



PT. INTER AGRO INDONESIA



Rice Transplanter

2ZS-6K



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1. Technical Parameter

| | | | | | | | |
|-----------------------------------|--------------------------------------|---|----|----|----|----|----|
| Type | | 2ZS-6K | | | | | |
| Name | | Rice Transplanter | | | | | |
| Driving Mode | | Two-Wheel Drive | | | | | |
| L(cm) x W(cm) x H(cm) | | 254 x 188.2 x 84.5 | | | | | |
| Weight(kg) | | 193 | | | | | |
| Engine | Model | ingle cylinder, air-cooled, four-stroke E170G | | | | | |
| | Rated Power(kw/hp)/Speed(rpm) | 3.3/3600 | | | | | |
| | Fuel | Gasoline | | | | | |
| Planting Part | Planting Method | Crank Forced Transplanting | | | | | |
| | Planting Rows/Row Space(cm) | 6/25 , 30 | | | | | |
| | Hill Space(cm) | 12 | 14 | 16 | 17 | 19 | 21 |
| | Seedling Pieces(Pieces/Hill) | 2-8 Adjustable | | | | | |
| Fuel Consumption(liter/ha) | | 《6.0 | | | | | |
| Planting Depth(cm) | | 1-3.5Adjustable | | | | | |



2. Brief introduction

I. Features and specification

1. Features

1.Compact and light

Air cooled engine weight only $\frac{1}{4}$ water cooler engines of equivalent horse power and very handy for carrying in the shop or out in the field.

2.Out standing fuel efficiency will provide tremendous energy saving.

3.Touch engine

Specially designed combustion chamber and adequate cooling facilities prevent the engine from over heating and maintain constant power output through out continuous running over a long period.

4.Easy start, Easy stop.

The engine can be started by simply pulling a rope wound up around the starter pulley.

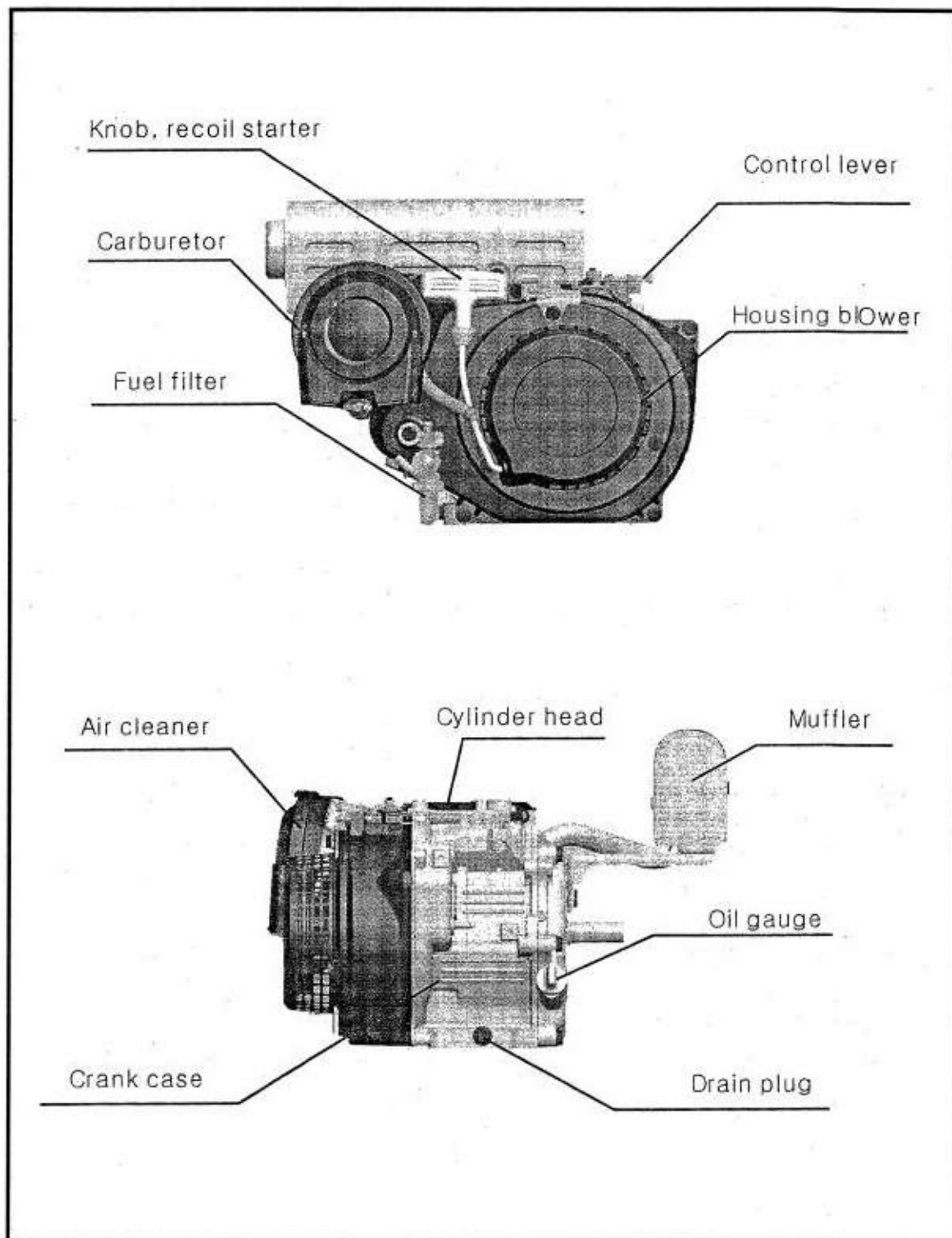
The engine are stopped by imply turning the lever of switch tumbler type. Pushing the button of switch push button type.

5.Increased durability

A long life of the engine is assured for durable bearing.

Qualified materials and precise work and assembly quarantined the engines to be free from troubles by long and continuous running.

II.Names and main compornts





III. Operation

1. Pre operation

(1) Inspection

Check all bolts and nuts.

Tighten them securely if not found loose.

(2) Supplying engine oil

When checking the engine oil level, place the engine horizontally, check the oil level without adjusting the oil inlet plug. When the oil L mark, add engine oil to the normal oil level.

① Using engine oil.

SAE 10W-30 (API, SE Grade)

※ Choice of proper lubricants oil is of vital importance, using low grade regularly cause damage the engine.

② keep the engine oil level. much or less the oil will make the engine trouble

(3) Change the engine oil

If the oil is found dirty, replace it because of promote wearing down engine

① Exchange timing

A new engine requires a change of the lubricating oil at the end of 20 hours of initial running.

Then keep of replacing the oil at every 50hours operation.

② Drain out the used oil inclining the engine while the engine is still warm after an operation, and then refill with new oil up to the normal level of the oil gauge.

※ Being engine warm, a foreign material can be drained out easily.

(4) Refueling

① Using fuel: Gasoline

② Check that fuel in the fuel tank dose not contain water and dust.



2. Staring and Running

(1) Staring

- ① Fuel cocks Open
- ② Close the choke valve.

When restarting the engine which is still warm turn the choke lever to the middle or completely.

- ③ Strongly pull the recoil starter knob, when you feel compression
 - * the engine should start within a few starting operations.
 - * If it is difficult to start the engine, fully open the choke lever and strongly pull the recoil starter a few times.
- ④ When the engine is started, gradually open the choke lever.

(2) Operation

- ① After starting, allow the engine three-five minutes no load running by the control lever.
- ② Operate the control lever to obtain the desire speed.

(3) Stopping

- ① Before stopping the engine, allow for a few minutes idling operation.
- ② Push stop button until engine completely stop-push button type.
Set stop switch lever at "stop" position – tumbler type.
- ③ Fuel cocks close.

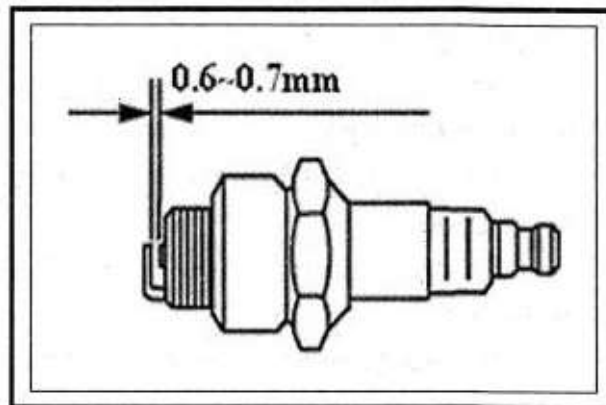
IV. Inspection

1. Spark plug

(1) Remove accumulated carbon particles from the sparkplug s by the wire brush and sand paper.

And adjust gap to 0.7~0.8mm.

(2) Unadeqate plug is cause difficult inserting, sooty or burnt out plug or disorder in performance and etc. so select an adequate plug.



2. Air cleaner

(1) Clean the air cleaner element at every 10~10 hours.

(2) If the element is stained, clean the element with mixture oil (gasoline 20:oil1) and allow to dry.

(3) If the element is torn down, replace the element before operating.

3. Periodical inspection

To obtain the best performance from the engine, service the engine referring to the follow table.

| Item | Check and inspection points | Maintenance |
|-------------------------------|---|---|
| Daily inspection | Check the engine oil level | Adding the oil. ("H" Mark) |
| | Check the bolt nuts and screw | Tighten |
| | Check the fuel and the oil leakage | Tighten the loosed parts Disassemble and maintenance, If not stop |
| | Check the air cooled Engine Check the air cooled pin | Clean the recoil starter Open the engine cover, side cover and head cover, and remove dust and precipitate |
| | Check the out put power Check the revolution Check the sound of running | Clean the air cleaner, fuel supply system, fuel cock and spark plug, Adjust carburetor |
| Initial 20 hours of operation | Replace engine oil | Replace engine oil while the engine is warm. |
| | Clean air cleaner | Inspect Every 10-20 hours and clean Be sure to replace damaged air cleaner |
| At 50 hors of operation | Changing the engine oil | 20 hours of running from first use, keep replacing the oil at every 50 hours operation. |



V. Long term storage

- 1.Drain the entire fuel out of the fuel tank, fuel cock and the carburetor.
- 2.Replace engine oil.
- 3.Fill approximately 10cc engine oil at combustion chamber through the sparkplug port, and pull recoil starter knob several times to circulate the oil, and then install the spark plug and stop the engine when you feel compression
- 4.Clean the engine and wipe with cloth damped with oil.
- 5.Store the engine in a clean dry place.

