lever is set to "High speed", set it to "Slow speed" to lower the rotation the engine speed.



2. Set the main shift lever to "Seedling feed".

### Reference

- If stopping the machine during operation, make sure to set the main shift lever to "Seedling feed" or "N" (neutral) and depress the brake pedal.
- When the main shift lever is set to "Forward" or "Reverse", the machine may drive forward slowly depending on the oil temperature and the engine speed. This is normal.
- 3. Set the key switch to "OFF" and the engine stops.
- 4. After making sure that the machine has stopped, set the parking brake.



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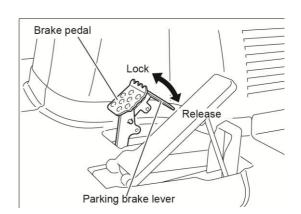
# **Parking**

### **WARNING**

If it is unavoidable to park on a slope, make sure to set the main shift lever to "Forward" or "Reverse", lower the planting part to the ground, set the parking brake and chock the wheel.

### **A** CAUTION

- · Park the machine on a flat and safe area.
- When leaving the machine, remove the key from the key switch.
- 1. Move the machine to a flat and safe area.
- 2. Move your foot from the speed control pedal and apply it slowly to the brake pedal to stop the machine.
- 3. Turn off the engine.
- 4. Depress the brake pedal to the bottom, and set the parking brake lever to "Lock", then set the parking brake.
- 5. Remove the key from the key switch. Releasing the parking brake
  - 1-Step on the brake pedal gently.
  - 2- The parking brake lever will return from "Lock" to "Release" and the parking brake is released.



# **Moving and driving**

The transplanter is not equipped with basic devices described in road traffic regulations, so it cannot run on public roads. A truck is needed for carrying the transplanter on the road.

The truck must meet the requirements of the road traffic regulations.

- 1. The transplanter may not exceed the width of the truck.
- 2. The transplanter may not exceed the length of the truck by more than 10%.
- 3. The weight of the transplanter may not be more than the carrying capacity of the truck.

### **WARNING**

Pay attention to the road shoulder when driving on farm roads with ditches or slopes on both sides.

Do not use the speed setting lever while the main shift lever is in the "Travel" position. If the main shift lever is released, the machine may stop suddenly and you may be injured.

## **A** CAUTION

- Ensure that the machine and levers are ready for starting to travel.
- Make sure of the safety around the machine, when starting to travel.
- Fold up the seedling rack. Otherwise it may crash to the people or objects.

### Preparing the machine for traveling

1. Fold the center marker and side marker to the back.

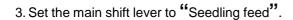
### Reference

The side marker should be folded.

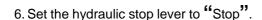
2. Put the side marker arm to the hook of the line marker and fix it. Refer to the following figure.

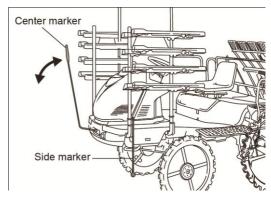
### Reference

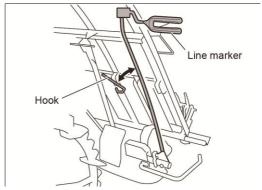
Even if folded, the line marker may extend outside the seedling rack, and it may catch on other objects. In that case, you may remove the line marker.

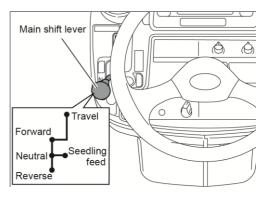


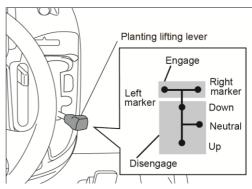
- 4. Start the engine.
- 5. Operate the planting lifting lever to "Lift" to lift the seedling rack to the highest position.

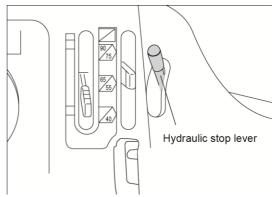












### Put the seedling rack to the middle of the machine

- 1. Start the engine.
- 2. Set the parking brake.
- 3. Set the main shift lever to "Neutral".
- 4. Set the accelerator lever to "Low speed".
- 5. Set the planting lifting lever to "Engage".
- 6. Step on the speed control pedal lightly and the planting part starts running and the seedling rack moves left and right.

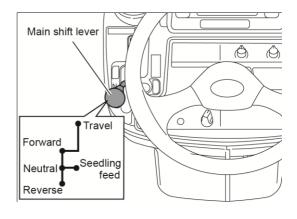
### **WARNING**

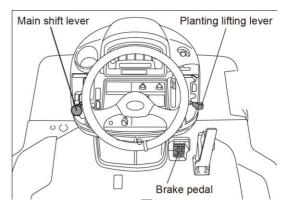
- The moving of the seedling rack is driven by a rotating shaft, so pay attention not to be pulled in.
- Set the accelerator lever to "Low speed" when moving the seedling rack.
- When moving the seedling rack to the middle, release your foot from the speed control pedal and the planting part stops moving.
- 8. Put the planting lifting lever to "Disengage".
- 9. The planting clutch disengages and the planting part stops working.

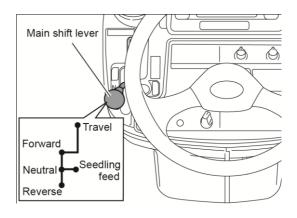
### Starting, moving and speed adjusting

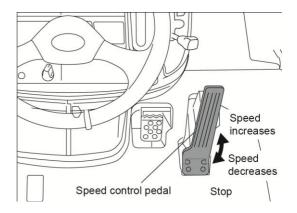
- 1. Set the main shift lever to "Forward" or "Travel".
- 2. Release the parking brake.

 Step on the speed control pedal slowly and pay attention to the safety of the surrounding. The transplanter starts moving slowly. Adjust the running speed by applying force on the speed control pedal.









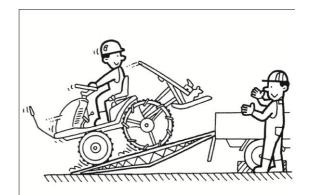
# **Transporting by truck**

Set the main shift lever to "Forward" or "Travel".

- Make sure there is no big gap between the hook of the ramp and truck.
- Do not unload the transplanter from the truck when there are seedlings, fertilizer or other objects on the space seeding rack and the seedling rack.
  - Unloading will change the balance of the machine and may cause the transplanter to turn over or cause objects to fall from the stage.
- During loading and unloading, the seedling rack should be in the middle. Lift the planting part to the highest point, and turn the hydraulic stop lever to "Stop".
- Drive in reverse when loading the transplanter on the truck.
   When unloading, drive forward in the lowest speed. Any violation may lead to an imbalance of the transplanter and cause it to turn over, fall and cause an accident.
- Do not change the driving direction when on the spring board; otherwise the wheels will run off the spring board and the transplanter may fall and cause an accident.
- Fold the seedling rack and pedals before loading.
- If the machine is equipped with a fertilizer distributor, fold the blowing device. (For more details, refer to the instruction of the fertilizer distributor.)
- When the transplanter is put on the truck, set the main shift lever to "Forward" or "Reverse", set the parking brake, and then fix it to the truck with a strong rope. If it isn't fixed, the transplanter may move off the truck.

Remove the objects placed on the seedling rack and space seeding rack, otherwise an accident may occur caused by the fall of these objects.

Fold the side marker and line marker, and fold the roller with the seedling rack, otherwise it will collide with nearby objects.



### Ramp

The ramp must meet the following requirements.

Basic dimensions of the ramp

Length: At least 4 times of the height of the truck

Width: Over 30 cm

Strength: Each ramp can resist 750 kg

Surface: Anti-slip processing

### Preparations of the truck

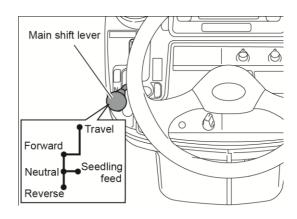
The truck is parked in a flat, safe and open area.

- Set the gear of the truck to "P" or "R", and set the parking brake.
- Chock the wheels of the truck.
- Make sure there is no big gap between the hook of the ramp and truck, and that the spring board has been connected to the truck well.

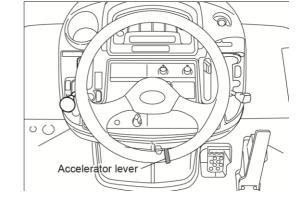
### Loading the machine

Drive in reverse when loading the transplanter onto the truck.

- 1. The transplanter is in the walking position.
- 2. Move the transplanter near the spring board, and make sure that the spring board and the front and rear wheels of the transplanter are in a straight line and that the wheels are in the middle of the spring board.
- 3. Set the main shift lever to "Reverse".



4. Set the accelerator lever to "Low speed".



- 5. Release the parking brake.
- 6. Step on the speed control pedal slowly and make the transplanter move back slowly.

### **IMPORTANT**

If the side bumper and stand touches the baffle of the truck during loading, the bumper can be folded to the inside for one grade.

### After loading on the truck

Fix the transplanter on the truck according to the following method.

- 1. Lift the planting part to the highest point and then set the hydraulic stop lever to "Stop".
- 2. Stop the engine.
- 3. Set the parking brake of the transplanter.
- 4. Fold the line marker to the hook.
- Fasten the rope to the rope hook to fix it.(Two points in the front, and the rear wheels on the left and right side.)

The figure only shows the rear wheel on the right side, fasten the left one in the same method.

### **IMPORTANT**

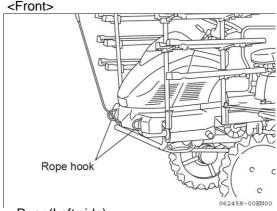
- Do not fasten the rope to other places besides the rope hook and the rear wheels; otherwise the machine may be damaged.
- Do not fasten the rope to the side bumper of the transplanter, it may cause deformation and damage.
- Do not move the machine when the side bumper is folded and supports the planting part, it may cause deformation and damage.
- Do not fasten the rope anywhere except the rope hook. The machine may be damaged.
- Never fasten the rope to the preparation seedling tray, assist bar, studded side bumper or rotor. It may cause deformation and damage.
- In principle, the transplanter should be loaded to the truck by driving in reverse, but if it is unavoidable to be loaded by driving forward, pay attention to the following points.
   Set the main shift lever to "Forward".

Set the accelerator lever to "Low speed".

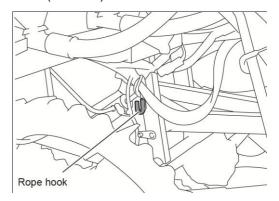
Do not load the transplanter on the tail board of the truck; it will lead to damage and malfunction.

Lift the planting part to the highest position and set the hydraulic stop lever to "Stop".

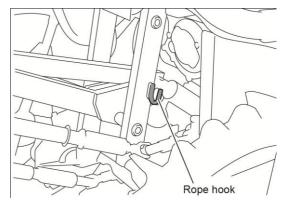
Because the seedling rack is vulnerable to wind, the truck should run at a low speed; otherwise the seedling rack may be damaged.

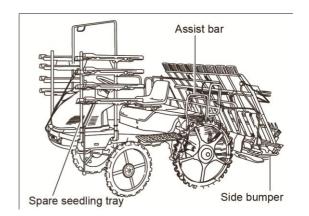


<Rear (Left side)>



<Rear (Right side)>

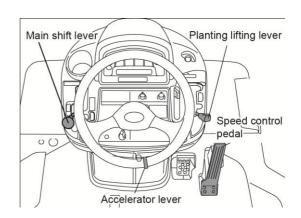




### Unloading the transplanter

Drive the transplanter forward when unloading from the truck.

- 1. Detach and stow away the rope used to fix the machine.
- 2. Start the engine.
- 3. Set the main shift lever to "Forward".
- 4. Set the accelerator lever to "Low speed".
- 5. Lift the planting part.
- 6. Release the parking brake.
- 7. Step on the speed control pedal slowly and make the transplanter move. The transplanter must align with the spring board in order to avoid steering when on the spring board.



# Re-starting the engine during loading and unloading

Operate according to the following methods if the engine turns off during loading and unloading.

- 1. Depress the brake pedal to the bottom.
- 2. Start the engine again on the spring board.
- 3. Release the brake pedal slowly after the engine is started.
- 4. Step on the speed control pedal slowly and run at the lowest speed.

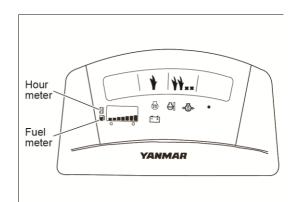
(EN)

### 8. PLANTING

# Preparations before entering the paddy field

### Check the amount of fuel

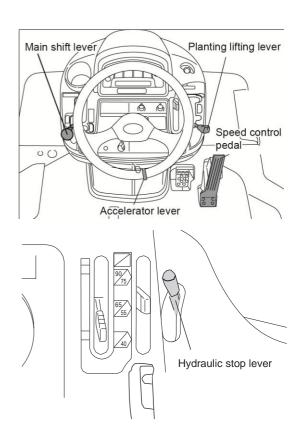
When the key switch is set to "ON", the LED panel shows the fuel meter.



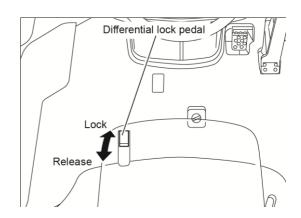
# Getting in or out of the paddy field

### **WARNING**

- If the edge of the field ridge and paddy field is steep, use the spring board. Drive forward when entering the field and drive in reverse when going out of the field. Any violation of this rule will cause the transplanter to turnover or suffer damage.
- When getting in or out of a paddy field, passing the field ridge or sloping field and driving on a farm way, remove the seedbed on the stage of seedlings and the preparatory stage of seedlings. Otherwise the transplanter may turnover because of imbalance.
- 1. Start the engine.
- 2. Set the planting lifting lever to "Up", raise the planting part to the highest position, and set the hydraulic stop lever to "Stop".
- 3. Set the main shift lever to "Forward" or "Reverse".
- 4. Set the accelerator lever to "Low speed".
- 5. Depress on the speed control pedal gradually and drive at a slow speed.



6. When you get in or out of a paddy field, depress on the differential lock pedal, and cross the field ridge at a right angle.



# Preparations after entering the paddy field

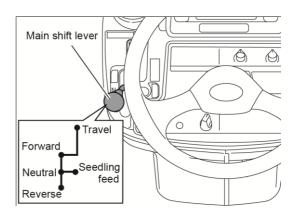
When the machine moves or works, do not use the "Travel", otherwise overload may cause damage to the transmission.

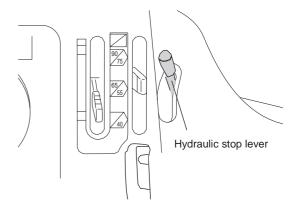
 After entering the field, release the speed control pedal, stop the transplanter and place the main shift lever to "Seedling feed".

### Reference

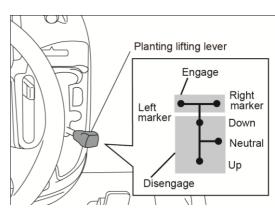
Operate the main shift lever after stopping the transplanter completely. If you shift the lever while the transplanter is moving, the transmission may be damaged.

- Set the planting part to the highest position.Make sure that the hydraulic stop lever is set to "Stop".
- 3. Set the main shift lever to "N" (neutral).
- 4. Set the accelerator lever to "Low speed".





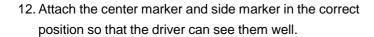
- Set the planting lifting lever to the engage position, depress on the speed control pedal gradually.
   The planting part starts working.
- 6. Move the planting part so that the stage of seedlings is on the right or left. After the belt that sends the seedlings starts working, set the planting lifting lever to the neutral position. The planting part stops working.
- 7. Loosen the line marker from the hook.
- 8. Stop the engine.

