

YANMAR



YANMAR OHV GASOLINE ROTARY MINI TILLER MRT4, MRT6, MRT6DX

OPERATION MANUAL



 **YANMAR AGRICULTURAL EQUIPMENT CO., LTD.**

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Thank you for purchasing this Yanmar product.

This manual describes the mechanism and general maintenance procedures in order that you can keep your machine in the best working condition and operate it safely. A safe and proper operation can be ensured by properly understanding the contents and carrying out instructions correctly as described in this manual.

And keep this manual with care for your long utilization even after you have read through it.

To improve or upgrade this machine in quality or performance or for some other reason, parts are sometimes changed, so some part of the description of this manual may not apply to your machine. Please understand such circumstances beforehand.

In the text of this manual, special mentions are given which follow the safety symbol  and notice symbol **NOTE**:

Please read them carefully and be sure to follow their instructions on full understanding.

AS TO SYMBOLS USED:

These are "absolutely necessary items for you to read" for insuring safety in work through your full understanding of the machine.



NOTE:

This symbol indicates "special instructions or procedures for you to follow indispensably" for insuring safety in operation.

This symbol indicates special instructions or procedures for insuring maximum performance in operation of this machine.

DIRECTION:

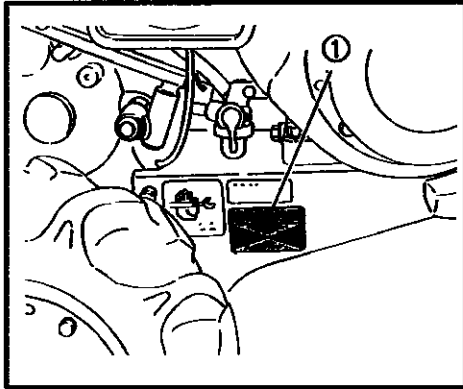
"Right" and "Left" sides of the machine are determined by facing in the direction of machine forward travel.



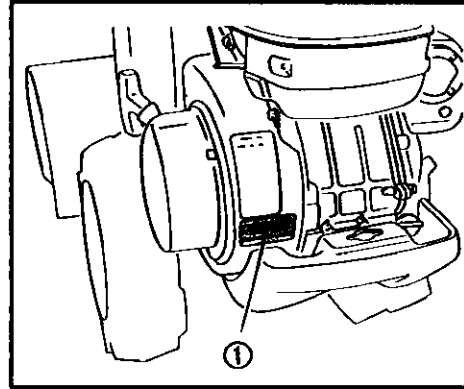
This machine is of metric design. All hardware is therefore metric. Make sure you use the specified metric hardware when replacement becomes necessary.

SERVICE AND WARRANTY

A trouble in your machine should be detected and cleared at early stage as much as possible. If you have found any abnormality, check it by yourself or consult your service representative. Please note the type and serial numbers.



① Name plate (Type and Ser.No.)



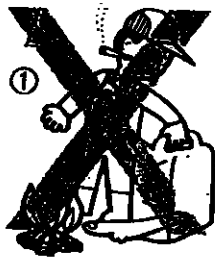
① Engine type and Ser. No.

SAFETY PRECAUTIONS

Precaution prior to work

Stop engine before refueling

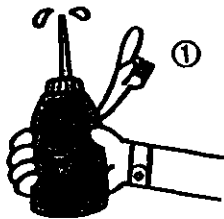
Stop the engine before filling the fuel. Do not smoke. Do not place a bare light close to the machine, otherwise the gasoline can be set afire.



① No fire!

When lubricating

Stop the engine before lubricating the rotating parts. Otherwise, your hands or cloth may be rolled in.



① Stop the engine before lubricating the rotating parts.

When lending your machine to others

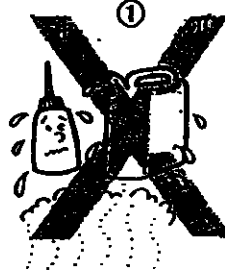
Instruct him for correct operation of the machine. Ask him to read the operation manual and related safety instructions.



① Read manual before operation!

When oiling

Do not apply oil to the machine while the engine is running or heated. Otherwise, a fire or burn of your body may result.



① Do not oil while the engine is heated.

When replacing the belt

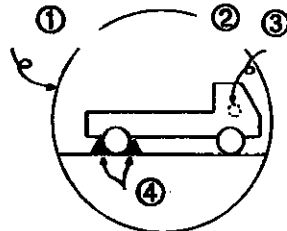
Stop the engine before replacing the belt. Otherwise your hand may be caught and injured.



① Stop the engine before replacing the belt.

Loading and unloading the truck

Keep the truck stationary on the flat ground, stop the engine, lock the truck by putting on the parking brake.

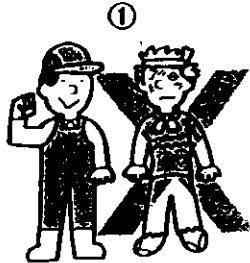


- ① Ensure safety in the vicinity.
- ② Parking brake
- ③ Put shift gear in "R"
- ④ Blocks

During work

Suitable conditions

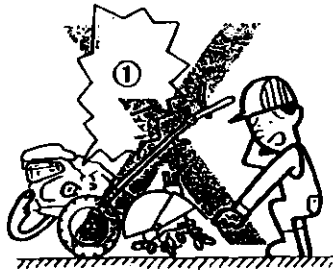
Wear the correct cloths suitable for the work.
Suspend the work when drunken or exhausted.



- ① Pay attention to your clothing or health conditions.

If grasses entangled on tines

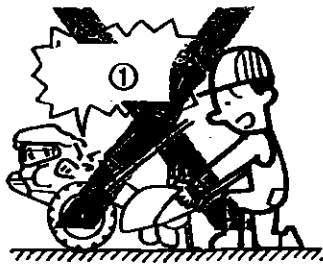
Stop the engine and remove the entangled grasses and straws from the tine shaft.



- ① Stop the engine first!

Replacing tines

Stop the engine before checking the rotary harrow or attempting replacement of tines.



- ① Stop the engine first!

Post-operation care

Maintenance

Turn off the main clutch and stop the engine to avoid an accidental advance.

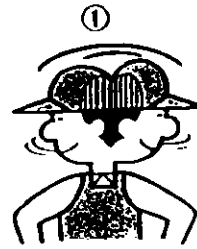
Uncovered rotating parts can bite your cloth.
Always fit the respective covers for operation.



- ① Shut off the engine and disengage the clutch before maintenance work.

Advancing

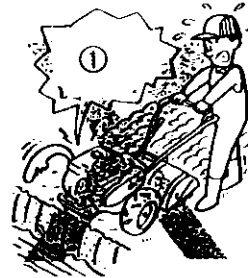
Look around the surrounding to ensure safety.
Slowly advance the machine. Do not start abruptly.



- ① Look around the surrounding

Rotary harrow operation

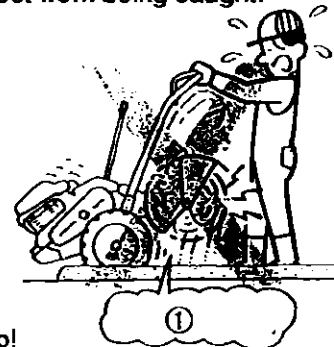
The rotary harrow running in normal direction can cause the tiller to jump forward. Do not advance toward other persons, river or cliff.



- ① Do not advance to a river or cliff.

Turning

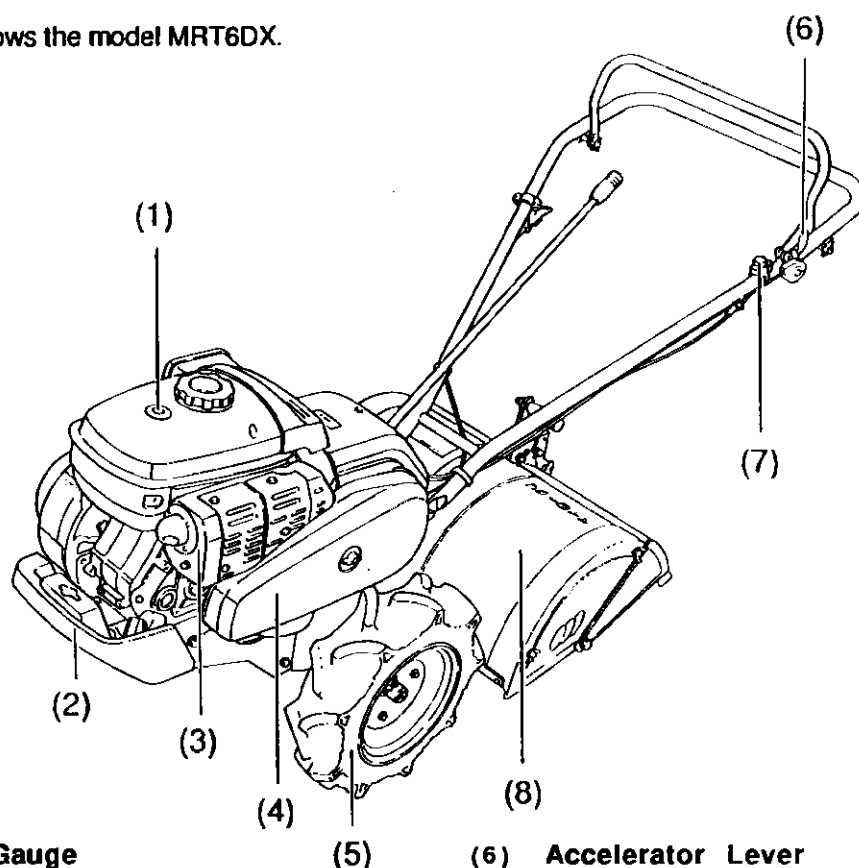
Lift the rotary harrow section. Watch your step to prevent your feet from being caught.



- ① Watch your step!

PARTS NAMES AND FUNCTIONS

Illustration shows the model MRT6DX.