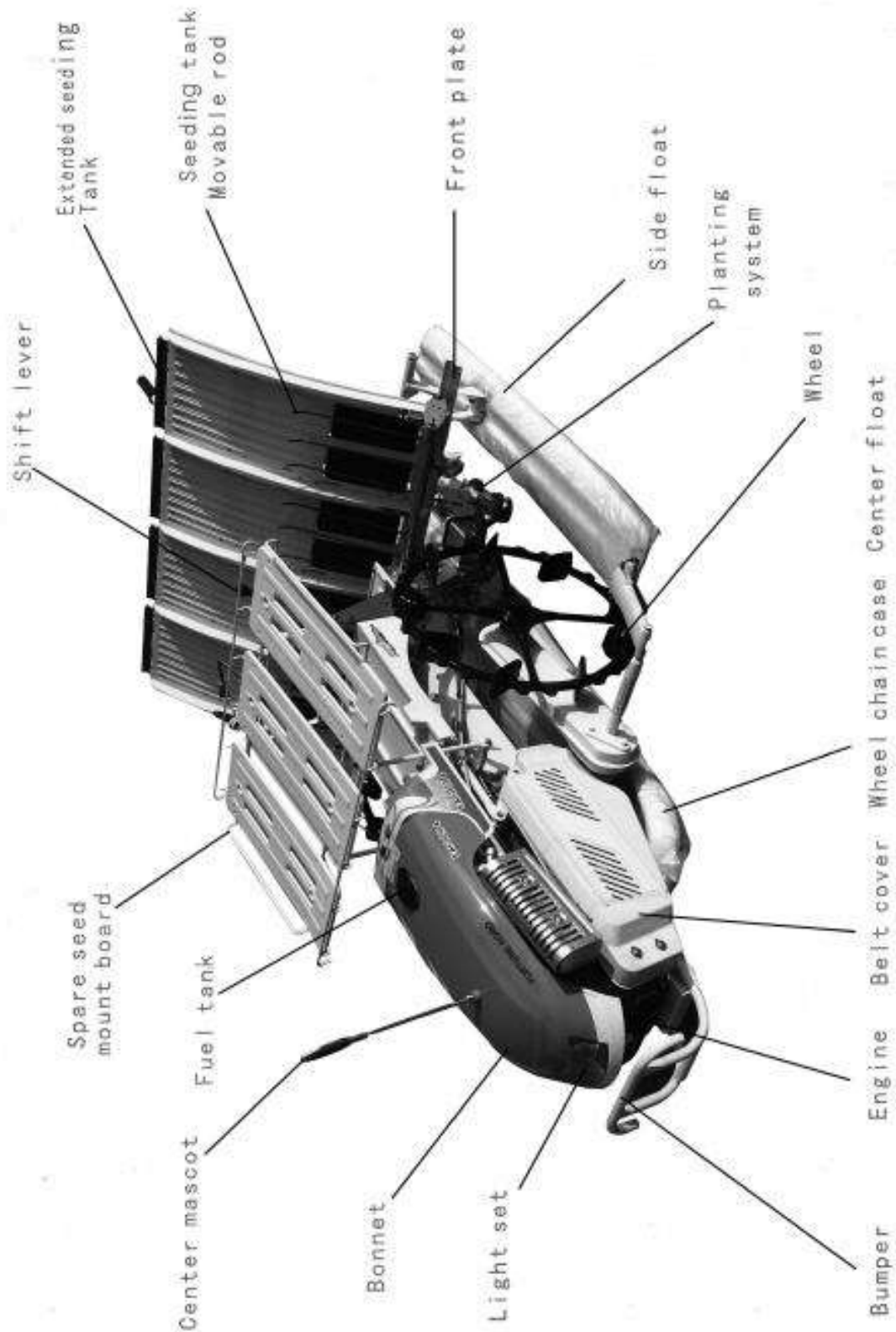
VI. For the safety operating

- 1.When operating the engine, wear neat and clean clothes.
- 2.Always stop the engine before refueling
- 3.Before operation, check the engine oil an the lever of gasoline in the fuel tank.
- 4.When operating the engine, do not touch high temperature, such as muffler, engine body etc. Touching these parts will cause severe burning.
- 5.When operating the engine, do not touch spark plug cord.
Touching spark plug cap and cord will result in electrical shock.
- 6.Ensure there is sufficient ventilation when operating the engine in door or in the green house.
The accumulated exhaust gas will affect you.

3. Description

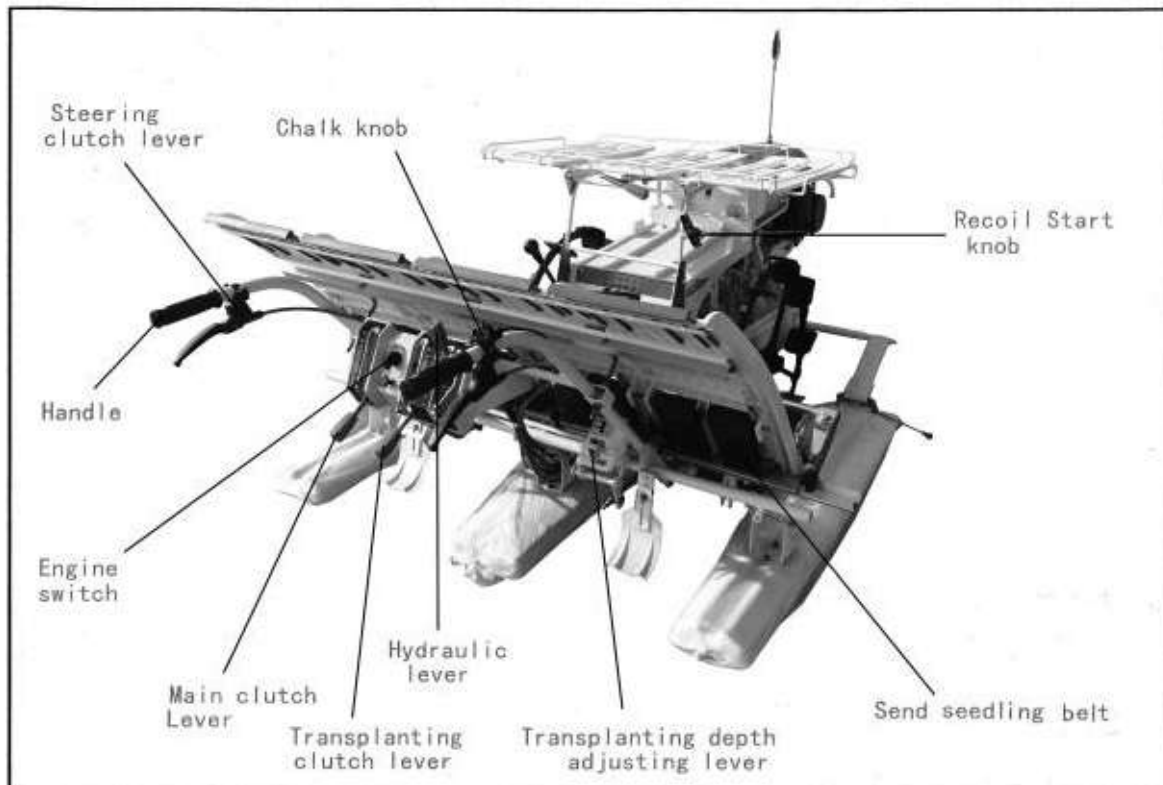
3.1. Description

Description of each part



3.2. Description of the operated lever

Description of the operated lever

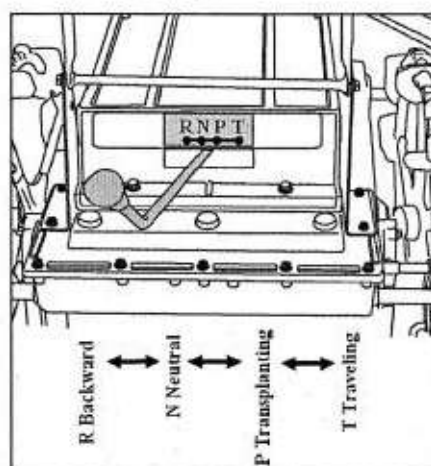


• Throttle lever

If you turn it inside, the revolution of engine becomes high, and if outside, low.



• Shift lever



4 stages such like traveling, transplanting, neutral and backward are marked on the top of the flame cover of the planting system. The levers are traveling, transplanting, Neutral and backward from the right in order.



Caution

- ① Operate the shift changed lever with setting the engine to low speed and the main clutch lever (disconnection)
- ② Go backward, taking care of the rear and rising the machine up with the hydraulic lever so that the handle doesn't go upward.



Important

- ① Never operate unreasonable because the transplanting lever isn't connected in case the shift lever is at the position of traveling. (If operated unreasonably, the shift lever changes the position of the traveling to the transplanting.)
- ② When the transplanting lever is on the position of connection, the shift lever doesn't change to the traveling. (If operated unreasonably, it is anxious about the damage of the working parts, so take care not to change.)

• Hydraulic lever

It adjusts the ascent, fixing and descent of the implement according to the hydraulic. The machine ascends at the position of [ascent], it fixes at [fixing] and descends [descent].

• Chalk knob

This black knob is in the operation box. Start the engine while completely pressing the knob in case of warming up and pulling it in cooling. If the engine starts, press the chalk knob slowly.

• Main clutch lever

This applies to cut the power from the engine to each system.

If you raise it, the power is applied to each system and lower, it cuts.



Important

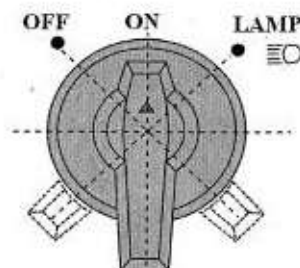
Connect the main clutch lever with the engine low speed, especially take care in case of the traveling speed [Disconnection] – The machine doesn't rise automatically, so supply the seed at this position

• Engine switch

When start the engine, set to the position of [ON]. [OFF] for stop, and [Lamp] for lighting.

• Transplanting clutch lever

It adjusts the operation or stop of the planting system. It begins to transplant at the position of [connection] and to stop at [disconnection].



