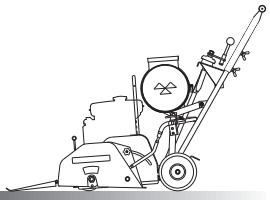
Mikasa

CONCRETE CUTTER

MCD-1UBLH



OPERATION MANUAL

en

http://www.mikasas.com

602-01309

EC Declaration of Conformity

1 Manufacturer's name and address	**Mikasa Sangyo Co., Ltd.** 1-4-3, Kanda-Sarugakucho, Chiyoda-ku, Tokyo, 101-0064, Japan
2 Description of the equipment	
2.1 Product	Joint Cutters (Concrete Cutters)
2.2 Type	MCD-1UBLH
2.3 Version(s)	—
2.4 Measured sound power level dB(A)	107
2.5 Guaranteed sound power level dB(A)	108
2.6 Motor type : Net power	Air cooled , 4 stroke SI engine (Honda GX200) : 4.1 kW
3 Conformity assessment procedure	Annex VIII of 2000/14/EC as last amended by 2005/88/EC
4 Notified Body's name and address	TÜV Rheinland LGA Products GmbH Tillystraße 2, 90431, Nürnberg, Germany Notified Body number: NB 0197
5 Comply with relevant provisions and requirements of the following directives and standards	2000/14/EC , 2006/42/EC , 2014/30/EU EN 500-1:2006 +A1:2009 , EN 500-4:2011
6 Signature	 2nd Jun. 2022 Keiichi Yoshida : Director, General Manager R&D Division
7 Technical documentation keeper	Engineer , R&D Division , Mikasa Sangyo Co., Ltd. 15-1,Shimoosaki,Shiraoka-city,Saitama,349-0203,Japan

Reference data	MCD-1UBLH
Hand-arm vibration level ※ Ahv m/s^2	8.2

※ Directive 2002/44/EC compliant. Test course (crushed gravel) is in comply with EN 500-4

Table of contents

1. Introduction

Thank you for purchasing Mikasa MCD-1UB type CONCRETE CUTTER.

- 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 parts repair, parts lists, service manuals, and repair of the machine, please contact the shop where you purchased, our sales office, or Mikasa Parts Service Center.
  In addition, parts lists are also available on the MIKASA website at:
  http://www.mikasas.com/english/

The illustrations and Figures in this manual may be different from the machine you actually purchased due to design changes and other reasons for improvement.

2. Machine 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 of a false use and misuse
Please use this machine to cut plain concrete, reinforced concrete and asphalt only.
Do not cut sediment, for that it flies into pieces and injuries 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 V belt. The way of adjustment of V-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 Transfer
Air-cooled petrol engine is amounted on Mikasa Concrete Cutter as power source.
V-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 labels

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 human 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.

Precautions (without a triangular mark): Failure to follow the instructions may result in damage of property.

4. Precautions for safety

4.1 General precautions WARNING

⚠ **WARNING:**

- **Do not work in the following conditions.**
  - ○ If you do not feel well due to overwork or illness.
  - ○ If you are taking any medicine.
  - ○ If you are under the influence of alcohol.

⚠ **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 Precautions when adding fuel

⚠ **DANGER:**

- **When adding fuel.**
  - ○ Be sure to work in a well ventilated location.
  - ○ Be sure to turn the engine off and wait until it has cooled down.
  - ○ Take the machine to a clear flat location without any combustibles nearby. Be careful not to spill any fuel. If you do spill some gasoline, wipe it all up.
  - ○ Do not allow any open flames nearby while adding fuel. (In particular, smoking while adding fuel is strictly prohibited.)
- Adding fuel until it comes too close to the top of the inlet may cause the fuel to overflow. That is dangerous. Follow the instructions in the engine manual about the specified fuel level.
- When through adding fuel, tighten the tank cap securely.