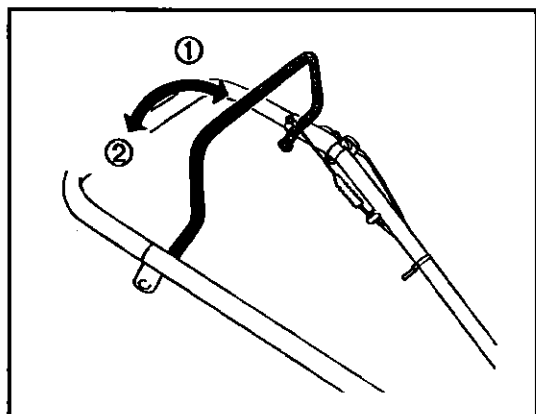


- (1) Fuel Gauge
- (2) Bumper
- (3) Muffler
- (4) Belt Cover
- (5) Tire

- (6) Accelerator Lever
- (7) Hand Switch
- (8) Cover for Rotary Harrow

Main clutch lever (Deadman lever)

Grip the lever to engage the clutch.
Release the lever to disengage the clutch.

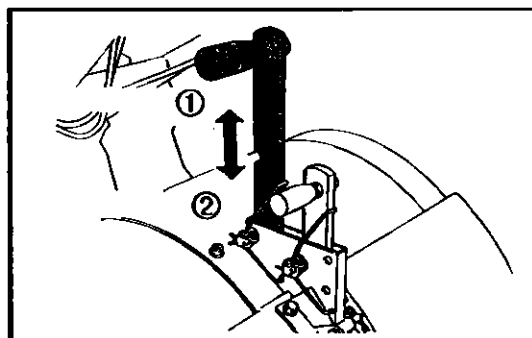


- ① Release for OFF
- ② Grip for ON

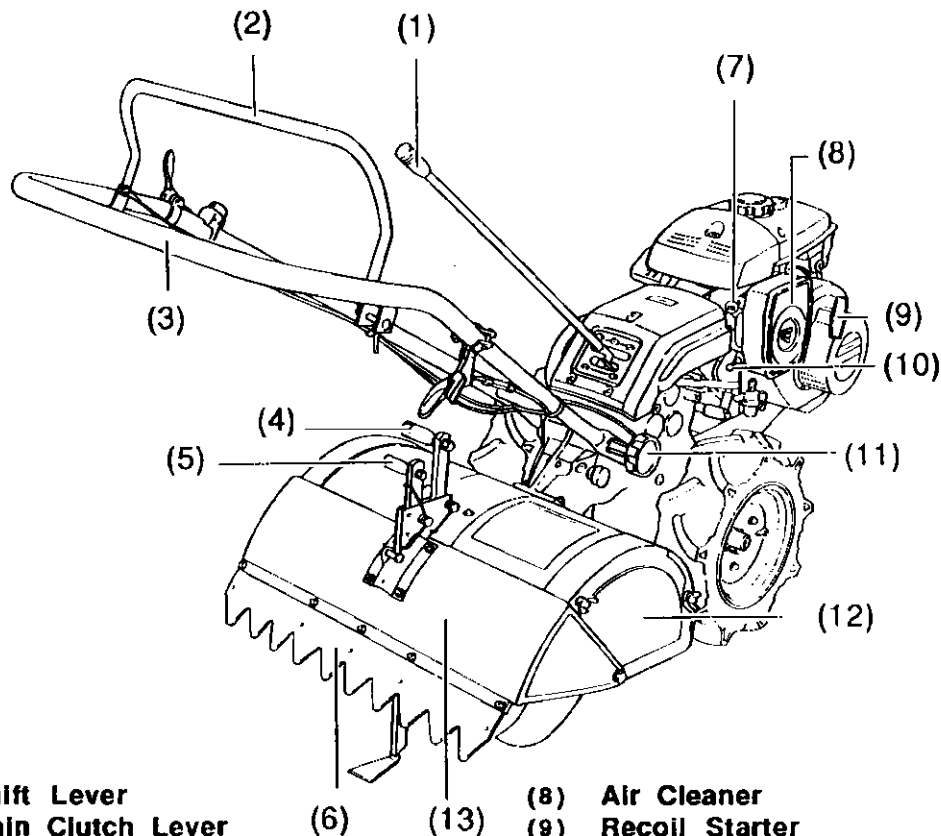
Resist bar

This resist bar prevents the machine from jumping forward while the rotary harrow is running for tilling work.

- For normal revolution of the rotary harrow, push down the resist bar to LOWER.
- For reverse revolution of the rotary harrow, pull up the resist bar to UPPER.



- ① Normal revolution: UPPER
- ② Reverse revolution: LOWER



- | | |
|-----------------------|------------------------------------|
| (1) Shift Lever | (8) Air Cleaner |
| (2) Main Clutch Lever | (9) Recoil Starter |
| (3) Handle | (10) Automatic Drain |
| (4) Resist Bar | (11) Handle Fixing Knob |
| (5) Depth Adjuster | (12) Side Cover of Rotary Harrow |
| (6) Rear Sheet | (13) Rotary Cover of Rotary Harrow |
| (7) Choke Lever | |

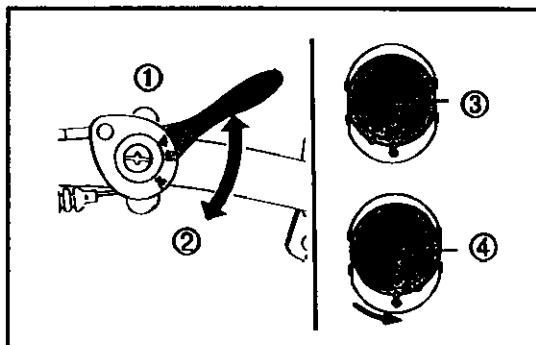
Accelerator lever, Hand switch

<Starting engine>

To start the engine, put the accelerator lever in the HIGH position and the hand switch in START position.

<Stopping engine>

To stop the engine, put the accelerator lever in the LOW position and the hand switch in STOP position.

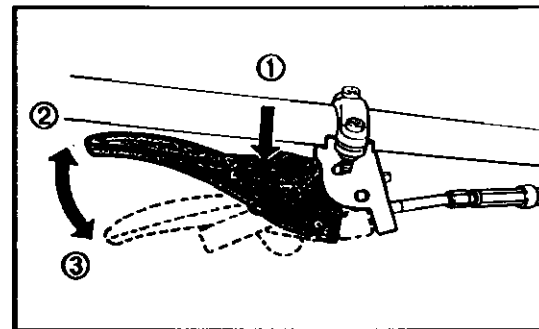


- ① LOW revolution
- ② Engine start/run position
- ③ HIGH revolution (Starting)
- ④ Engine stop position

Differential lock lever (DX version)

Operation should normally be carried out with the differential lock lever at the OFF position. If one side of tires slips disabling the straight advance, place the differential lock lever in the LOCK position. This enables the both side tires turn at an equal speed, thereby improving the linear advance.

To turn, place the differential lock lever in the OFF position and manoeuvre the handle.




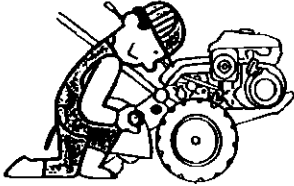
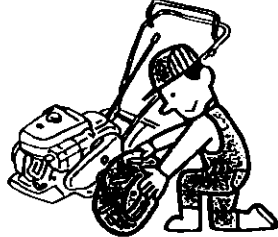


- ① Press here and release the lever.
- ② Lock
- ③ Release

PRE-OPERATION CHECKS

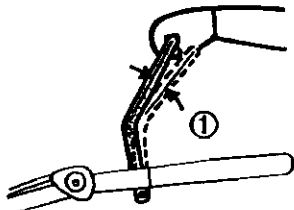

1. Pre-operation checks

For safe and comfortable work, carry out the maintenance of the machine prior to work. Abnormality should be immediately removed. The machine should also be checked after the work.


Look around the machine

<ul style="list-style-type: none"> • Check fuel level, leak, crack in the fuel pipe. 	<ul style="list-style-type: none"> • Check for level and contamination of transmission oil. 	<ul style="list-style-type: none"> • Check the tires for air pressure and damage. 
<ul style="list-style-type: none"> • Check for engine oil level, contamination, oil leak. 	<ul style="list-style-type: none"> • Check the air cleaner for dirt. 	<p>Check for:</p> <ul style="list-style-type: none"> • Deformed, dirty parts • Damage of body and loosened bolts and nuts • Dirt at the muffler and any parts subject to heat • Broken or loosened connections and wires

Try to operate the lever

<ul style="list-style-type: none"> • Check the play for each lever.  <p>① Play</p>	<ul style="list-style-type: none"> • The machine should work smoothly. 
--	---

Start engine and check for

<ul style="list-style-type: none"> • Abnormal sound from the engine immediately after start • Color of the exhaust gas 
--

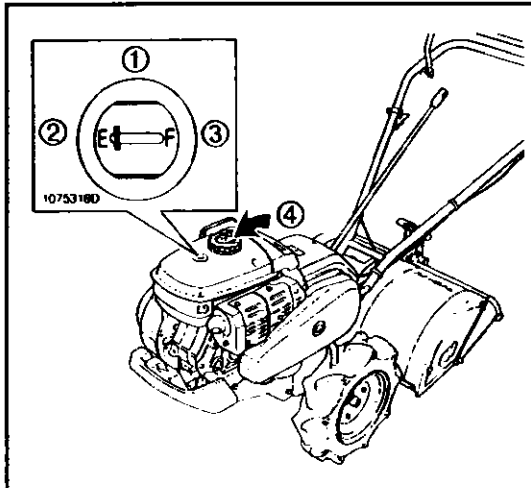


- Never fail to stop the engine before checks or maintenance.
- Never lubricate or supply fuel oil while the engine is warm.
- Never smoke during oil replenishing
- Never use bare lamp/light during oil replenishing
- After replenishing oil, be sure to fasten the fuel tank cap and clean off the oil spill.

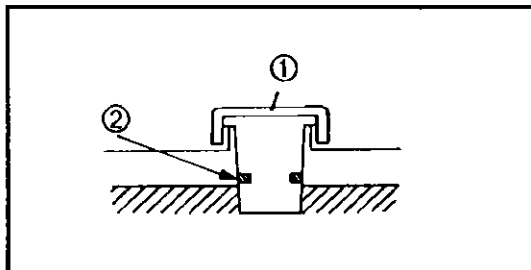
2. Checking fuel and oil

Fuel

Check the fuel level with the fuel gauge fitted on the fuel tank. If insufficient, replenish the fuel to the level slightly lower than the red mark. This is the standard level for fuel.