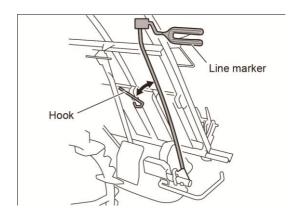


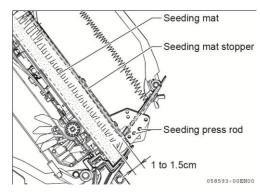
9. Take the seedlings to the stage of seedlings. Fix the seedling mat stopper and the seeding press rod.

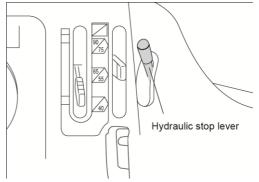
### Reference

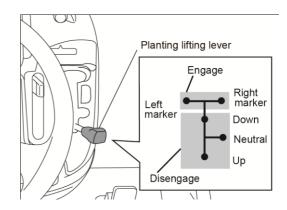
- The distance between the seedling press rod and the seedling mat is adjusted to the condition of the seedlings.
- Make sure that the press rod of the seedbed is on an equal footing with the stage of seedlings.
- 10. Set the hydraulic stop lever to "Release" and the planting lifting lever to "Down" and lower the planting part.
- 11. Move the preparatory seedlings to the preparatory stage of seedlings in advance.
  - When it is set, make sure that the preparatory stage of seedlings is balanced.

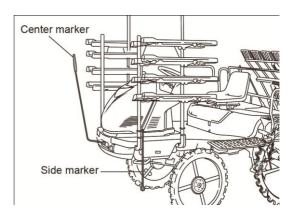








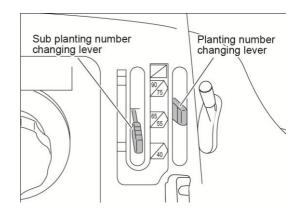




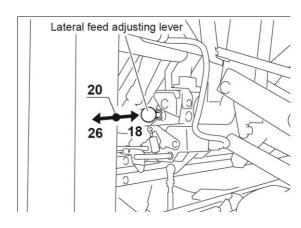
# Loading new seedlings

When loading new seedlings, move the stage of seedlings to the right or left according to the following method.

1. Set the number of plants to 55.

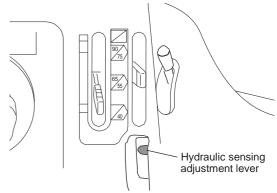


2. Set the lateral feed adjusting lever to the returning position.



3. Lift the planting part to the highest position.

Make sure that the hydraulic stop lever is set to "Stop".



- 4. Set the main shift lever to "N" (neutral).
- 5. Set the accelerator lever to "Low speed".

### Reference

Do not step on the parking brake.

- 6. Step on the speed control pedal and the seedling section moves horizontally.
- 7. When the seedling rack moves to the right or left position, the horizontal moving stops automatically. At this time, release the speed control pedal.

### Reference

After the horizontal feed stops, the one key indicator light turns off and the engine goes into idling. At this time, the indicator light turns off.

8. Stop the engine.

9. Adjust the seedling press board of the seedlings and start loading the seedlings.

### Reference

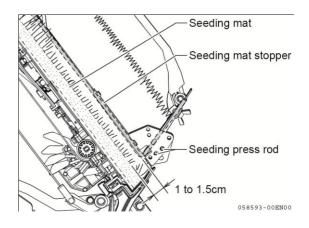
Do not load seedlings when the press board is loose.

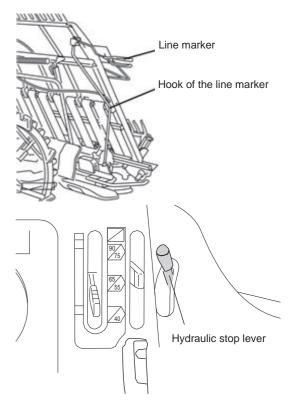
10. After loading the seedlings, check the gap between the seedbed and the press board of the seedbed.

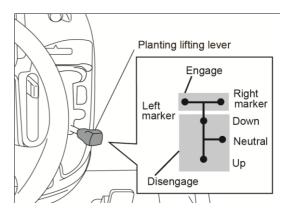
### Reference

- The standard clearance is 1 cm to 1.5 cm, but it should be adjusted according to the condition of the seedlings.
- Ensure the seedling mat stopper will be parallel with the seedling rack.
- 11. Remove the line marker from the marker hook.

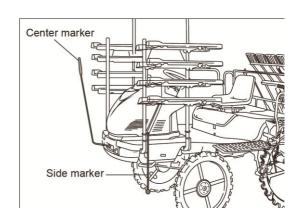
- 12. Set the hydraulic lock to "Lock". Set the planting lifting lever to "Down" to lower the stage of seedlings.
- 13. Load the preparatory seedlings on the preparatory stage of seedlings. There is only one seedling on every stage. Keep the right and left stage balanced.







14. Move the center marker and the side marker to the position where they can be seen easily.

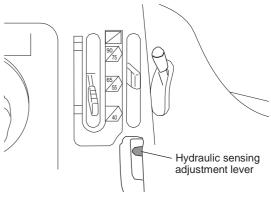


# **Transplanting operation**

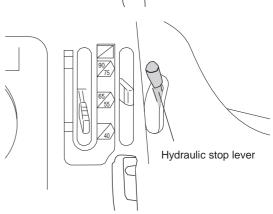
The following describes the main planting operations.

Refer to the section "Circle planting" for an example of how to use the special circle planting feature of this machine.

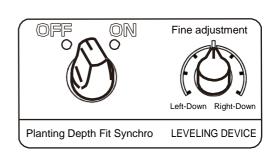
1. Adjust the sensitivity of the hydraulic according to the condition of the field.



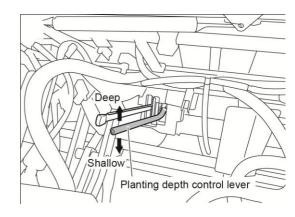
Confirm the condition of the paddy field.Set the hydraulic stop lever to the "Stop" position.



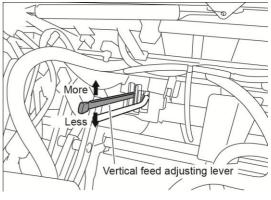
3. Set the automatic adjustment of the planting depth to "OFF" to adjust the position of the planting depth control lever.



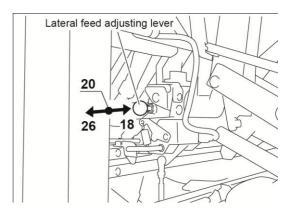
4. Move the planting depth control lever to the middle position.

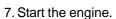


5. Set the vertical feed adjusting lever to the desired position.



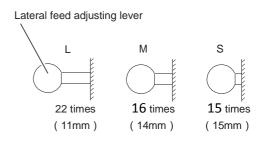
Adjust the transfer of the lateral feed adjusting lever to the desired delivery value.



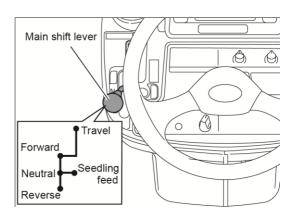


### Reference

- When working in deep water, in order to prevent the engine from turning off, adjust the revolving speed of the engine in advance to a high speed.
- If the seedling fill alarm indicates seedling floating when you load the seedlings, confirm the position of the press rod of the seedbed.



8. Put the main shift lever to "Forward".

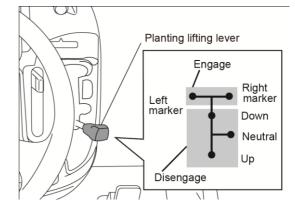


Move the planting lifting lever to the planting position. Then move it to the right or left marker. Lower the line marker as necessary.

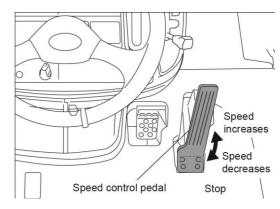
### Reference



When you want to lower the side marker, move the planting lifting lever to the appropriate side. Then lift and fold the line marker.



10. Step on the speed control pedal to start moving and planting.



- 11. After planting for 4-5 meters, stop the machine, confirm the planting, and adjust the following if necessary.
  - Planting amount
  - · Sensitivity of hydraulic
  - · Planting depth
  - Seedling number in a hill
- 12. Observe the condition of the planting and the paddy field, depress on the speed control pedal, and then start planting at the high speed.

### (EN)

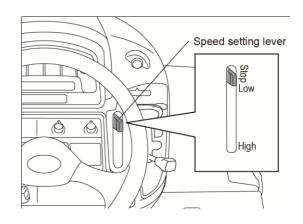
13. After the correct working condition is established, move the speed setting lever to the fixed position, release the speed control pedal, and let the machine move in the specified speed.

### Reference

- To release the fixed speed function, push the speed setting lever into the "Stop" position or press the brake pedal all the way down.
  - The machine will stop and the fixed speed function will be released.
- To release the fixed speed function while traveling, push the speed setting lever into the "Stop" position while pressing down the speed control pedal. The speed can be increased and decreased with the speed control pedal.

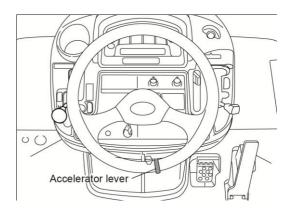
### **IMPORTANT**

If the seedlings contact with the exhaust gas or vent-pipe directly, they may get burned and wither. When the machine turns on the field ridge and the tail gas and vent-pipe hit the seedlings directly, move the seedlings.



# Working in fields with deep water

If stepping on the speed control pedal and starting the engine causes the engine stall, put the accelerator lever to "High speed". Then start the engine with a higher rotating speed of the engine.



## Planting on the side of the field ridge

## Consider the condition of the field before starting your work

#### **IMPORTANT**

- Allow for more space on the head land when turning.
- When coming close to the edge, consider how many rows remain. Adjust the rows so that the machine can plant 7 rows in the round.

#### Example:

When there are 9 rows left on the edge of the field, use the unit clutch lever to plant 2 rows in one pass before the final pass. Then do the last round planting 7 rows.

#### **IMPORTANT**

Use the unit clutch and seedling feed stopper according to the condition of the seedlings.

#### Reference

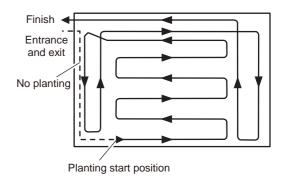
- The seedling feed stopper can stop 1 row of planting.
- The seedling feed stopper can be used on any row.

When the front wheel hits the ridge of the field, there is space for 7 rows left. But the final position can deviate. So when turning to plant, the gap to the adjacent rows can become narrower or wider. The gap between the rows near the ridge can become 30 cm or more.

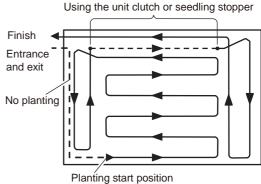
#### Reference

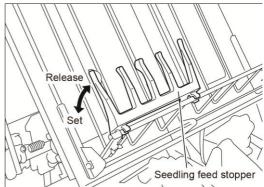
If the front wheel almost hits the field, move the main shift lever to neutral, step on the speed control pedal slightly and turn up the planting arm. This makes it easier to align the final row.

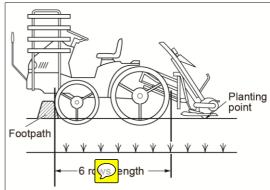
<When row ordering is not required>

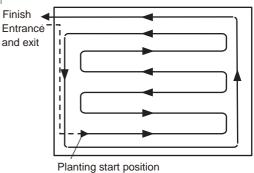


<When row ordering is required>







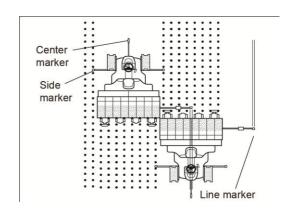


## Using the line marker

Use the line marker on the first run to mark off the side of the field. On the next run, use the center marker to align the row forward, keeping a straight line and an even row width.

#### **IMPORTANT**

If the water is too deep, it is hard to see the mark made by the line marker clearly, so lower down the water to around 1 to 2 cm. When it is not easy to see the line clearly, align the side stem to the adjacent planted row. And keep the gap between each row at about  $25 \, \mathrm{cm}$ .



# **Turning**

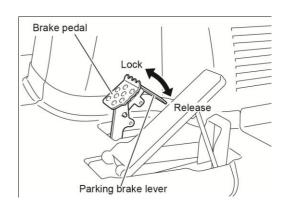
## Driving in reverse first and then turn around

- 1. When close to the end of the field, reduce the speed.
- 2. Before the front wheel hits the ridge of the field, move your foot from the speed control pedal and depress the parking brake.
- 3. Move the main shift lever to "Reverse". The planting part rises automatically.
- 4. Step on the speed control pedal slowly, and drive in reverse to get in position for turning.

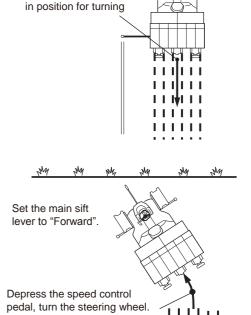
#### Reference

Do not let the front wheel hit the ridge of the field to stop. The wheel gear can block and make the main shift lever difficult to operate.

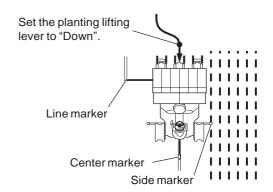
- 5. Set the main shift lever to "Forward", step on the speed control pedal and turn the steering wheel. Make sure that the transplanter does not hit the ridge of the field.
- 6. Use the side marker to aim at the adjacent row and adjust the machine to a straight line.
- 7. Move the planting lifting lever to "Down" and lower the planting part.



Retreat a little to get

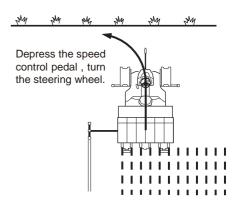


- 8. When staring to plant, use the planting lifting lever to lower the line marker.
- 9. Then step on the speed control pedal to continue working.



## **Turning without reverse**

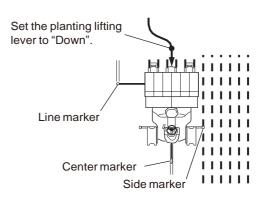
- 1. When you are close to the field ridge, use the speed control pedal to reduce the speed.
- 2. Move the planting lifting lever to the "Up" position and lift the planting part.
- 3. Step on the speed control pedal and turn the steering wheel.



- 4. Use the side marker and center marker to aim at the adjacent gap. Make the machine run forward.
- 5. Set the planting lifting lever to "Down", lower the planting part.
- 6. Adjust the position; use the planting lifting lever to lower the line marker.
- 7. Then step on the speed control pedal to continue working.

#### Reference

When you turn without reversing, you allow more space between rows compared to reversing and then turning.

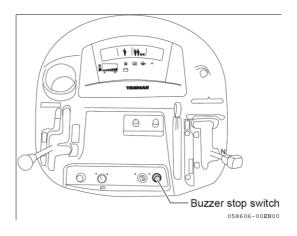


# Adding seedlings

When the amount of seedlings on the seedling rack has decreased to a number that requires adding new seedlings, the seedling adding alarm lamp turns on. Add seedlings according to the following method.

The fertilizer jam call and the fertilizer filling call are only used when the machine is equipped with a fertilizer.

