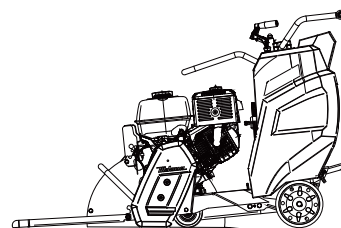


Mikasa

CONCRETE CUTTER

MCD-T18



INSTRUCTION MANUAL

en



<http://www.mikosas.com>

602-02602



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1. INTRODUCTION

- This instruction manual describes the proper methods for using Mikasa CONCRETE CUTTER, as well as simple checks and maintenances. Be sure to read this instruction manual before operation, in order to get full use of the excellent performance of this machine, as well as to improve your operation and to perform engineering work effectively.
- After reading this manual, store it in a handy location for easy reference.
- For details about the engine of this machine, see the separate instruction manual.
- For inquiries about repair parts, parts lists, service manuals, and repairs, please contact the store where you purchased the product, our sales office, or the Mikasa Parts Service Center. For parts lists, please visit our homepage at: <http://www.mikasas.com/> where you can access Mikasa WEB parts lists.

The illustrations in this manual might slightly differ in part from the machine you actually purchased due to design changes.

2. MACHINERY OVERVIEW

Application

Mikasa Concrete Cutter is used to cut the concrete or asphalt road surface by Diamond Blade that is attached on its Blade shaft. Please choose machine type by cutting depth, and then choose appropriate blade to match the spot situation, such as material age, presence or absence of reinforcement in the concrete.

Warning About Incorrect Applications And Techniques

Please use this machine to cut plain concrete, reinforced concrete and asphalt only.

Do not cut sediment, for that it flies into pieces and injures man around the machine.

This cutter can be equipped with diamond blade only. Do not attach resinoid blade on this machine. Please pour water to blade at cutting except using dry-type blade, for that conglutination of the blade or Blade chip flies into pieces.

Do not use this machine in the state that you turned more than the number of turn in accord with the blade, for that conglutination of the blade or Blade chip flies into pieces.

Do not use this machine in instability, or in a rough ground, for that conglutination of the blade or Blade chip flies into pieces.

Do not use this machine to cut a secondary product concrete.

Structure

Engine of Concrete Cutter is fixed on a main body base, and conveys power to Blade shaft with the Ribbed belt. The way of adjustment of Ribbed belt tension is making Engine slide.

Belt cover, Handle guide, Handle for elevating the blade, and Blade cover which can be put on and off easily is attached on Engine Base. Cutting depth is adjusted by rotating Handle for elevating the blade through Blade Arm that is equipped with Front wheel The way to travel the machine is pushing the machine directly.


Power Transmission






Air-cooled petrol engine is amounted on Mikasa Concrete Cutter as power source.

Pulley is attached on Engine shaft for driving Blade shaft, and Diamond Blade is attached on Blade shaft. The cutting depth can be adjusted to change the Front wheel position by Handle.

The way of driving the machine while cutting is pushing the handle.

3. WARNING SIGNS

The triangle shaped  marks used in this manual and on the decals stuck on the main body indicate common hazards. Be sure to read and observe the cautions described.

 Warning labels indicating hazards to humans and to equipment.	
 DANGER	Denotes an extreme hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, is likely to result in serious injury or death.
 WARNING	Denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in serious injury or death.
 CAUTION	Denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in injury to people and may damage or destroy the product.
CAUTION (without at )	Failure to follow the instructions may result in damage to property.

4. CAUTIONS FOR SAFETY

4.1 General Cautions

WARNING

- Do not work with this machine, when
 - you are tired or sick and not feeling well,
 - you have taken medicine or drug, or
 - you have had a drink.



CAUTION

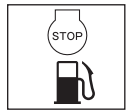
- Read this instruction manual carefully and handle the machine as described so that you can work safely.
- For details about the engine, refer the separate instruction manual for the engine.
- Make sure you thoroughly understand the construction and operation of the machine.
- Please check each part before work, and execute the scheduled check and alignment regularly.
- To work safely, always wear protective clothing (helmet, safety glasses, safety shoes, ear plugs etc.) and appropriate work clothes.
- Please wear Hearing protector (noise protective equipment of ear muff or ear stoppers) by all means.
- Always check the machine to make sure that it is normal before starting operation.
- The decals on the machine body (operating methods, warning decals, etc.) are very important to ensure safety. Keep the machine body clean so that they can be read at all times. If any decal cannot be read, replace it with a new one.
- It is very dangerous if children come into contact with the machine. Take the utmost care how and where the machine is stored.
- Before performing any maintenance, be sure to turn the engine off.
- Mikasa does not accept any liability for accidents or problems caused as a result of not using genuine Mikasa parts or if the machine has been modified.



4.2 Refueling Precautions

DANGER

- Always refuel in a well ventilated area.
- Make sure to stop the engine and wait until the engine cools down when refueling.
- Select a flat surface area with no flammable material around for refueling. Be careful not to spill the fuel. Wipe off well if there is any spill.
- Never put fire near the machine during refueling. (Especially, be careful about smoking.)
- If you fill to the top of the fuel tank inlet, fuel might spill out from the tank, and it becomes dangerous
- After refueling, tighten the tank cap well.



4.3 Location And Ventilation Precautions

DANGER

- Do not run the machine in an unventilated location, such as indoors or inside a tunnel. The exhaust gas from the engine contains toxic gases such as carbon monoxide and is very hazardous.
- Do not operate the machine near open flames.



4.4 Precautions Before Starting

CAUTION

- Check the clamping condition of each part. Cause the big failure that does not think that a screw loosens by vibration. Tighten the screw well.
- Confirm that the diamond blade does not have anomaly such as deficit of the blade chip or the crack of the board.
- If the machine were not run more than 3 months, be sure to start at low speed in a few minutes to warm up thoroughly, for the reason to avoid engine seizure by oil film shortage.

4.5 Precautions During Work

CAUTION

- When starting and working with the machine, confirm that neighboring people and obstruction are safe.
- Always pay attention to foothold and work in easy position that allow to keep your machine in good balance.
- Be careful not to touch muffler and engine body as it becomes hot in operation or just after operation.
- Discontinue operation promptly whenever your machine goes deficient or you notice any abnormality.
- Be sure not to make the cutter with blade stand-by for work.
In the case to be without avoidance, be sure to run the engine at low speed possibly in a short time.
(In case of running the engine at high speed at the above position for long time, it might occur the engine seizure by oil film shortage.)
- Be sure to stop engine before leaving the machine. Also shutdown engine for transporting the machine, and close the fuel cock.
- Mount blade cover by all means, and use it.
- Because engine turns blade when start, be careful enough. Do not bring legs close especially.
- Be careful enough so that be not rolled up your hand or clothes in reel (inside of the belt cover).



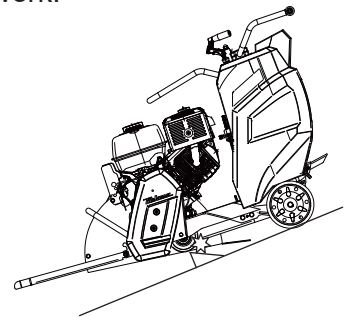
4.5 Precautions During Work

DANGER

Precautions in inclined area

When you use machine on inclined area, various risk is accompanied. Adhere rigidly to the following precautions to a minimum, and try for further safety retention. When you cannot get safety, never use it.

- Do not leave machine in the inclined area. There is danger to cause a serious accident when machine begins to move by any chance.
- In the inclined area, grasp a handle well, and never separate a hand from machine. Machine begins to move in tare weight at the moment when you separated a hand, and there is danger to cause a serious accident.
- When you work in inclined area, be located in the upper part of the slope for machine by all means, and let machine face straight it below for a slope, and work.
- Stop the machine at flat space. When you stop machine in inclined area out of necessity, lower straight machine after having stopped the engine by all means, do wheel stopper to the front wheel for safe retention by all means. When be collided by an automobile and be shaken in right and left, even if you put on wheel stopper down the front wheel, the machine climbs wheel stopper and begins to move, and be careful this risk is very likely. Even if you put on wheel stopper down the back wheel, there is not effect. In addition, a parking brake of the rear wheel is not a thing to guarantee certain fixation of the machine. Use wheel stopper for a front wheel on the occasion of a stop by all means.
- When put wheel stopper, never go in the front side of the machine. When machine has begun to move by any chance. There is the danger of serious injury or decease, by the physical truncation with blade and the conflict of machine.
- If hand touches the blade when put wheel stopper, there is danger injured seriously. Put wheel stopper from the non blade cover side of the machine by all means.
- In case of stop, when water is in the water tank, the center of gravity rises and the balance worsens. Even if you put wheel stopper to the front wheel at the time, it is very dangerous that the front wheel climbs over wheel stopper and begins to move. In this case pull water out of the water tank by all means.
- When a road surface gets wet in inclined area, wheel stopper in itself slips depending on an angle, and effect is gone. Stop on the dry road surface by all means, when you stop it in inclined area out of necessity.
- Do not work on blade installation disassembly in inclined area, because it is dangerous.
- Do not work on to cross the slope. There is danger that tumble of the machine or the damage of the blade cause a serious accident.



4.6 Lifting Precautions

DANGER

- Be sure to work with sling by crane license holder.
- Before work of lifting, check any damage of body parts (especially, Lifting hook, etc) or looseness / omission of screws, and be sure safe.
- Stop the engine at the time of the lifting, and close the fuel cock.
- Use enough strength of wire rope.
- The work of lifting uses only one-point lifting hook, and do not lift in other point (handles).
- Never put any person or animal under the lifted machine.
- For safety, do not lift up the machine more than required height.



4.7 Precautions In Transportation / Safekeeping

WARNING

- Stop the engine at the time of transportation.
- Carry it after engine and body got cold well.
- By all means drain fuel before transporting the machine .
- Fix the machine well not to move and fall down.