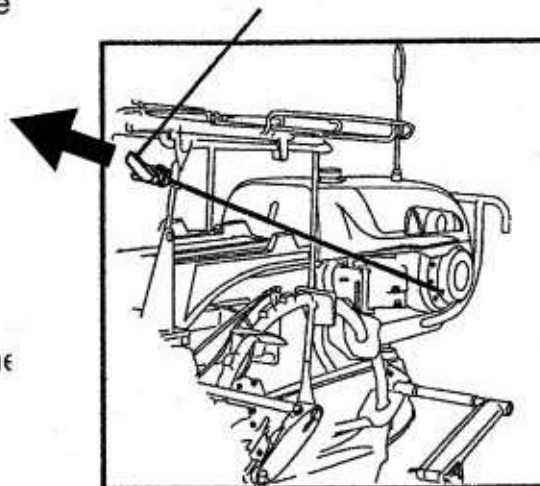
- **Hill Spacing adjusting lever**

It controls the hill spacing (number of the hill per 2m) by pushing or pulling.

- **Recoil starter knob**

It is near the handle and starts the engine at the side of handle easily.

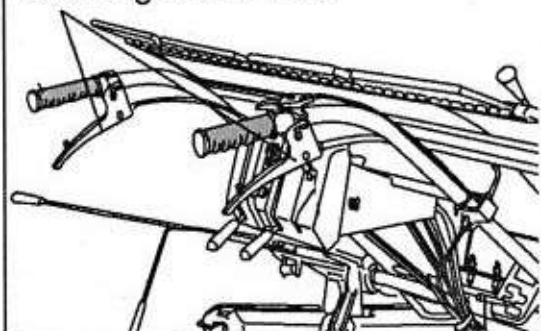
Recoil start knob



Important

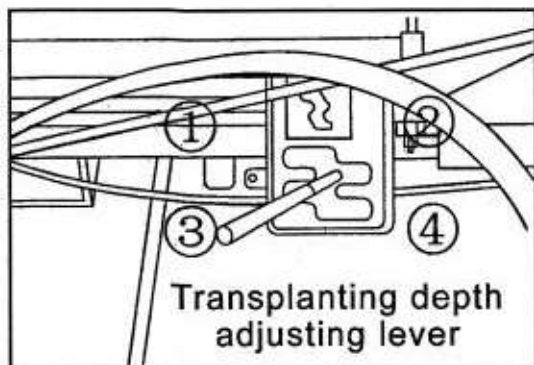
Manipulate the hill spacing adjusting lever while operating the planting system at low speed.

Steering clutch lever



- **Steering clutch lever**

It is used to change the direction by cutting the power transmitted to the axle apart from right and left.



Transplanting depth adjusting lever

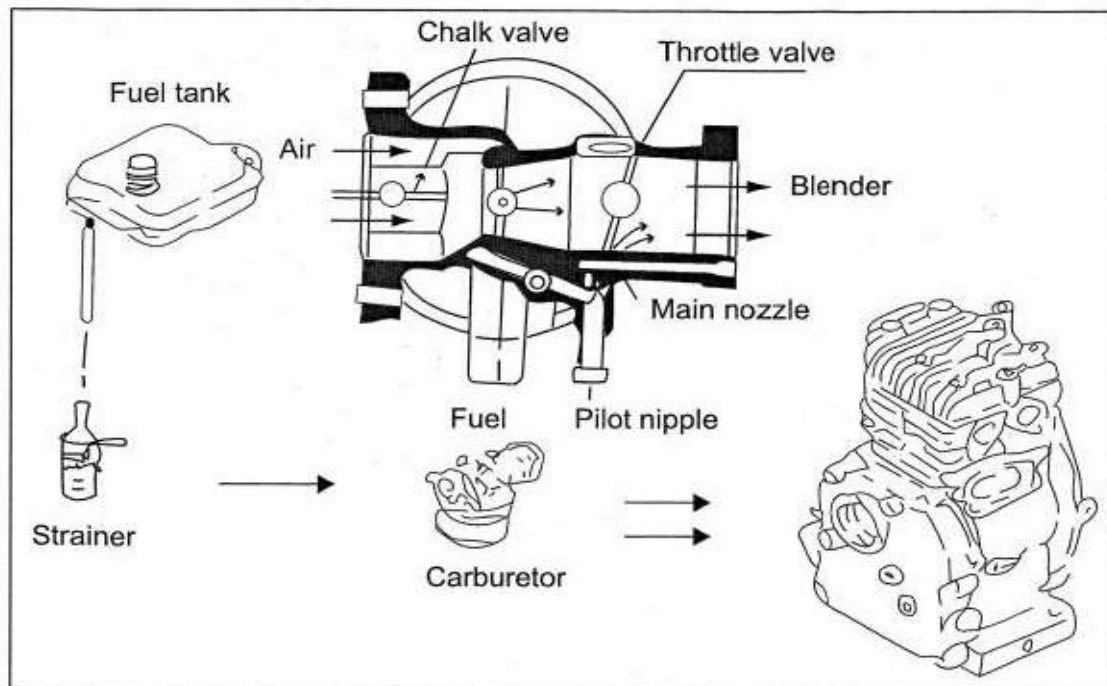
- **Transplanting depth adjusting lever**

It controls the transplanting depth to 4 stages. The upper guide adjusts it shallow and lower guide deep.

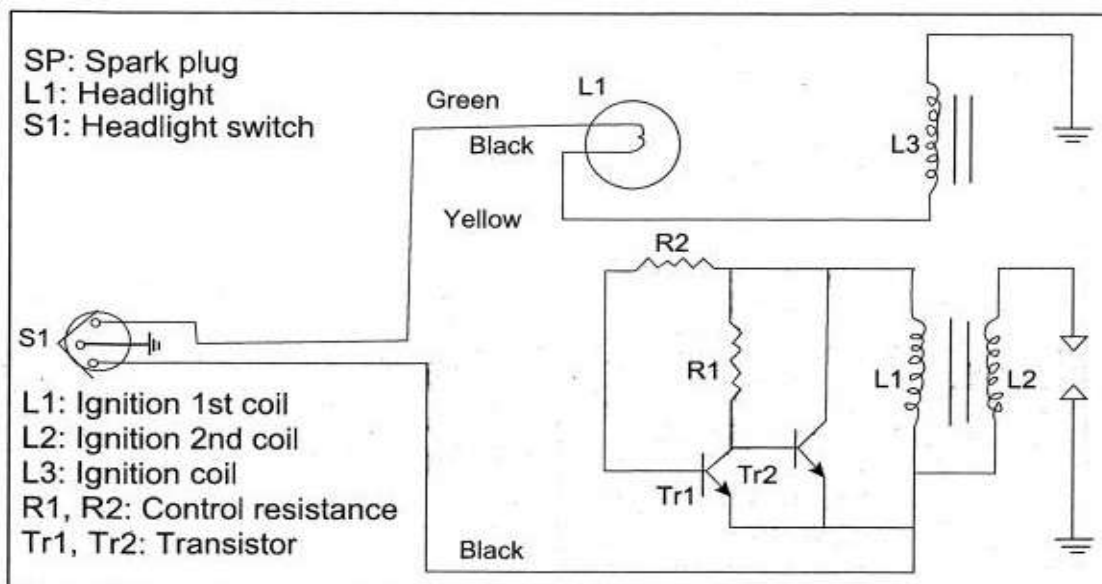
3.3.Drawing of each

Drawing of each system

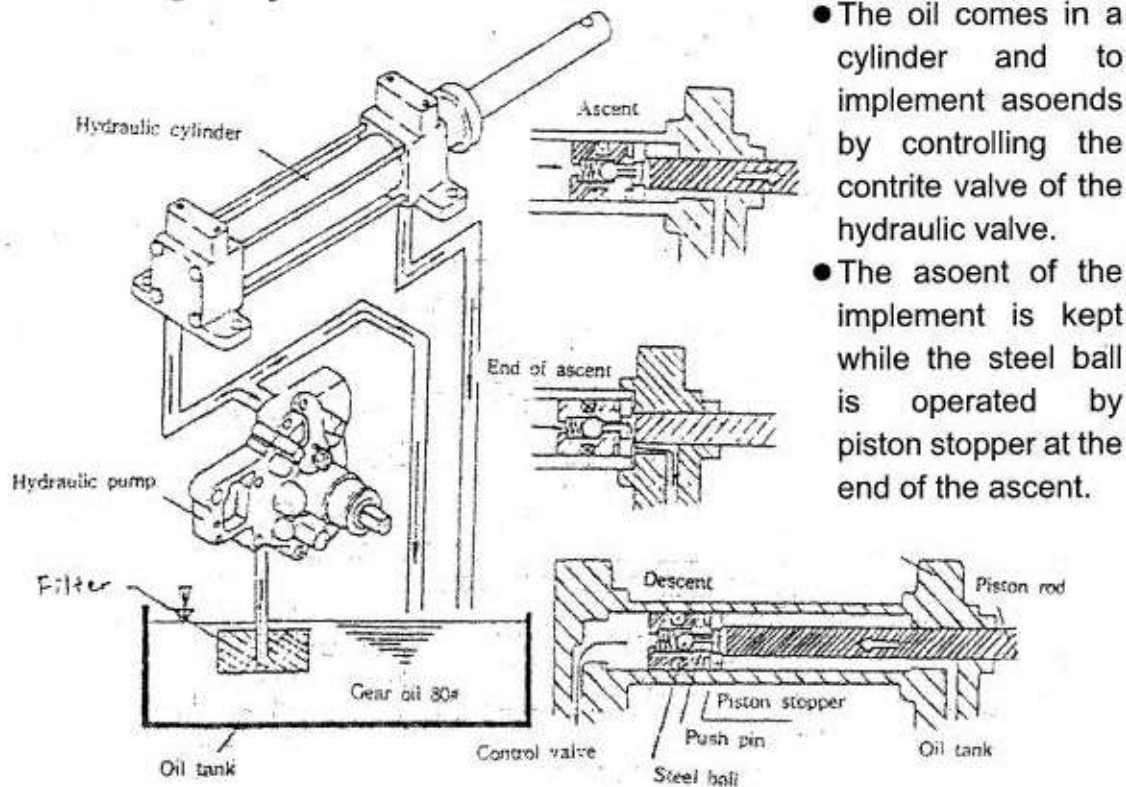
Drawing of fuel system



Drawing of electrical instrument



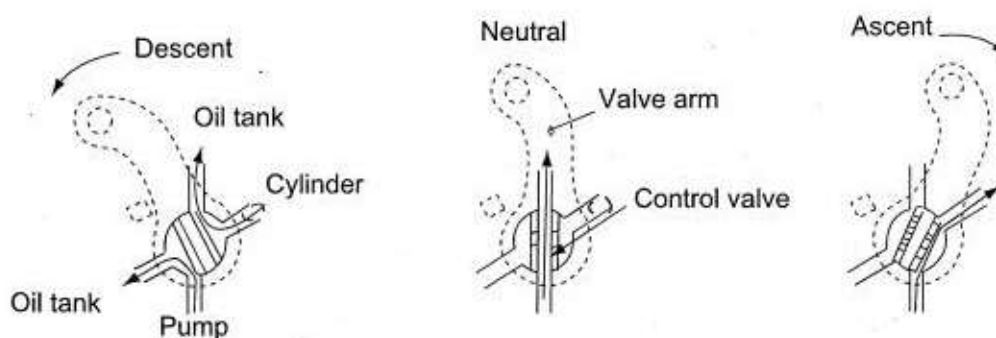
• Drawing of hydraulic



- The oil comes in a cylinder and to implement asoends by controlling the contrite valve of the hydraulic valve.
- The asoent of the implement is kept while the steel ball is operated by piston stopper at the end of the ascent.