1. Press down the buzzer switch.

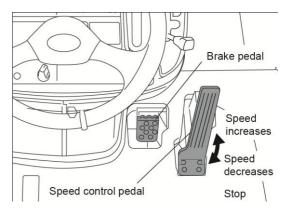


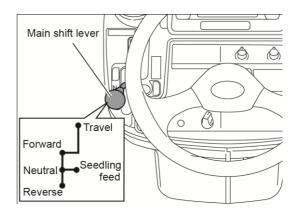


- Move your foot from the speed control pedal.Step on the brake pedal, stop the machine, and move the main shift lever to "Seedling feed".
- 3. Add seedlings to the row that requires new seedlings.
- 4. Move the main shift lever from "Seedling feed" to "Forward".
- 5. Step on the speed control pedal and the machine starts moving and working again.

#### **IMPORTANT**

When lifting the planting part to add seedlings, set the planting lifting lever to ", and then set the main shift lever to "Forward".





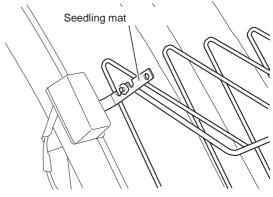
# Removing remaining seedlings

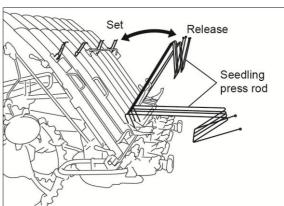
Remove the remaining seeding mat; replace it with a new seeding mat according to the following method.

- 1. Start the engine.
- 2. Operate the planting part and put the seedling rack to the right or left.
- 3. Stop the engine.
- 4. Lower the planting part to a height where it is easy to remove the remaining seedlings. Set the hydraulic stop lever to "Stop".
- 5. Move the seedling mat stopper in the direction of the arrows. Release the seedling mat stopper.

#### **IMPORTANT**

Do not turn the planting part or operate the machine with the press seedling mat stopper released. Otherwise machine damage and personal injury can occur.





- 6. Remove the old seedling mat and load the new seedling mat.
- 7. Return the seedling mat stopper.



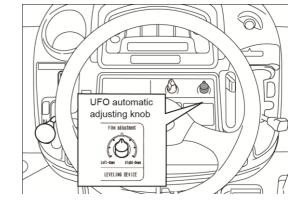
(EN)

# Automatically balancing with the UFO

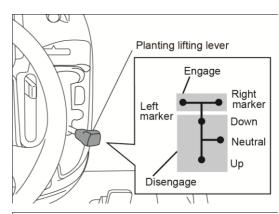
When the planting lifting lever is set to "Down" or "ON", the UFO of the planting part is turned on and keeps out the horizontal balance automatically. Even if the machine leans to one side on uneven ground, the planting part remains balanced.

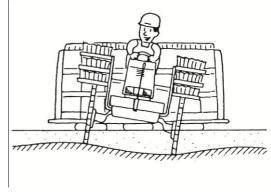
## **During normal planting operation**

Turn the knob of the UFO to the central position.



When the planting lifting lever is set to "Down" or "ON", the UFO starts to work.





## Adjusting a tilted planting part

When planting, adjust the planting part to align it with the paddy field when it leans to the left or right according to the following method.

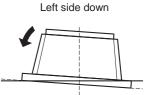
(The left of the planting part is raised)

Turn the knob of the UFO towards "Lower left" to adjust the planting part to an even, horizontal position.

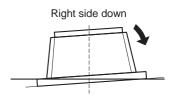
(The right of the planting part is raised)

Turn the knob of the UFO towards "Lower right" to adjust the planting part to an even, horizontal position.



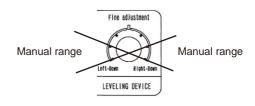






#### Reference

Put the automatic adjusting knob to "Manual range". Then you can tilt the planting part to the desired angle.



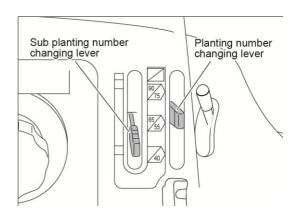
# Adjusting to the conditions of the seedlings, paddy fields and operations

## Adjusting the amount of seedlings

Adjust the number of plants with the Planting number changing lever and the Sub planting number changing lever at the lower right of the driver's seat.

#### Reference

- With the combination of the 2 levers, it is possible to adjust the number of seedlings in the range of 6 gears.
- When it is difficult to shift the levers, start the engine, put the
  main shift lever into neutral ("N"), keep the brake pedal
  unlocked, and push the speed control pedal to adjust. Adjust the
  number of seedlings before getting into the paddy field.
   According to the condition of the paddy fields, the number of
  plants varies, so the amount should be confirmed again after
  moving forward for about 4 meters to 5 meters. Make the
  necessary adjustments.



#### (EN)

Reference list for the planting number (30 cm rows)

Planting number	60	70	80	95	105	125
Row spacing (cm)	22	18	16	14	12	10

#### Reference

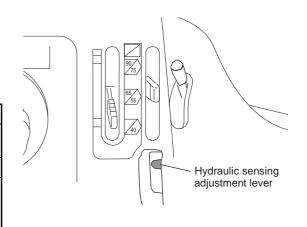
The row spacing and the planting number varies with the sliding rate. The table is only for reference.

## Adjusting the hydraulic sensitivity

To adjust the sensitivity automatically according to the softness of the paddy fields, turn the hydraulic sensing adjustment lever until the floating boat touches the ground.

Referring standards of the adjustment

	•
Condition of the paddy field	Position of the rod
Soft paddy field (the float presses the mud)	"Soft paddy field"
Normal condition	1 scale apart from "Hard paddy field"
Hard paddy field (using the float to eliminate the difference between the fields, the body of the float should not touch the ground)	"Hard paddy field"



#### **IMPORTANT**

- When you turn the hydraulic sensing adjustment lever to "Soft paddy fields", the planting depth becomes shallow. When you turn it to "Hard paddy fields", it becomes deep. Use it together with the planting depth control lever.
- If the hydraulic sensing adjustment lever lies within 1 scale from "Soft fields" and the cultivation ends, the head of the machine rises up abruptly. Use it when the floating boat has accumulated too much mud.

However, when you turn the hydraulic sensing adjustment lever to "Soft paddy fields", check the planting depth and set the planting depth control lever to "Deep".

## Adjusting the depth of planting

A planting depth of 3 cm is appropriate.

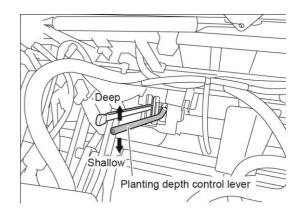
Switch to the proper depth based on the conditions of the paddy field and seedlings.

The depth of planting should be confirmed after working about 4 meters to 5 meters. When necessary, make adjustments.

If the planting depth adjusting lever is set to 'Shallow', the depth will be shallow, and vice versa.

#### **IMPORTANT**

- When you adjust the depth, the planting part should be lifted. If not, the machine will be damaged.
- The proper position of the planting depth adjusting lever varies with the working condition, so consider changing it for low-speed operation and high-speed operation. If not, the seedlings will float and the machine will carry mud.



# The operational method of the automatic depth adjusting mechanism

Set the automatic depth adjusting lever mechanism to "Standard" and start planting.

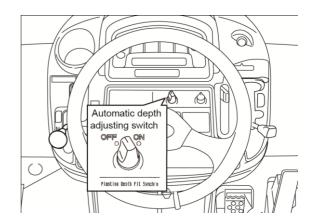
Step on the speed control pedal. When the planting speed increases, the automatic adjusting mechanism responds to the speed change and automatically changes the depth.

#### **IMPORTANT**

- If there is very little water in the field, the floating boat floats less and the seedlings are planted deeper. When this happens, set the automatic depth adjusting switch to "OFF" to turn off the device.
- Do not put the automatic depth adjusting switch to "OFF" during operation. Otherwise, the machine will continue to plant deeply.



- If the switch of the mode selector of the paddy field is set to "Standard", the automatic adjusting mechanism will automatically turn off,. But if it is set to "Paddy field" or "Deep water", the machine will automatically enter the "ON" state (the pilot light turns on).
- If there is not enough water in the field, the float does not float and the seedlings are planted deeper. Set it to "Switch" and turn off the automatic adjusting part (the indicating lamp turns off).



## Adjusting the number of seedlings taken (vertical)

The number of plants is controlled by the vertical feed adjusting lever. It varies with the condition of the seedbed and the sowing amount.

The adjustment has 11 steps and ranges from 8 mm to 18 mm. 3 or 4 seedlings can be planted in a hill.

Set the vertical feed adjusting lever for the number of transplanting to "Middle", and then confirm the amount after working about 4 or 5 meters.

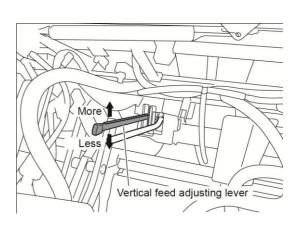
If necessary, adjust the number.

If the vertical feed adjusting lever is set to "More", the number of seedlings increase, and vice versa.

Make the adjustment together with the adjusting method of the horizontal feed.

#### Reference

The approximate amount of boxes (the amount of seedlings) per 10a that is needed depends on the number of seedlings, the amount of the lateral and vertical feed and the planting rate of the seedbed and is indicated on page 138 "Setting the frequency of the lateral feed and the number of seedlings taken vertically".



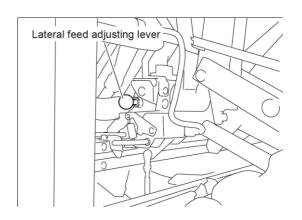
### Adjusting the lateral feed

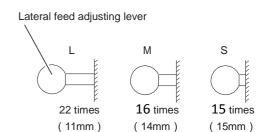
Adjust the amount of seedlings planted in every hill based on the condition of the seedbed. Adjust it by controlling the amount of the lateral feed on the seedling rack.

Operate the adjusting lever of the horizontal feed to change the amount.

Adjust the seedling rack as necessary.

To adjust, move the lateral feed adjusting lever to the position shown in the following illustration.



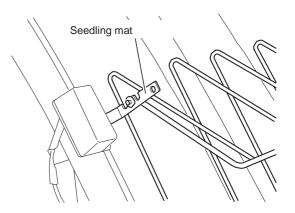


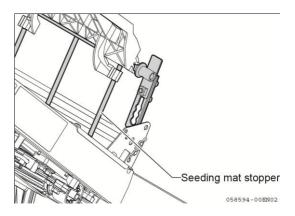
Lever position	22 times	16 times	15 times
Cutting width	11 mm	14 mm	15 mm
Number of hill	Short	Middle	Large

# Adjusting the seedling press rod and the seedling mat stopper

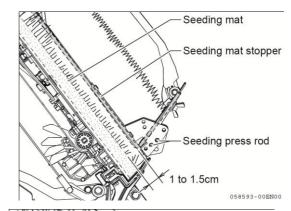
## **WARNING**

- When you adjust the seedling press rod and the seedling mat stopper, the engine must be turned off and the hydraulic stop lever should be set to "Stop", otherwise a sudden start of planting may cause accidents.
- Adjust the seedling press rod and the seedling mat stopper according to the seedling height and planting posture.





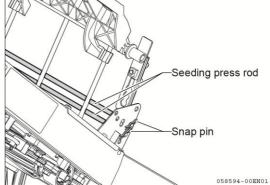
 Set the seedling mat stopper 1 cm to 1.5 cm above the surface of the seeding mat.



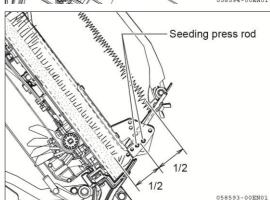
• When the leaves of the seedlings get caught and the seedlings do not slide down well, lift the seedling mat stopper little.

#### Reference

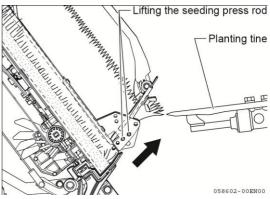
The standard position of the seedling mat stopper is 1 cm to 1.5 cm away from the surface of the seedling mat, but should be adjusted according to the condition of the seedling mat.



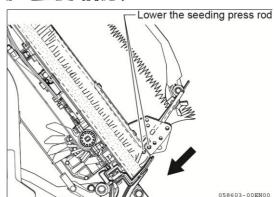
• Usually the seedling press board is set at the second or the third notch (factory setting).



 If the seedlings are tender and long, and the leaves hang down, move the seedling press rod to the first or the second notch so that the leaves do not touch the planting tines.



 If the seedlings are short (under 12 cm) or the posture is backwards, set the seedling press rod to the first or the second notch.



# Freeing a sunken-in machine when the plowing chassis is too deep

Choose the method that is most appropriate to the situation to lift the machine.

## The rear wheels starts sinking during driving

Keep the planting parts lowered, depress the differential lock pedal and drive the machine out at a slow speed.

#### **IMPORTANT**

- Turning the steering wheel makes the transplanter sink in further. If you drive the machine in reverse, the front wheels sink in further.
- In order to reduce the weight of the machine, unload the spare seedling rack and the seedlings on the seedling rack.
- At first, push the speed control pedal slowly.
   If you push it abruptly, the engine will stop.
- When the transplanter cannot be pulled out by its own power, fasten a rope to the rope hook and drag the machine with a tractor. Start the engine of the transplanter, drive slowly and advance straight forward, otherwise the machine will be deformed and damaged.

## The front wheels sink in when you drive in reverse

- Unload the seedlings on the spare seedling rack to reduce the weight in the front.
- Retreat at a low speed.

#### The machine sinks in when you make a turn

When you turn the front wheels, but the machine does not turn, tread the differential lock pedal and turn the machine at a low speed. (Because after the steering wheel stops working, the one-sided driving force of the rear wheels is cut off and the force is halved.)

If this does not work, stop turning and return the steering wheel to the straight direction.

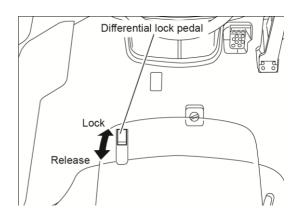
Depress the differential lock pedal and drive the machine out.

#### **IMPORTANT**

When you pull the machine out by its own power, do not place the board lights under the wheels or the machine will be damaged.

#### Reference

In paddy fields where the machine is likely to sink in, attaching auxiliary wheels can help the machine work properly. Please consult with your dealer.

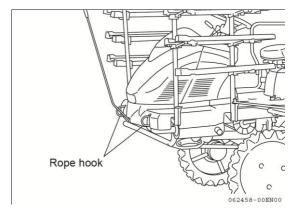


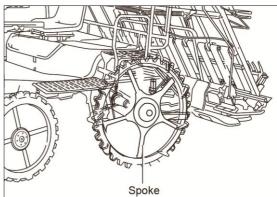
## Towing the transplanter with a rope

When the transplanter sinks in the paddy field, tie a rope to the rope hook in the front of the machine.

#### **IMPORTANT**

- Two persons are needed to conduct the towing: The driver of the transplanter and the person who tows the transplanter.
- Do not fasten the rope to other parts except for the rope hook to tow the transplanter, or the transplanter will be deformed, damaged, and suffer malfunctions.
- Tow the machine straight forward and drive the transplanter, or it will be deformed and damaged.
- Do not pull by the spokes, e.g. by sticking a wood piece inside.