- ① Fuel gauge
- ② Empty
- ③ Full
- ④ Supply port

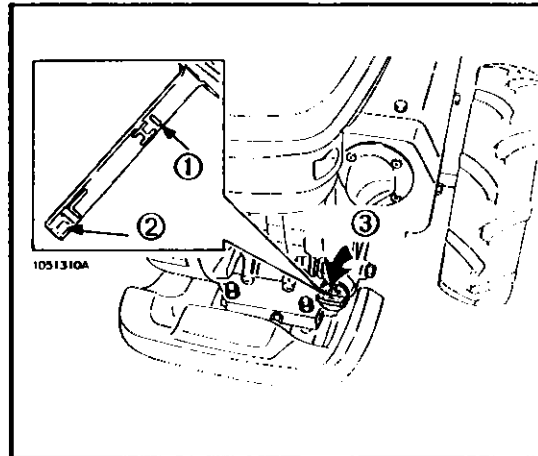


- ① Fuel cap
- ② Red mark

NOTE:
Filling oil beyond the red mark can cause fuel spill when the machine is tilted.

Engine oil

Take out the oil gauge and wipe off oil with a cloth. Reinsert and draw it out to see if the oil level is within the upper and lower marks on the gauge.



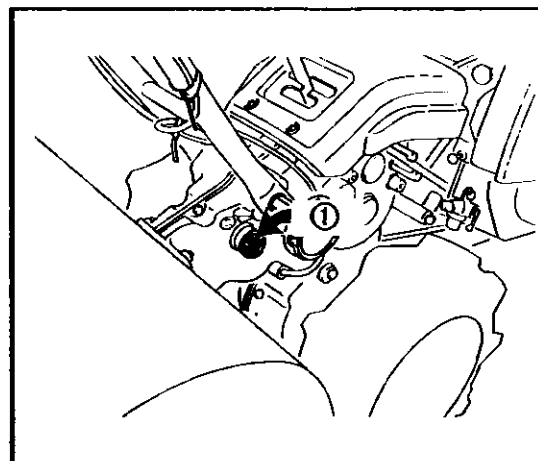
- ① Upper limit
- ② Lower limit
- ③ Oil supply port

NOTE:

- Check the oil level after the engine is stopped.
- Replenish the oil with engine kept level (horizontal).

Transmission oil

Keep the machine level (horizontal) and check the oil is present to the oil port.



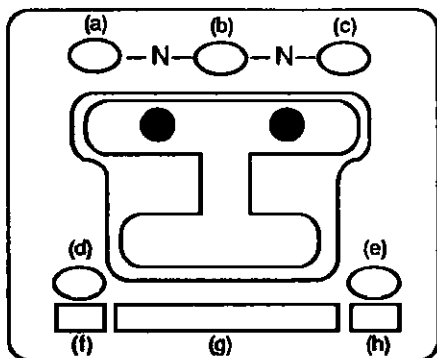
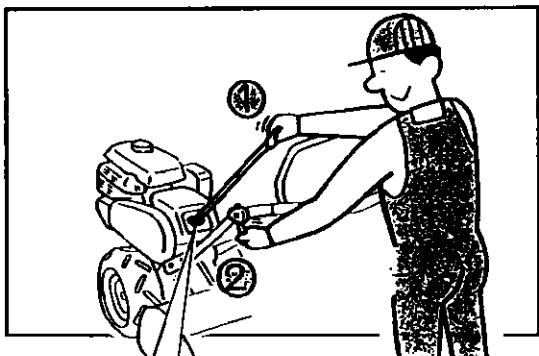
- ① Oil supply port

OPERATION

1. Starting/stopping engine

Starting engine

- (1) Set the shift lever at NEUTRAL position and the accelerator lever at HIGH position.

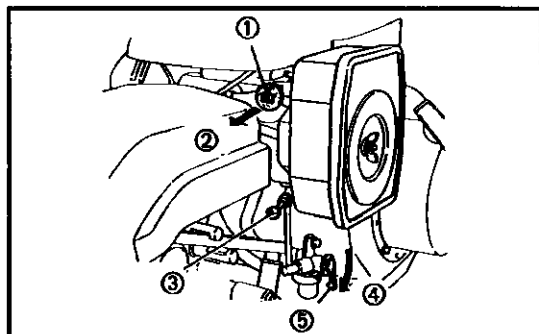


- ① Shift lever at N
 - ② Place accelerator lever at HIGH.
- | | | |
|----------------|------------|-----------|
| (a) BACK | (b) WORK | (c) MOVE |
| (d) REVERSE | (e) NORMAL | (f) UPPER |
| (g) RESIST BAR | (h) LOWER | |

- (2) Turn the fuel cock to OPEN position and pull the choke lever for CLOSE (engine start) position.

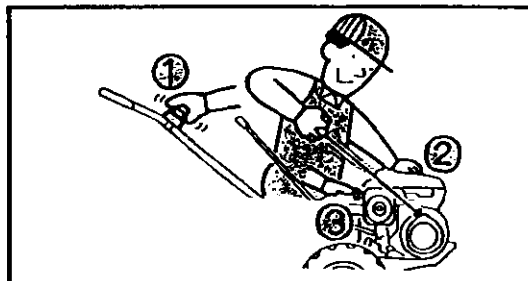
NOTE:

Do not use the choke lever while the engine is warm.



- | | |
|---------------|------------------|
| ① Choke lever | ② Pull for CLOSE |
| ③ Auto drain | ④ OPEN |
| ⑤ Fuel cock | |

- (4) Set the hand switch at START and jerk the recoil starter with force. Watching the engine condition, slowly push in the choke lever.



- ① Set hand switch at START.
- ② Pull recoil starter.
- ③ Slowly return back the choke lever.

NOTE:

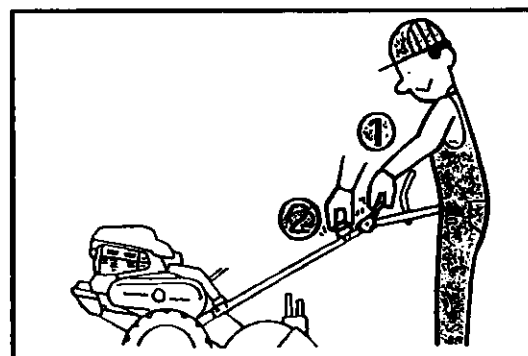
After starting, run the engine for 5 minutes approximately under no-load condition. (engine warmup)



- * Perform pre-checks before starting the engine.
- * Look around the surrounding and check the positions of the respective levers before trying to start.
- * Do not warm up the engine in a closed room.

Stopping engine

- (1) Set the accelerator lever at LOW position and set the hand switch at STOP.



- ① Set accelerator lever at LOW.
- ② Set hand switch at STOP.

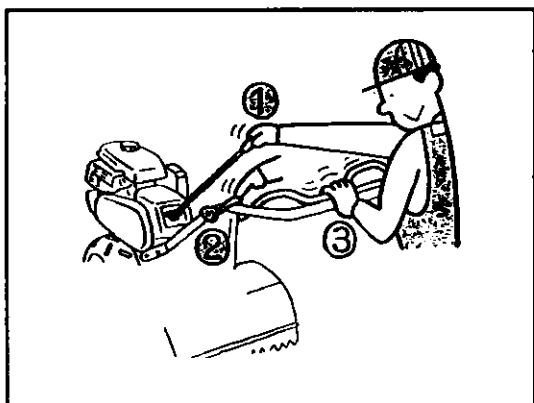
NOTE:

To store the machine for a lengthy period of time, place the fuel cock at CLOSE position. Pull the auto drain to remove the gasoline out of the carburetor.

2. Starting, turning, shifting, stopping

Starting

- (1) Set the shift lever at MOVE, WORK or BACK as wanted.
- (2) Adjust the engine revolution with the accelerator lever.
- (3) Place the main clutch lever at ON to start.



- ① Set shift lever at wanted position.
- ② Adjust revolution with accelerator lever.
- ③ Grip the main clutch lever in ON position.



Prior to starting, ensure safety watching around the machine.

Turning

Maneuver the handle toward the direction you want to advance.

NOTE:
In case of the model MRT6DX, set the differential lock lever at RELEASE.

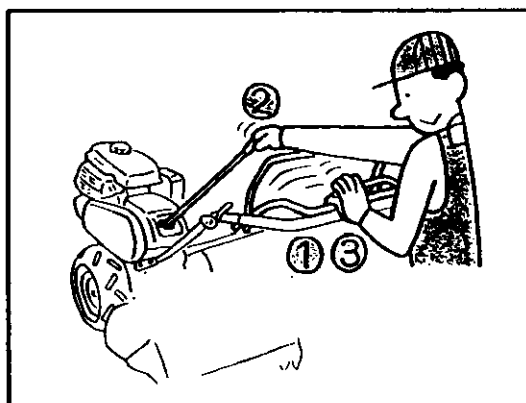


Watch your step when turning the machine. Be careful not to roll in your feet.

Shifting (Changing speed)

To change the speed of the machine, do the following:

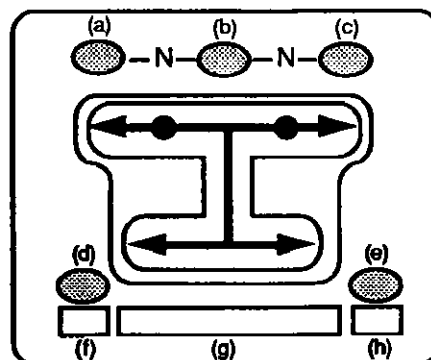
- (1) Release the main clutch lever and place it in the OFF position.
- (2) Maneuver the shift lever to a wanted shift.
- (3) Set the main clutch lever in the ON position. The machine can now be advance.



- ① Set main clutch lever at OFF.
- ② Set the shift lever in wanted speed.
- ③ Grip the main clutch lever in ON to start.

NOTE:

WORK position provides a slow advance and MOVE position provides a speedy advance.