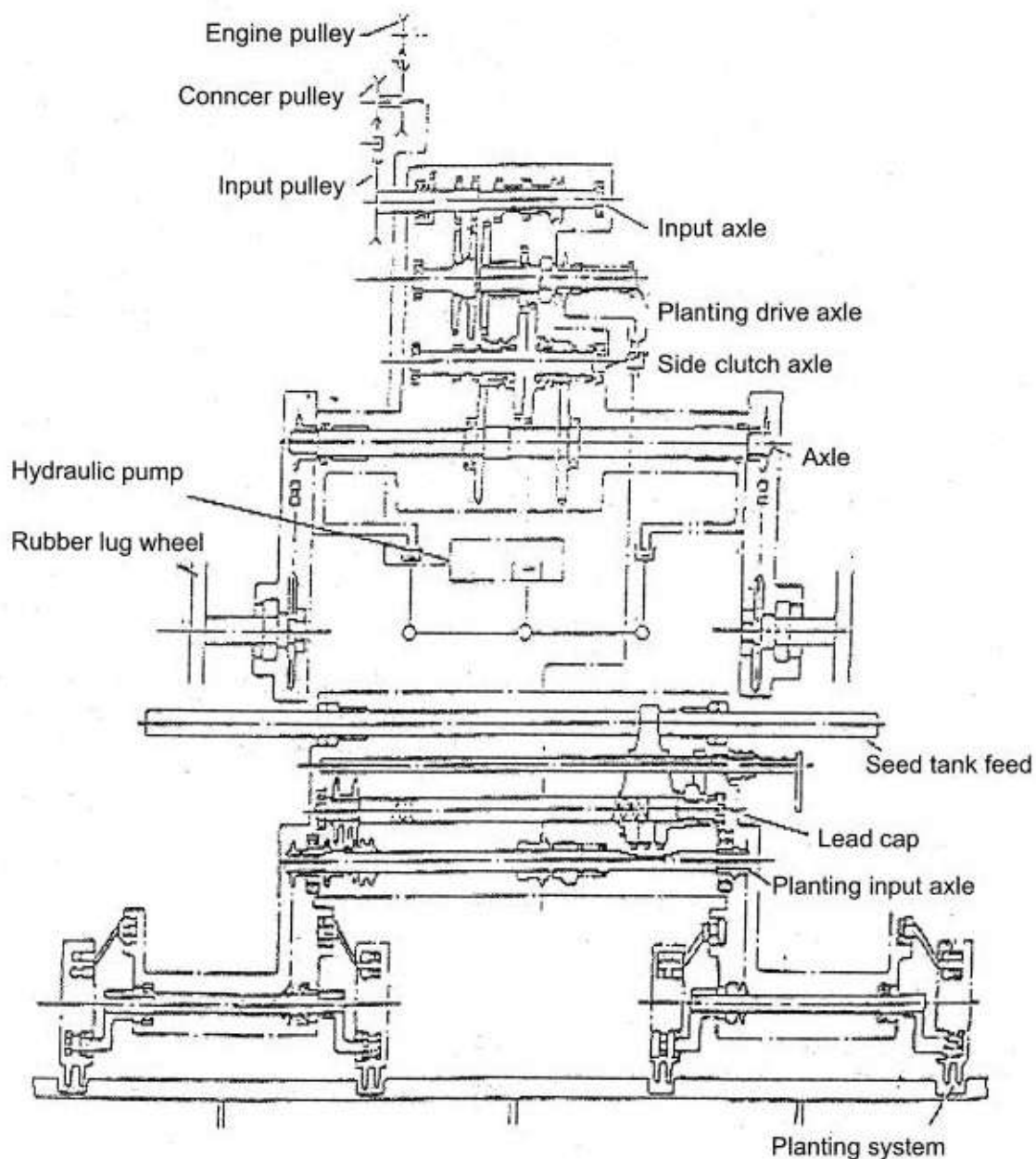
- The implement descends while the oil of the cylinder flows in the gear box by the weight of the implement

• Position drawing of valve arm



- It ascends or descends according to the position of valve. When the valve arm is at the center, the implement is fixed to the regular position.

● **Drawing of power system**



4. Transplanting Preparation

Transplanting preparation

Preparation of the seed

① It is important to raise the good seed for the good transplanting. Raise a strong and good seed with the method to raise the seed well (chart).

② Enough water the bed soil of seed the day before transplanting so that the bed soil has the standard moisture. When you push the base bed soil with a finger, it is proper to be sunk a little.



Important

① If the bed soil is too dry, it gets scattered, drops down and has a float seed.

② If the bed soil is too wet the seed feed exceeds, so take care not to have many numbers of hill.

※ The bed soil means the seedling mat.

Refer to the table on the right about the puddling schedule.

Preparation of the field

Puddle sincerely so that there isn't any unevenness on the surface of the rice paddy.

• Puddling schedule

| Kind for rice paddy | Puddling |
|---------------------|-----------------|
| Usual rice paddy | 1~2days before |
| Rice paddy of water | 1 day before |
| Wet rice paddy | 2~4 days before |



Important

The schedule becomes changed according to the weather or soil, so set the schedule to your real situation.

• Water depth

It is proper to aver about 0.5~2 cm depth.

Caution:

① If there is too much water, the muddy water makes the bad transplanting posture.

② If too little water, it has the missing hill because the seed comes together with the planting system back.

• Condition of the top soil

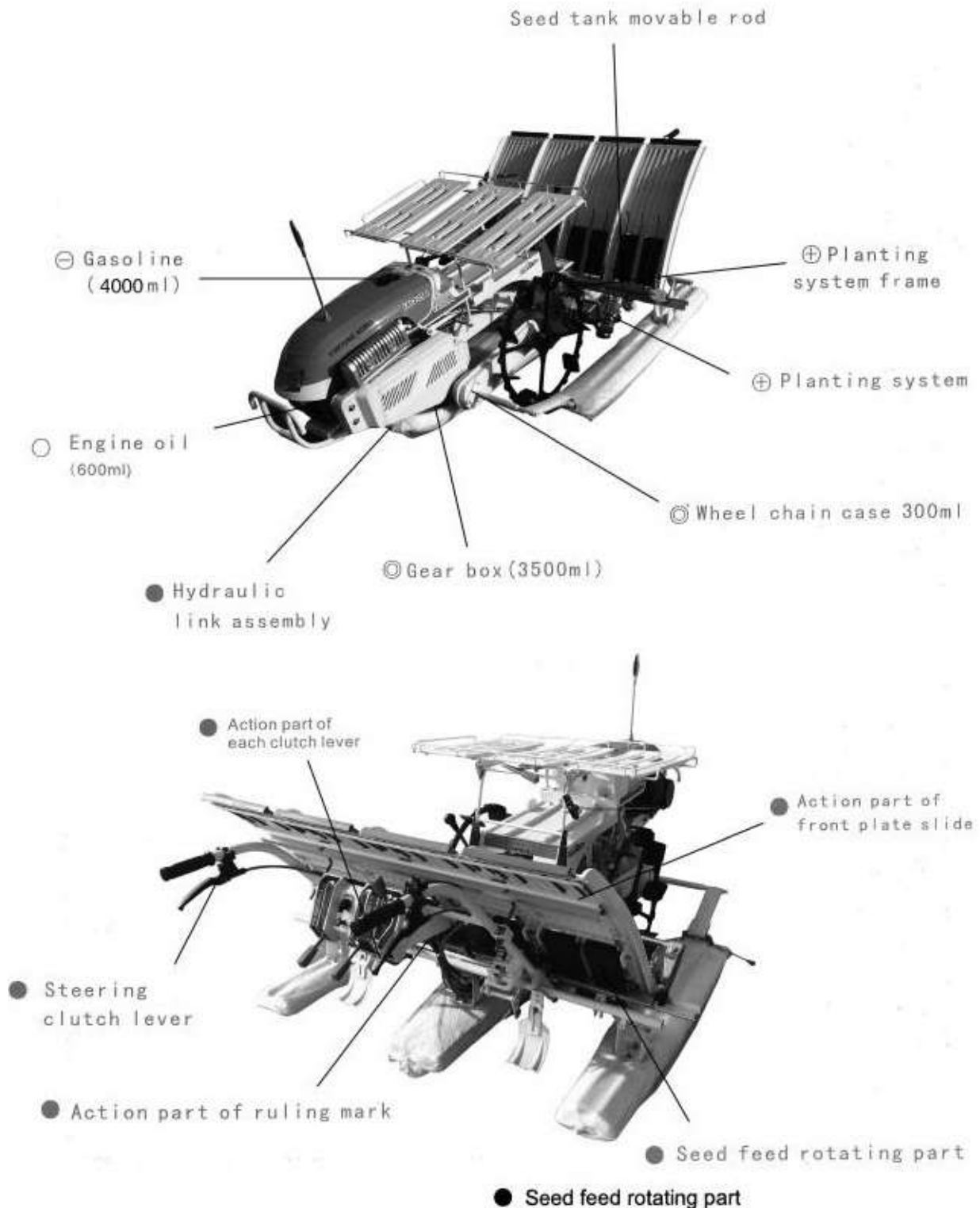
It is suitable to plant enough with hands.

If it becomes too hard, the transplanting posture becomes bad.

4.1.Preparation of the seedling and field

4.2.Preparation of the machine

Preparation of the machine



● Memory to lubricate

Always check before operation

① Check of the oil of the engine and each gear case.

② Is there the fuel?