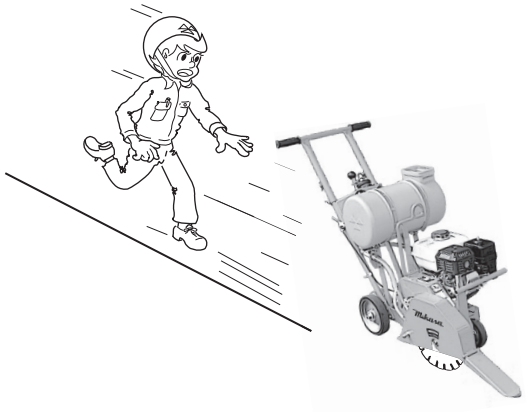
4.3 Precautions where to use the machine

⚠ **DANGER:**	● Do not run the engine in an unventilated location, such as indoors or in a tunnel. The exhaust gas from the engine is carbon monoxide and is deadly. ● Do not operate the machine near open fires.	

4.4 Precautions before operation

⚠ **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.	

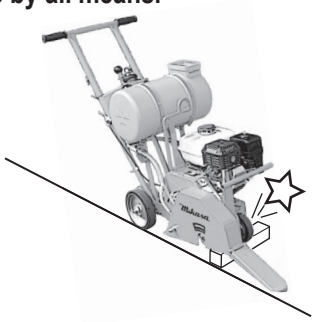
4.5 Precautions when working

⚠ **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 to stop engine before leaving the machine. Also shutdown engine for transporting the machine, and close the fuel cook. ● 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).	
⚠ **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.  ● Because there is the danger that machine runs uncontrollably when a grip falls out from the handle, warn you enough.	

4.5 Precautions when working

⚠ DANGER:

- 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 ring 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 ring stopper down the front wheel, the machine climbs ring stopper and begins to move, and be careful this risk is very likely. Even if you put on ring stopper down the back wheel, there is not effect. In addition, **the machine is not equipped with a parking brake. Use ring stopper for a front wheel on the occasion of a stop by all means.**



- When put ring 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 ring stopper, there is danger injured seriously. Put ring 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 ring stopper to the front wheel at the time, it is very dangerous that the front wheel climbs over ring 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, ring 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 Precautions in lifting

Loading and unloading by crane needs the lifting license. Be sure to work by crane licensing holder.

⚠ DANGER:

- Be sure to work with slings 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 cook.
- 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.

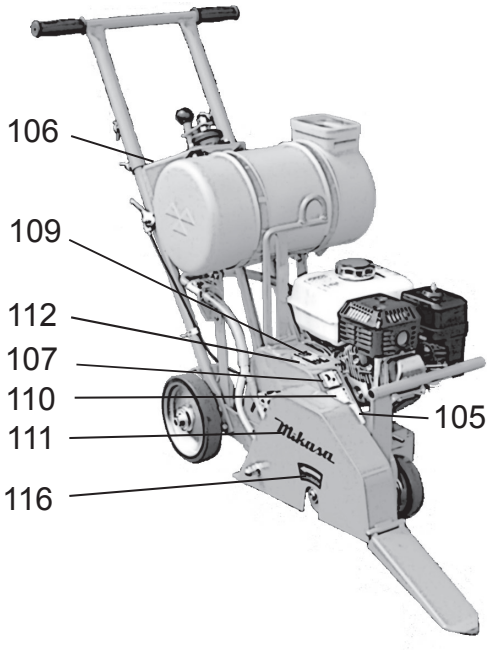
4.7 Precautions in transportation / safekeeping

⚠ **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 Installed place of every Decal