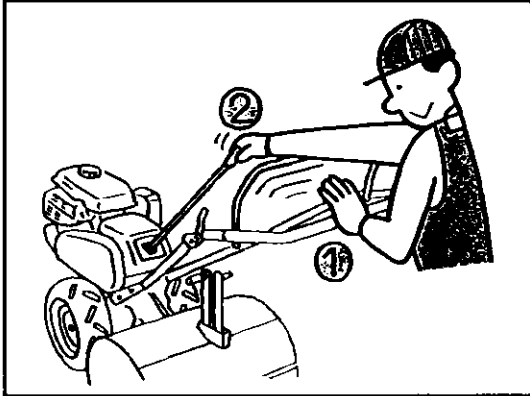
- | | | |
|----------------|------------|-----------|
| (a) BACK | (b) WORK | (c) MOVE |
| (d) REVERSE | (e) NORMAL | (f) UPPER |
| (g) RESIST BAR | (h) LOWER | |

NOTE:

Never set the shift lever in NORMAL or REVERSE when moving.

Stopping

- (1) Release the main clutch lever and set it in the OFF position. Now the machine will stop.
 - (2) Set the shift lever at NEUTRAL.
- * Before leaving your machine, never fail to turn off the engine.



- ① Set main clutch lever at OFF.
② Set shift lever at N.

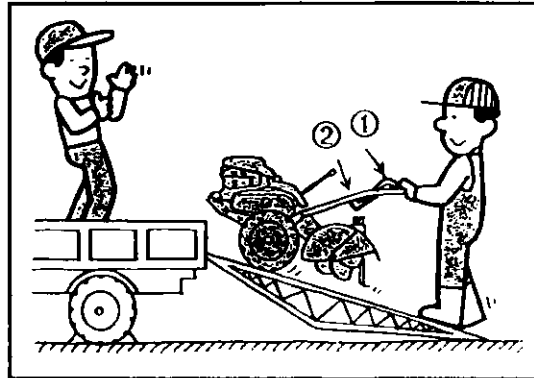
3. Loading/unloading on truck



- * Carry out loading or unloading the tiller onto the truck on the flat and firm ground.
- * Do not stand in front of the tiller - this is dangerous.
- * Fix the gangboard hook level with the truck's cargo area.

Loading/unloading

- (1) Select the flat and firm ground free from danger as well.
- (2) Prepare a robust gangboard.
- (3) Set the lever at WORK for loading, set it at BACK for unloading onto the truck.



- ① Main clutch lever at LOCK.
② Differential lock lever at LOCK.

<Gangboard requirements>

The gangboard should be of sufficient strength having the following requirements.

Length: More than 3.5 times the height of truck's cargo area.

Width: Suited for the width of the tiller

Strength: Sufficiently withstands the weight of the tiller.

Finish: Processed to prevent slippage.

NOTE:

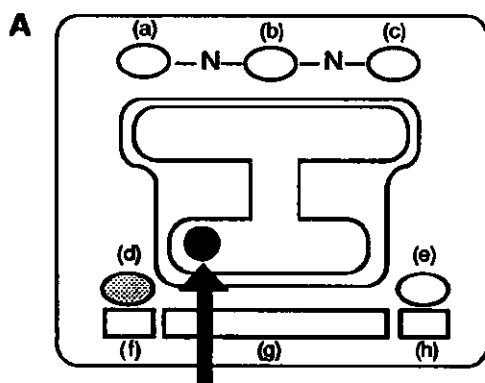
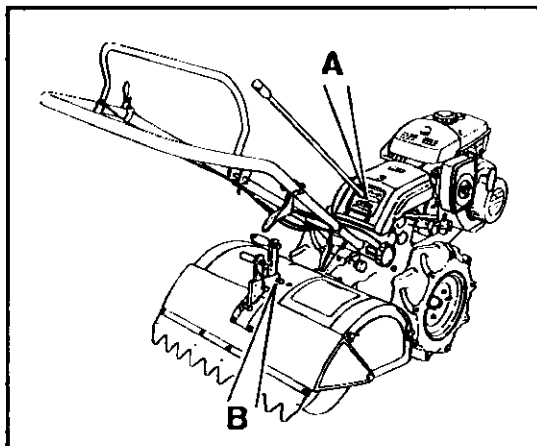
- * Never fail to set the differential lock lever at LOCK before loading or unloading. (DX version only)
- * Never operate the main clutch lever or differential lock lever on the gangboard while loading or unloading. (DX version)
- * Make sure the left and right tires are just along the center of the gangboard.
- * Be careful that the gravity of the tiller may abruptly deviate when crossing the junction of the gangboard and the truck.
- * Securely fasten the tiller on the truck using blocks to the tires.

ADJUSTMENT WITH RESPECT TO WORKS

1. Tilling work

Tilling hard farm

Use the rotary harrow in reverse revolution.
Fix the resist bar at UPPER.

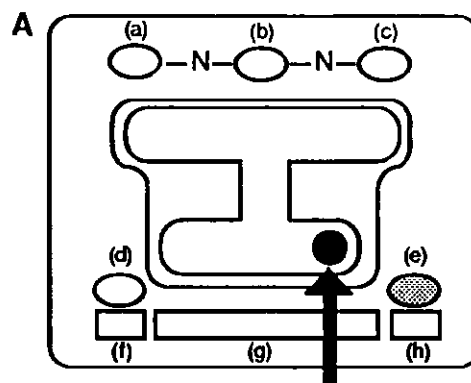
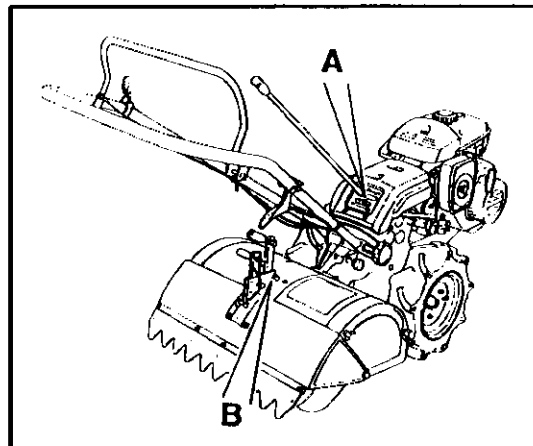


Set the shift in REVERSE.

(a) BACK (b) WORK (c) MOVE
(d) REVERSE (e) NORMAL (f) UPPER
(g) RESIST BAR (h) LOWER

Tilling soft farm

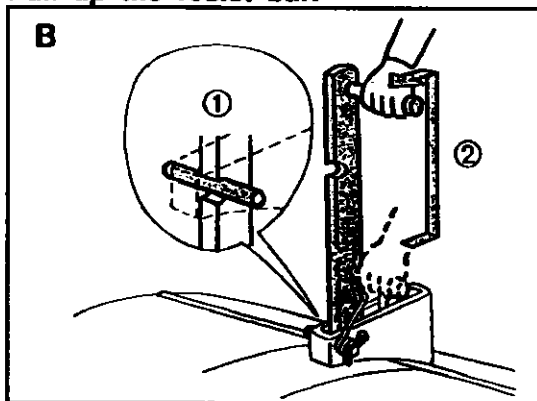
Use the rotary harrow in normal revolution. Fix the resist bar at LOWER.



Set the shift in NORMAL.

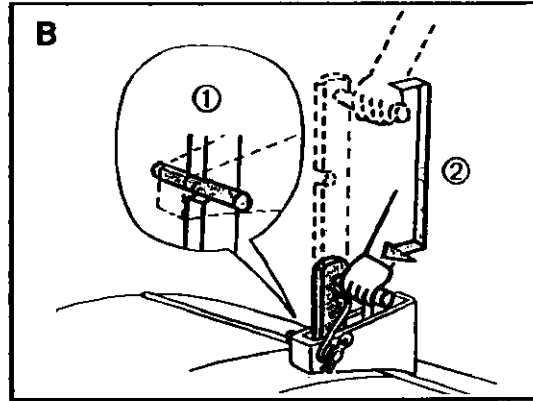
(a) BACK (b) WORK (c) MOVE
(d) REVERSE (e) NORMAL (f) UPPER
(g) RESIST BAR (h) LOWER

Pull up the resist bar.



① Hang the cut on the pin.
② Pull toward you then pull up.

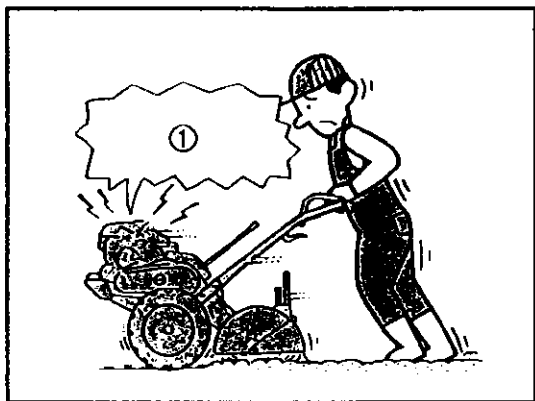
Pull down the resist bar.



① Hang the cut on the pin.
② Pull toward you then push down.

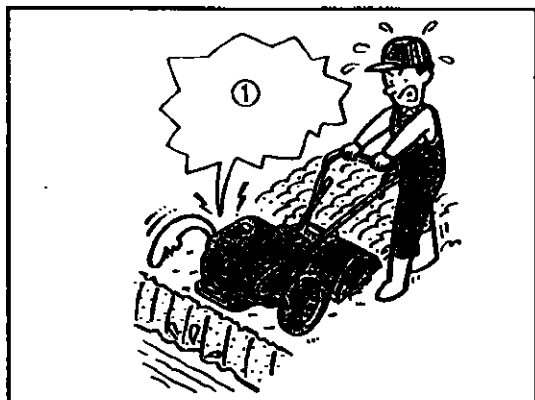


- * To remove entangled stuff from the tilling part, never fail to stop the engine.
- * Gently support the handle during work; do not press down with force. If pressed, the machine may jump forward abruptly.



① Do not apply force on the handle.

- * Releasing the handle will disengage the clutch, stopping the machine.
- * While the rotary harrow is running, the tiller may be forced forward. To avoid a collision or precipitation, do not advance toward the river or cliff.