4.8 Precautions In Maintenance

CAUTION

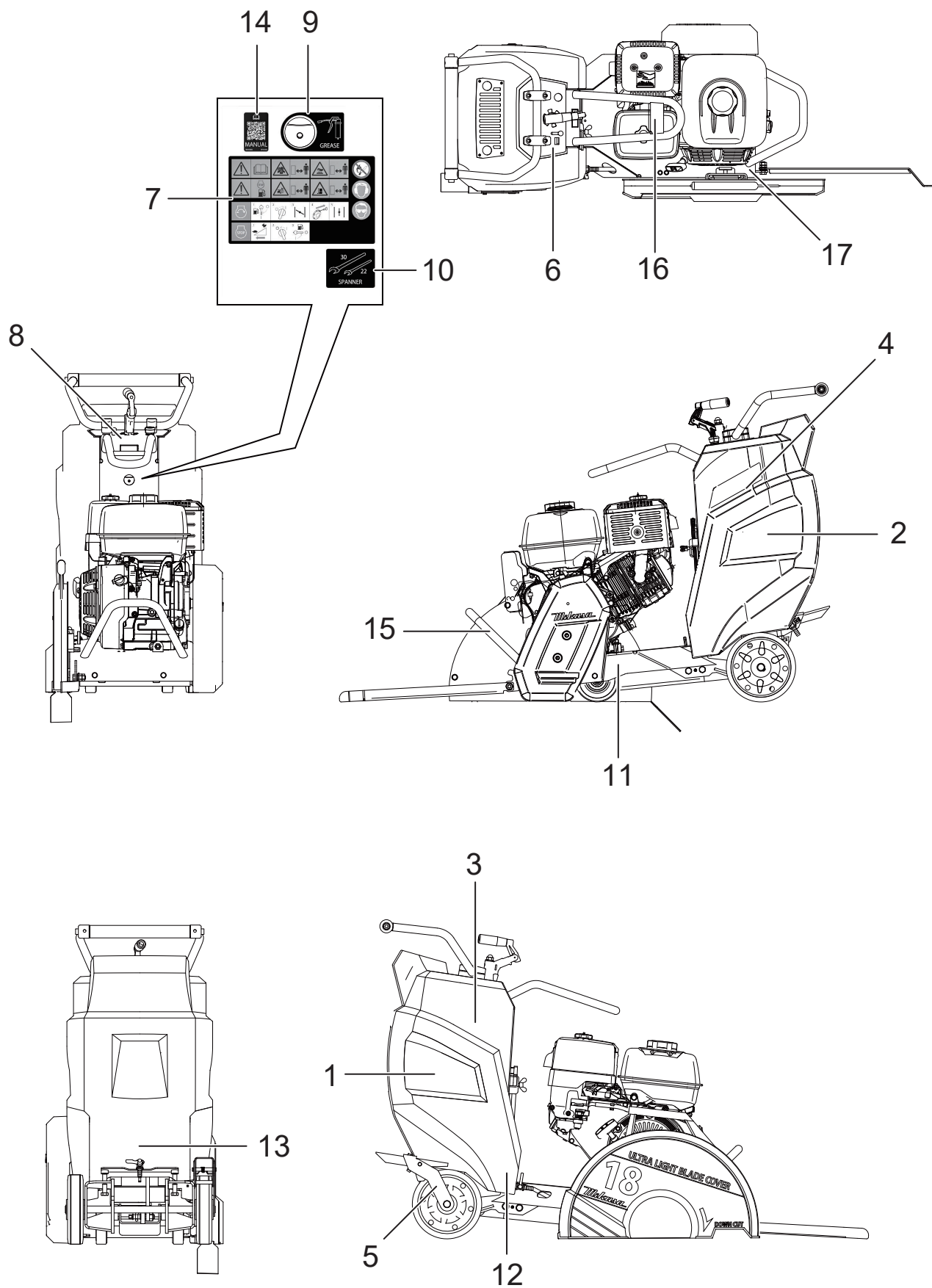
- Appropriate maintenance is always required for safety operation and to maintain performance of the machine. Pay full attention in the condition of the machine, and maintain good condition. Especially improper maintenance of lifting-related part becomes cause of serious accident.
- Do work after lower temperature of machine. Especially muffler becomes high temperature, and there is danger that burn itself. In addition, be careful not to burn itself enough, because engine or engine oil become hot.
- Do the check alignment in situation that stopped engine by all means. There is badly injured danger when you are rolled up in a reel.

After maintenance fulfillment, check the installation of safety protection parts and safety of the machine. Especially, check bolts and nuts thoroughly.

When you do maintenance with dismantlement, refer to maintenance manual regularly, and work safely.



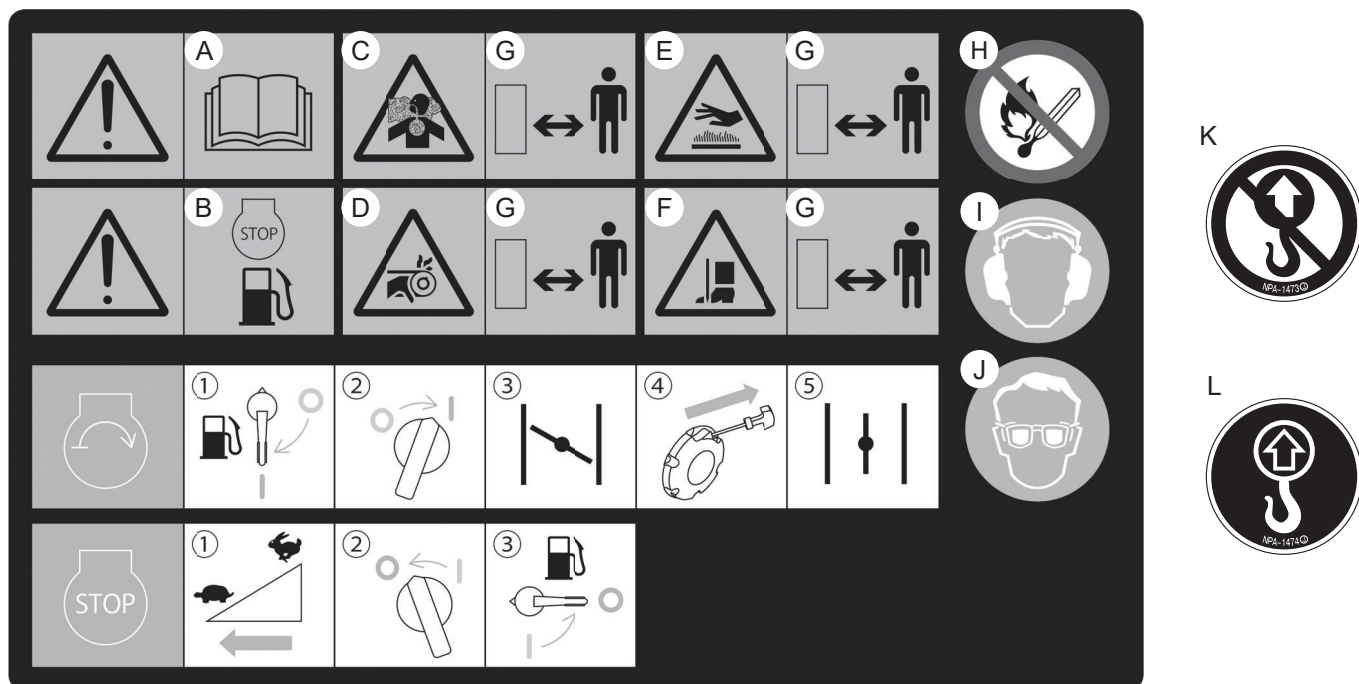
4.9 Label Position

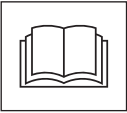





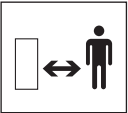







4.10 Label List

No.	Part No.	Part Name	Q' TY	Decal No.	REMARK
1	9202-24090	DECAL, LOGO(R),GREEN/T18	1	NPA-2409	
2	9202-24100	DECAL, LOGO(L),GREEN/T18	1	NPA-2410	
3	9202-24110	DECAL, MODEL(R),GREEN/T18	1	NPA-2411	
4	9202-24120	DECAL, MODEL(L),GREEN/T18	1	NPA-2412	
5	9202-24130	DECAL, BRAKE /MCD-T18	1	NPA-2413	
6	9202-24140	DECAL,INSTRUMENT PANEL/T18	1	NPA-2414	
7	9202-24150	DECAL, CAUTIONS SET /T18	1	NPA-2415	
8	9202-24160	DEACL,TACHO METER /T18	1	NPA-2416	
9	9202-24170	DEACL, GREASE /MCD-T18	1	NPA-2417	
10	9202-24180	DEACL, SPANNER /MCD-T18	1	NPA-2418	
11	9202-24190	DEACL, BELT /MCD-T18	1	NPA-2419	
12	9202-24200	DEACL, WATER COCK /T18	1	NPA-2420	
13	9202-24210	DEACL, DRAIN WATER /T18	1	NPA-2421	
14	9202-24820	DEACL, MANUAL(QR)/EN/T18	1	NPA-2482	
15	9202-14730	DECAL,DO NOT LIFTING	1	NPA-1473	
16	9202-14740	DECAL,LIFTING POSITION	1	NPA-1474	
17	9202-24810	PLATE,SERIAL.NO/EXP/T18	1	NPA-2481	