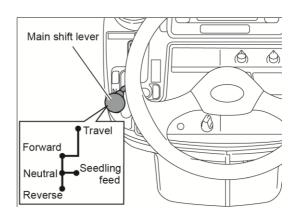


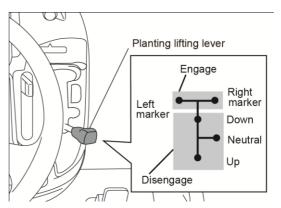


# **Turning the rotor case**

### **WARNING**

- When you need to turn the rotor case manually, turn off the engine. If you don't obey, you can be dragged in by the rotating parts, resulting in injuries and damages.
- When you manually turn the rotor case, be especially careful with the point of the tine.
- Only one person can do the work step by step to manually turn the rotor case.
- 1. Set the parking brake.
- 2. Start the engine, and lift the planting part to the top.
- 3. Set the hydraulic stop lever to "Stop".
- 4. Turn off the engine.
- 5. Set the main shift lever to "Seedling feed".
- 6. Set the planting lifting lever to "ON".



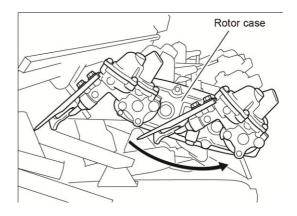


89 VP6D, VP8DN

7. Turn the rotor case in the direction of the arrows.

#### Reference

Set the planting number changing leven "Middle". This makes it easier for the rotor case to turn.



# Operating with the safety clutch engaged

## **WARNING**

- During the inspection, turn off the engine and set the hydraulic stop lever to "Stop". If the engine is not shut down, the planting part can operate unintentionally and cause injuries and accidents.
  - To prevent the planting part from damage, install the safety clutch. The safety clutch operates in the following situations.
- There are obstacles, e.g. stones, in the paddy field.
- There are obstacles in the seedling opening.
- The seedling mat is very hard.
   The safety clutch will make a rattle noise when it operates.
- 1. Stop planting immediately when the planting clutch operates.
- 2. Raise the planting part, set of the hydraulic stop lever to "Stop" and turn off the engine to find the cause.
- 3. After fixing the problem, start the engine, confirm that the planting part works normally and begin to plant.

# 9. DISMANTLING AND INSTALLING THE ENGINE COVER AND THE STEP

## **WARNING**

Turn off the engine and let it cool down sufficiently, then start working. Otherwise, burn injuries will occur.

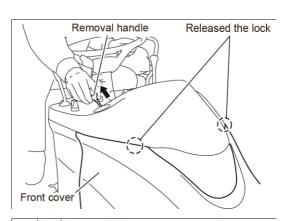
## **WARNING**

Be sure to re-install the covers that were removed, you operate the machine with a cover removed, you may be injured.

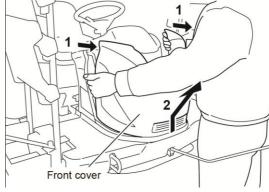
# Dismantling and installing of the engine cover

## Dismantling the engine cover

1. Pull the removal handle of the engine cover. (The hooks in the upper right and left)

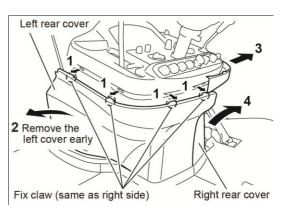


2. Remove the front cover.



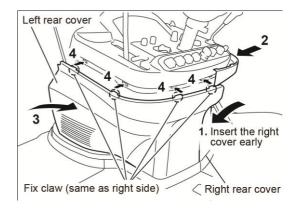
3. Pull the four fixed claws of the left rear cover, and remove the cover to the front and up.

At the same time, remove the right rear cover.

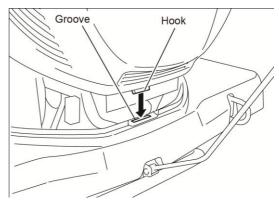


## Installing the front and rear engine covers

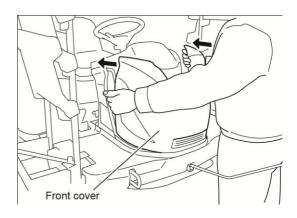
 Put the cover at the rear right into the groove, and insert the four claws above into the holes to install the cover.
 At the same time, install the cover at the left behind.



2. Insert the hook parts of the front cover into the groove of the front bumper.

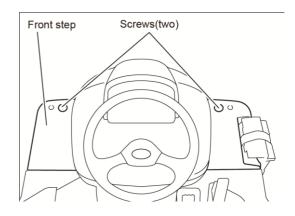


3. Press the fix claws on both sides of the front cover to lock it.



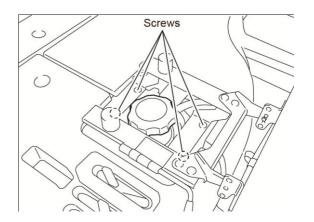
# Dismantling and installing the front step

- 1. Set on the parking brake.
- 2. Dismantle the front and rear right and left cover of the engine.
- 3. Remove the two screws fixing the front step, and then remove the step.
- 4. Install the front step in the reverse order of dismantling.



## Dismantling and installing the right and left step

1. Remove the four screws and dismantle the seat from the installed base.

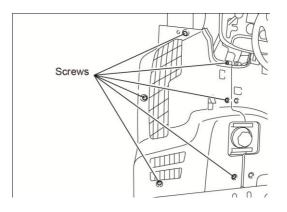


- 2. Dismantle the screws fixing the right and left step (six screws on each side).
- 3. Remove the right and left step from the machine.
- 4. Install the right and left step in the reverse order of dismantling.

#### **IMPORTANT**

Be careful that the handles do not hit the step.

Do not let the connectors get entangled.



# 10. MAINTENANCE AND STORAGE AFTER WORK

## **A** DANGER

Do not allow open flames or fires when discharging fuel from the machine.

## **WARNING**

Before you cover the transplanter, make sure that the heated parts of the engine have cooled down. If the machine is still hot, the cover will catch fire and cause an accident.

## **A** CAUTION

- Turn off the engine and apply the parking brake when you
  lift the planting part or check and maintain the planting
  tines and rotor case. Set the hydraulic stop lever to "Stop"
  and use the rack to support the planting part so that it does
  not fall down.
- Clean the machine on an even and steady surface.



## Cleaning the machine

Wash the machine after operation. Clean the dirt drawn into the rotating parts and dry the machine. Then, apply oil to the rotating and sliding parts, and apply grease to the rusty parts.

#### **IMPORTANT**

- Do not let the engine or electrical devices (e.g. switches, sensors) get in touch with water.
- After cleaning, all engine parts which need oiling should be oiled. If not, the machine may not work correctly next time it is used.
- Clean the dirt and straws stuck in the rotating parts. If not, the grease seals and bearings can be damaged.
- Clean the machine in a flat and even place.

# Components that need oiling and greasing

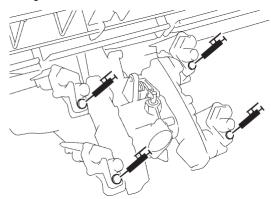
Oil Injection: Lubricant:

Grease Gun: -



Check the amount of the remaining grease in the planting arm and inject grease if the amount is less than 1 cc to 15 cc.

Planting arm



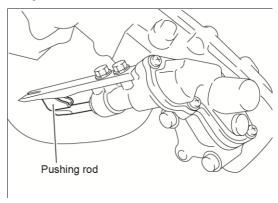
#### **IMPORTANT**

If the amount of grease is excessive, the movement of the push rod will slow down, the posture of planting will be bad or the seedlings will remain on the tine. Remove excessive grease.

#### Reference

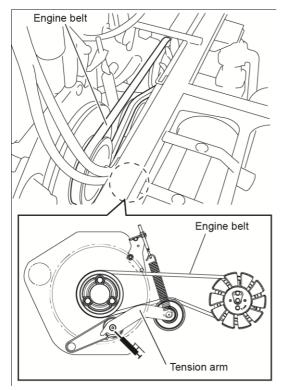
When the push rod moves unevenly, inject the planting arm with a little gear lubricant (where the grease is injected).

Pushing rod

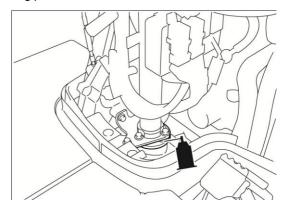


## (EN)

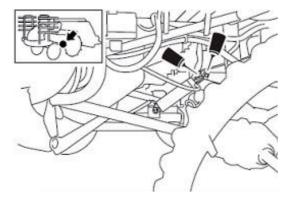
## Tension arm pivot



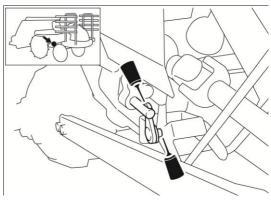
## Steering portion



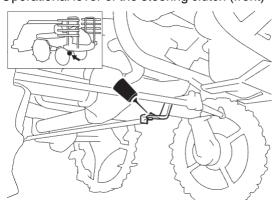
Rotating part of the installing pivot of the lift cylinder



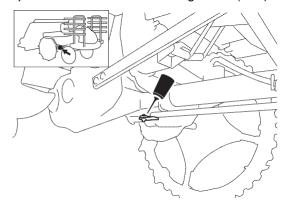
Shifting part of the row spacing



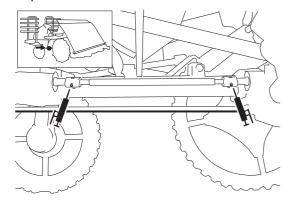
Operational lever of the steering clutch (front)



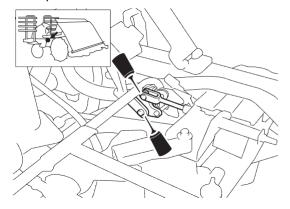
Operational lever of the steering clutch (rear)



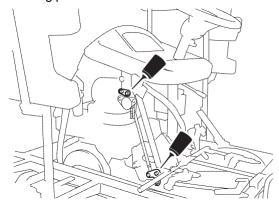
## Output shaft of the real axle



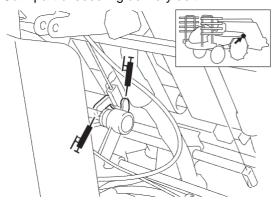
## Brake pedal



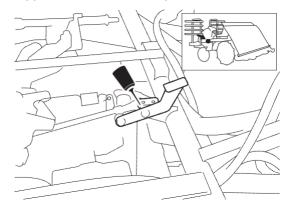
Rotating part of main shift lever



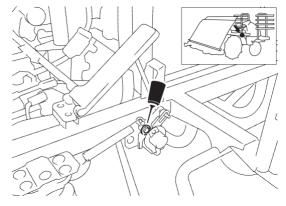
Cam part of seedling delivery belt



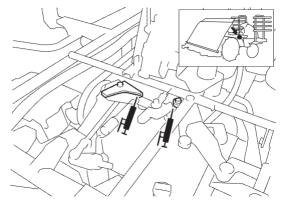
## Support of differential lock pedal



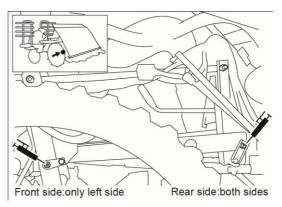
Rotating support of speed control pedal



Operating part of gear shift

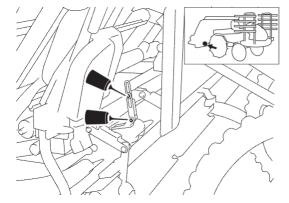


Support of connecting rod

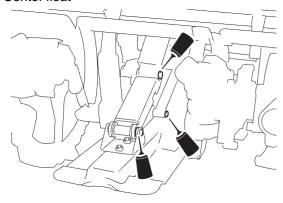


## (EN)

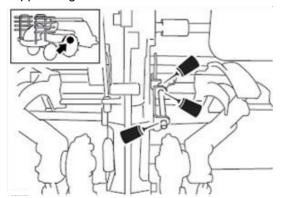
## Float (five places)



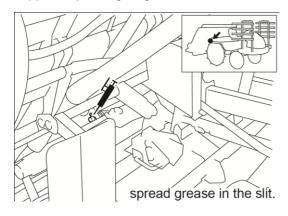
Center float



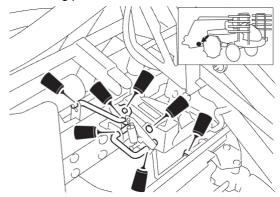
Support of guide rail



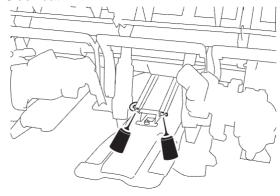
Support of planting stage arm



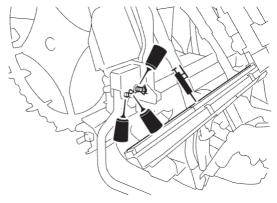
Connecting part of float sensor



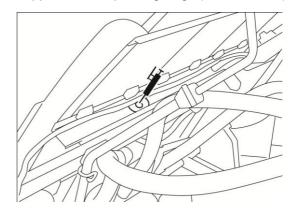
Side float



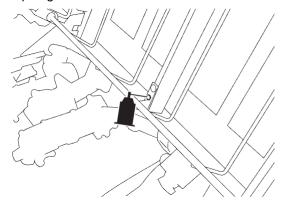
Support of side bumper



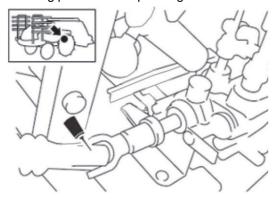
Support block of planting stage (VP6:3, VP8:4)



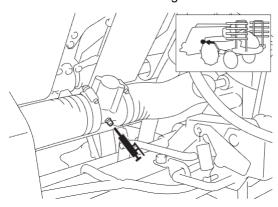
Top of guide rail



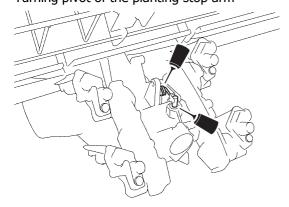
Rotating portion of the planting drive shaft



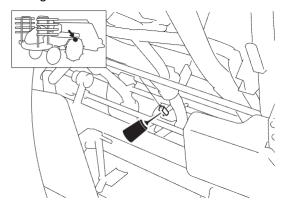
Sleeve of the vertical sending screw



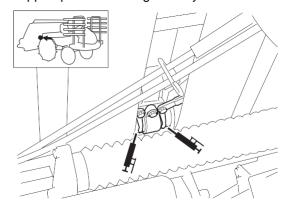
Turning pivot of the planting stop arm



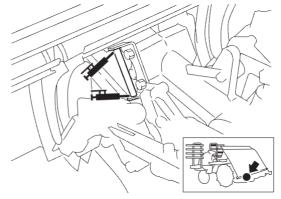
Linkage steel wire of vertical feed



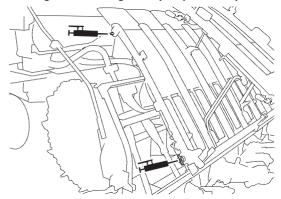
Support part of seedling delivery belt



Tray slide of the guide rail



Folding the seedling rack (Only for VP8)



#### (EN)

## **Storing**

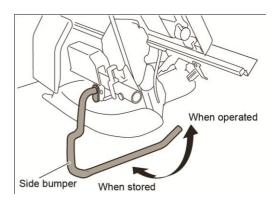
If the transplanter is not used for a long time, do an inspection and all necessary adjustments, then store it according to the following method.

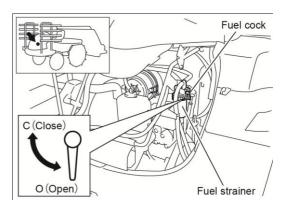
- 1. Store it in a place that is not exposed to direct sunlight, water or has poor ventilation.
- 2. Fold the side bumper and use it as a support.