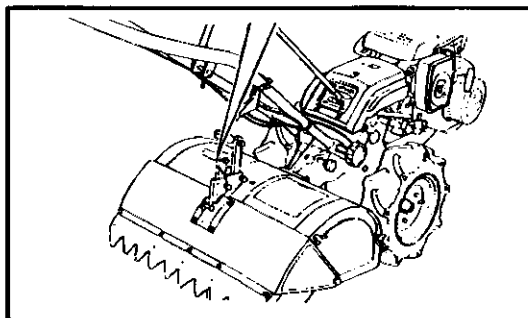
① Do not advance toward the river or cliff.

2. Adjusting tilling depth

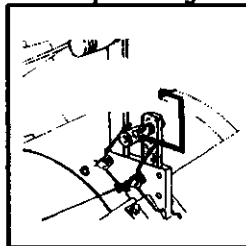
Tilling depth is adjusted by moving up or down the depth adjust bar.

Pull the black depth adjust bar toward you and displace the bar from the retention cut. Move the bar up or down and engage it with a cut at proper height.

To increase the tilling depth, move the bar up. To decrease the tilling depth, move the bar down.



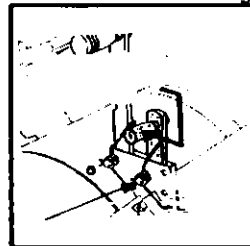
For deeper tilling



Pull the bar toward you and move up.

Fit the cutout on the pin.

For shallower tilling

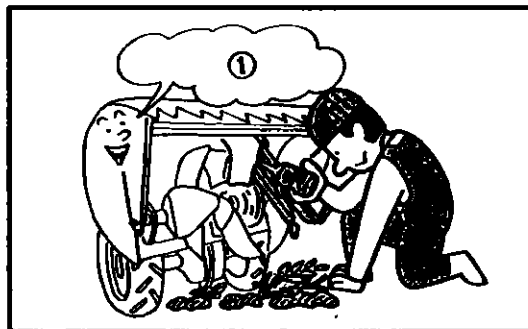


Pull the bar toward you and move down.

Fit the cutout on the pin.

If the resist bar or depth adjust bar gets heavy, do the following operation:

1. Disengage the main clutch lever.
2. Stop the engine.
3. Remove soil or grasses from the resist bar or depth adjust bar. Apply oil on them.

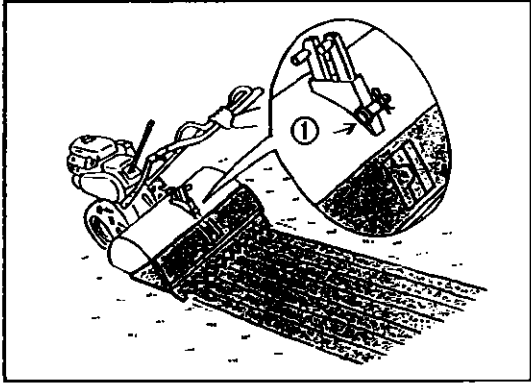


① Remove soil or grasses and apply oil.

3. To match tilling conditions

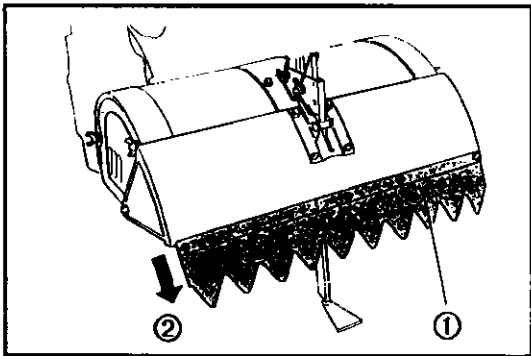
Level tilling

Remove the rotary harrow cover fixing pin. This permits level and uniform swaths with distinct stripes.



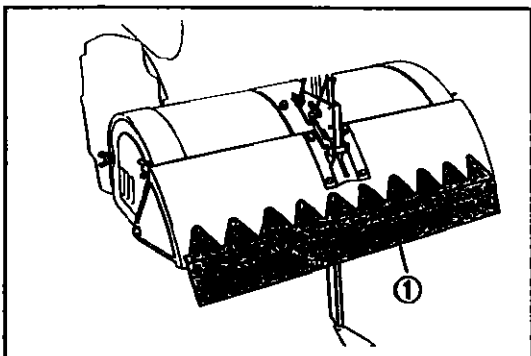
① Fixing pin

To ensure soft stripes, move the rear sheet fixing position to the lower holes.



① Use lower holes.
② Rear sheet

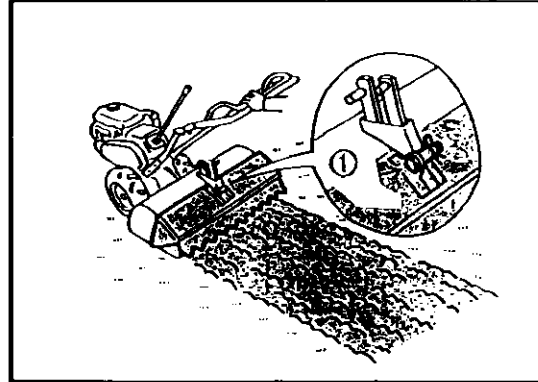
If stripes are not required, fit the rear sheet up side down.



① Fit the rear sheet up side down.

Inward ridge tilling

Fix the the rotary cover at a raised position, and the inward ridge tilling is performed at a medium height.



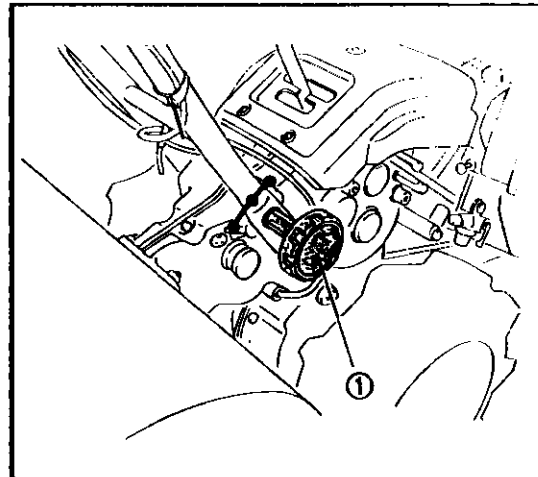
① Fixing pin

NOTE:

The rotary cover may collect soil on its inside. Remove the soil from time to time.

4. Adjusting handle height

To match your physical building, adjust the height of the handle. It can be adjusted in three steps. To do this, remove the handle fixing knob and fix the handle at an adequate height.



① Handle fixing knob

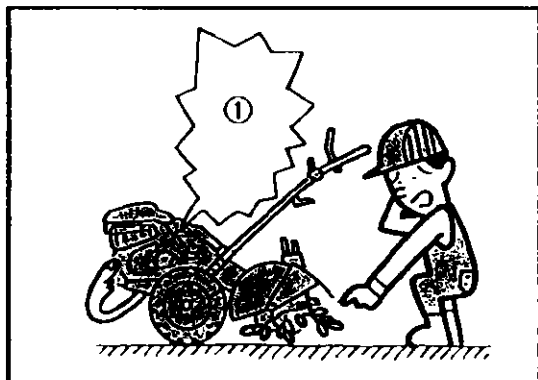
POST-OPERATION CARE

1. Daily maintenance



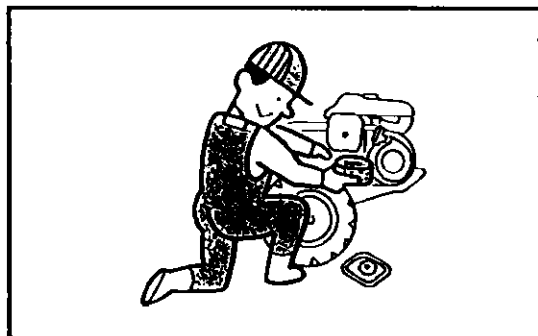
Stop the engine before performing the maintenance or daily care.

- Clean off soil and dirt from the rotary harrow.

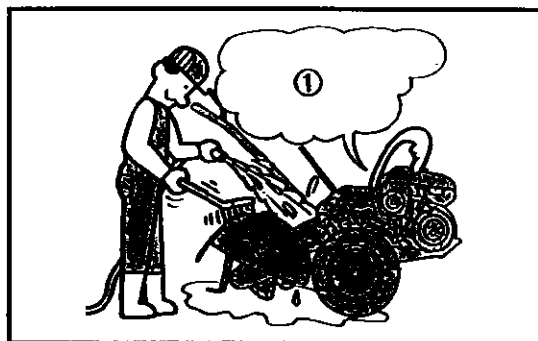


① Stop the engine prior to maintenance.

- Clean off soil and dirt from the air cleaner.



- Wash the machine with fresh water. Be careful not to spray water to the air cleaner intake port.



① Wash me with water paying attention not to spray the air cleaner intake port.

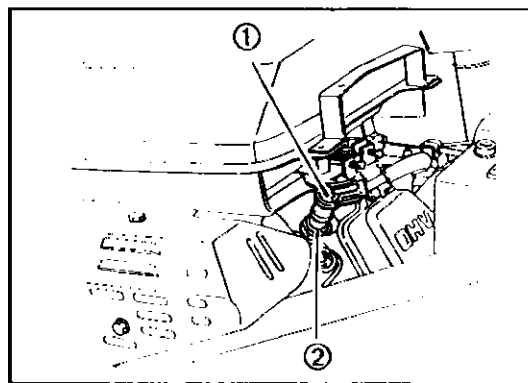
- Fill grease to the grease nipples.

2. Care for lengthy storage

If the machine is not to be used for a long period of time, take the following maintenance:

Remove the spark plug and inject about 10 cc of engine oil #30 through the plug hole. Pull the recoil starter 2 or 3 times, then refit the plug in position. Lightly pull the recoil starter and stop pulling when you feel heavy (compressed point). Securely press the plug cord.

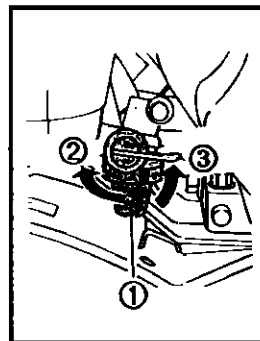
Empty the fuel tank, carburetor and fuel strainer.