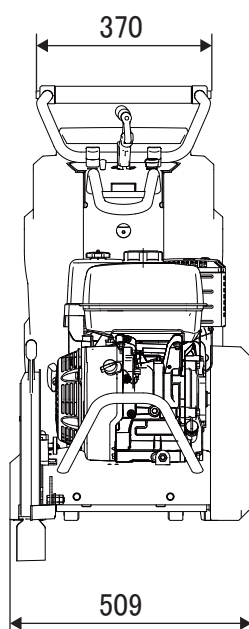
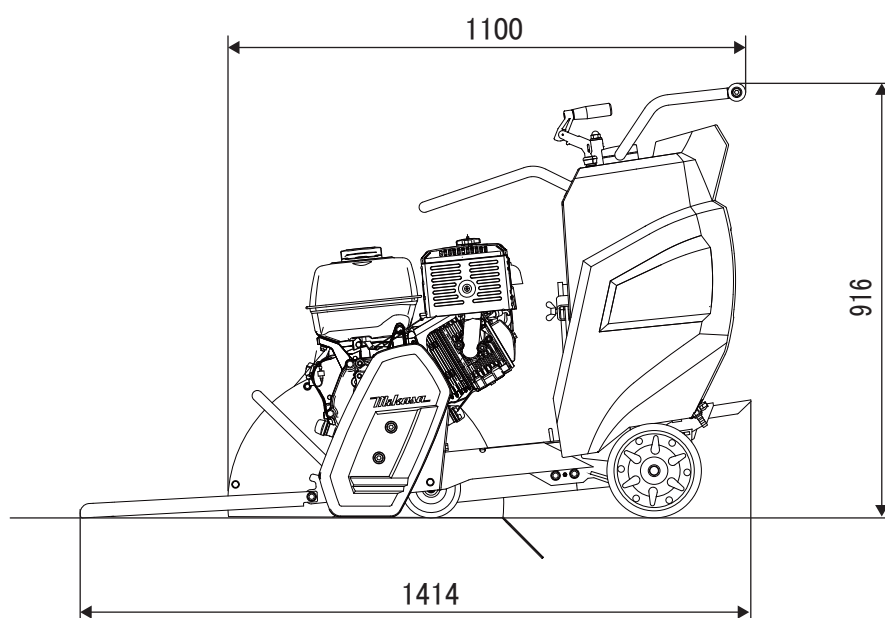
4.11 Descriptions Of Symbols Used On Warning Labels



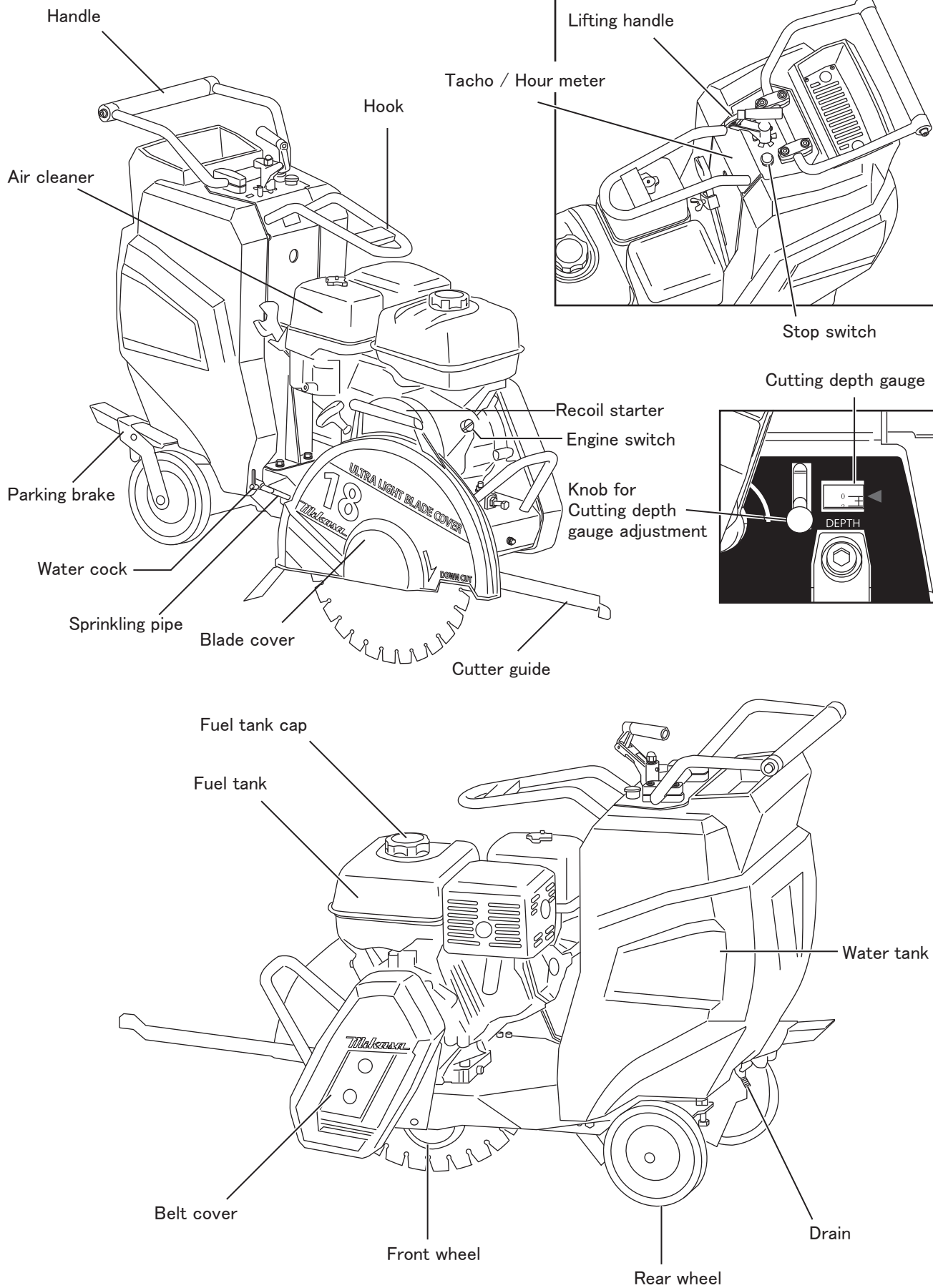
- A.**  **Read the manual carefully.**
Always read the operation manual and have good understanding of operation before your work.
- B.**  **Caution during fueling.**
During fueling, always stop the engine.
- C.**  **Danger: poisonous exhaust gas**
Carbon monoxide poisoning may occur if the exhaust gas is inhaled. Do not operate the machine in a poorly ventilated area.
- D.**  **Be careful not to be caught in rotating parts.**
Make sure the engine is stopped when removing the belt cover during a belt change.
- E.**  **Be careful not to get burned.**
Accidental burn may occur if you touch the hot parts (engine, muffler, etc.) during operation or immediately after the machine stops.
- F.**  **Caution for danger of blade on your foot.**
During operation, pay attention to your feet. Do not put your foot near the blade. Bar, avoiding from standing back of Handle Bar.
- G.**  **Do not go near the source of danger.**
During operation, do not go near the hot parts and rotating parts.
- H.**  **Fire hazard**
Stop the engine when refueling. Fire may occur if a flame is near the tank fuel port.
- I.**  **Danger of hearing damage caused by noise**
Always use ear plugs while operating the machine.
- J.**  **Wear eye protection gear.**
During operation, to protect your eyes, wear goggles.
- K.**  **Lifting by the handle is prohibited.**
Due to a falling risk, do not lift the machine by the handle.
- L.**  **Do not go under the lifted machine.**
Do not let people or animals go under the lifted machine.

5. APPEARANCE

5.1 Dimensions (mm)



5.2 Control Unit Positions And Names



6. SPECIFICATION

6.1 Main Body

Model		MCD-T18
Engine		HONDA GX390
Dimensions		
Overall Length(on operating)	mm	1100 (1414)
Overall Height		916
Overall Width		509
Outfit mass (With Water half quantity)	kg	131
Blade size and maximum cutting depth (Axis hole dimension of blade ϕ 27)	inch	18
Traveling system		Handle turning system
Adjusting for cutting depth		Manual lifting screw system
Cooling System of blade	L	Centrifugal injection type
Water tank capacity		50

※ Weight includes weigh of machine, lubricants, 50% of fuel and 50% of water in case with water tank option.

6.2 Diamond Blade

Blade size	Outer diameter	Maximum cutting depth
10in.	254mm	70mm
12in.	305mm	95mm
14in.	356mm	120mm
16in.	407mm	145mm
18in.	457mm	170mm

6.3 Engine

Maker		Honda
Engine Model		GX390
Max. Output	kW (PS)	8.7 11.8
Start System		Recoil starter
Set Engine Revolution	rpm	3600
Fuel Capacity	L	6.1

※ Specifications are subject to change without notice.

7. INSPECTION BEFORE OPERATION

⚠ CAUTION

- Do the check alignment in situation that stopped engine by all means.
- Do maintenance work in a place with a flat and hard surface to keep the machine stable.
- Level the machine, and check it after the machine confirmed that it does not move.

- The check point before the work see "each part check schedule list" mentioned in 21 pages.

7.1 Engine Oil

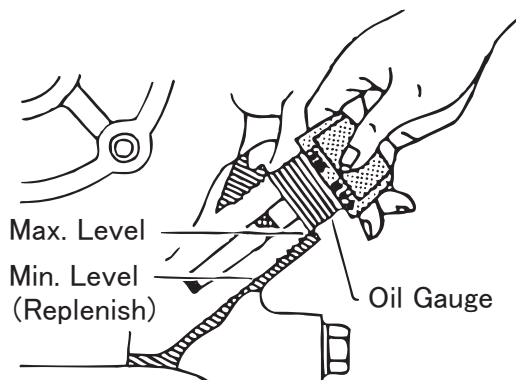
With the engine positioned horizontally, check oil with oil gauge.

Replenish through filler port as necessary.

Use following oil (10W-30 is in use when shipped).(Fig.1)

When it is used in normal temperature, its consumption tends to increase . Pay additional attention at the time of daily check. As for quality of oil, be sure to use SE grade or better.

Degraded quality or decreased quantity may induce damage by seizure.