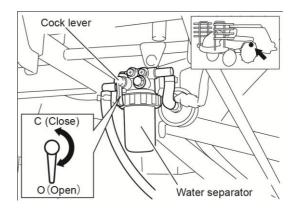
  Lower the planting part. Set the hydraulic stop lever to "Stop".
- Set the planting lifting lever to "Middle".
   Set the main shift lever to "Seedling feed". Then pull out the key from the key switch.
- 4. Remove the battery from the electric system and store it in a dark, well-ventilated place. If the transplanter is stored with the battery installed, make sure that the terminals of the battery are disconnected from the battery.
- 5. Completely fill the fuel tank with oil. Put the cock of the fuel strainer and the water separator to C (Closed).

#### **IMPORTANT**

- Fill the fuel tank, otherwise water drops will form and lead to rust.
- If the transplanter is stored for a long time, fill the fuel tank, and put the fuel cock to "C" (closed).
- 6. Apply rust preventive oil, engine oil or lubricating oil on the outside parts that rust easily.







## 11. INSPECTION AND MAINTENANCE

## **A** WARNING

- During inspections, oiling, maintenance and repair, park the machine in a flat and stable place without traffic dangers and stop the engine.
- When lifting the planting part to inspect and maintain the planting tines and rotor case, set the hydraulic stop lever to "Stop" and use the stage to prevent the planting part from falling.

## **A** CAUTION

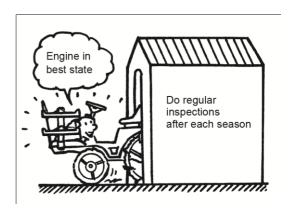
- Do an inspection, repair and maintenance on each part once a year, especially the oil pipe, hydraulic oil pipe, other rubber pipes and electrical wire. If not, the machine will suffer damage and malfunction.
- If you remove a cover or board during your work, install it back to the same position.
  - If not, you may be dragged in the machine and suffer injury. On disposal of waste oil, do not pour waste oil directly into a river or sewer. You will pollute the environment.
  - Contact a specialized shop or your dealer for proper waste oil disposal.

# Intervals of regular inspections and maintenance

Do an inspection and maintenance in the off-season, so that the machine can operate and perform best in the busy season. In order to avoid hidden dangers caused by negligent maintenance, do the inspection and maintenance of the transplanter in a repair workshop to ensure its safety after the season.

Replace especially the rubber pipes, e.g. oil pipes and hydraulic pipes, every two years. Do an inspection on the electric wire every year and if the coating is damaged, replace the wire.

Otherwise the machine will not be in the best condition and safe operation cannot be guaranteed.



# Table of regular inspections and maintenance

Item	Content	Time of inspection and replacing	Reference page
Inspection and maintenance on fuel tank	Quantity (37.0L)	After operation and before storing	103
Inspection on engine oil	Quantity and dirt mark, add if necessary (2.9 L: replacing the engine oil only)	Inspection: before operating Replacing: the first time after 50h, then every 200h	105
Inspection and maintenance on transmission case	Quantity and dirt mark (11.0 L)	Inspection: every season Replacing: the first time after 50h, then every 300h	106
Inspection and maintenance on rear axle case	Quantity and dirt mark (7.0 L)	Inspection: every season Replacing: the first time after 50h, then every 300h	107
Planting arm	Quantity and dirt mark Adding oil: within 1-15cc, out of the factory 15cc.	Everyday Identify the remaining quantity of Iubricating oil, add within 1cc to 15cc	95
Oil on sliding parts	Engine oil and gear oil	After operation and before storing	-
Fuel filter	Cleaning it and replacing the filter element	Replacing: the first time after 50h, then every 300h	110
Water separator	Cleaning it and replacing the filter element	Inspection: Before operating Cleaning: every season Replacing the filter element: every 300h	110
Filter element of transmission case oil	Replacing	Replacing: the first time after 50h, then every 300h	111
Filter element of engine oil	Replacing	Replacing: the first time after 50h, then every 100h	111
Cleaning the filter of the air cleaner	Filter element, blowing with air	Clean every 150h Replace every 400h	109
Inspection of cooling water	Quantity and adding	After operation and before storing	112
Inspection of belts of fan	Quantity and adjusting on tension	Inspection: The first time after 50h, then every 100h replacing when damaged	113
Battery	After liquid level and ratio inspection, charge if necessary	Everyday, before operating	120
Inspection of electric wire	Damage of the cover, loosening of the connection	Replacing when parts are abnormal	120
Oil pipe and its connection	Inspection	Replacing every two years	124
Inspection of engine and starting electric system	Starting	Inspection every season	-
Inspection of hydraulic devices	Oil leakage	Inspection every season	-
Hydraulic pipe and its connection	Inspection	Replacing every 2 years	-
Inspection of tightness of turning parts	Tighten	After operation and before storing	-
Inspection of steel wire	Freedom	After operation and before storing	-
Inspection of important bolts and nuts	Tighten	After operation and before storing	-
Planting tines	Inspection, replacing if worn	After operation and before storing	117-118
V-belt	Damage	After operation and before storing	-
Vertical feed bearing	Inspection	After operation and before storing	-
Support of seeding carrying stage	Inspection	After operation and before storing	-
Long guide rail F	Inspection	After operation and before storing	-

## Table for adding oil, water and grease

Place of adding		Content	Туре	Reference page	
Fuel tank 37.0 L		37.0 L	Diesel	103	
Crank case of engine		2.9 L (when replacing the machine oil)	( 3)		
Cooling water	Radiator	3.0 L	-	112	
Cooling water Water tank		0.4 L	-	112	
Transmission ca	ise	11.0 L	TF500 Hydraulic/Transmission fluid	106	
Rear axle case		7.0 L	7.0 L TF500 Hydraulic/Transmission fluid		
Planting arm		1 cc to 15 cc (adding grease) 15 cc (grease at factory)	Grease: (EP#1)	95	

#### **IMPORTANT**

- When you do a regular inspection, use genuine products of our company.
- Adding too much lubricating oil on the planting arm will influence the push rod and the planting posture.

## Adding fuel oil

## **A** DANGER

- When adding fuel oil, do not smoke and use fire for lightening.
- After adding oil, close the cover of the oil tank well, and wipe off any spilled oil. The oil can ignite and cause a fire.
- Do not add oil when the engine is operating or the muffler is hot. The oil can ignite and cause a fire.

### Inspection

Set the key switch to "ON", and confirm the oil level through the fuel meter on the LED panel.

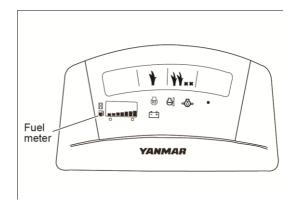
## Adding fuel oil

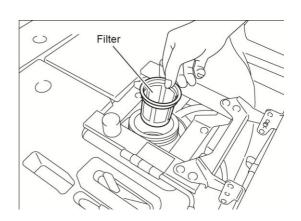
- 1. Lower the driver's seat.
- 2. Remove the fuel tank cover and then add the fuel (diesel).

#### IMPORTANT

When adding fuel oil, pay attention that no foreign matter enters the tank. Do not remove the filter.

- 3. Do an inspection to check whether there is dirt on the filter, and if there is, remove it.
- 4. After adding fuel oil, put the cover back to the original place.
- 5. Return the driver's seat to its original position.

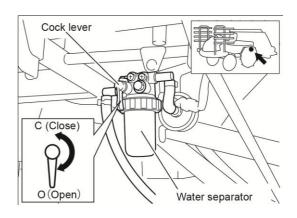




## Discharging the fuel oil

## Discharge of the fuel oil in the fuel tank

- 1. Prepare a container to hold the discharged fuel.
- 2. Remove the flexible pipe on the water separator, and drain the fuel into the container. Do not spill any fuel.
- 3. After discharging, connect the flexible pipe and turn it to "C" (closed).



## Inspection, adding and replacing oil

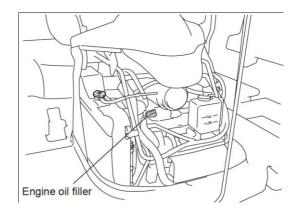
#### Reference

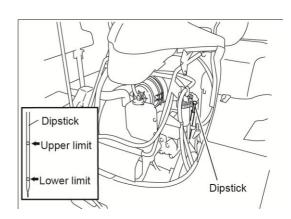
When doing an inspection or adding and replacing oil, park the transplanter in a flat area, otherwise the oil quantity cannot be measured accurately.

## **Engine oil**

Doing an inspection

- 1. Starting the engine and warm it for 1 minute to 2 minutes. Then stop the engine and let it cool for 2 minutes to 3 minutes.
- 2. Remove the front cover of the engine.
- 3. Remove the dipstick and clean the dipping part.
- 4. Insert the dipstick into the filler to the bottom of the tank and then pull it out. Check whether the oil level is between the upper limit and the lower limit of the dipstick.
- 5. If the oil level is between the upper limit and lower limit of the dipstick, the oil quantity is within the specified quantity. If it is not sufficient, add according to the method stated below.
- 6. After the inspection, install the dipstick as it was.
- 7. During the inspection, make sure that there is no oil leakage.



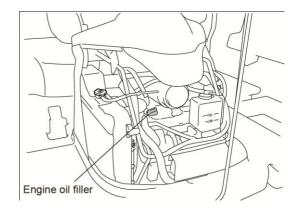


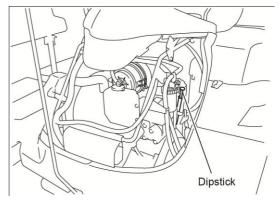
### Adding oil

- 1. Open the oil filler.
- 2. Add the oil from the filler port to the specified quantity (between the upper and lower limit).
- 3. After adding oil, put the cap on the filler port back to its original place.

#### Reference

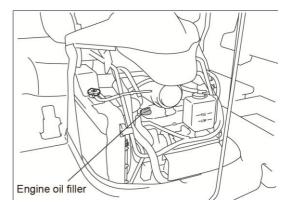
To make adding oil more comfortable, use the hopper which is attached to the machine.

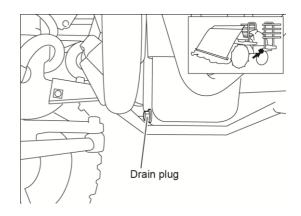




## ■ Replacing oil

- 1. Remove the front cover of the engine.
- 2. Put the container under the drain plug on the bottom of the engine.
- 3. Remove the cap on the filler port and drain plug, and discharge the oil.
- 4. After discharging the oil into the container, install the drain plug back to its original place.
- 5. Add oil according to the method stated above.
- 6. Close the cap on the filler port.
- 7. Install the front cover of the engine.



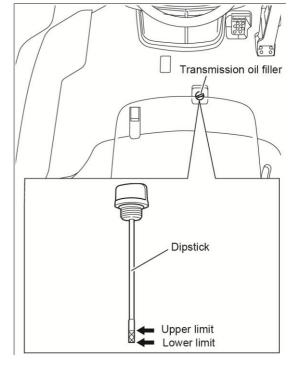


#### Transmission case oil

When replacing the transmission case oil, replace its filter element too.

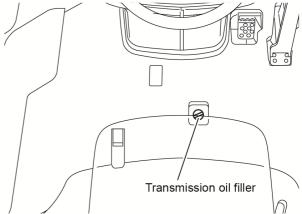
#### Inspection

- 1. Lower the planting part to the lowest point, and set the hydraulic stop lever to "Stop".
- 2. Open the cover.
- 3. Remove the cap on the filler port, and clean the dipstick.
- 4. Insert the dipstick into the filler port to the bottom of the tank, then pull it out and check whether the oil level is between the upper limit and lower limit of the dipstick.
  - Do not twist the cover when inserting the dipstick into the filler port.
- 5. If the oil level is between the upper limit and lower limit, the oil has the specified quantity. If it is less than the lower limit, add oil according to "Adding oil" stated below.
- 6. Put the cap on the filler port.
- 7. During inspection, check whether there is oil leakage.



## Adding oil

- 1. Remove the cap on the filler port, and insert the hopper (accessory of the machine) into the filler port.
- 2. Add oil by the hopper to the specified quantity (between the upper limit and the lower limit of the dipstick).
- 3. After adding oil, put the cap on the filler port.



#### ■ Replacing oil

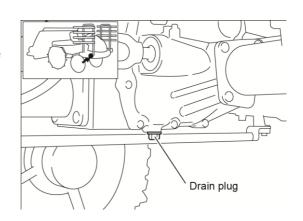
- 1. Lower the planting part to the lowest point.
- 2. Put a container under the drain plug of the transmission case.
- Remove the cap on the filler port and drain plug, then drain the oil into the container.
- 4. After draining the oil into the container, put the drain plug back as it was.
- 5. Add oil for the transmission case oil from the filler port.
- 6. Add the oil according to "Adding oil".
- 7. Put the cap on the filler port as it was.

#### **IMPORTANT**

When doing an inspection, make sure to lift the planting part to the highest point, because it is impossible to determine the accurate oil quantity when the planting part is

lowered down. (This may cause lack of oil.)

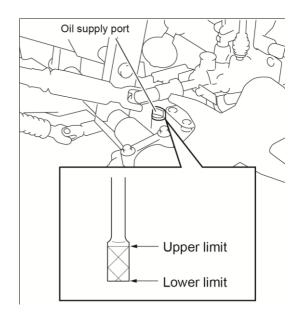
The machine will suffer damage when used in this condition.



#### Rear axle case

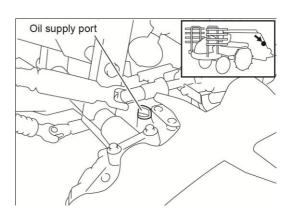
#### Inspection

- 1. Move the planting part upward to the up end position, and set the hydraulic stop lever to "Stop".
- 2. Remove the cap on the oil supply port that on the upper portion of the rear axle case, and clean the dipstick by a clean cloth.
- 3. Put the cap back on the oil supply port and remove it again. See whether the oil level is between the upper and lower lines.
- 4. If the oil level is low, add oil until the oil level is between the lower and upper lines.



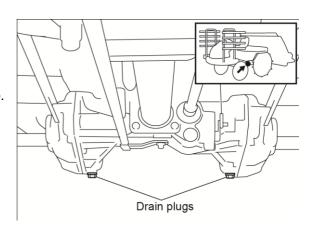
### Adding oil

- 1. Remove the cap on oil supply port, and insert the funnel into the oil supply port.
- 2. Fill the oil through the funnel until the oil level reaches the specified level.



#### Replacing oil

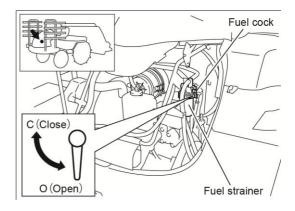
- 1. Set a container below the drain plugs that are located under the lower part of the rear axle case. (One for each side.)
- 2. Drain the oil by removing the cap on the oil supply port and loosening the drain plugs.
- 3. After the oil has been drained, put the drain plug back in place.
- 4. Fill the oil until the oil level reaches the specified level.

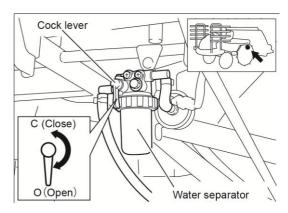


## Air bleeding of the fuel system

Do an air bleeding of the fuel system if the engine stops because the fuel runs out or during inspections and maintenance. Remove the water separator, fuel filter and fuel pipe, and remove the air according to the following procedures.

- 1. Add fuel to the fuel tank.
- 2. Set the fuel cock of the water separator and fuel filter to "O".





- 3. Turn the key switch to "ON" for 10 seconds. The fuel filter is filled with fuel automatically. Then check the condition of the fuel filter.
- 4. Set the accelerator lever to "High speed", and set the main shift lever to "Seedling feed".
- 5. Step on the brake pedal, and put the key switch to "Start".