③ Is the rotating part lubricated?

| Symbol | Name of oil | Lubricated point |
|--------|---------------------|----------------------------|
| ● | Grease | Yellow mark, each rotating |
| ⊙ | Gear oil 80W | Gear box |
| ⊖ | Gasoline | Fuel tank |
| ⊕ | Grease 9Albania OP# | Planting system |
| ○ | Engine oil 10W-30 | Engine |
| ⊗ | Gear oil 80W | Side frame, wheel chain. |

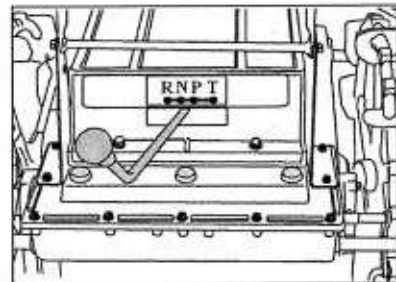
Conveyance of machine

● Caution

① When lubricate the rotating part marked with yellow, lubricate while racing manually.

② If there isn't any specified pure oil, prepare an equal things. (refer to p)

③ The oil of the gear box is combined with the hydraulic operation oil, so take care not to blend the dust. Always use the specified oil 80#



● Traveling on a road

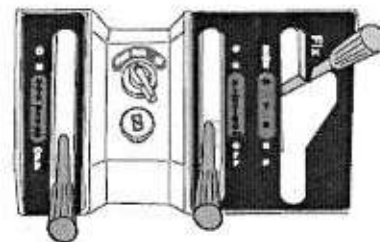
① Start the engine.

② Move the seed tank to the center of the machine

③ Set the shift lever to the position [traveling]

④ Go down the hydraulic lever with the implement ascended and set the lever to the position of [fix].

⑤ Travel while operating the engine at low speed.



● Caution

① Because it is dangerous at a limited area, slowly travel with the shift lever [transplanting].

② When travel on a road, never supply the seed in the seed tank.

5. Transplanting method

Transplanting method

Operation order

● Starting the engine

- ① Is there gasoline?
- ② Is there Engine oil?
- ③ Do you set the fuel cock to the position of [ON]?
- ④ Do you pull up the choke knob at its maximum?
- ⑤ Do you pull up the throttle lever about 1/2?
- ⑥ Pull up the recoil starter correctly.
- ⑦ Turn the choke knob back.

● Move of the transplanted to the rice paddy

- ⑧ Pull down the hydraulic lever and ascend the machine.
- ⑨ Set the shift lever to the position of [transplanting].
- ⑩ Operate the main clutch and convey

the transplanter to the rice paddy.

● Preparation at the rice paddy

- (11) Supply the seed in the seed tank.

● Transplanting

- (12) Position of each lever
 Shift lever -----[transplanting]
 Main clutch lever ----- [connection]
 Transplanting clutch lever -- [connection]
 Hydraulic lever ----- [descent]

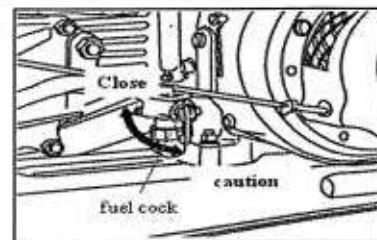
● Stop

- (13) Set the throttle lever to the position of [low].
- (14) Set the engine switch to [OFF].
- (15) When stop for a long time, set the fuel cock to [OFF].

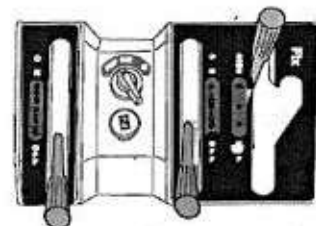
Starting the engine

● Starting method

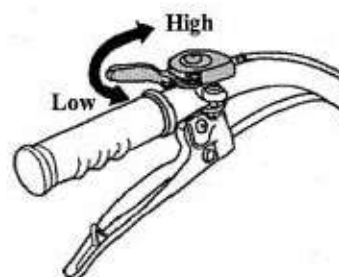
- ① Set the fuel cock to the position of [ON]



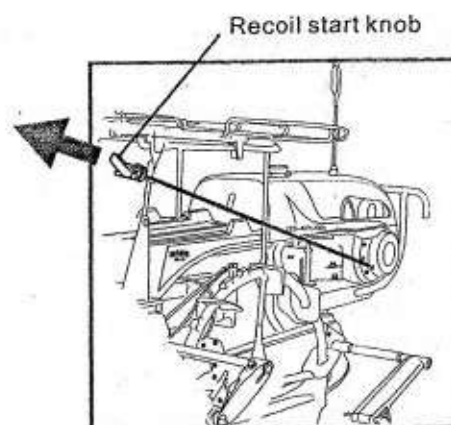
- ② Set the main clutch lever to [OFF]. The transplanting clutch lever to [OFF], and the hydraulic lever to [DOWN].



- ③ Set the engine switch to [ON] (set in to [LAMP] at night)
- ④ Turn the throttle lever inside $\frac{1}{2}$



- ⑤ Pull up the choke knob at its maximum. Cooling – [Open]
- ⑥ Pull up the recoil starter correctly. Warming up – [Close]
- ⑦ When the engine starts, Turn the choke knob slowly back



Caution

If the engine doesn't start despite of doing the operation
⑦ 3~4 times, it causes the over – intake of the fuel, so turn back and pull up the choke knob

Operation for getting accustomed

- Observe the items below until using the transplanted at about 10a so that it isn't excessive to the machine.
The method below is the key to use the machine for a long time.
- ① Understand the caution attached to each part well.
- ② Start the operation always after heating up at low speed.
- ③ Never start suddenly
- ③ Take care not to operate unreasonably

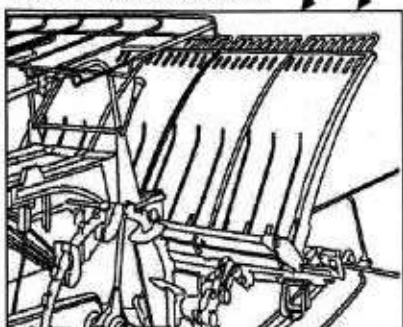
6. Supplying the seed

Supplying the seed

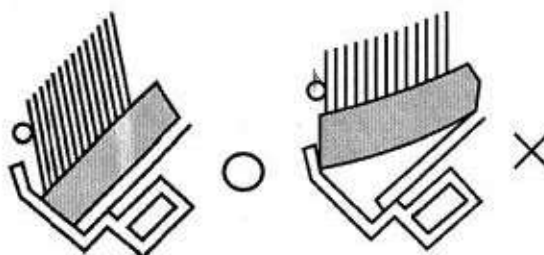
● Extended seed tank

When the seed comes out the seed tank during supplying the seed, take out the extended seed tank and prevent the bent seed

Extended seed tank

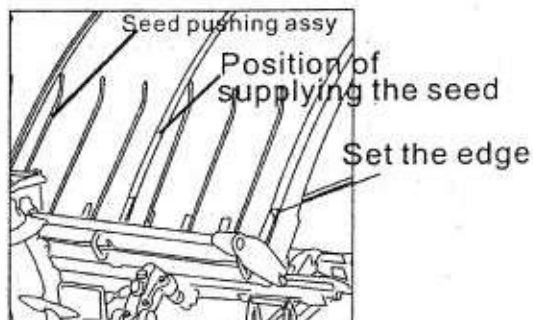
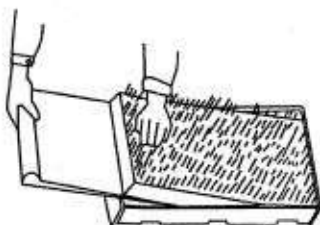


Take care so that the seed doesn't float from the seed bundling port or scatter.



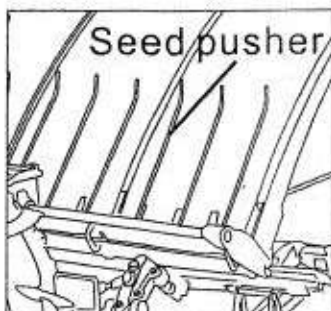
● Seed bundling method

Pick up one side, put in the seed bundling plate, and cut out the seed.



● No seed in the seed tank

Move the seed tank to right or left edge and supply the seed.



Important

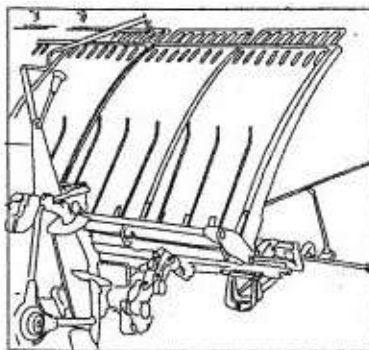
① Always supply the seed only the rice paddy.

② When the top soil is thick and the seed pusher hooked. It causes the seed to slide bad. Move the seed pusher to the position of open.

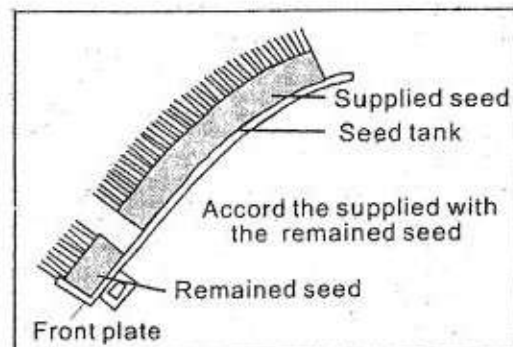
7. Decision of the row spacing

● Supplying the seed

Supply the seed before it comes to the supplied position. If used below it, the number of planting pieces becomes decreased.



Take care so that the border line accord with the remained seed.



Important

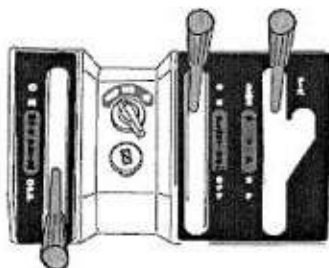
When supply the seed, it is unnecessary to move the seed tank to right or left edge. Only in case there is no seed, move the seed tank to any edge.

Decision of the row spacing

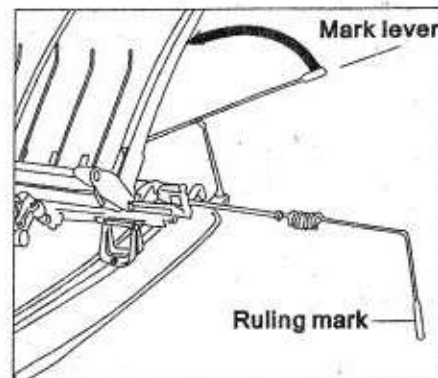
● Method to apply the ruling mark.

It is used to keep the transplanting straight and the neighbor row spacing regular.