Temperature	Use oil
More than 25°C	SAE#30
10 ~ 25 °C	SAE#30, #20
10 ~ 0 °C	SAE#20
Less than 0 °C	SAE#10

Fig. 1

7.2 Fuel

Use lead-free automobile gasoline. For replenishment, be sure to shutdown engine and use strainer provided at filler port. Wipe off any spilled fuel clean.(Fig.2)

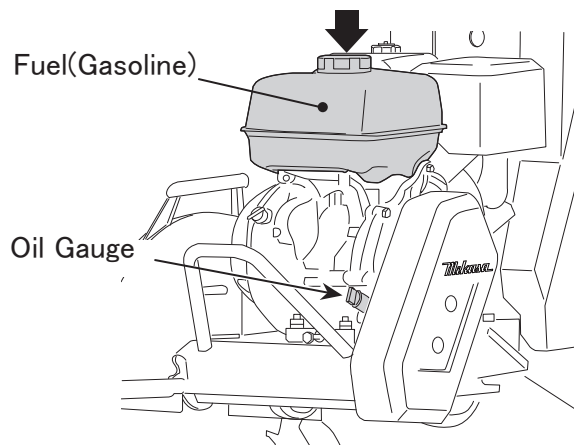


Fig. 2

7.3 Water Tank

Use water tank filled with water. Pay attention to the water level.(Fig.3)

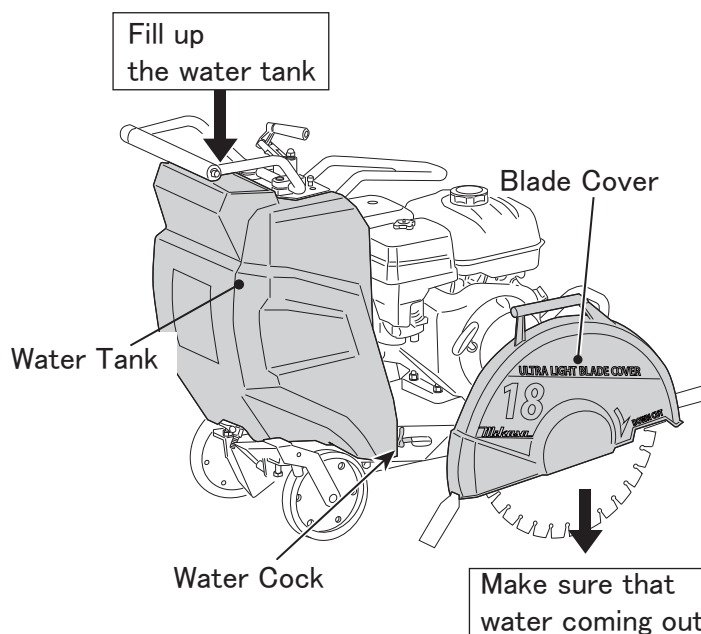


Fig. 3

7.4 Belt

CAUTION

Check for bolts and nuts tightening after inspection.

● Check the belt

Check the ribbed belt between engine and blade shaft for sag or defect. Tension is normal if the deflection is 4 -7 mm when depressed at midway between the two shafts.(Fig.2)

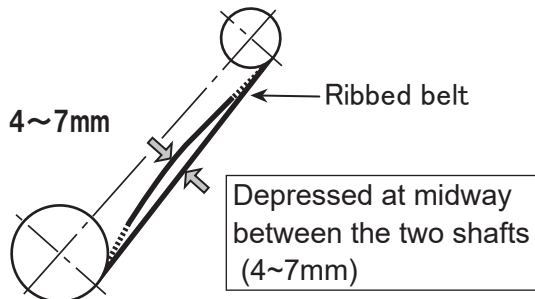
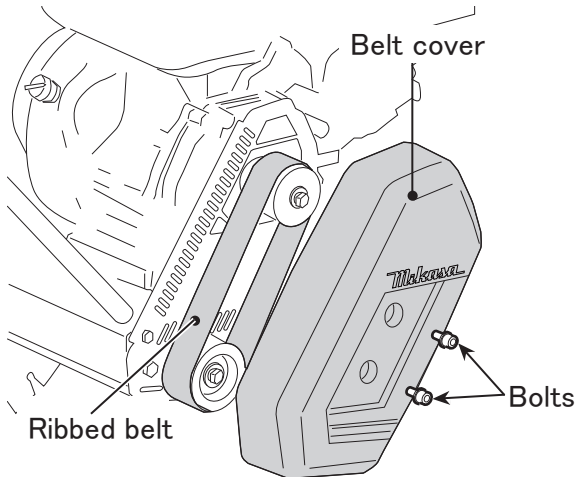


Fig. 4

● How to adjust the belt

1. With 2 bolts removed, take off belt cover. (Fig.4)
2. Loosen 4 engine mounting bolts.

CAUTION

Bolts should be just loosened, not removed.

3. Rotating "Adjust bolt & nut of belt tension" clockwise, the belt tension will be increased. (Fig.5)

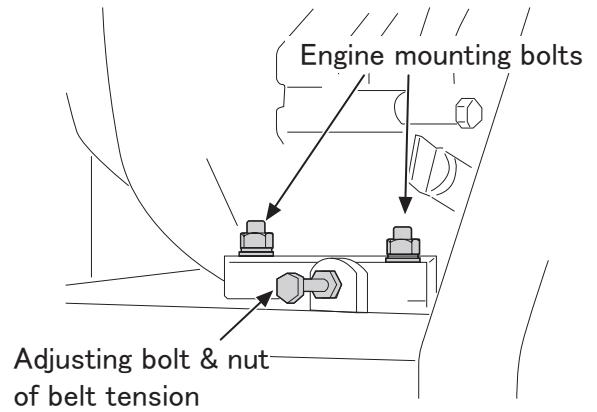


Fig. 5

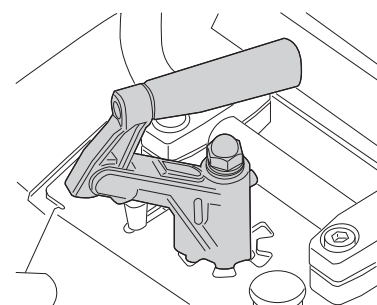
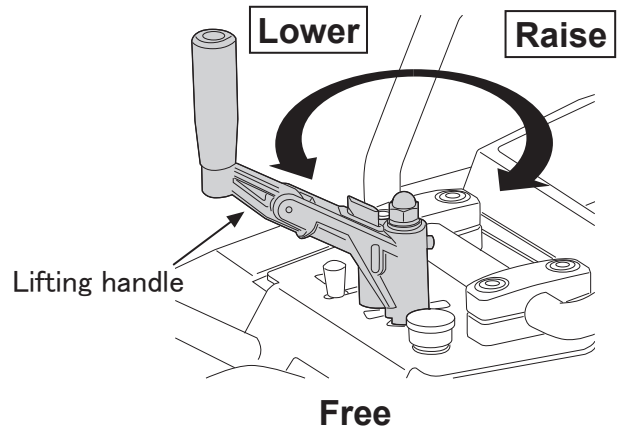
● How to replace the belt

1. Rotating "Adjust bolt & nut of belt tension" counter-clockwise to take off the belt easily.
2. Replace new belt and adjust the belt tension in accordance with the previous paragraph.

7.5 Lifting/Lowering

● How to lift/lower the machine

Cutting depth can adjust with lifting handle. Rotating the lifting handle clockwise, machine body will ascend. And rotating it counter-clockwise, machine body will descend. When the lifting handle is released, it will be locked automatically.(Fig.6)



Lock

Fig. 6

● How to adjust the lifting force

After taking off the water tank, it can be adjusted with the bolt inside the frame.

- Drain water from tank.
- Loosen bolts and nuts below the tank. And take off the flat-bar and water tank. (Fig. 7)

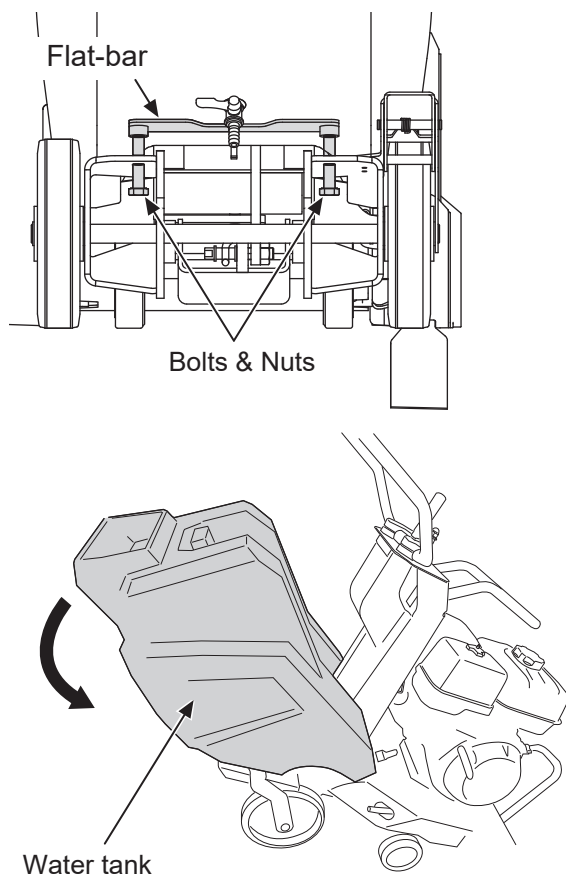


Fig. 7

- Turning the adjusting bolt clockwise will reduce the force required to turn the handle to ascend the machine.

Turning the adjusting bolt counterclockwise will reduce the force required to turn the handle to descend the machine.

※ **Ascending force and descending force should be equivalent. (Fig. 8)**

- After finishing the adjustment, tighten bolt & nuts to fix the water tank and flat-bar.

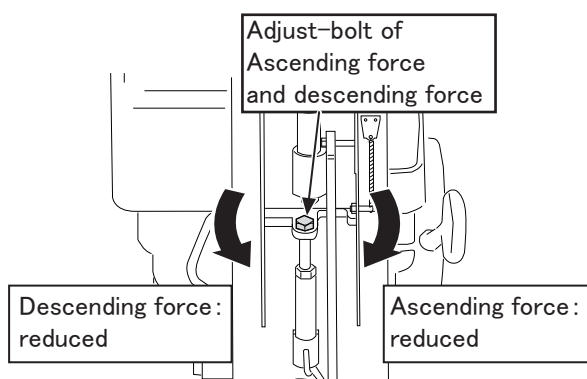


Fig. 8

7.6 How to Read Cut Depth

● **Cutting depth refers to the distance between the blade periphery and the position directly below the blade axis, which is the center of rotation and is in contact with the ground surface.**

Cutting depth gauge

- The cutting depth gauge indicates the cutting depth at work. The cutting depth gauge is compatible with 14 to 18 inch blades and should be used with "the knob for cutting depth gauge adjustment" to adjust the position of the scale. (Fig.9)

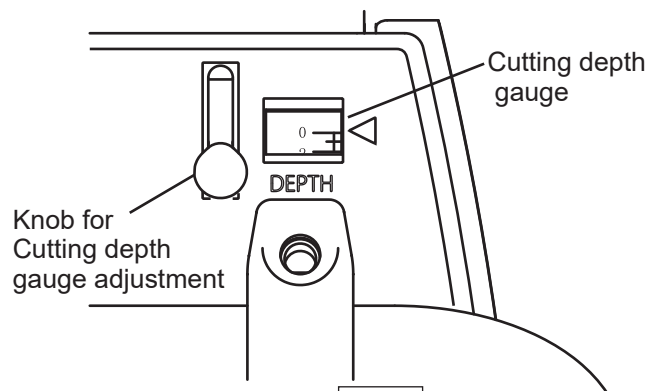


Fig. 9

● How to use cutting depth gauge (Fig. 7)

- Set the gauge to Zero when the blade touches the ground surface.
- After started the cutting work, the cutting depth is indicated on the cutting depth gauge.