#### **IMPORTANT**

Do not start the engine continuously for more than 10 seconds; otherwise the electric wire and engine may be damaged.

#### Reference

If the air has not been removed completely, repeat the procedures for 3 - 5 times to remove the air completely.



# Cleaning the filter element of the air filtration machine

## **CAUTION**

Clean the filter element of the air filtration machine only after the engine has cooled, otherwise you may get burned.

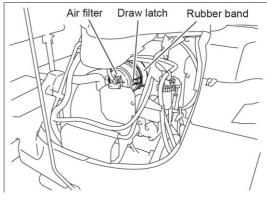
Using a dirty filter element will decrease the engine power and result in malfunction. Clean the filter element according to the following methods.

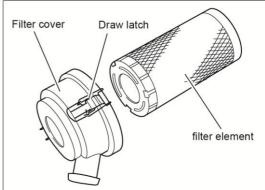
- 1. Remove the front cover of the engine.
- Unfasten the rubber band, pull up the air filtration machine, then attach the draw latch on the cover of the air filtration machine, and pull out the filter element.
- 3. The filter element is made of filter paper.
  Clean it by tapping it gently or blowing the dirt away with an air gun. (Tapping too strongly will damage the filter paper.)

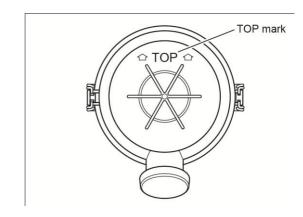
Part number: 1C727C-12530

- 4. Lock the cover of the air filtration machine with the two draw latches and then attach the rubber band back as it was.

  Install it so that the TOP mark is at the top.
- 5. Install the front cover of the engine as it was before.







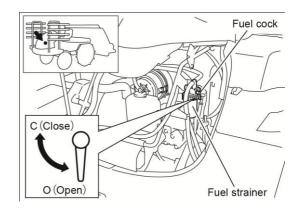
## Cleaning the fuel filter

The fuel filter removes water and contamination from the oil. Clean it regularly according to the following method.

Replace the filter element inside the oil filter every 300 hours.

Filter element (fuel filter)	Part number: 119810-55650
------------------------------	---------------------------

- 1. Remove the front cover of the engine.
- 2. Set the fuel cock to "C".
- 3. Turn the bolts, and then remove the fuel filter. Remove the water and contamination from the filter.
- 4. After cleaning the filter, install it back to its original position. Set the fuel cock to "O", and turn the key switch to "On" for 5-10 seconds, then the air bleeding is complete.
- 5. Install the front cover of the engine as it was.

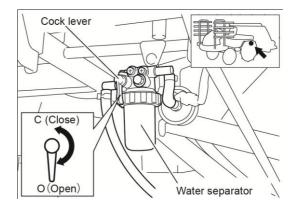


# Cleaning the water separator

The filter inside the water separator should be replaced every 300 hours.

Filter element	Part number: 171081-55910
----------------	---------------------------

- 1. Set the cock of the sediment cup to "C".
- 2. Remove the water separator. Then remove the water and contamination from it.
- 3. After cleaning, install the filter back as it was. Set the cock lever of the water separator to "O", and then turn the key switch to "ON" for 5-10 seconds. The air bleeding is complete.



# Replacing the oil filter of the transmission case

The filter of the transmission case is a cylinder type. It is not possible to clean it.

When replacing the oil of the transmission case, also replace the filter.

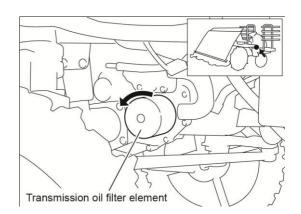
Filter	Part number: 1C731C-53650
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## Replacing the filter

- 1. Discharge the oil of the transmission case.
- 2. Use the same procedure as described for replacing the oil.
- 3. Turn the filter in the direction of the arrow and then remove the filter.
- 4. Apply oil to the rubber ring on the bottom of the new filter.
- 5. Turn the oil filter for 2/3 of a turn after the rubber ring touches the installation surface of the filter.

#### **IMPORTANT**

- After replacing, carry out an inspection to check whether there is oil leakage on the installation surface.
- · Use a genuine filter produced by YANMAR.



## Replacing the engine oil filter

The engine oil filter is a cartridge type. It is not possible to clean it. When replacing the engine oil, also replace the filter.

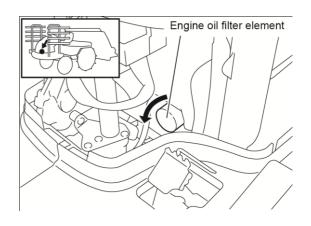
Engine oil filter	Part number: 119305-35151
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### Replacing the engine oil filter

- 1. Remove the front cover of the engine.
- 2. Drain the engine oil with the same method as described for replacing the oil.
- 3. Turn the element of the engine oil filter in the direction of the arrow, and then remove it.
- 4. Apply oil to the rubber ring on the bottom of the new filter of the engine.
- 5. Turn the oil filter of the engine for 2/3 of a turn after the rubber ring touches the installation surface of the filter.
- 6. Install the front cover of the engine back as it was.

#### **INPORTANT**

- After replacing, carry out an inspection to check whether there is oil leakage on the installation surface.
- · Use a genuine filter produced by YANMAR.



# Inspection, adding and replacing of cooling water

## **A** DANGER

Do not open the cover of the radiator when the engine is operating or shortly after it stops operating. Hot water can spurt out and burn you. Open the cover only after the engine stopped operating and cooled down sufficiently.

The inspection, adding and replacing of cooling water are carried out after the front cover of the engine is taken off.

After the task, re-assemble the machine to its original condition.

#### Inspection

Check whether the water level of the water tank is in the range between FULL and LOW.

#### Reference

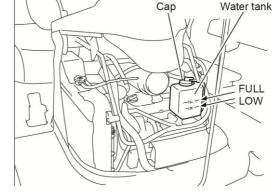
During the inspection, check whether there is water leakage.

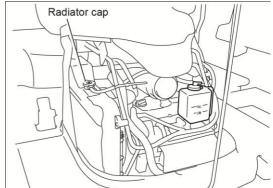
## Adding cooling water

When the amount of cooling water is not adequate, remove the cap of the water tank, and then add pure water to the tank.

## Replacing cooling water

- 1. Remove the radiator cap.
- 2. Remove the water drain pipe from the hook (three parts), and turn it face down.

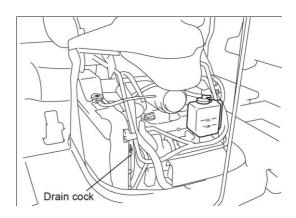




- 3. Open the cock on the water drain pipe and then remove the water from the radiator.
- 4. Clean the radiator with pure water until you do not see any rust flowing out.

#### Reference

When cleaning the radiator, we recommend adding a cleaning agent to the water. Start the engine after 15 minutes and then drain the water.



- 5. Install the water drain cock on the pipe, and then put the pipe back on the hook as it was (two parts).
- Add the required amount of antifreeze and then add pure water until the water flows out.
- 7. Install the cover of the radiator.
- 8. Start the engine and run it in idle for 5 minutes to mix the antifreeze.
- 9. Stop the engine, and then check again whether the cooling water meets the required quantity.

#### Use of antifreeze

The antifreeze has the function to reduce the freezing temperature of the water, which may vary with the ratio of antifreeze. Refer to the following table for cold areas and safe concentrations.

#### Mixture ratio table of antifreeze

Outdoor	temperature	-5	-10	-15	-20	-25	-30
Ratio	Water (%)	82	73	66	61	55	49
Nalio	Antifreeze (%)	18	27	34	39	45	51

- The ratio of the antifreeze may differ for different manufacturers, refer to their instructions for correct use.
- Add tap water when the cooling water decreases. Determine the relative density for permanent type products.
- The antifreeze is good for only one year, so replace it every year.

#### **IMPORTANT**

Do not drain antifreeze directly into the nature. Deliver all waste oil, fuel, cooling water, dissolvent, filters, batteries and other harmful substances to the seller or an industrial waste disposal company for disposal.

## Inspection and adjusting of the cooling fan belt

#### Inspection

Remove the front cover of the engine. Press the middle of the cooling fan belt to check the tension. The deflection of the belt should be 10 mm to 15 mm. Also check the belt for damage.

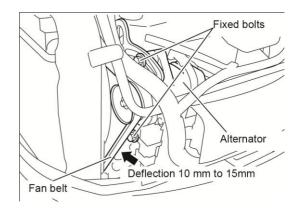
#### Adjusting the cooling fan belt

- 1. If the deflection is not appropriate, loosen the fixing bolts of the engine and adjust the tension by moving the engine.
- 2. Tighten the fixing bolts of the engine.
- 3. Move the engine to the bottom, replace the belt if it is still slippery.

#### **IMPORTANT**

Do an inspection 50 hours after replacing the belt.

V Belt	Part number: 119127-42310
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(EN)

## Inspection and adjusting of the engine belt

#### Inspection

Check the tension of the belt. The length of the tension spring should be between 185 mm to 187 mm. Also check the belt for damage.

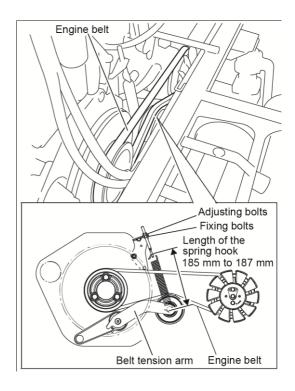
#### Adjusting the engine belt

- 1. If the deflection is not appropriate, loosen the tension fixing bolt and turn it to adjust the length of the spring hook to between 185 mm to 187 mm.
- 2. Turn the fixing bolt.
- 3. If the belt is still slippery after adjusting, replace it with a new

#### **IMPORTANT**

Do an inspection 50 hours after replacing the belt.

Engine belt	Part number: 1C732C-11020
Engine beit	Part number: 1C/32C-11020

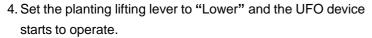


## Inspecting the operation of the UFO device

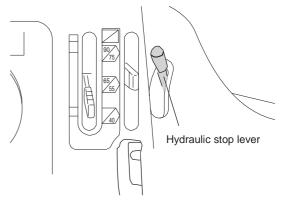
During planting, check whether the horizontal control of the planting part operates normally by the following procedures.

## Inspecting the horizontal control of the planting part

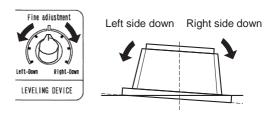
- 1. Start the engine.
- 2. Put the planting part 30 cm over the ground by using the planting lifting lever.
- 3. Set the hydraulic stop lever to "Stop".



- 5. Turn the UFO automatic adjusting knob to "Lower right" and the right side of the planting part is lowered. Turn the knob to "Lower left" and the left side is lowered.
- 6. After inspecting, return the UFO automatic adjusting knob to "Middle".
- 7. Set the panting lifting lever to "Up" and the planting part returns to a central position that is parallel with the machine body.
- Stop the engine.
   This finishes the inspection of the horizontal control.







(EN)

### Inspection and adjusting of the gap between the seedling fetching guide rail and planting tines

#### Inspection

Install the tine set gauge on the seedling fetching mouth.
 Installing the seeding gauge
 Install the tine set gauge after it aligns with the width of the seedling fetching mouth.

#### Reference

The tine set gauge cannot be inserted when the seedling rack is at the extreme left or right position. Move the stage to the central position.

2. Turn the rotor case to make sure that the front part of the planting tines aligns with the vertical gutter of the tine set gauge.

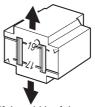
Proper position of the planting tines (when viewed from A)

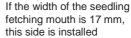
The front part of the planting tines aligns with the tine set gauge as shown in the figure above. This is the proper position.

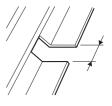
#### Reference

Turn the rotor case by hand according to Page 89 "Turning the rotor case".

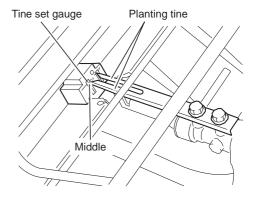
If the width of the seedling fetching mouth is 19 mm, this side is installed

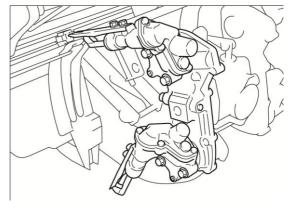


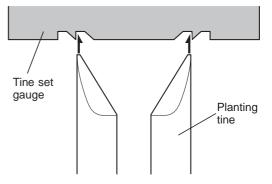




Width of the seedling fetching mouth





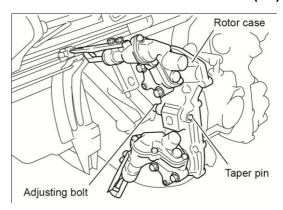


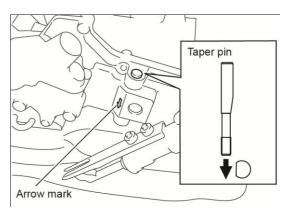
#### **Adjusting**

- 1. Loosen the installing bolt of the rotor case to the top.
- 2. Tap the top surface of the bolt gently, and then loosen the taper pin.
- 3. Install the tine set gauge on the seedling fetching mouth, turn the rotor case and make the front part of the planting tines align with the vertical gutter of the seedling gauge.
- 4. Screw in the installing bolt of the rotor case to fix it.

#### **IMPORTANT**

Make sure that you install the taper pin in the correct direction. Insert it in the turning direction of the rotor case. (An arrow on the rotor case indicates the direction.)





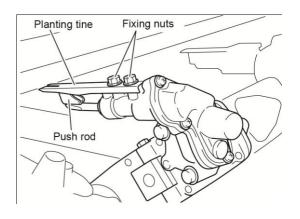
# Inspection and adjusting of the gap between the push rod and the planting tines

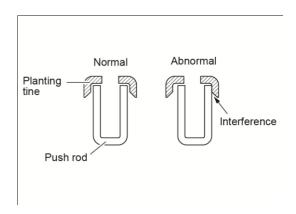
#### Inspection

Turn the rotor case by hand, move the push rod to the front part of the planting tines and then check whether the push rod and the planting tines interfere with each other.

#### **Adjusting**

If the push rod and the planting tines interfere with each other, loosen the fixing nut of the planting tines, and adjust. After adjusting, tighten the fixing nut.





## Inspection and replacing of the planting tine

If the seedlings are planted in disorder, unevenly or if seedling floating occurs, the planting tine may be worn. Inspect or replace it according to the following method.

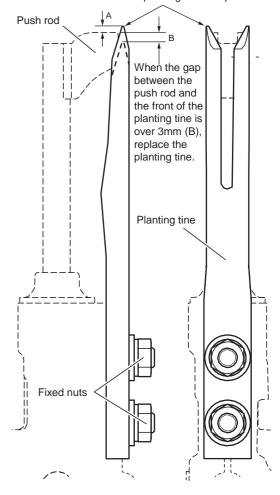
#### Reference

When the new planting tines pushes the push rod, the front ends of the planting tines and the push rod must be as shown in the figure right. The figure can be used as a reference during inspection and to determine the degree of wear.

#### Inspection

Turn the rotor case. When the push rod is pushed out, the distance between the front parts of the planting tines and push rod is A=2+/-1 mm. Replace the planting tines when the wear reaches B=3 mm.