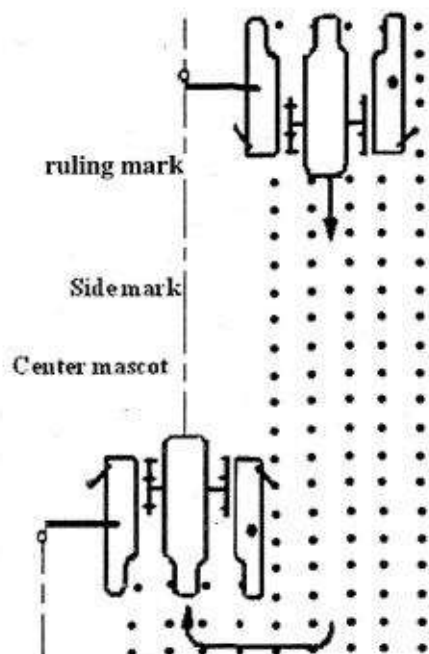
① Confirm to set the transplanting clutch lever to the position of [ON] and the hydraulic lever [DOWN]



② Pull back the mark lever, spread the ruling mark at the planted side, and plant it while ruling on the top soil

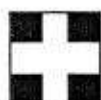
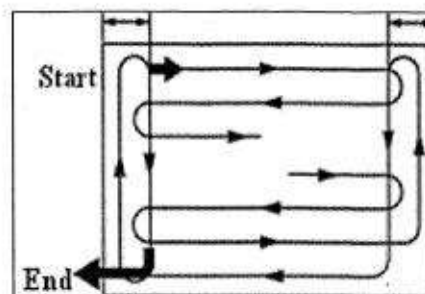


③ The line of ruling mark indicates the center of the machine at the planted side next. Plant while setting the center mascot to the line with ruling mark.



● Transplanting method around leave

Leave the space to plant 4-8 rows around the leaver to transplant.

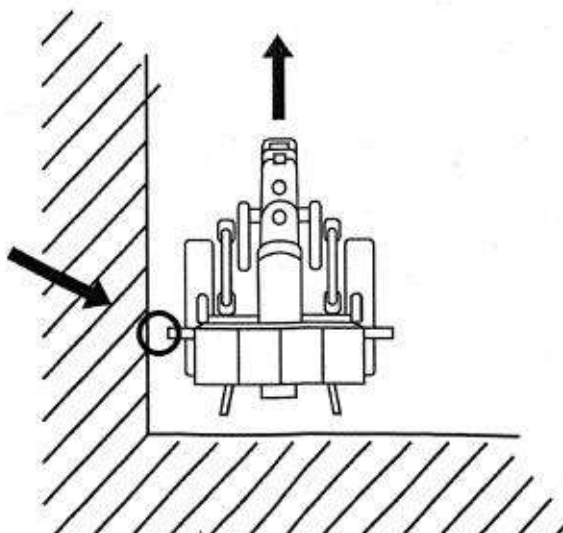
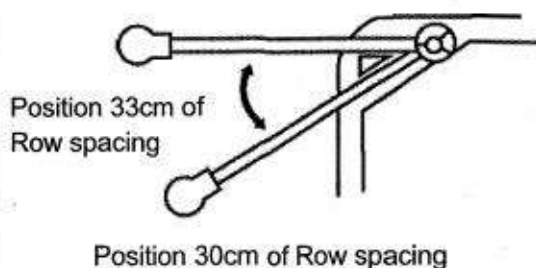


Important

Especially take care so that the front plate doesn't touch the leave at the rice paddy of the high leave

● Method to apply the side mark

It is used to keep the row spacing uniformly. Set the side mark in front of side float to the row of the transplanted seed to plant.



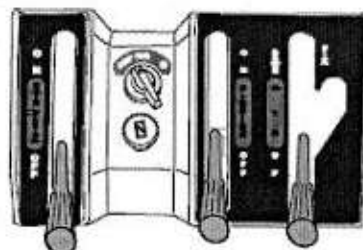
8. Turning

Turning

When finish the transplanting to the arranged length, turn as follows.

● **Turning method with the hydraulic lever**

- ① Set the transplanting clutch lever to the position of [OFF], decrease the number of the revolution of engine, and set the hydraulic lever to [UP] to rise the implement.
- ② Rise the handle up a little. (The hydraulic makes the machine ascend.)



Hold the side clutch of the direction to rotate at this moment and turn the machine.

The transplanter turns lightly while float doesn't press the top soil by Special auto- hydraulic device at a little ground contact pressure of float.

- ③ Set the edge of the side mark to the line of transplanted seed for the proper row spacing.
- ④ Set the hydraulic lever to the position of [DOWN]
- ⑤ Set the transplanting clutch lever to [ON].

Operate the transplanting clutch lever so that you make the start and end of the transplanting even

- ⑥ Pull back the mark lever of planting side next and spread the ruling mark.



Caution

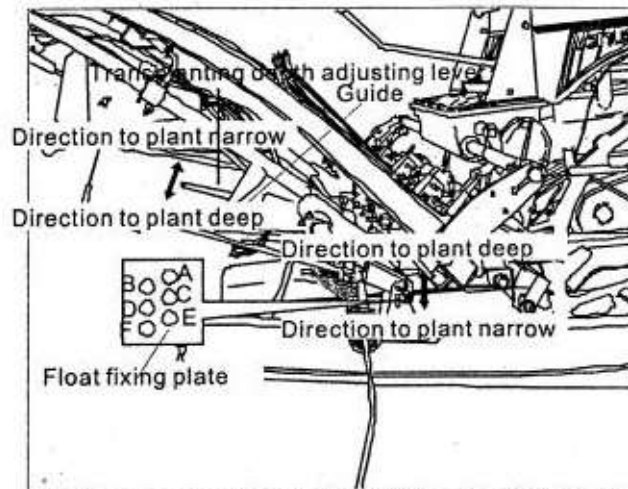
- ① Surely fold the ruling mark before turning.
- ② Confirm whether there is no people or obstacle around.
- ③ Take care so that a person isn't injured by the front plate and wheel.

9. Operation and adjustment of each part

Decision of the transplanting depth

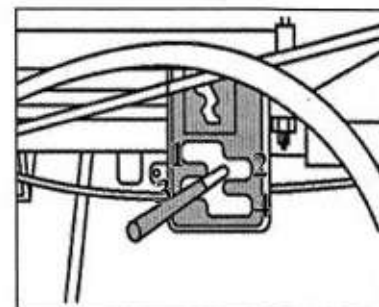
The transplanting depth can be chosen to 4 stages by changing the position of transplanting depth adjusting lever. Also it may be chosen to 6 stages by changing the fixing hole of the rear of float.

- The Transplanting depth changes according to the hardness of top soil
- The standard depth is about 2.6cm
- Select the correct lever for the standard depth after transplanting by test.

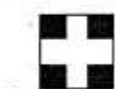


The transplanting depth is adjusted by changing the position of the depth adjusting lever and the float fixing hole.

- Most shallow
- Shallow
 - Field of the softest top soil.
 - In case of short seeds
- Standard shallow
 - Usual standard field
 - Standard seed
- Deep
- Deepest
 - In case of bad transplanting posture.
 - When the transplanting traces remains by the hard top soil
 - Deep water



| Transplanting depth | Position of float fixing hole | | | Position of the adjusting lever of the transplanting depth |
|---------------------|-------------------------------|---|---|--|
| | A | B | C | |
| Most shallow | 1 | | | |
| Shallow | 2 | 1 | | |
| Standard shallow | 3 | 2 | 1 | |
| Standard | 4 | 3 | 2 | |
| Deep | | 4 | 3 | |
| Deepest | | | 4 | |



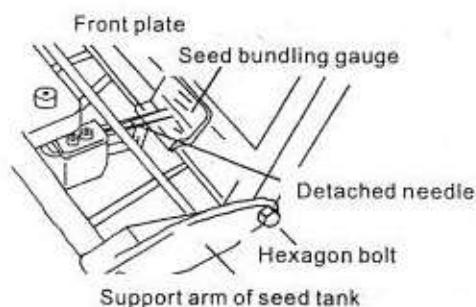
Important

- ① If more the lever to 1 stage, the transplanting depth changes to about 0.6cm.
- ② The position of float fixing hole is for shipment.

Decision the number of transplanting pieces

Set it by the sowing amount basically. When make the number of transplanting pieces small. Adjust a small sowing amount beforehand. The standard sowing amount is 330ml sprouted seed per 1 case. (1 cup evenly with the seed measuring cup)

● In case of adjustment with implement. It changes to 9 stages by controlling the adjusting lever of the vertical seed bundling. About 11mm is the seed bundling amount at the standard position.



- ① If more the lever to 1 stage, it changes to about 1mm.
- ② Adjust properly according to the situation, because the number of seed bundling pieces are affected by the moisture of top soil and the condition of seed.

● Using seed bundling gauge If only planting system among 4 has too much or small transplanting pieces, adjust the seed bundling amount with the seed bundling gauge as follows.

- ① Set the transplanting clutch lever and the main clutch lever to [disconnection] and the hydraulic lever [descent] to stop the engine.
- ② Set the seed bundling gauge to the seed bundling hole of the front plate.
- ③ Set the change lever to [neutral], the transplanting clutch lever and main clutch lever [connection], pull the recoil starter slowly until the edge of the detached needle touches the seed bundling gauge lightly.
- ④ Loosen the nut (M10) fixed to the rocking crank of the planting system and adjust two planting systems at center. Tighten the nut(M10) after adjustment. Never optionally adjust the outer right and left planting system, basis of the seed bundling. (Consult the agency for adjustment.)



When set the adjusting lever of vertical seed bundling to the maximum and turn the plating system with hand, confirm whether it interferes the front plate.

- ① 3~5 pieces is the number of standard transplanting pieces. Adjust properly according to the situation, because the number of seed bundling pieces is affected by the moisture of top soil and the condition of seed.
- ② Set 4 detached needles correctly to the same position.

10. Check before
transplanting

Check before transplanting

Check point

You should know the condition of machine always to prevent the accident or trouble beforehand. The items marked ※ are explained about the check method below.