⚠ CAUTION

Every time you change the cutting site and/or blade, please adjust the cutting depth gauge with this method.

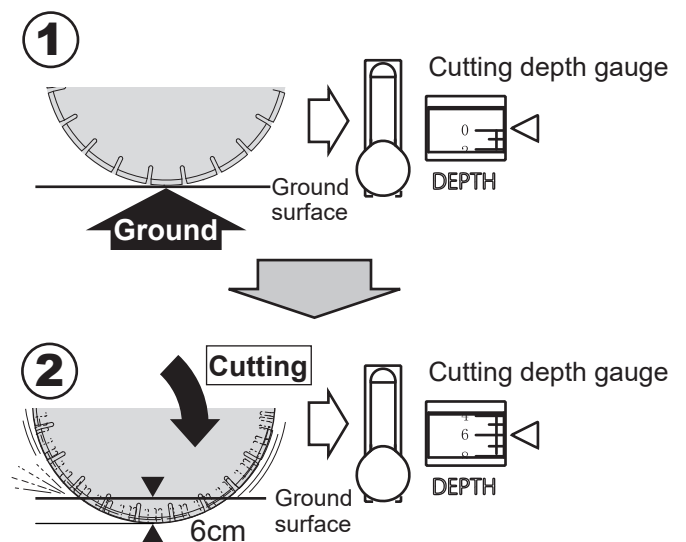


Fig.10

7.7 Installing the Blade

1. Install Flange (IN), Diamond Blade and Flange (OUT) in such order to the blade shaft and tighten sufficiently with Nut (left hand thread). (Fig. 11)

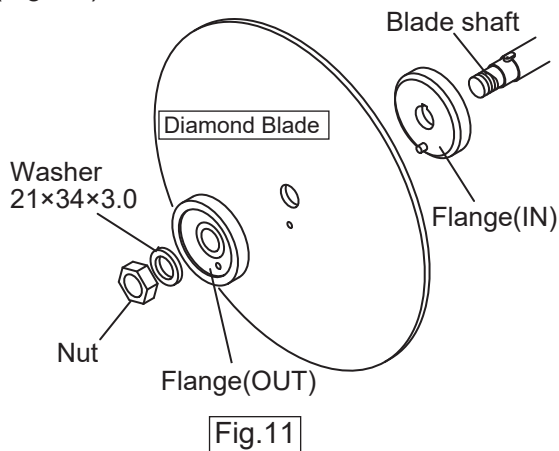


Fig.11

2. Standard accessory wrenches are used to tighten the nut. 30mm wrench is for the nut. And 22mm wrench is for fixing the arbor. (Fig.12)

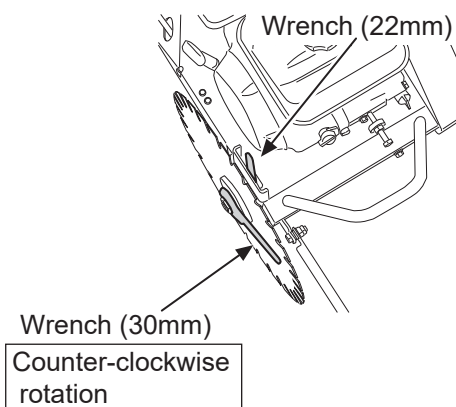


Fig.12

3. After blade has been tightened, check the cooling water and install blade cover.
4. Set the cutter guide, aligning it with the blade. (Fig. 13)

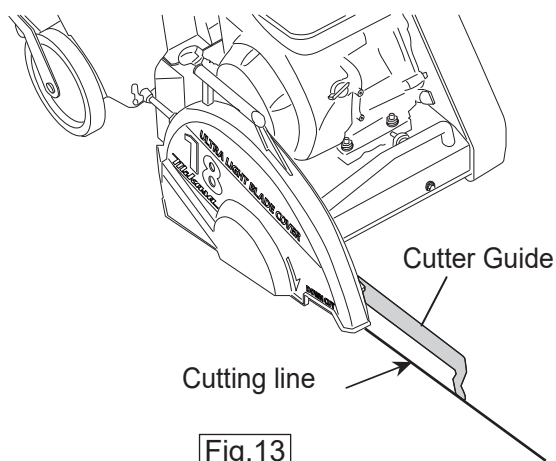


Fig.13

7.8 Parking Brake

- There is a Parking Brake on right rear wheel. The wheel will be locked when the brake lever pushed down. And the wheel will be unlocked when the brake lever pushed up. The brake should be unlocked before work. (Fig.14)

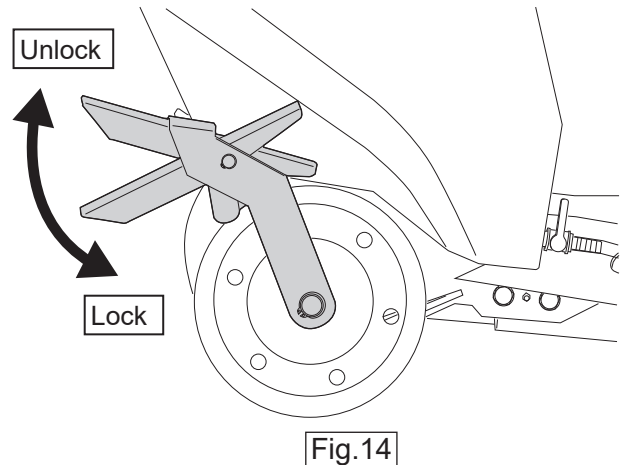


Fig.14

7.9 Stop Switch

- Stop Switch is equipped as standard for the safety. (Fig.15)

- Stop**
Push the stop switch to stop the engine. Then, the switch will hold the pressed down state.
- Reset**
The switch should be turned clockwise to reset the stop switch

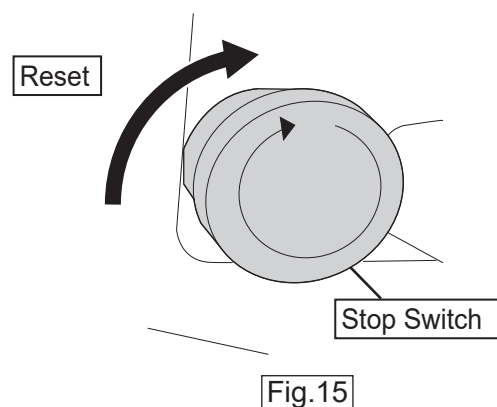
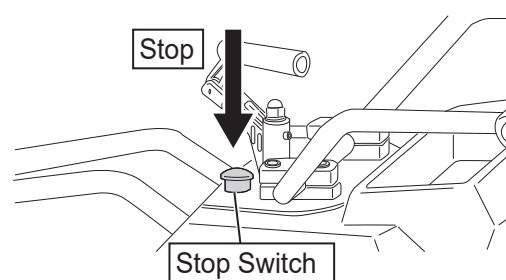


Fig.15

8. OPERATION

8.1 Starting Up

1. Set the fuel cock lever to the "ON" position to let the fuel flow. (Fig. 16)

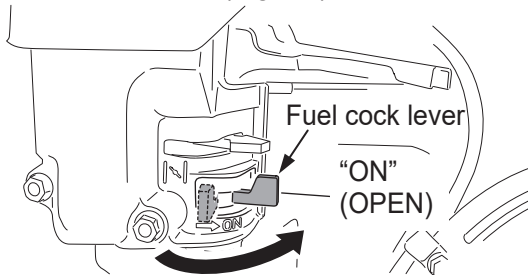


Fig.16

2. In cold weather or when the engine does not start easily, set the choke lever to the "Start" position. This is not necessary when the engine is already warmed up. (Fig. 17)

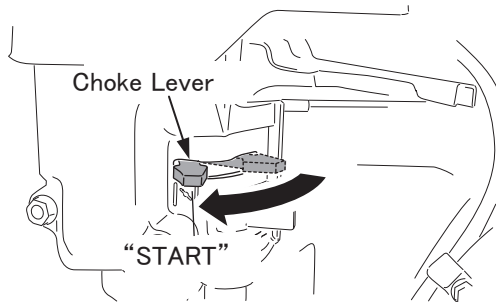


Fig.17

3. Move the throttle lever slightly to high speed side. (Fig.18)

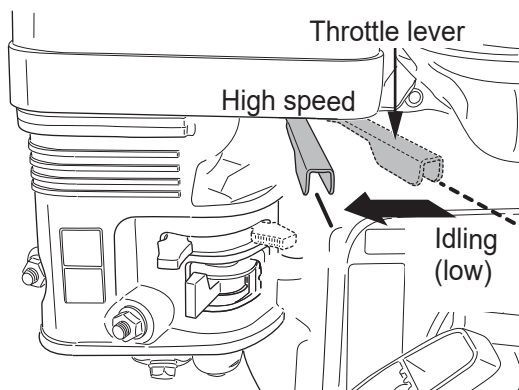


Fig.18

4. Turn on the engine switch on. (Fig.19)

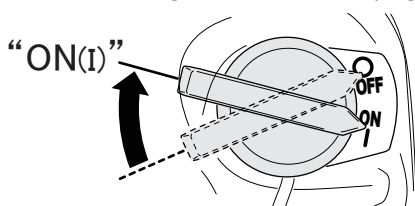


Fig.19

5. Hold the recoil starter grip, and pull it a little. You will feel a slight resistance. Then, pull it hard to run the engine. be careful not to pull too hard, or the rope might break or come off. Allow the starter rope to slowly move back into the case while keeping the grip grabbed. (Fig.20)

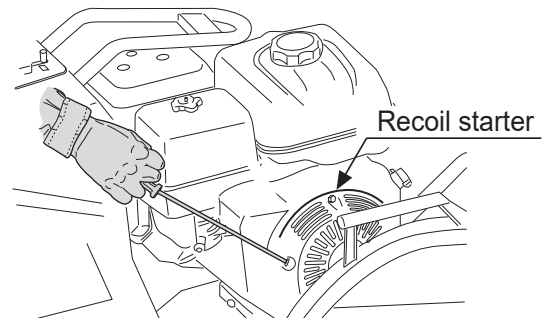


Fig.20

CAUTION

Do not pull the starter knob all the length of the rope.