A=+2/-1 mm is the gap between the front ends of the planting tine and push rod



#### Replacing the planting tines

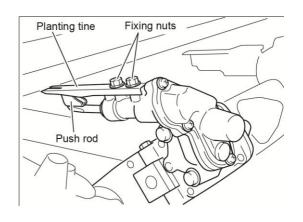
- 1. Remove the two fixing nuts of the planting tines and then remove the planting tines.
- 2. Install the new planting tines in the same way as the old planting tines.
- 3. Check and adjust the gap between the push rod and the planting tines.
- 4. Check and adjust the gap between the seedling fetching rail and the planting tines.
- 5. Check and adjust the vertical seedling fetching quantity.

#### **IMPORTANT**

 Tighten the fixing nuts with a torque wrench to a tightening torque of 4.9 - 6.9 Nm. Tightening inappropriately will lead to a leaning planting tines which causes seeding floating and uneven seeding.

Contact your dealer to purchase a torque wrench if you do not have one.

- · When installing, remove all foreign matter.
- When replacing, make sure that the planting tine and the push rod do not interfere with each other.



## Inspection and adjusting of the vertical seedling fetching quantity

After replacing the planting tines, the fetching quantity indicated in the vertical feed adjusting lever may differ from the actual fetching quantity. Do the following inspection and adjust.

#### Inspection

- 1. Set the vertical feed adjusting lever to "Middle".
- 2. Set the tine set gauge to the seedling fetching mouth.

Installing the tine set gauge.

Install the tine set gauge after it aligns with the width of the seedling fetching mouth.

#### Reference

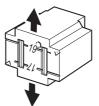
Put the tine set gauge in the seedling fetching mouth when the seedling rack is at the extreme left or right side. Then move the seedling rack to the middle.

3. Turn the rotor case by hand, and make sure that the front part of the planting tines aligns with the middle of the tine set gauge.

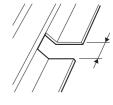
#### Reference

Turn the rotor case by hand according to Page 89 "Turning the rotor case". "

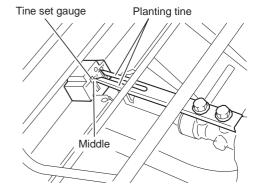
If the width of the seedling fetching mouth is 19 mm, this side is installed



If the width of the seedling fetching mouth is 17 mm, this side is installed

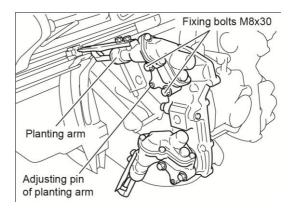


Width of the seedling fetching mouth



#### **Adjusting**

- 1. Set the vertical feed adjusting lever to "Middle".
- 2. Loosen the two fixing bolts M8x30 on the planting arm.
- 3. Move the planting arm upward, meanwhile adjust it with a cross-slotted screwdriver to make the front end of the planting tines align with the middle part of the seedling gauge.
- 4. Tighten the two fixing bolts M8x30 on the planting arm.



## Inspection and maintenance of the battery

The battery used in this product does not have a filler hole. Therefore it is not necessary to fill with distilled water. (No distilled water is required since the battery is the sealed type.) Normally, you can check the battery condition from the brightness of the lights and the sound level of the horn.

#### **WARNING**

- During inspection of the battery, wear protective goggles and rubber gloves.
- · Never let children close to the battery.
- Before/after inspection, remove any dust or unwanted material around the battery. If dust or unwanted material are attached to the terminals or ground cable connection, this can cause ignition or fires.
- Do not close the exhaust port of the battery. The gas generated inside the battery may increase the internal pressure and burst.
- When replacing the battery, use a battery with the same specifications as detailed in the instructions.

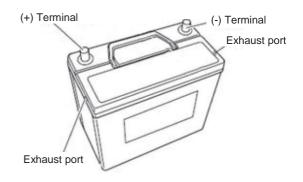
Designated battery	6-QW-45LT1HD
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 In order to protect the environment, do not throw the replaced battery away. Return the battery to the battery manufacturer or dealer for recycling.

#### Recharging the battery

Recharge the battery under the following conditions.

- · When the battery has not been used for a long time.
- When the devices have not been used for a long time.
- When the battery cannot be recharged successfully and runs out due to generator malfunction.
- 1. Remove the battery.
- Connect the positive terminal of the charger to the positive terminal of the battery, then connect the negative terminals in the same way.
- 3. Make sure that the battery terminal is clean and the charging circuit is securely connected.
- 4. We recommend the constant voltage charging method. When charging the battery, use a charger that does not exceed the maximum control voltage at 16.0V (max. 16.2V)
- Charge the battery by the constant current charging method if the battery can not be charged by the constant voltage charging method.
  - (a)-Charge the battery with a current of 1/10 of the 20-hour rate capacity. (For example, charge with a current of 6A if the battery has 60AH capacity.)



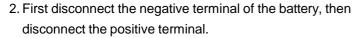
(b)-Charging time per voltage (reference)

Battery Voltage V	Charging Time
12.65-12.55V	1hour
12.55-12.45V	2hours
12.45-12.35V	3hours
12.35-12.20V	4hours
12.20-12.05V	5hours
12.05-11.95V	6hours
11.95-11.80V	7hours
11.80-11.65V	8hours
11.65-11.50V	9hours
11.50-11.30V	10hours
11.30-11.00V	12hours
11.00Vor less	14hours

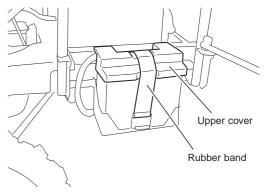
- (c)-Measure the charging voltage of the battery every hour during charging. When the battery charging voltage exceeds16.2Vor the battery temperature exceeds 45 °C, decrease the charging voltage but extend the charging time. Otherwise the battery may fail.
- (d)-After charging is complete, perform the discharge load test. If the open circuit voltage reaches 14.4V, the battery is fully charged. When the open circuit voltage is below 14.4V, charge the battery with a current of the 20-hour rate capacity for 2 to 3 hours until the charging voltage approaches 0A.
- 6. If the battery voltage falls below 11.0V, the battery may not charge during the early stages charging. This is due to the battery running-out and the specific gravity of the sulfuric acid in the battery becoming close to pure water because the internal resistance increases. Connect the battery in parallel to the fully charged battery. As the battery is being charged, the specific gravity of the sulfuric acid increases and the charging voltage returns to normal. Disconnect the fully charged battery.

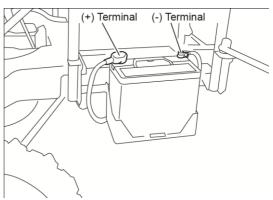
### Removing the battery

1. Remove the rubber band from the cover.



- 3. Remove the battery.
- 4. Install the battery by reversing the removal procedure.





### Maintenance of the battery

- 1. Before operating the rice transplanter (after more than 15 days in warehouse or transportation), do not install the battery to the machine to maintain voltage in the battery. Once the battery is installed in the machine, operate the engine for more than 20 minutes every 15 days.
- 2. Inspect the battery voltage every month. If the voltage falls below 12.45V, charge the battery immediately.
- 3. When storing the battery for a long time, fully charge the battery every 3 to 6 months.
- 4. If the battery is not charged during long-term storage for more than 1 year, dispose of it according to the disposal procedure.
- 5. Be sure to use, store and transport the battery in a well-ventilated area.

If the battery has been running out for a long term, it cannot be charged effectively and this can cause irreversible damage to the battery. Dispose of the battery if the service life becomes shorter. These problems can be avoided if you perform maintenance according to the maintenance procedure.

#### Charging the battery

- · Charge the battery if:
- · The sulfuric acid indicator is black.
- · Used in a very cold area.
- It is difficult to start the engine.
- It is difficult to start the engine because of natural discharge.
- · The lights of the transplanter become weak.
- 1. Remove the battery.
- 2. Connect the positive terminal of the battery with the positive terminal of the charger, and the negative terminal of the battery with the negative terminal of the charger.
- 3. Charge the battery for 8-10 hours with 3A. The battery is charged when the sulfuric acid indicator turns green.

#### **IMPORTANT**

- · Do not use quick charging.
- When connecting the terminals of the battery, clean the oil on the terminals. After connecting, apply solid lubricant on the terminals.
- · Cover the terminals with the rubber covers.

#### **Battery maintenance**

If a terminal of the battery is corroded and there is white powder on it, clean it with distilled water and then apply oil on it.

#### Natural discharge of the battery

The battery will discharge naturally when the engine has not been started for a long time. Even if you do not use it for a long time, start the engine regularly to check the battery and charge it if necessary.

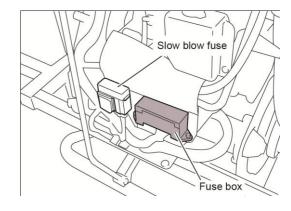
## Inspection and replacement of the fuse

When the fuse or the general fuse is blown, the electric parts cannot operate and the battery cannot be charged. In that case, replace the fuse with a new one according to the following method. If the new fuse is blown shortly after being replaced, the system may be short-circuited. Consult with your dealer.

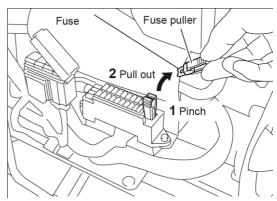
The fuse and the general fuse are on the upper part of the machine.

#### **Fuse box**

- 1. Remove the front cover of the engine.
- 2. Remove the cover of the fuse box.



3. Remove the fuse puller and use it to pull the fuse out.



- 4. Replace the damaged fuse with a new one of the same capacity. Put a standby fuse inside the box.
- 5. After replacing, install the fuse puller as it was.
- 6. Install the cover of the fuse box, and close the cover of the front part.

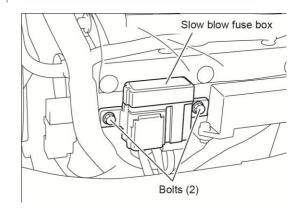
Back up 20A Back up 10A		Marker Left motor 20A Full time	Right motor 20A		Speed					
Back up	Switch 5A	battery		10A	20A					
COA	LOA	JOA	07.		2011		_	1C731C-	95880	'

#### Slow blow fuse

The slow blow fuse is a fuse with a higher capacity to protect the electric circuit of the machine.

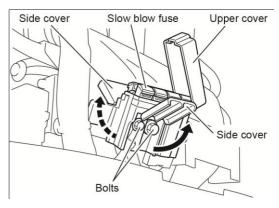
*80A	4 0 A	4 0 A
ALTERNATOR	KEY SWITCH (FUSE BOX)	GLOW

Use correct type of fuse conferming to designated capacity. The fuse marked "%" is screw cramp type. Detach the battery negative side cable from battery terminal when replacing this type of fuse.



#### Replacing the slow blow fuse of 80A

- 1. Detach the negative terminal of the battery.
- 2. Remove the two bolts that fix the box.
- 3. Open the covers on the two sides of the fuse box, and then remove the two bolts that fix the slow blow fuse box.
- 4. After replacing the slow blow fuse, install the bolts and cover as they were.



### Inspection of the oil pipe

### **WARNING**

Before operating, do an inspection to check whether there is oil leakage caused by damaged or aging pipes. If you find any, replace the oil pipe. If not, a fire can occur.

- 1. Remove the front cover of the engine and the front, left and right boards.
- 2. Check whether there is damage on the oil pipe, loosening of the connected parts or oil leakage.
- 3. If the oil pipe is damaged, contact your dealer for repair.
- 4. Install the front cover and the front, left, right boards as they were.

### 12. TROUBLESHOOTING

When the mechanical parts show any abnormalities, turn off the engine, set the parking brake and find the cause. If not, you may be dragged into the machine and injured. If the parts still do not function after taking the recommended measure, contact your dealer.

### Missing plants

	Reasons	Measure
1	If the seeds are too few and not properly placed, sprouting will be faulty with many dead seedlings.	The missing seedlings cannot be placed by the seedling planting machine. (Place them manually.)
2	The seedling mat is too soft. The root of the seedling is spread poorly and the seedbed collapses easily.  If the seedling on the seedling mat topple over, they bundle together and cannot be planted.	Adjust the Seedling mat stopper prevent the seedlings from toppling over.  Seedling mat stopper  Seedling mat stopper  Seedling press rod  The seedlings should be handled slowly and carefully.  The seedling board should be used to take the seedlings to prevent the seedling bed from collapsing.  Seedling board
3	The machine planting tines does not work well and the transplanting of the seedling fails.  • The planting tines is broken.  • The planting tines is badly adjusted.	Adjust or change the planting tines.  Vertical gutter Planting tine  Tine set gauge

#### Reasons Measure The seedling mat do not slide well. They get stuck · If the seedling mat is too dry, water it. at the seeding mat stopper. · Adjust the seedling mat stopper so that it does not block the Seedling mat stopper Seedling Seedling mat press rod • Press the two sides of the seedbed with your hands to make the width of the seedbed more narrow. 5 • The seedling mat is too heavy to slip. Adjust the seedbed stopper A missing plant appears after every 18, 20 or 26 seedlings. to the proper position (0.5 cm to 1 cm). • If the above does not help, the time synchronization might be faulty. Contact your dealer. · The bottom soil has a lot of clay and is sticky. · Put the seedling into water. The seedling does not leave the machine · Install the push piece on the machine planting tines. planting fingers properly, resulting in missing plants or floating seedlings. Push piece Install tightly Push rod shaft · The seedling is stuck in the machine planting fingers resulting in poor pickup. · Set the seedling depth to "Deep planting". • Adjust the depth of the field from 1 cm to 2 cm (or a little deeper). The movement of the push rod is not smooth. · Remove excessive grease from the arm. • If the push rod is bent, repair or replace it. • If the push rod is engaged with the planting tines, loosen the fixed bolt of the planting tines to adjust the planting tines. Is the problem occurring just after using the unit · Remove the remaining, unplanned seedlings from the seedling mat. Then start planting fresh seedlings in the next row. clutch lever? • When planting for many hours without using the unit clutch lever and the remaining seedlings have collapsed, remove the collapsed seedlings and supply new seedlings. (The seedlings you remove can be used for supplemental planting.) Are not enough seedlings remaining? If not enough seedlings remain, supply new seedlings.