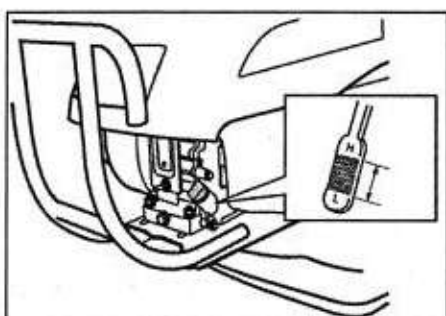
●Check as follows

- ① Trouble point at the previous day
- ② Engine system
 - Amount of the engine oil ※1
 - Cleaning of the strainer ※2
 - Cleaning of the air cleaner
- ③ Hydraulic system
 - Extended hydraulic belt ※3
- ④ Traveling system
 - Extended main belt
 - Broken steering clutch ※4
 - Lubrication at the lubricated point

- ⑤ Transplanting system
 - Clearance of the seed bundling hole ※5
 - Extruding period of planting fork ※6
 - Lubrication at the lubricated point
- ⑥ Others
 - Check the tightness of each tightened part

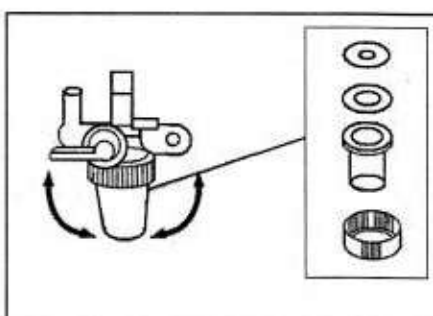
Check method

1. Amount of the engine oil



Pull out the lever gauge and check the oil level is between the upper and lower marks. If below the lower mark, replenish it.

2. Cleaning of the strainer

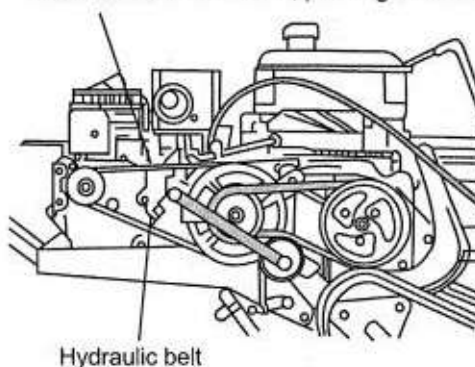


- The water or dregs of the fuel aren't settled in a cup.
- If there's settled. Close the cock and unpack the cup to clean.
- Clean the dregs attached to the filter.

3. Tension of the hydraulic belt

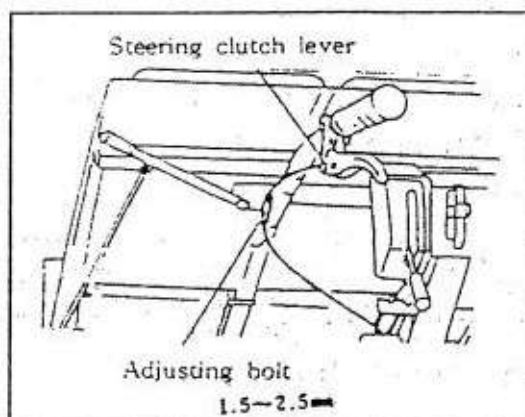
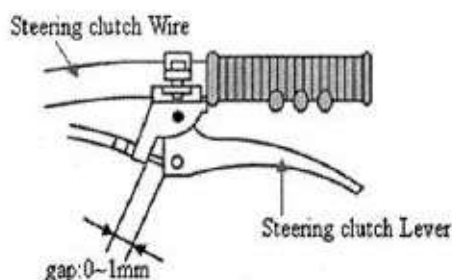
Confirm whether the hydraulic belt isn't expanded. If expanded, pull up to the front of the engine, push the center of the belt with a finger, it is proper to enter about 10~15mm.

Extent to enter 10~15mm, pushing with a finger



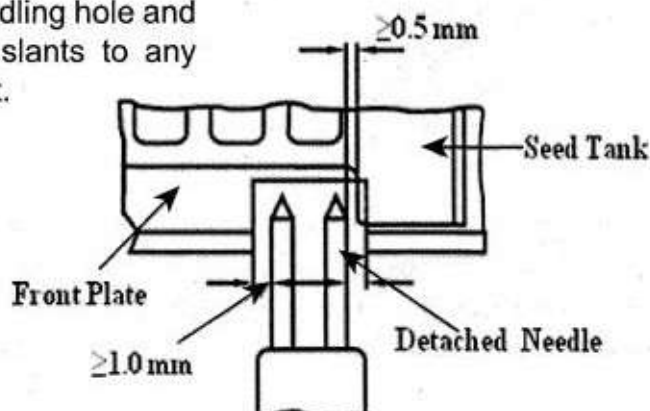
4. Steering clutch

Confirm whether the steering clutch is disengaged with the lever operated and whether there isn't a gap by the expanded wire. If the gap isn't proper, adjust with the adjusting bolt.



5. Gap

Confirm whether the right and left have the same gap between the seed bundling hole and the detached needle. When it slants to any side, loosen the set clip to adjust.



11. Simple service and management of the transplanted

Simple service and management of the transplanted

Control of each part

The life of machine and the excellent performance depend on the daily service. It is adjusted for shipment, but check and adjust each system sometimes to keep the condition so that the excellent performance of "GREAVES transplanted" is displayed enough.

●Hydraulic belt (SA-36 white yellow)

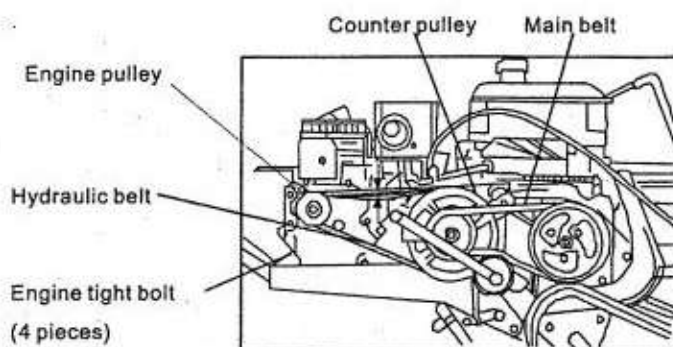
When exchange the expanded belt to new one, adjust as follow.

- ①When fit a new belt, adjust while moving the engine back and forth with the engine tight bolt loosened so that the central distance of axles between the engine pulley and the counter pulley is kept 249mm.
- ②In case of the expanded belt when the belt slips down and the power is transmitted bad, adjust the belt to enter about 10~15mm pushing it with a finger while loosening the engine tight bolt a little and moving the engine back and forth.

●Main belt (SA-28 white yellow)

The main clutch employs the method of tension clutch by the tension pulley. If the belt starts to slip, adjust it as follows.

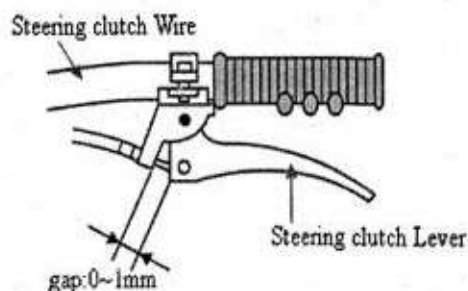
- ① Operate the engine at low speed.
- ② Set the shift lever to [neutral] and the main clutch [connection]
- ③ Loosen the lock nut of the main clutch and the wire, adjust it while turning with the adjusting bolt so that the main belt doesn't slip.



- ④When pull back the traveling lever to [disconnection] with the adjustment above finished, if the belt turns with the pulley, exchange and fit the new belt.

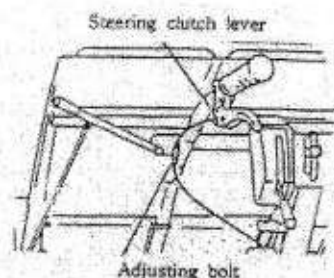
• Steering clutch lever)

Fix it while turning the adjusting bolt of the steering clutch wire so that the gap of the steering clutch lever becomes 0~1mm. Tighten the lock nut firmly after adjustment.



• The life of machine and the excellent performance depend on the daily service.

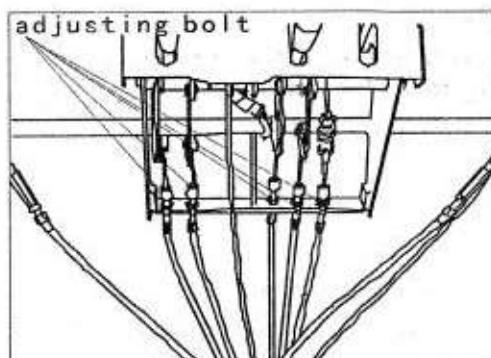
It is adjusted for shipment, but check and adjust each system sometimes to keep the condition so that the excellent performance of "GREAVES transplanted" is displayed enough.



• Transplanting clutch wire

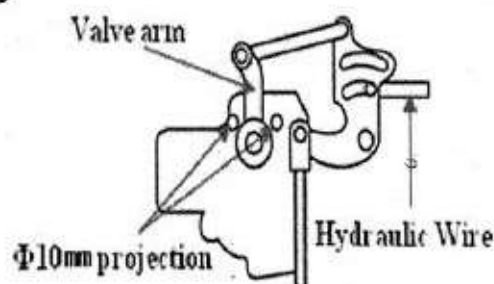
When the operation of the transplanting clutch lever is incomplete to 「connection」 「disconnection」, adjust it while loosening the transplanting clutch and lock nut and turning the adjusting bolt.

- ① Main Clutch wire (Yellow)
- ② Seed mount wire
- ③ Transplanting Clutch wire (Green)
- ④ Wire (S) (Black)
- ⑤ Hydraulic Wire (Blue)



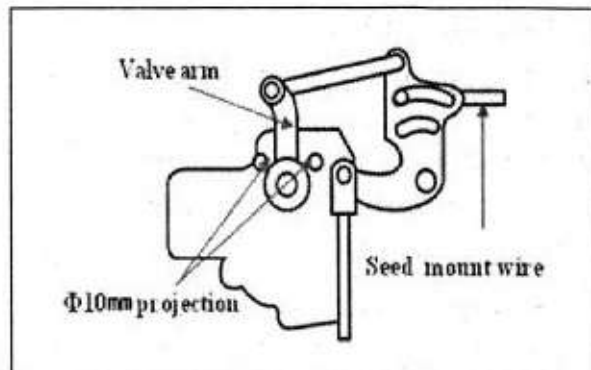
• When the operation is incomplete despite the manipulation of the hydraulic lever, adjust as follows.

Set the hydraulic lever to fixing and raise the center float from the ground. Loosen the lock nut of the hydraulic wire and adjust while turning the adjusting boot, so that the belt Arm comes to the center of 2 pieces (Φ10mm projection) of the hydraulic pump body.