WARNING

Because engine turns blade when start, be careful enough.

6. When the engine is stopped, the hour tachometer is always showing "Cumulative time". "Rotation number" is displayed during operation.(Fig.21)

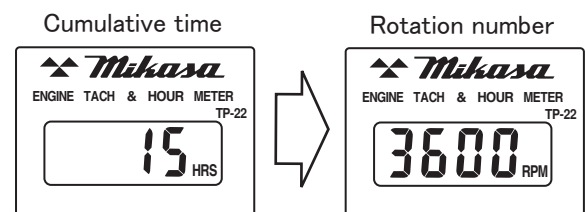


Fig.21

7. If engine has started, while listening to explosion sound, slowly return the choke lever to OPERATION position. (Fig. 22)

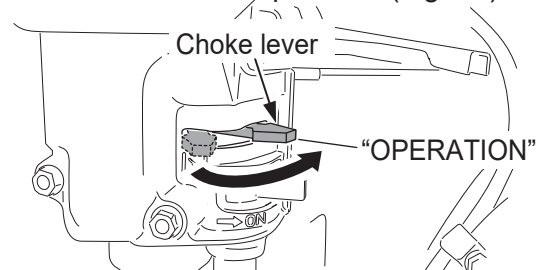


Fig.22

8.2 Operation

CAUTION

Sudden feeding or cutting may damage blade or decrease durability of engine, ribbed belt, etc...

1. Align the cutting guide with pre-determined cutting line. Aligning is easier if it is done with the machine lifted.
2. Move the throttle lever slowly to the normal operation and set the engine speed at high speed.(Fig. 23)

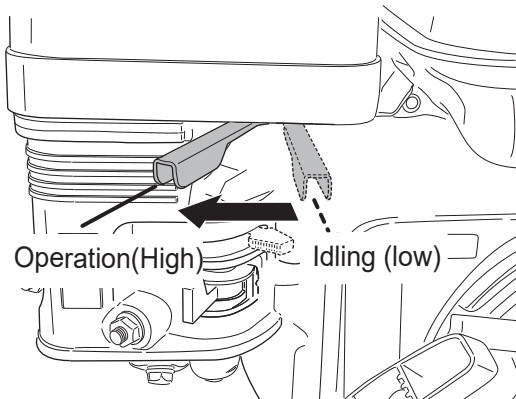


Fig.23

3. With water cock opened, spray cooling water to the blade.(Fig. 24)

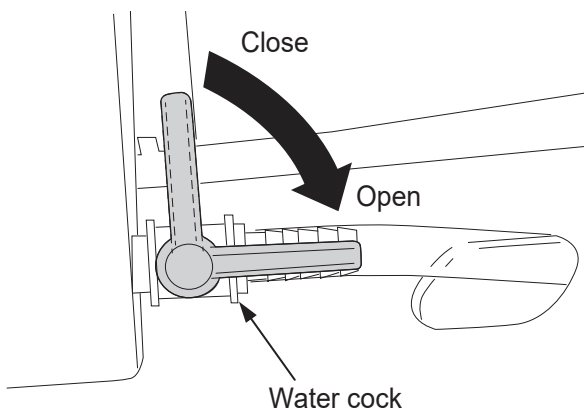


Fig.24

4. To cut-in with the blade at the bottom, turn Crank handle to the counter clockwise, and cut down while adjustment the lowering speed so that engine speed is not reduced excessively.(Fig. 24)

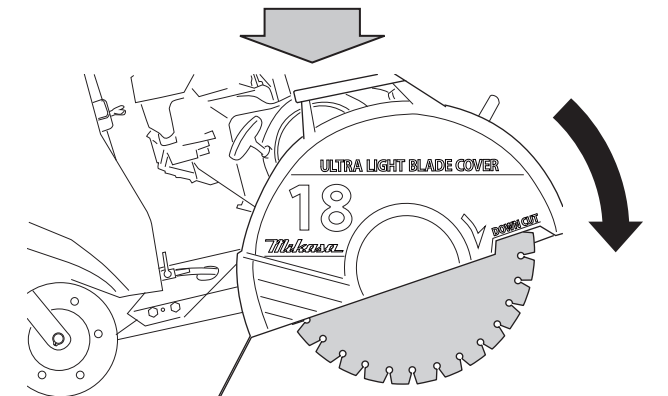
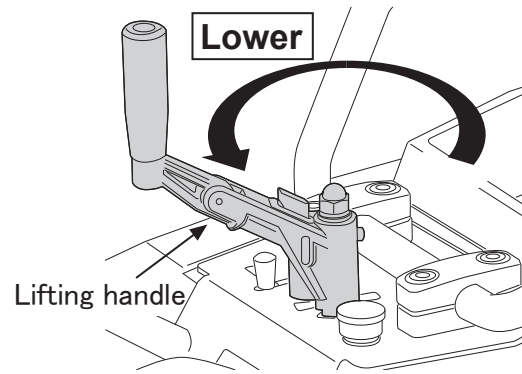


Fig.25

5. While checking the cutting depth with cutting depth gauge, control the cutting work. When the blade reach to target depth, stop and release the lifting handle. Then it will be locked automatically.
6. While listening to engine sound, push the machine slowly for cutting operation.

8.3 After Operation

1. When cutting is completed, turn the lift handle slowly counterclockwise to raise the machine body.(Fig. 26)

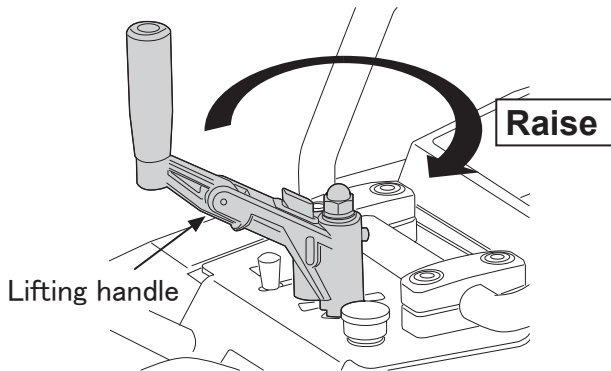


Fig.26

2. Close water cock to stop cooling water spray.(Fig. 27)

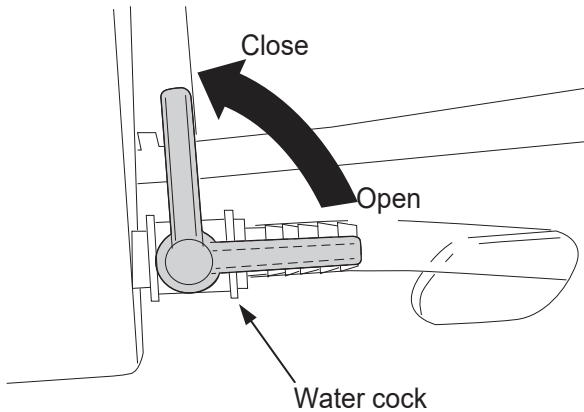


Fig.27

3. Return the throttle lever to lower engine speed.(Fig. 28)

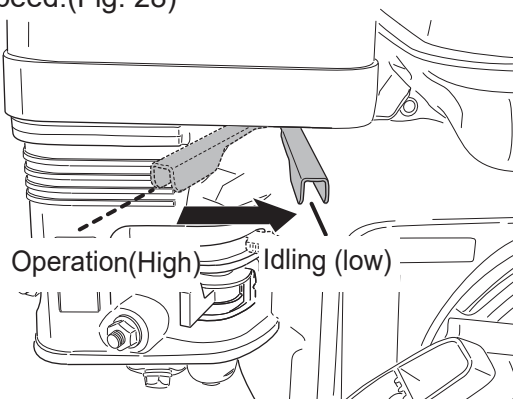


Fig.28

CAUTION

If the unit is to be left in standby mode for an extended period of time, stop the unit completely.