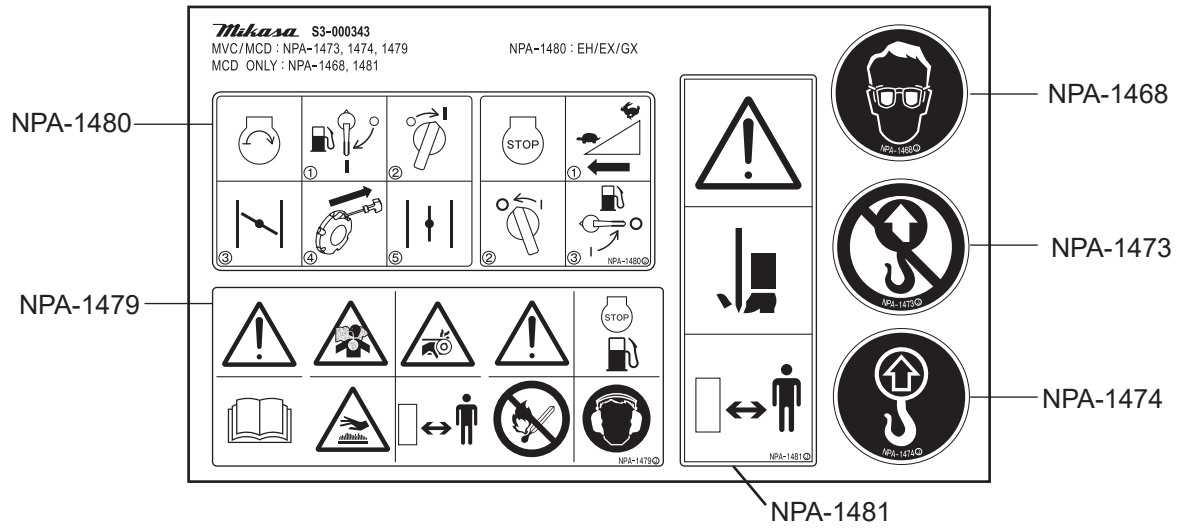


NO.	PART/NO.	PART NAME	Q'TY
105	9202-10100	DECAL,EC NOISE REQ.LWA108	1
106	9202-03330	EAR PROTECTION LABEL	1
107	9202-06280	DECAL, DANGER	1
108	9201-01530	GAUGE/MCD-1UB	1
109	9202-10530	PLATE,SERIAL NO./NPA-1053	1
110	9202-06290	DECAL,CAUTION(MANUAL)	1
111	9201-01580	DECAL MIKASA MARK 200MM	1
112	9201-01590	DECAL,V-BELT/A-29	1
116	9201-02860	DECAL, ROTATION/NP-286	1
122	9201-02650	PROTECTION PLATE/NP-265	1

4. 10 Warning labels and information

Decal for new European machine directives

PART/NO. 9209-00090 DECAL, SET /MVC, MCD /EXP,EU



① **Lethal Exhaust Gas Hazard.**
Carbon monoxide poisoning may occur if the exhaust gas is inhaled. Do not operate the machine in a poorly ventilated area.

② **Rotaing Parts Hazard.**
Keep hands clear from all moving parts (such as inside the belt cover) to prevent injury.

③ **Refueling Hazard.**
Stop the engine and let cool before refueling.

④ **Read the manual carefully.**
Read and fully understand the operation manual before operating the machine.

⑤ **Burn Hazard.**
Never touch the hot parts. Allow these parts to cool before servicing the machine.

⑥ **Keep safe distance.**
Be careful not to approach danger source during operation.

⑦ **Fire hazard.**
Keep away any flames and sparks from the machine.

⑧ **Noise hazard.**
Always wear ear protection while operating the machine.

⑨ **No lifting position.**
Do not use any other points (such as the handle) except one point lifting hook for lifting the machine.

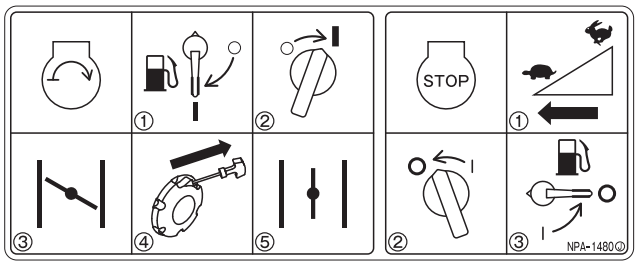
⑩ **Lifting position.**
Use one point lifting hook for lifting the machine.

⑪ **Blade hazard.**
Keep feet clear from blade to prevent injury.

Starting and stopping for gasoline engine

START

① Open Fuel Cock to start.
② Turn Stop Switch to “I”(ON) position.
③ Close Choke Lever.
④ Pull Recoil Starter to start the engine.
⑤ Return Choke Lever to open.