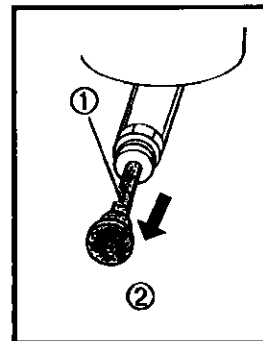
- ① Plug cord
- ② Spark plug

<Removing fuel>

- (1) Remove the fuel from the fuel tank.
- (2) Close the cock to CLOSE.
- (3) Remove fuel from the fuel strainer.
- (4) Pull the auto drain knob to remove fuel from the carburetor. Keep it pulled until the fuel is completely drained out.



- ① Strainer
- ② Loosen
- ③ Close



- ① Auto drain
- ② Pull to remove fuel from the carburetor.

PERIODIC INSPECTION AND ADJUSTMENT

Periodic checks ensure an extended lifetime of your machine

Periodic inspection and maintenance in off-season will ensure the preferable conditions of your machine. To keep your machine working in good conditions, ask your service representative for a regular inspection every year. It is recommended to replace fuel pipes, rubber hoses, and electrical wires every two years.

1. Check intervals

CHECK POINT	RATING	ACTION	INTERVAL
Engine oil replacement	MRT4: 0.5 L MRT6: 0.6 L MRT6(s)DX: 0.6 L	Engine oil class SC or better Summer (>20°C): SAE#30 Autumn, Spring: SAE#20 Winter(<10°C): SAE10W-#30	1st: 20 h 2nd: 100 h
Replacement of transmission oil	MRT4: 3.2 L MRT6: 3.2L MRT6(s)DX: 2.8L	Yanmar transmission oil #90	1st: 50 h 2nd: 100 h
Cleaning of air cleaner		Wash with kerosine or replace the cleaner	Check proper to work.
Differential lock lever (DX version)	1-3 mm	Play at part A	
Main clutch lever	10 mm approx.	Check by deflection when pressed with a finger	
Air pressure in tires	1.2 kg/cm ²		
Spark plug	0.8-0.9 mm	Spark gap (Slit of electrodes)	
Engine fixing bolts		Fasten	
Handle fixing knobs/bolts		Fasten	

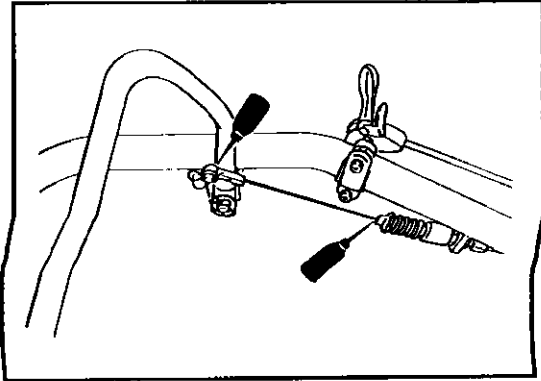


- Prior to check or maintenance, stop the engine completely, disengage each lever.
- Refit the covers and bolts without failure. Otherwise your close may be caught in the rotating parts.

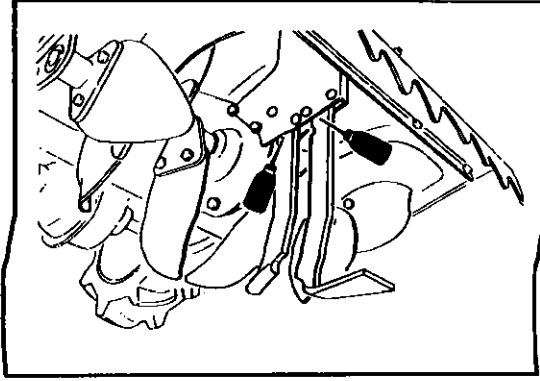
2. Oiling and greasing

Apply oil and grease to the following points at regular intervals.

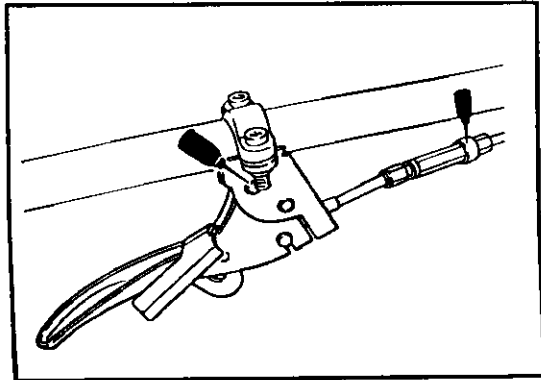
Main clutch wire, lever, joint



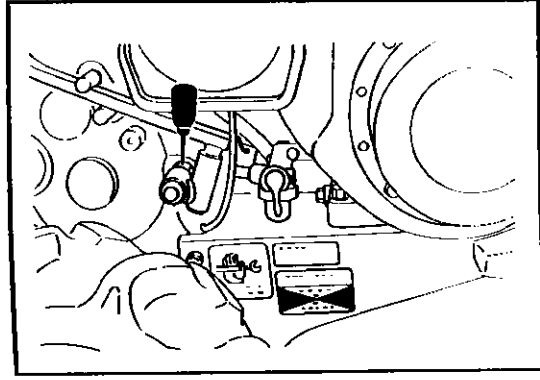
Resist bar and depth adjust bar



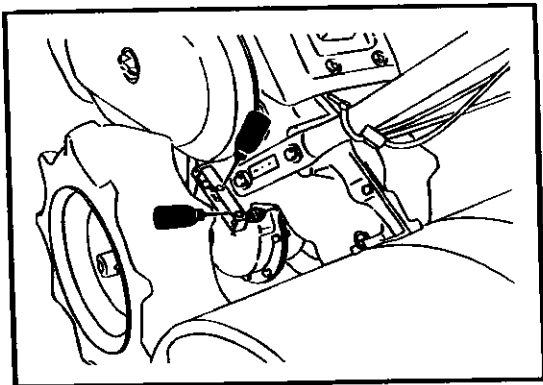
Differential lock wire, lever, joint



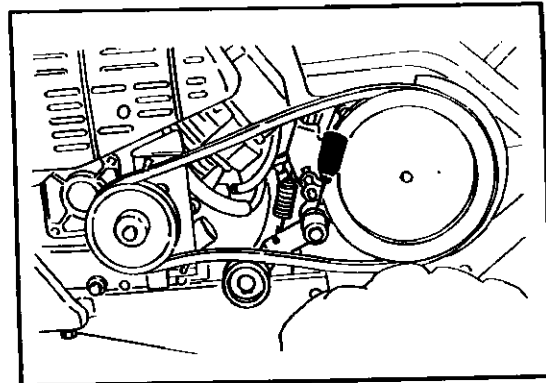
Shift lever axis



**Differential lock lever fulcrum
(Transmission side)**



Tension roller axis



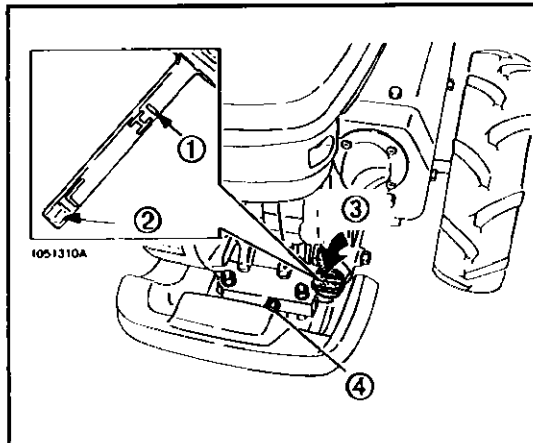
3. Replacing oil

Aged or contaminated oil not only reduces the performance but also causes a trouble in operation. Periodically remove the old oil and replenish the new oil to the specified level.

Engine oil

<Check>

Open the oil cap and take out the oil gauge. Wipe off oil with a cloth. Reinsert and draw it out to see if the oil level is within the upper and lower marks on the gauge.



- ① Upper limit
- ② Lower limit
- ③ Oil supply port
- ④ Drain plug

NOTE:

- Check the oil level after the engine is stopped.
- Replenish the oil with engine kept level.

<Replacing oil>

Remove remaining oil through the drain plug on the lower part of the engine. Replenish new oil through the oil supply port to the specified level by the oil gauge.

NOTE:

- Oil can be easily removed while the engine is warm.
- Use the specified oil.

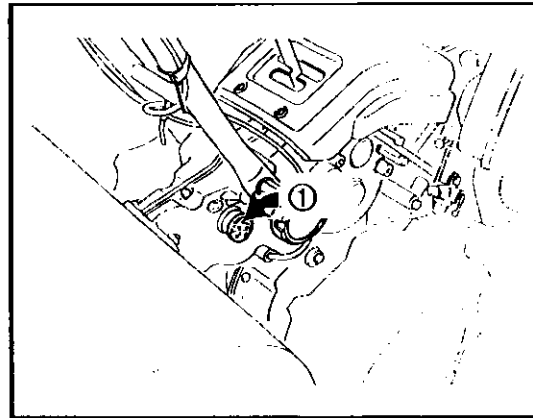
Transmission oil

Check

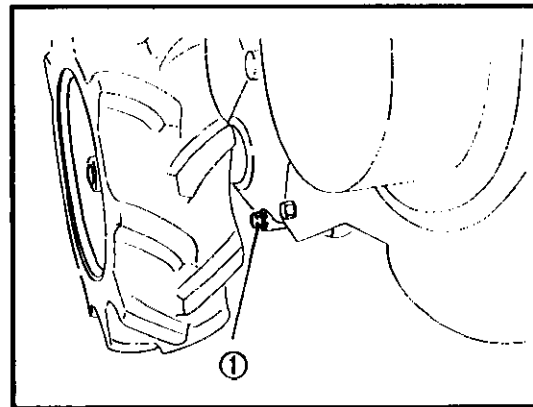
Check for leak of oil.

Replacing oil

Detach the drain plug on the bottom of the transmission case and remove the remaining oil through it. Refill new oil as far as slight overflow is seen at the check bolt.