9. STOPPING THE MACHINE

1. Turn the engine switch to the OFF position, then the engine stops. (Fig. 36)

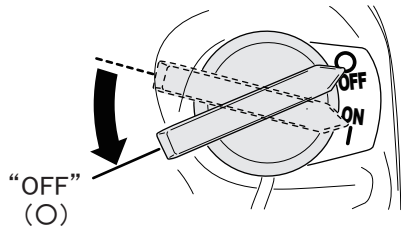


Fig.29

2. Shut the fuel cock.(Fig. 30)

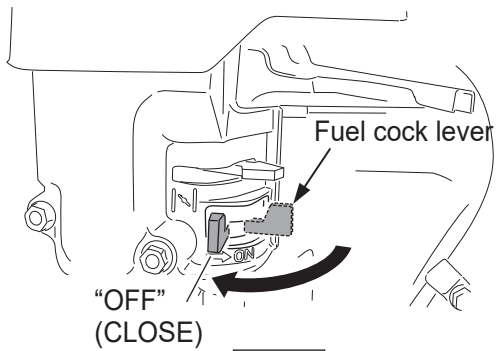


Fig.30

3. Stow the cutter guide.(Fig. 31)

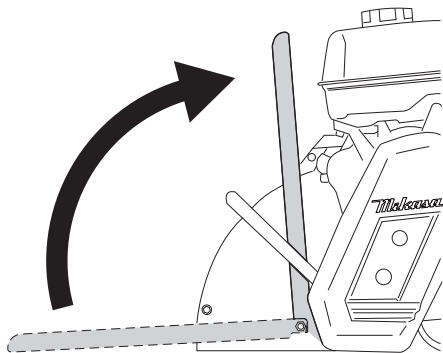


Fig.31

4. Drain water from the water tank. (Fig.32)

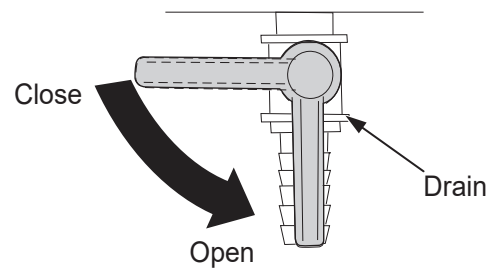
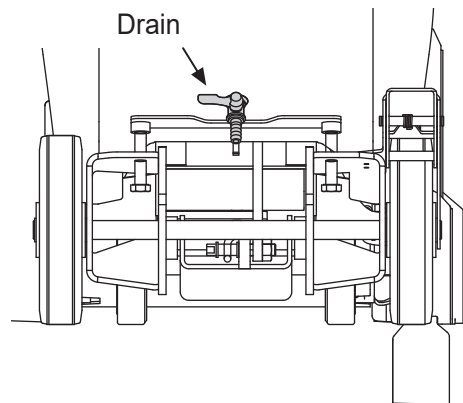


Fig.32

10. TRANSPORT

10.1 Loading And Unloading

WARNING

- Before work of lifting, check any damage of body parts (especially, Lifting hook, etc) or looseness / omission of screws, and be sure safe.
- Stop the engine at the time of the lifting, and close the fuel cock.
- The work of lifting uses only one-point lifting hook, and do not the work of lifting in other point (handles).
- Use enough wire rope of the strength.
- Never put any person or animal under the lifted machine.
- For safety, do not lift the machine up than required height.

1. Do loading and unloading by cranes.
2. In loading and unloading select a leader, and work by instructions of a leader by all means.
3. Lift the machine with the guard hook by all means, to hook fittings. Never lift the machine with handle, to hook fittings.

4. Movement in a lifting motion does not do sudden unloading. Take down a machine from a rear wheel by all means.
When suddenly unloaded a machine from a front wheel, FRAME (FRONT WHEEL) may protect other machine part.

CAUTION

Do not do loading and unloading that use a gangboard, because it is very dangerous.

10.2 Precautions In Transportation

WARNING

- Stop the engine at the time of the transportation, and close a fuel cock.
- Remove a blade at the time of transportation by all means.
- By all means drain fuel before transporting the machine .
- Fix the machine well not to move and fall down.

1. Cover the fuel tank when the machine is transported on rain weather.
2. When securing the machine with ropes, etc., choose a place where the parts will not be deformed.

11. STORAGE

1. Clean the machine by removing residual mortar and water.
2. Drain water of the water tank and the pipe.
3. Supply grease to the pillow block and grease nipple of each part. Particularly, pillow block of the blade shaft should be well greased a few times by means of grease gun after work.
4. Put cover so that garbage and dust do not appear.
5. Store it in the space which no hit rays of the sun with a little moisture.

● **For prolonged storage**

1. Drain fuel from not only fuel tank but also fuel pipe and carburetor.
2. Greasing up to each parts and check the engine oil.
3. Pull the recoil starter and stop it in the lightly compressed position.
4. Cover the air cleaner and muffler.
5. Put a wheel stopper on the rear wheel.

12. PERIODIC CHECKS AND ADJUSTMENTS

12.1 Table Of Scheduled Checks

How often?	Place to check	Item to check	Reference
Daily (before starting operation)	Appearance	Flaw, deformation	
	Fuel tank	Leaks, oil level, dirt	Gasoline
	Fuel system	Leaks, oil level, dirt	
	Engine oil	Leaks, oil level, dirt	Engine oil
	Air cleaner	Dust of sponge	
	Blade	Crack, damage	
	Lifting device	Function validation, oils and fats	Grease
	One-point lifting hook	Loose or missing parts, crack, breaks	
	Bolts, nuts	Loose or missing parts	
After first 20 hours	Engine oil	Replace once, after the first 20 hours	Engine oil
Every 100 hours	Engine oil	Replace	Engine oil
	Lifting screw	Crack, curve, greasing	Grease
	Lifting handle	Crack, curve, greasing	Grease
	Pillow block	Greasing	Grease
Every 200 hours	Ribbed belt	Flaw, tension	
Every 2 years	Fuel pipes	Replace	
Irregular	Air cleaner element	Replace once, after the first 50 hours	
	Pillow block	Wear, abnormal noise, creak wobble	

For details about the check and maintenance of the engine, please refer to the attached engine operation manual.

CAUTION

- The above table shows the check frequency for standard condition.
- The check frequency may vary depending on the condition in which the machine is used.

Tightening torque list (unit: kgf-cm, 1kgf-cm=9.80665N-cm)

		Thread diameter							
		6mm	8mm	10mm	12mm	14mm	16mm	18mm	20mm
Material	4T(SS41)	70	150	300	500	750	1,100	1,400	2,000
	6-8T(S45C)	100	250	500	800	1,300	2,000	2,700	3,800
	11T(SCM3)	150	400	800	1,200	2,000	2,900	4,200	5,600
	When the mating material is aluminum.	100	300~350	650~700	(Bolts used on the machine are all right-hand thread.)				

12.2 Grease Up

- Supply grease to the pillow block and grease nipple of each part. (Fig.33)

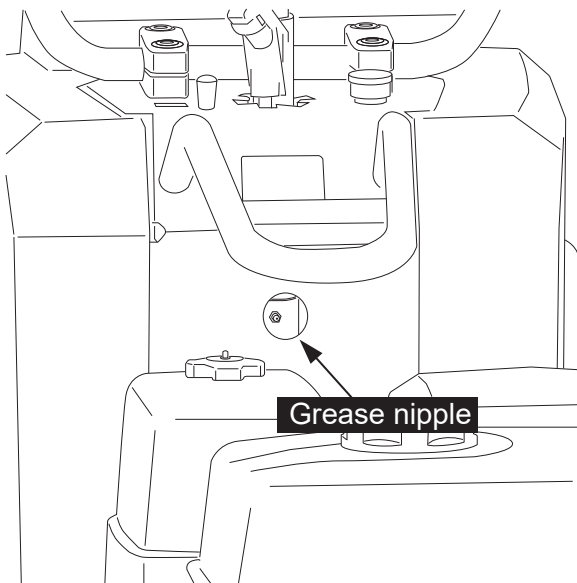
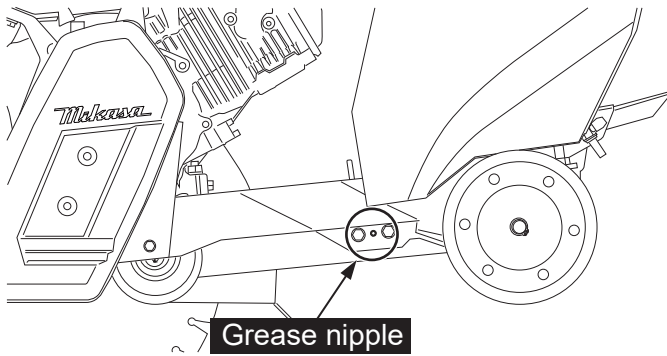
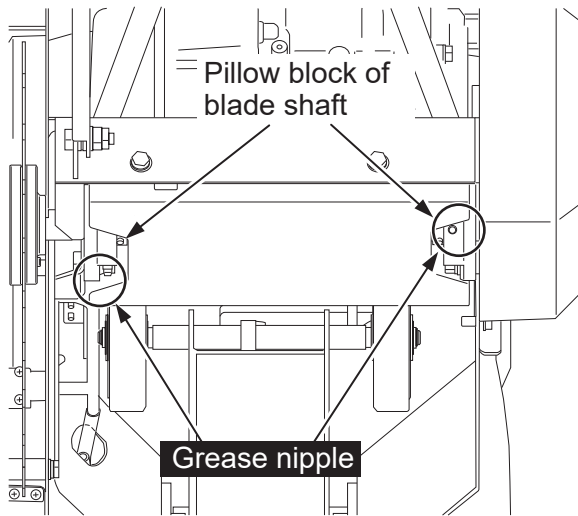


Fig.33

12.3 Handle Adjustment

- Check the looseness of the socket head bolts on the handle. And tighten 4 pieces of socket head bolts to fix the handle. (Fig.34)