## Floating seedlings (every seedling is floating)

	Reasons	Measure
1	The field is too hard and seedlings cannot be planted deep enough?  • The field is a clay field.  • The field has too much sand. (2 or 3 days after plowing, the field becomes too hard to transplant seedlings.)  If the hole of the planting fingers is not fully filled with the seedling, water may come in and make the seedlings float.	<ul> <li>Put more water into the field to make the field softer.</li> <li>Transplant seedlings immediately after plowing.</li> <li>Set the hydraulic indicator to "Plowing".</li> <li>Set the depth of transplanting to "Deep planting".</li> <li>Transplant the seedlings when the field has the proper strength.</li> </ul>
2	The root of the seedling is not good resulting in toppled seedlings.	Transplant the seedlings slowly.     Press the seedling mat with the seeding press rod.
	The seedling leaves the planting fingers too quickly, making the seedling topple over.	
3	If the water is over 3 cm deep, the transplanting is not possible.	<ul> <li>Set the switch to "Deep water".</li> <li>Set the liquid indicator to "Hard field".</li> <li>Transplant slowly.</li> <li>Reduce the depth of the water to 1 cm to 2 cm.</li> <li>Set the transplanting depth to "Deep planting".</li> <li>When the depth is set to "Changing", set the transplanting depth device to "ON".</li> </ul>
	If the float body is floating on the water, the transplanting is not firm.	
4	If the field is to soft, the transplanting is not firm.	<ul> <li>Transplant the seedling after the soil has settled after plowing.</li> <li>Set the transplanting depth to "Deep planting".</li> <li>Transplant slowly.</li> </ul>

Reasons Measure 5 The float presses the soil. • Set the hydraulic sensing adjustment lever to "Soft field" to avoid pressing the soil. · Lower the water level of the field to make the surface harder or make the surface even. • Transplant slowly. The float pushes down the seedling. The float leaves a deep trace, and the seedlings tilt or float to the inside. 6 The float is not in contact with the ground. Set the hydraulic sensing adjustment lever to "Hard field" and make sure that it does not press the soil. If the float is floating on the water, the transplanting is not firm. Unwanted objects interfere with the float. Remove the interfering objects. Link section

	Reasons	Measure
8	The long guide and the planting tine are too far apart.	Adjust the clearance between the long guide and the planting tine.
		How to adjust the clearance
		<ol> <li>Put the planting number changing lever to "Middle".</li> </ol>
		2. Loosen the two bolts of the long guide.
		<ol> <li>Adjust the clearance between the end of the long guide and the tip of the planting tine to between 5±1 mm.</li> </ol>
		4. Tighten the two bolts to lock the long guide.
		Long guide 5±1 mm Planting tine —

### Floating seedlings (only one seedling is floating)

#### Reasons **Processing Measure** 1 The root of the seedbed is not good. · Transplant slowly. · Put the seedbed into water. The seedbed is too dry (seedlings topple over easily). · Adjust the push rod to the pushing-seedling side. • When the planting tines takes the seedling with one not-cut seedling sticking to it, the push-in cannot work. The remaining seedling will float. Push rod 3 The seedling is between the planting tines. Remove it when holding. 4 The distance between the planting and the two ports is the Loosen the bolt to make the distance similar. Rotor case Port a=b Planting tine Taper pin Adjusting bolt The surface of the field is hard (the strength of the surface). If the field is too hard, transplanting becomes too The appropriate field hardness for machine-transplanting difficult, resulting in the collapsing or floating of the seedling. hardness is as follows: Drop a ball of mud the size of a golf Plow the field again. ball from one meter height. The below figure shows the field hardness. If the field is too hard, transplanting becomes too difficult, resulting in the collapsing or floating of the seedling. If the field is too soft, transplanting is not uniform resulting in the pressing of the clay. Suitable Soft Hard 6 The distance between the long guide rail and the planting Put the guide rail through the middle of the planting tines is too long. tines. Adjusting: (Relationship between the guide rail and the planting tines) 1. Loosen the two bolts of the long guide rail. 2. Adjust the long guide rail to the proper position. - The long guide rail passes through the middle of the planting tines. - The end of the planting tines overlap the end of Two bolts Planting Long bolt **Planting** the guide rail by 5±1 mm. through the middle of 3. Tighten the two bolts. the planting Long guide rail Viewed from A 5±1 mm

### Floating seedlings (only for leaves with bad roots)

## Reasons **Processing Measure** The leaves block the seeding port. · Adjust the seedling press rod to unblock the seedling Adjust the seedling press rod to the pushingseedling side. The leaves touch the planting fingers, breaking the leaves. Adopt the seedbed that has not enough soil. If the rice hull emerges, the planting fingers will damage the 3 The planting tines does not pass through the middle of the In order to make the planting tines pass through the seedling port. middle of the seedling port, loosen the taper pin of the rotor case and adjust it. Rotor case a=b Planting tine Taper pin Adjusting bolt 4 Seedlings are fed with the seedling mat stopper released. Feed seedlings with the seedling mat stopper installed. • When the seedling mat stopper is installed, the seedlings under the stopper are broken or bent. Removal of seeding rows 3, 4, 5 Removal of seeding rows 1, 2, 6, 7, 8 (VP8 type)

## **Toppling of the seedling**

	Reasons	Measure
1	If the field is too hard, the seedling cannot be transplanted firmly.  The float presses on the adjacent rows.  The trace of the float becomes deeper, and the seedlings topple over or float towards the inside.	<ul> <li>Set the planting depth control lever to "Deep planting".</li> <li>Reduce the water and increase the strength of the field surface or flatten the surface of the field.</li> <li>Transplant slowly.</li> <li>Set the hydraulic indicator to "Soft field".</li> <li>Adjust the press rod to the pressing-seedling side.</li> </ul>
2	The seedling mat is too thick and the quantity of seedlings is unbalanced.	Cut the seedling mat to 3 cm.     Transplant slowly.
3	The field is too hard.	Plow the field carefully. Set the planting depth control lever to "Deep planting". Transplant slowly. Set the hydraulic indicator to "Hard field"
4	The field has a lot of weed and other objects.	Remove the obstacles. Set the planting depth control lever to "Deep planting". Transplant slowly. Set the hydraulic sensing adjustment lever to "Hard field".

## Lifting of the seedling

	Reasons	Measure
1	The field or the bottom soil has too much clay, so the planted seedling is lifted off.  The seedling cannot be lifted easily off the planting tines.	<ul> <li>Set the planting depth control lever to "Deep planting".</li> <li>Adjust the depth of water from 1 cm to 2 cm (or a little deeper).</li> <li>Install clods on the planting tines.</li> <li>Refer to Page 24 to get the best field strength to transplant.</li> <li>Use soil of a higher quality.</li> </ul>
2	The movement of the push rod is slow.	If the movement of the push rod is slow, check for dirt and other foreign matter.

## Tilting forward of the seedling

	Reasons	Measure
1	The press rod is not adjusted correctly.  The press rod works too much.  Adjust up	<ul> <li>Adjust the press rod and make sure that the tips of the leaves do not touch the planting fingers.</li> <li>If the seedbed is too hard, water the seedling. Or reduce the number of seedlings.</li> <li>Transplant slowly.</li> </ul>
2	The float presses the soil.	<ul> <li>Set the planting depth control lever to 1 "Low distance".</li> <li>Set the hydraulic sensing adjustment lever to "Soft field".</li> </ul>
3	The height of the seedling is over 20 cm.	The seedling turns forward because of centrifugal force. Transplant slowly.
4	The surface of the field is too soft.	Leave the field to dry for half a day.

(EN)

## The float presses the soil

	Reasons	Processing Measure		
1	The hydraulic indicator is not adjusted to a position suitable for the strength of the field.	Adjust the hydraulic sensing adjustment lever to "Soft field".		
2	There is a lot of contamination.	Remove all contamination.  Remove the sail answer and the fleet.		
3	The soil piles up on the float.	Remove the soil or water on the float.		
4	The surface of the field is too thin or too soft	<ul> <li>Reduce the water and strengthen the field surface flatten the surface of the field.</li> <li>Transplant slowly.</li> </ul>		
5	The transplanting part is turning right and left.	If the machine is equipped with an UFO, set the UFO to "Lower right" or "Lower left" to make the transplanting part horizontal.    Fine adjustment   Left-down   Right-down		
6	The front of the side float sinks down.	Find and eliminate the reasons for the sinking (e.g. the installing of the grain, manure drill and pipes which press the float), and transplant horizontally.		

## Up and down movement of the lifter / UFO movement is faulty (UFO auto diagnosis with LED flashing)

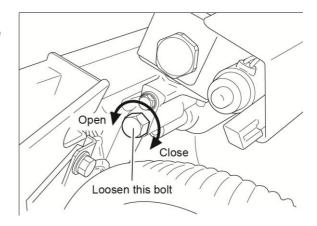
Confirmed Methods	Measure		
You can control the UFO manually, but it does not work automatically.	Check if the controller or sensor is faulty. Contact your dealer.		
1 The UFO does not work.	Check the fuse.		
2 The up and down handle does not work.	Check if the controller or hydraulic device is faulty. Contact your dealer.		
3 Even after adjusting the transplanting distance, the distance does not change.			
The up and down handle is at the "Down" position with the transplanting position turning forward, and cannot be set to horizontal.	Check if the controller or sensor is faulty. Contact your dealer.		
The up and down handle is at the "Middle" position with the transplanting position turning forward.	Check the fault of the control return switch that is attached to the left of the rolling cylinder. Contact your dealer.		

#### **Emergency repair of a faulty UFO**

Open the by-pass valve next to the rolling cylinder, and adjust the seeding rack horizontally to make the rolling cylinder work temporarily without the UFO.

- 1. Loosen the bolts of the by-pass valve.
- 2. Move slowly.

When the seedling rack moves right and left, it can be adjusted through the rolling spring and continue work as usual.



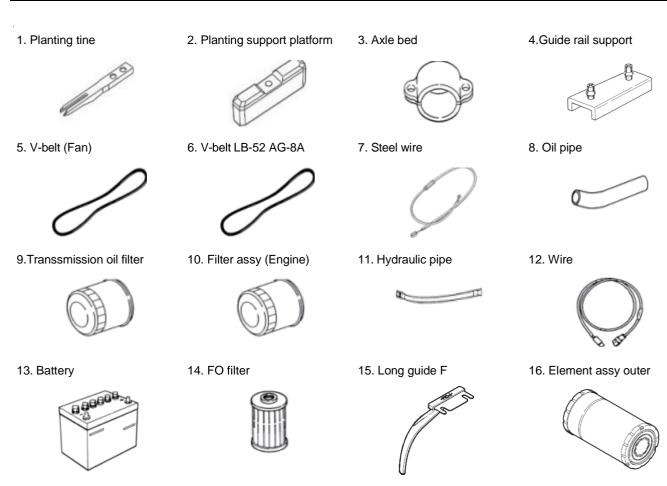
## 13. OTHERS

## **Specifications**

Name					Yanmar transplanter	
Model					VP7D25	
	Total length			mm	3260	
Body dimensions	Overall width			mm	2595	
differisions	Overall height			mm	2330	
Minimum grou	nd clearance			mm	425	
Machine weigh	ıt			kg	784	
	Model			-	3TNM68-CUP2	
	Type			-	Vertical water cooled 3 cylinder diesel engine	
	Total displace	ement		L (cc)	0.784 (784)	
Engine	Minimum out	put/speed		kW (PS)/rpm	12.8 (17.4) /3200	
	Fuel			-	Diesel fuel	
	Fuel tank cap	pacity		L	37	
	Starting mode	Э		-	Electric starting	
	Starting type			-	Ackerman system (Power steering)	
		Type v sussetts	Front wheels	-	Puncture-free tires x 2	
		Type x quantity	Rear wheels	-	Rubber covered two-side lugged tires x 2	
	\\/haala	Outon diamenton	Front wheel	mm	650	
Traveling part	Wheels	Outer diameter	Back wheel	mm	950	
		Tread	Front wheel	mm	1240	
			Back wheel	mm	1220	
	Number of gear stages			-	2 forward, 1 backward (HMT non-gear-stage transmission)	
	Transplanting type			-	Rotary type	
	Lifting type			-	Hydraulic system	
	Number of planting rows			-	7	
	Distance between each row			cm	25	
Transplanting	Bir I i I i			cm	22, 18, 16, 14, 12, 10	
part	Number of plants			hill/m²	60, 70, 80, 95, 105,125	
	Depth of transplanting			mm	12 to 57 (7 steps)	
	Controlling of transplanting			-	Automatic leveling control (UFO)	
	Adjusting of the number		mm/time	11/22, 14/16, 15/15		
				mm/time	8 to 17 (10 steps)	
Transplanting r	ate	•		m/s	0 to 1.65 (Slip ratio 0%)	
The number of	seedling mat (	(spare)		-	18 (6)	
Efficiency				min/10a	10	
	Sort of seedling			-	Seedling mat	
0 100	Height of seedling			cm	Little seedling 10 to 15 Medium S,eedling 15 to 25	
Condition of seedling	Age of seedling			leaf	Little seedling 2.0 to 2.5 Medium seedling 2.5 to 4.5	
	Size of seedbed (lateral x longitudinal x thick)			cm	58 x 28 x 3	
Alarm device				-	Fuel gauge, Made-up alarm/buzzer Water-temperature alarm, Engine oil pressure, Charge	

### Parts susceptible to wear

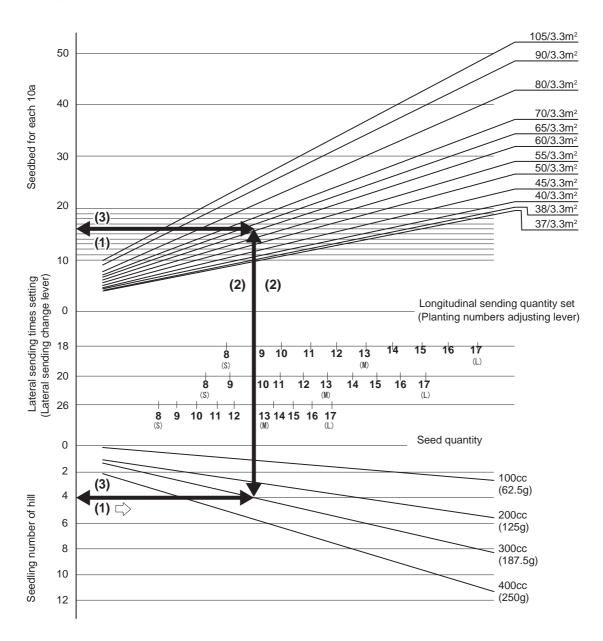
No	Name	Number	No	Name	Number
1	Planting tine	1C731C-66622	9	Transmission oil filter	1C731C-53650
2	Planting support platform	1C727C-86100	10	Filter assy (Engine)	119305-35151
3	Axle bed	1C726C-83650	11	Hydraulic pipe	-
4	Guide rail support	1C723C-85400	12	Wire	-
5	V-belt (Fan)	119127-42310	13	Battery	1E8510-83050
6	V-belt LC-52 AG-COG4	1C732C-11020	14	FO filter	119810-55650
7	Steel wire	-	15	Long guide F	1C731C-85900
8	Oil pipe	-	16	Element assy outer	1C727C-12530



#### Reference

If the triangle ditch of the guide rail support is badly worn, replace it. If the planting support platform is moved, you can see the guide rail support.

## How to set the lateral sending time and longitudinal getting quantity



#### Example 1

When the seedlings are for 300 cc sowing quantity, the seedling is transplanted with 16 boxes for 10a and 60 seedlings for  $3.3m^2$ .

- 1. Because 10a can use 16 boxes seedlings, we can make a mark on the right and find out the first cross point with 60 cc.
- 2. Go from the first cross point down, and find out the second cross point with 300 cc.
- 3. Make a mark from the second cross point to the left, and we can find out that the seedling number of one hill is 4. Lateral sending and longitudinal getting can be set as:

Lateral sending 18 times, longitudinal getting 9 mm

The seedling number of one hill is 4.

#### Example 2

- 1. The same condition as in example 1, considering that the seedling number of one hill is 4.

  Because the seedling number of one hill is 4, make a mark from the right and find out the cross point with 300 cc.
- 2. Go from the first cross point down, and find out the second cross point with 60 cc.
- 3. Make a mark from the second cross point to the left, and we can find out that the seedbed number of 1.5 mu is 16 boxes.

Lateral sending and longitudinal getting can be set as: Lateral sending 18 times, longitudinal getting 9 mm

Seedbed number is 16 boxes.

#### **Standard Accessories**

No	Name	Quantity	Note
1	Push piece	14	
2	Seedling pick plate	7	
3	Tool bag	1	
4	Tine set gauge	1	
5	Funnel	1	
6	Pipe 12x300	1	
7	Oil feeder	1	
8	Spanner 10x12	1	
9	Spanner 12x14	1	
10	Double offset ring spanner	1	
11	Ejector pad instructions	1	
12	Operating instructions	1	
13	Accessory atlas	1	
14	Extra key	1	
15	Rod packing	14	
16	Rod scraper	14	
17	Planting tines	14	
18	Seedling rack support sliding block	3	
19	Long guide F	7	
20	FO filter	1	
21	V-belt	1	
22	Oil seal	7	
23	Spring	2	

Note: The accessory of your machine may be different depending on its use. Check the delivery list.