- ① Oil supply port



- ① Drain plug

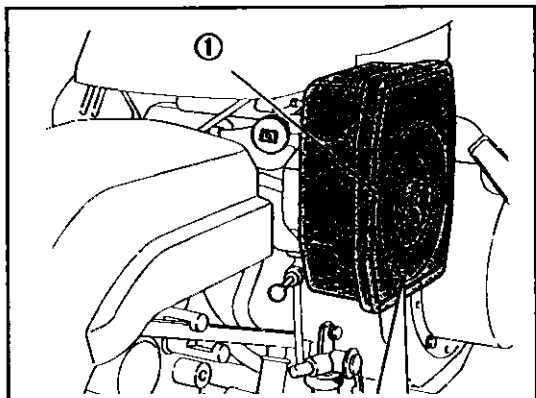
NOTE:

Oil can be easily removed while the transmission block is warm.

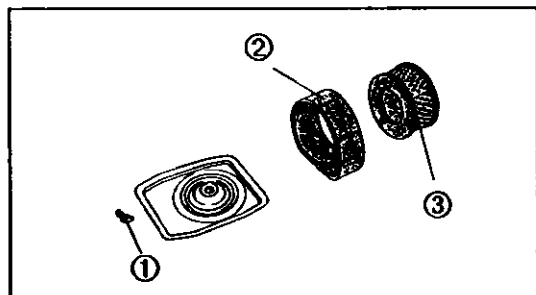
4. Cleaning and replacing air cleaner

The air cleaner serves to keep the engine in favorable conditions by removing dust in air and preventing the cylinder liner and piston ring from wearing.

Clean the air cleaner element every 10-20 hours (every 5 hours in a dusty environment) and replace it every two years.



① Air cleaner



- ① Wing nut
- ② Sponge
- ③ Element

<Cleaning air cleaner element>

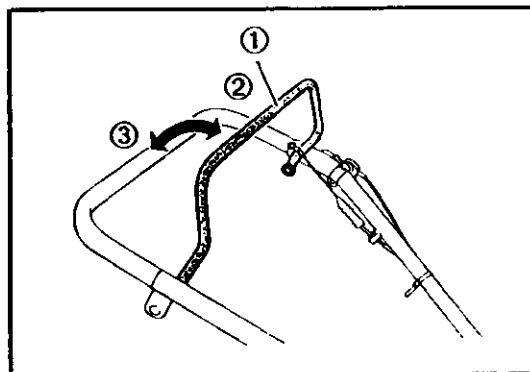
Loosen the wing nut and take out the element. Blow air from inside of the element or pat it to take off dust. Be careful not to damage fins. Refit the element and fasten with the wing nut.

5. Adjusting wire tension

Main clutch lever

<Check>

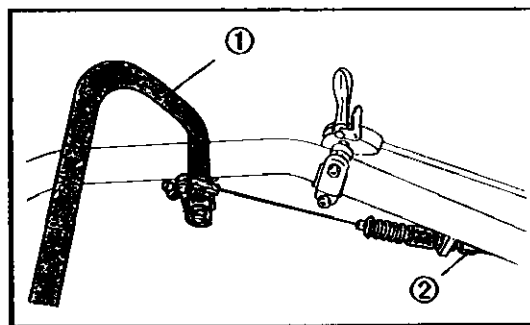
Make sure the clutch is engaged and disengaged. Check that the belt will not be moved when disengaged.



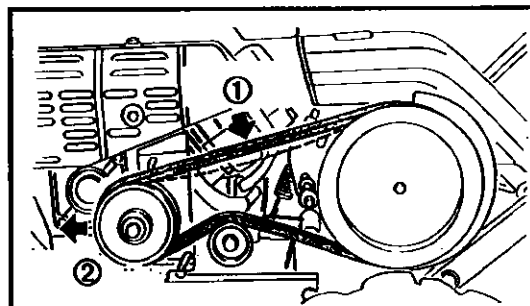
- ① Main clutch lever
- ② OFF
- ③ ON

<Adjustment>

Adjust the belt tension with the main clutch wire adjuster so that there is no belt slippage during work. If there is no margin for further adjustment, displace the engine forward and obtain a deflection of approximately 10 mm when pressed at the center with a finger. The clutch should be engaged for this adjustment.



- ① Main clutch lever
- ② Wire adjuster

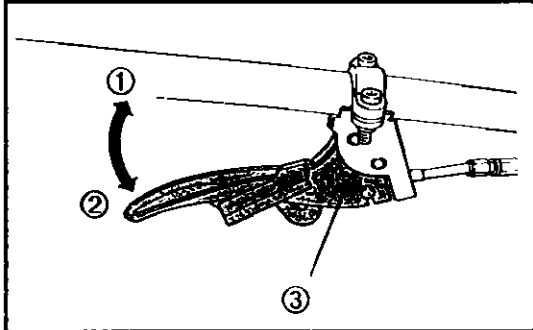


- ① Deflection Approx. 10mm
- ② Shift the engine forward

Differential lock lever (DX version)

<Check>

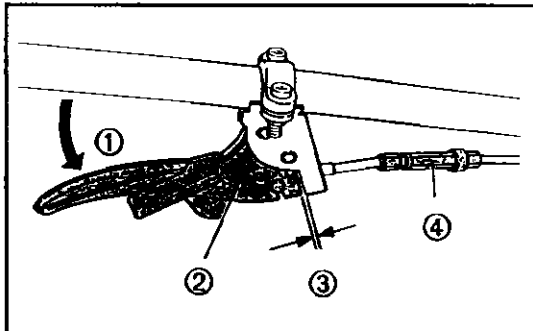
Make sure the lever works for LOCK and RELEASE as intended.



- ① Lock
- ② RELEASE
- ③ Differential lock lever

<Adjustment>

Remove the slackness in the inner wire under unlocked condition (differential lock lever at RELEASE). Adjust the inner wire tension for 1-3 mm of play at part (A) illustrated below.



- ① RELEASE
- ② Differential lock lever
- ③ (A) Play 1-3 mm
- ④ Inner wire

NOTE:

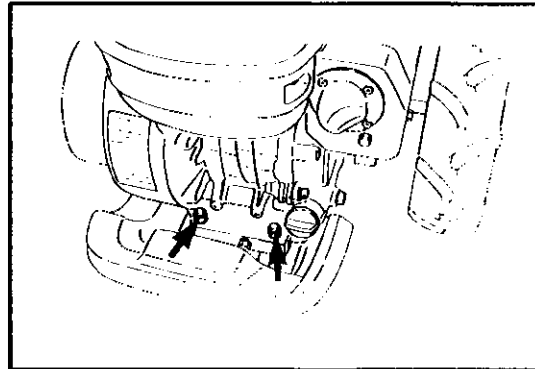
Make sure of the operation after adjustment is finished.

6. Adjusting tire air pressure

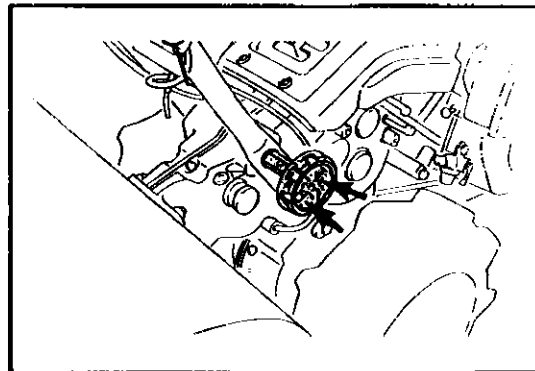
The tires should be adjusted for air pressure of 1.2 kg/cm². Make sure the left and right tires have the equal pressure, otherwise, you may lose the control over the handle during work.

7. Fastening

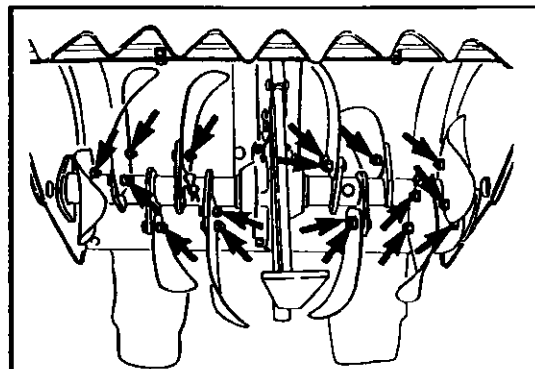
Engine fixing bolts



Handle fastening knobs, handle fixing bolts



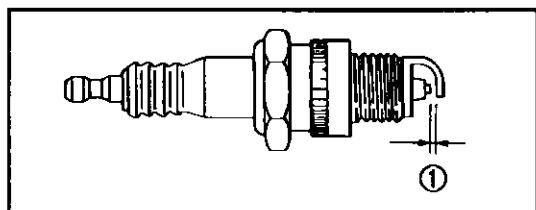
Tilling tines



8. Checking spark plug

- (1) Take out the spark plug periodically and check the electrodes for burning or wearing. Clean the spark gap with a wire brush. Adjust the gap for 0.8-0.9 mm.
- (2) If the electrodes are found damaged, replace the plug. Defective plug may lead to engine troubles or poor exhaust effect.

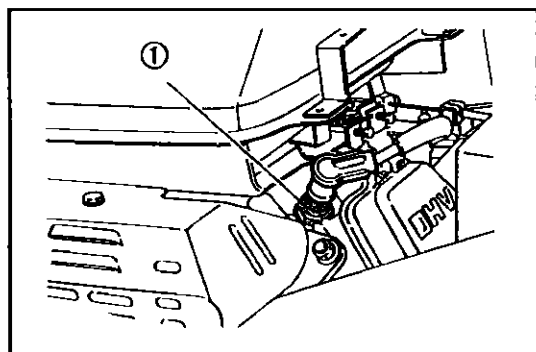
Spark Plug	NGK (BP6ES) DENSO (W20EP-U)
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① Spark gap

NOTE:

Spark gap should be 0.8-0.9 mm



① Spark plug

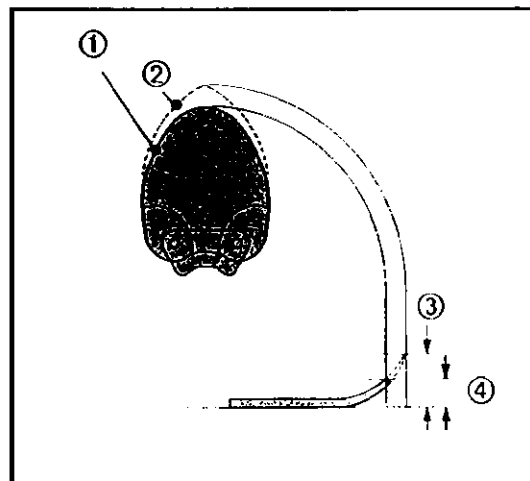
9. Checking tilling tine

<Check>

Check the tilling tines for damage, bending, or wearing. Also check a play at the fixing point.