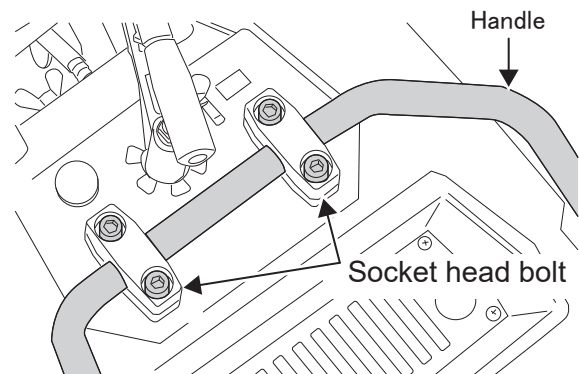
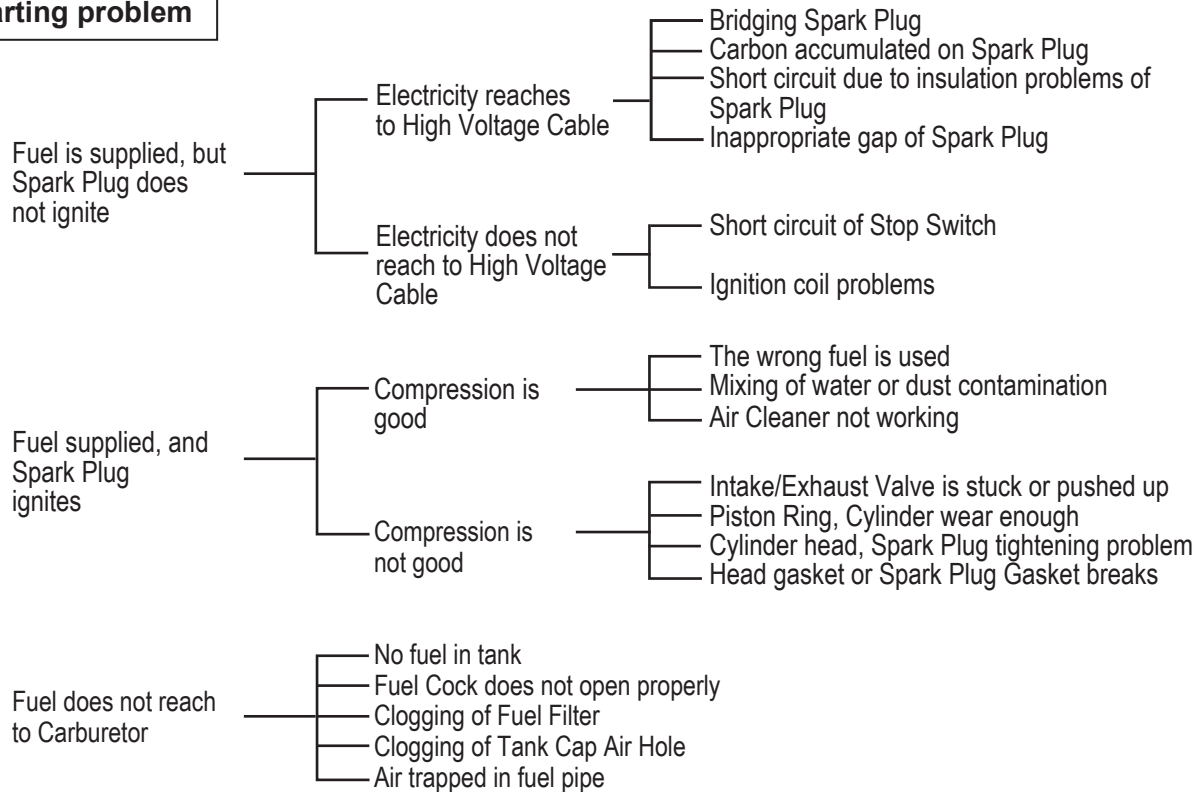


Fig.34

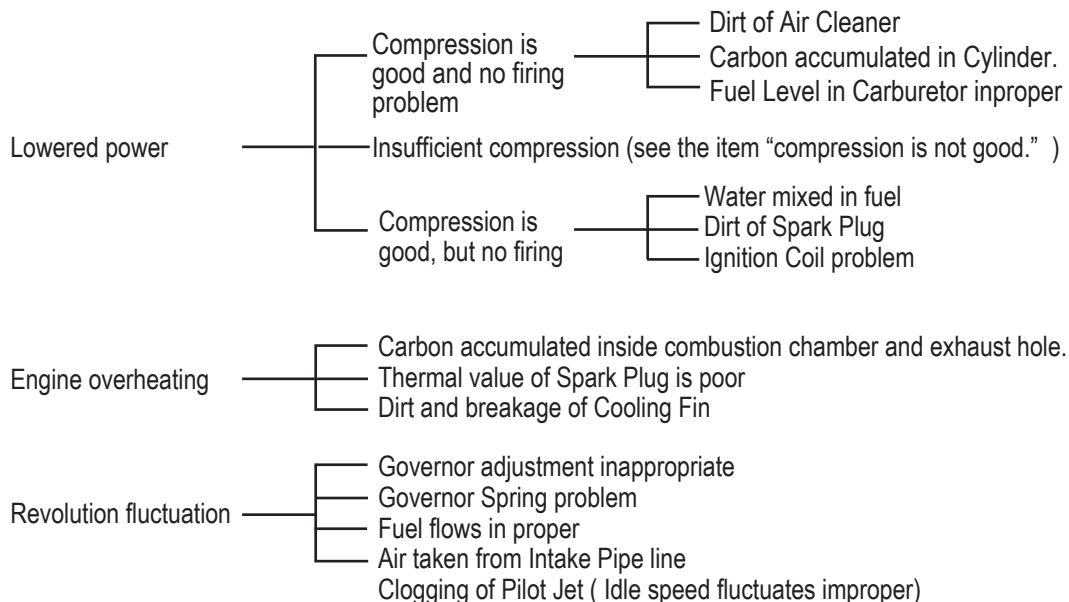
13. TROUBLESHOOTING

13.1 Engine

Starting problem



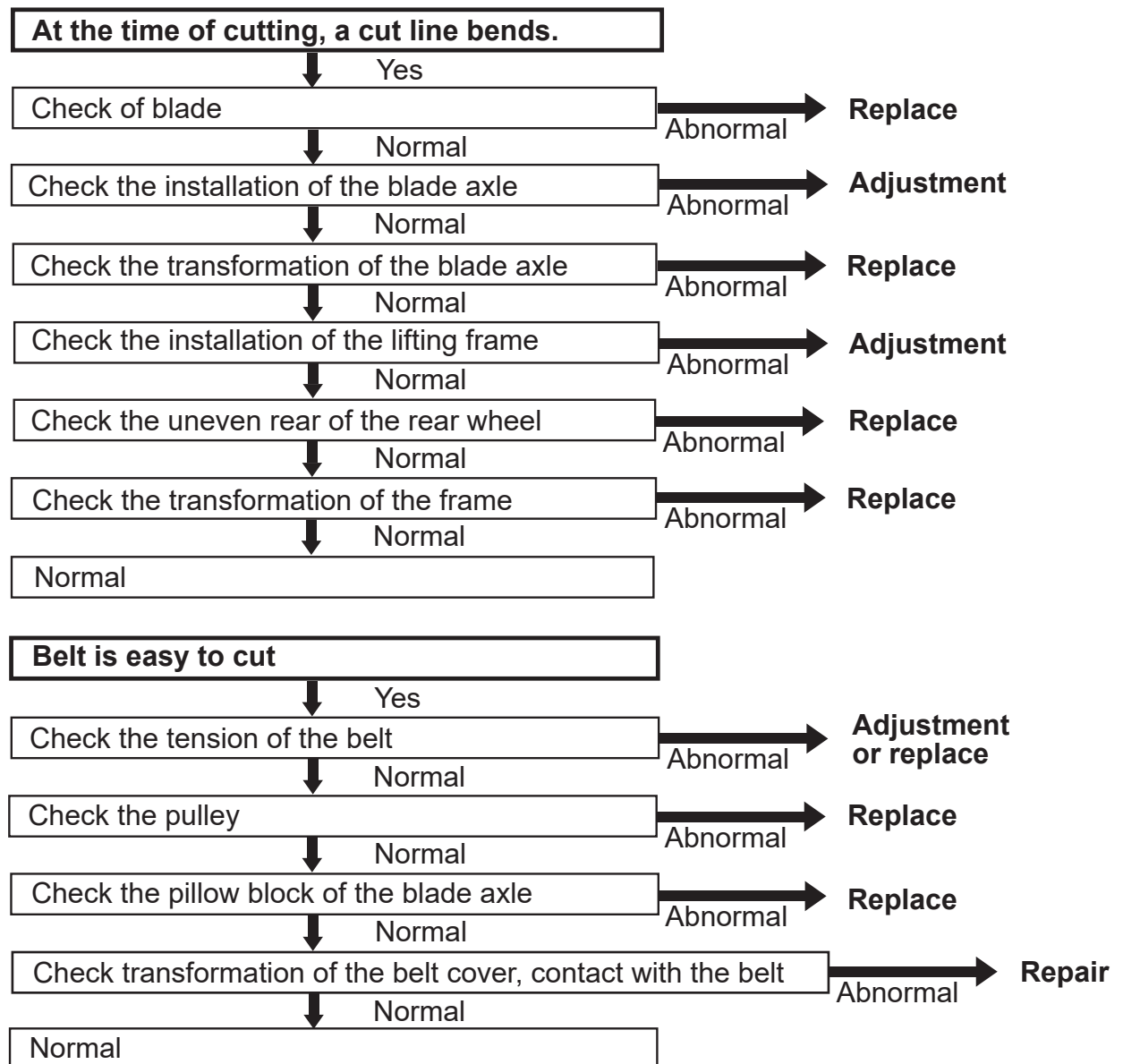
Operation problem



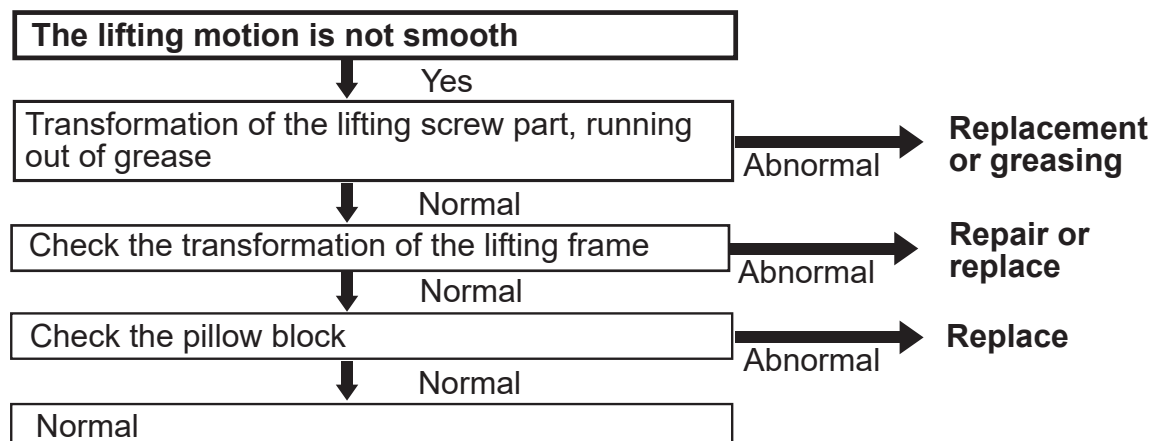
Recoil Starter does not work well

- Clogging of dust from rotating part
- Weakening of Spiral Spring

Blade system



Height Adjusting System



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