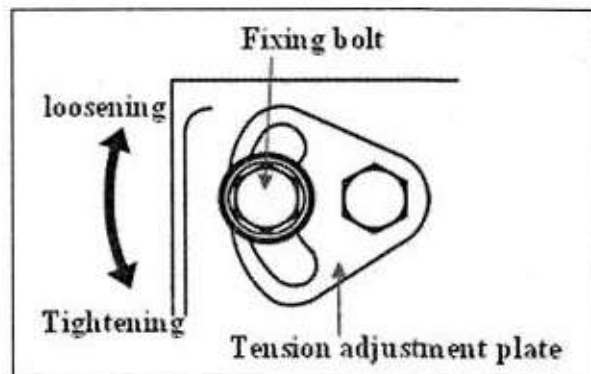
• Seed mount wire

Set the main clutch lever to [Disconnection] and make the front of the center float touch the ground a little. Adjust it so that the valve arm comes to the center of 2pieces ($\Phi 10\text{mm}$) of projection of the hydraulic pump body.



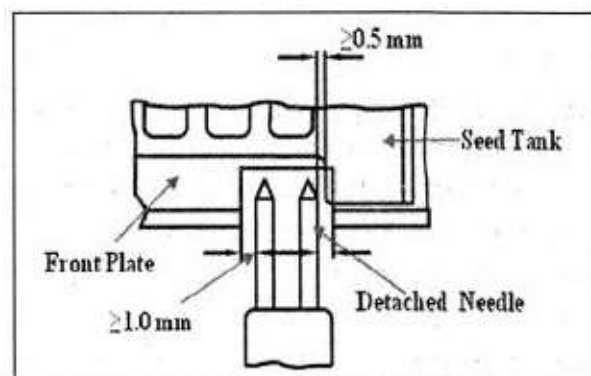
• Driving tension of the planting system

Because some noise inside the frame means the expanded driving chain of the planting system, loosen the bolt a little, and adjust so that some noise doesn't spring up. Tighten the bolt firmly after adjustment.



• Gap between the detached needle and the front place

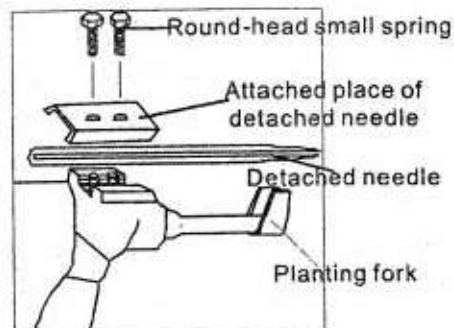
1.3~1.7mm is the standard gap between the detached needle and the lateral of the front plate groove. If the gap is wrong, loose the front plate adjusting knob a little and move the front plate to the right and left to adjust. (Take care so that the right gap is like the left.)



• Exchange of the detached needle and planting fork.

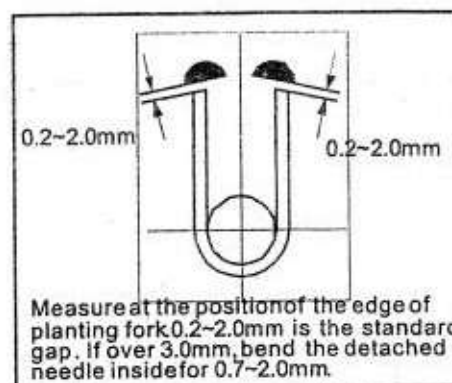
If operate it on the sand field or the soil of sand properties. The detached needle and planting fork become bent or worn.

If the gap of the detached needle and planting fork become wide, it causes the bad posture to transplant. Check sometimes and repair or exchange the bent or worn.



① Exchange of the detached needle

The worn or deformed detached needle causes the bad posture, so check and repair. When it is impossible to repair by terrible worn or deformation, loosen a small round-head screws (M5×0.8×20) to exchange it.



② Exchange of the planting fork

The worn or deformed edge of the planting fork causes the bad posture, so repair or exchange.

● Exchange method(refer to the drawing on the right)

- (1) Remove the planting system cover and pull out the extruding arm.
- (2) Loose the extruding nut and extruding lock nut from the planting fork.
- (3) Exchange the planting fork.
- (4) Assemble it following the reverse procedure.

Exchange the planting fork for the seeding as the same method.



- ① Assemble the cushion rubber correctly.
- ② Lock the extruding nut and the extruding lock nut at the position of 27mm (tightening size of the screw).



12. After transplanting and trouble shooting

After transplanting

Check the machine closely for the preparation to use next spring after transplanting.

1) Wash cleanly with water and remove the sewage completely while driving the engine at the middle speed.

2) Lubricate each lubricated point enough.

3) Exchange the oil of the specified point to new one.

If exchange the new oil after warming up, you can do it cleanly and quickly.

4) Drain the gasoline of the fuel tank and the carburetor completely.

5) Put 20ml new oil into the hole of the ignition plug. Pull up the recoil starter and operate the engine over 10 times idling to prevent the rust of the inner cylinder and the valve.

6) Pull up the recoil starter, stop at the pint to feel the compression.

7) Lubricate with grease especially to the transplanting system for rust-proof.

8) Keep the planting for at the lowest position (condition of extruding seed) to prolong the life of the extruding spring of the planting system.

9) Set the main clutch lever and the transplanting clutch lever to [OFF], the hydraulic lever [DOWN] and the fuel cock [OFF] to keep.

10) The oil of the gear box is used with the hydraulic action oil combined, so take care the dust not to be blended.

11) Cover the transplanted after cleaning and keep at the shade and dry room. Take care so that the fertilizer isn't touched.

12) Check the spare parts and kit to keep together with the transplanted.

*** Caution**

If you make the agency a request to disassemble and to clean for check and service, you may use it with confidence and a good performance.



Periodical check • service chart

○:check • replenishment • adjustment △:cleaning • washing ●: Exchange

| Item | Check before start | Check period | | Remarks | Reference page |
|---|--------------------|--------------|------------------------------------|--------------------------|----------------|
| | Daily | Per 1.5ha | After finishing the year operation | | |
| Gear box oil | | ○ | ○ | Gear oil 80# 3500ml | 15 |
| Hydraulic belt | ○ | ○ | ○ | | 34,35 |
| Main belt | ○ | ○ | ○ | | 36 |
| Gap of steering clutch lever | ○ | ○ | ○ | 0~1mm | 34,37 |
| Driving tension of planting system | | ○ | ○ | Confirm in disassembling | 38 |
| Wheel chain case-oil | | | ○ | Gear oil 90# 300ml | 18 |
| Lubrication of each part | ○ | ○ | ○ | Gear oil | 18 |
| Worn of deformed planting fork-detached | | ○ | ○ ● | Repair or exchange | 40 |
| Gap of seed bundling hole | ○ | ○ | ○ | 1.0~1.7mm | 34 |
| Extruding period of planting fork | ○ | | | Lowest of wheel tracks | 35 |
| Extruding period of planting fork | | | ○ | | 35 |
| Lubrication of planting system | | ○ | ○ | | 18 |
| Lubrication of planting system flame | ○ | ○ | ○ | Grease | 18 |
| Side flame oil | | ○ | ○ | Gear oil 90# 200ml | 18 |
| Lubrication of each part | ○ | ○ | ○ | Gear oil | 18 |
| Engine oil | ○ | ● | ● | Engine oil 30# 500ml | 18 |
| Fuel filter strainer | | | | | 33 |
| Air cleaner | | | | | |
| Cylinder rust-proof (long-term storage) | | | | | 41 |
| Check and tighten each part | ○ | ○ | ○ | | |
| Inferior operation of hydraulic | | | | | |

* Caution

If you make the Dealer a request to disassemble and to clean for check and service, you may use it with confidence and a good performance.

Trouble shooting

| Contents of trouble | Cause and remedy |
|---|--|
| The seed isn't planted in the top soil (float seed) | Deficient water of bed soil → water |
| | Inferior adjustment of transplanting depth → Deepen |
| | Too hard top soil → Reduce the transplanting speed and push the handle |
| The transplanting fork returns with the seed. | Deficient water of bed soil → Water |
| | Inferior operation and deformation of planting fork |
| | Wide gap between planting fork and detached needle |
| | Deficient water of rice paddy → Irrigate |
| The seed falls down. | Deficient water of bed soil → Water |
| | Deformed and worn detached needle |
| | Deformed and worn detached needle |
| | Inferior operation and deformation of planting fork |
| | Much water in a rice paddy → Reduce the transplanting speed. |
| Much number of pieces per hill | Excess water of bed soil → Dry |
| | Much sowing |
| | Inferior adjustment of the number of pieces |
| Missing hill | Irregular sowing density |
| | The seed I kept afloat → Take care to supply the seed. |
| | Crumbling seed → Fix the seed press. Dry the bed soil |
| | The clod, root is caught in the seed bundling hole. |
| | Inferior adjustment of seed bundling hole |
| | Deformed and worn detached needle |
| | Inferior adjustment of the number of pieces of detached needle |
| Irregular number of pieces per hill | Irregular sowing density |
| | Inferior lip of seed → Open the seed press. Water the bed soil. |
| | The root is caught in the seed feed roller. |

Trouble shooting

| Contents of trouble | Cause and remedy |
|--|---|
| It isn't planted cleanly | Too soft top soil→ water the bed soil. Reduce the transplanting speed. |
| 4 rows of seed isn't reduced to the same amount. | Difference water of bed soil |
| | Inferior adjustment of seed bundling hole |
| | Irregular adjustment of planting pieces of the detached needle |
| The seed of the seed tank is kept afloat | Excess water of bed soil → Dry |
| | Deficient thickness of bed soil →Adjust the moisture of bed soil |
| | root the fix the seed press. |
| The seed of the seed tank is kept afloat | Excess water of bed soil→ Dry |
| | The edge of the supplied seed doesn't meet the remained |
| | The root is caught in the seed feed roller. |
| | Forgot to fix the seed press. |
| The detached needle touches the seed bundling hole | Inferior adjustment of planting pieces of detached needle |
| | Inferior adjustment of seed bundling hole. |
| | Deformation of the detached needle |
| | Loosing fixing nut of planting crank, rocking crank |
| | Inferior fixing of the support arm of seed tank |
| Different transplanting depth 4 rows | Different hole of the fixing support (rear) of 3 floats |
| | Loose hydraulic belt |
| Inferior auto-swing of wheel and float | Inferior adjustment of hydraulic wire |
| | Inferior adjustment of seed mount wire |
| Slow transplanting and traveling speed | Loose main belt |
| | Loose hydraulic belt |
| | Inferior adjustment of main clutch wire |
| The seed doesn't slip | Deficient water of bed soil → Water |
| | Broad seed width → Shake the direction of the bed soil length |
| | The root is caught in the seed feed roller. |