Replacement Interval

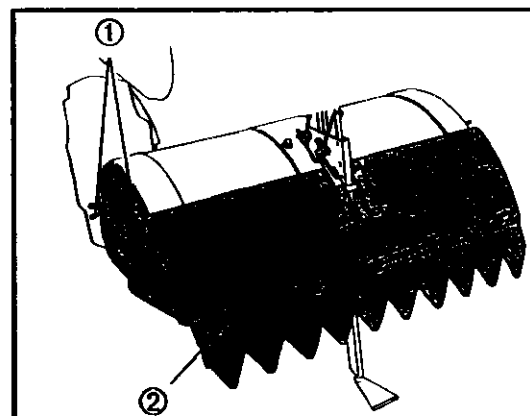
Place the tines on the flat surface and watch the height of the tip. If it is less than 30 mm, it must be replaced with new one.



- ① Tine needing replacement
- ② Shape of brand new tine
- ③ Brand new: 50 mm
- ④ Replace if less than 30 mm.

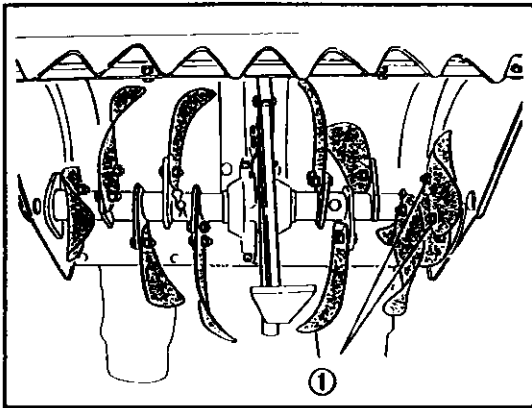
<Replacement>

For easy replacement of a tine, lift the cover for the rotary harrow. Removal of the whole side cover further facilitate the replacement.



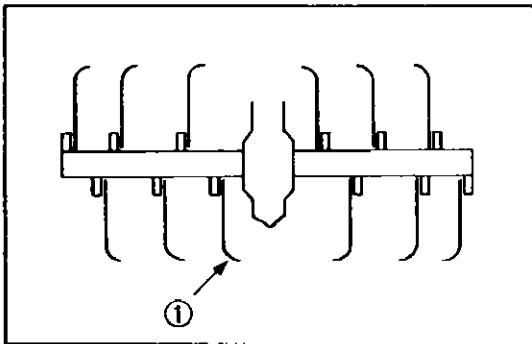
- ① Remove wing nuts (left and right).
- ② Remove fixing pin.

Remove the tine fixing bolts, two on each tine.



① Fixing bolts (2 on each tine)

Tine tip must be fit inward.



① Tine tip must be fit inward.

TROUBLESHOOTING

Be sure to stop engine before checking

Symptom	Probable Cause	Action to be taken
Pulling recoil starter fails to start engine	(1) Running out of fuel (2) Incorrect starting procedure (3) Fuel cock is closed (4) Fuel contaminated with dust or water (5) Defective spark plug	(1) Replenish oil. (2) Follow the correct procedure. (3) Open the fuel cock. (4) Dewater the carburetor and fuel strainer. (5) Take out and dry the plug. Adjust the sparking gap or replace the plug with new one.
Low engine power	(1) Air cleaner clogged with dust (2) Insufficient engine oil (3) Too tense the belt (4) Low engine revolution (5) No compression	(1) Take out the filter element and clean or replace it. (2) Replenish the engine oil. Replace contaminated oil with new oil. (3) Adjust the tension of the belt. (4) If the accelerator lever has been displaced, replace to the original position. (5) Fasten the spark plug and cylinder head with respective bolts. The piston ring may be worn. Consult with your service representative.
Heavy vibration	(1) Engine vibrating (2) Handle vibrating	(1) Fasten the engine fastening bolts. (2) Fasten the handle fastening knobs.
Main clutch lever engaged, but unable to travel	(1) Belt slippage	(1) Adjust the belt tension.
Differential lock lever engaged, but not locked (DX version)	(1) Wire prolonged	(1) Adjust the wire length.
Resist bar or depth adjust bar not controllable	(1) Grasses and mud entangling on the bars	(1) Remove grasses and mud. Apply oil to the moving parts.

SPECIFICATIONS OF YANMAR ROTARY MINI TILLER

MODEL	MRT4	MRT6	MRT6DX	MRT6SDX
Physical				
Length overall (mm)	1410			
Width overall (mm)	575			
Height overall (mm)	1040	1050		
Weight (kg)	73	77	79	80
Main clutch system	Deadman clutch (belt tension)			
Travelling speed (m/s)				
Stage 1	0.30	0.32		
Stage 2	0.79	0.84		
Reverse	0.27	0.29		
Tire size	3.50-6	3.50-7	3.50-7	3.50-7
Rotary harrow				
Transmission shift	Normal - Reverse, one stage each			
Tiller shaft speed (rpm)	Normal: 208 Reverse: 230			
Swathe width (mm)	500			
Tiller shaft				
Shape	Round pin hole			
Total length (mm)	216			
Pin hole position	184			
Shaft diameter (mm)	ø25			
Engine				
Type	GA120SKL	GA160SKL	GA160SKL	GA160SZKL
Displacement (cc)	113	154		
Maximum output (ps)	4.0	5.8		
Starter system	Recoil (Finger start)			Self recoil
Spark plug	NGK-BP6ES			
Fuel tank capacity (L)	2.2			

STANDARD ACCESSORIES

NO	CODE	ITEM	Q'TY	REMARKS
1	1A1540-87030	Tool box	1	
2	160330-92730	Screwdriver (Phillips)	1	
3	160110-92700	Box spanner 21	1	
4	28110-100120	Spanner 10 x 12	1	
5	28110-120140	Spanner 12 x 14	1	
6	1A2170-88900	Operation manual	1	
7		Safety guide	1	

MAJOR CONSUMABLE ITEMS

NO	ITEM	NO	ITEM
1	V-belt SB-36H	5	Spark plug NGK-BP6ES
2	Accelerator wire	6	Wheel oil seal
3	Main clutch wire	7	Tiller shaft oil seal
4	Differential lock wire (DX version only)		

ATTACHMENTS

1. Use of Attachments

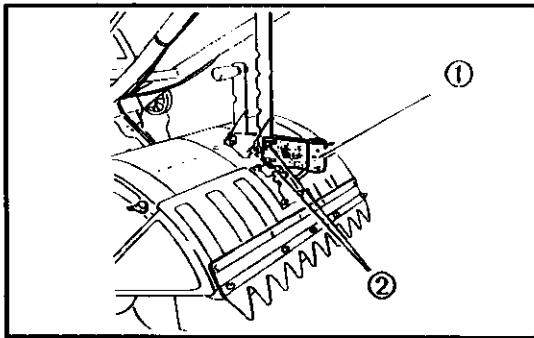
Hilling plate and transit wheel

- (1) Lift the rotary cover and fix it with the fixing pin attached to the cover.
- (2) Move up the red resist bar.
- (3) Place the black depth adjust bar at its top position.
- (4) Fix the attachment fixing bracket (option) with two pins.

Attachment fixing bracket:
Code No. 7S0070-68000

NOTE:

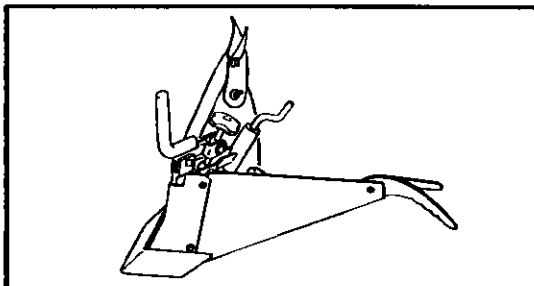
To install an attachment, keep the rotary cover lifted up.



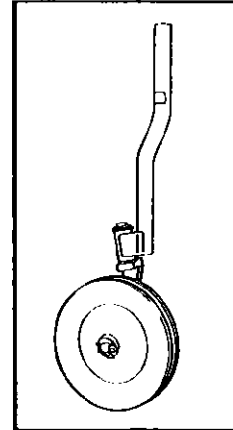
- ① Attachment fixing bracket
② Pins(2pcs)

Hilling plate Code NO.

KND: 7S0022-44000
MM: 7S0022-45000
Apollo: 7S0022-46000



Transit wheel Code No.
7S0055-47000



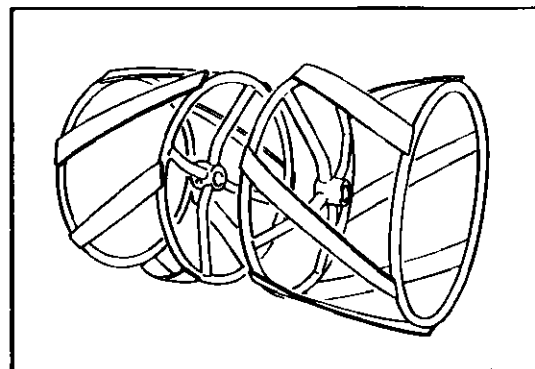
Spiral weeder

Code No. 7S0035-22000

Take off the side cover of the rotary harrow and fit the weeder taking the same way as for tine replacement.

Precautions:

- Set the red resist bar upward.
- Use the reverse rotation.
- If grasses are apt to collect in the rotor, perform the work with the side cover detached.



NOTE:

For further information, consult the operation manual for the respective attachment.