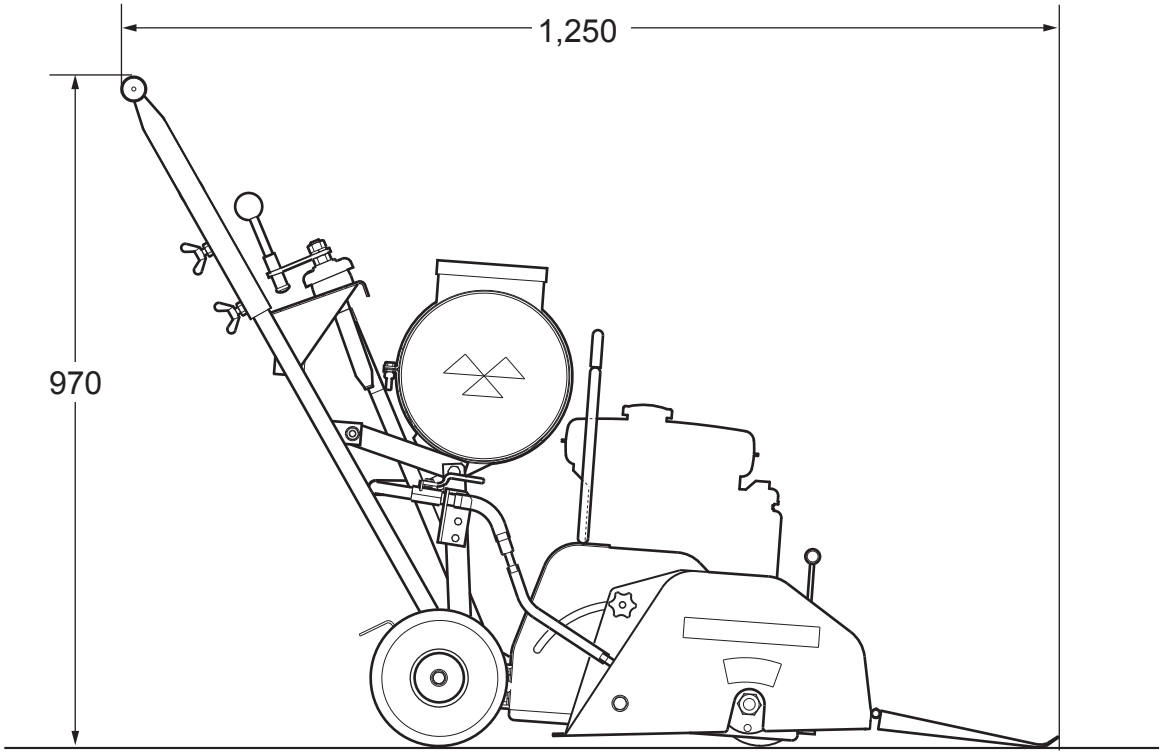


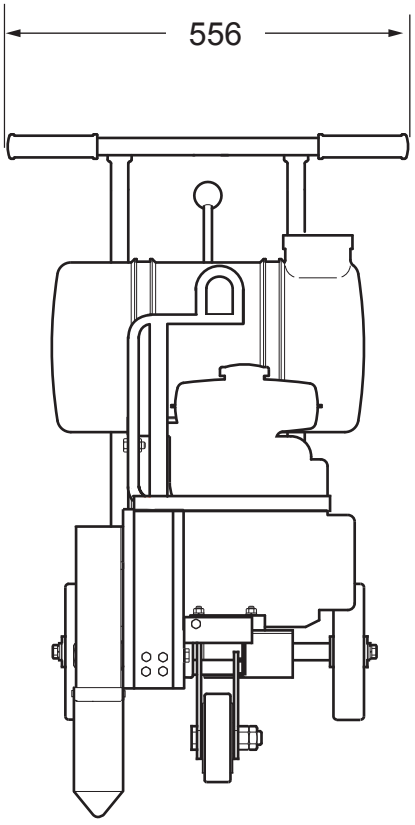
STOP

① Return Throttle Lever fully until “O”(OFF) position to stop work.
② After cooling down enough, turn Stop Switch to “O”(OFF) position to stop the engine.
③ Close Fuel Cock at the end.

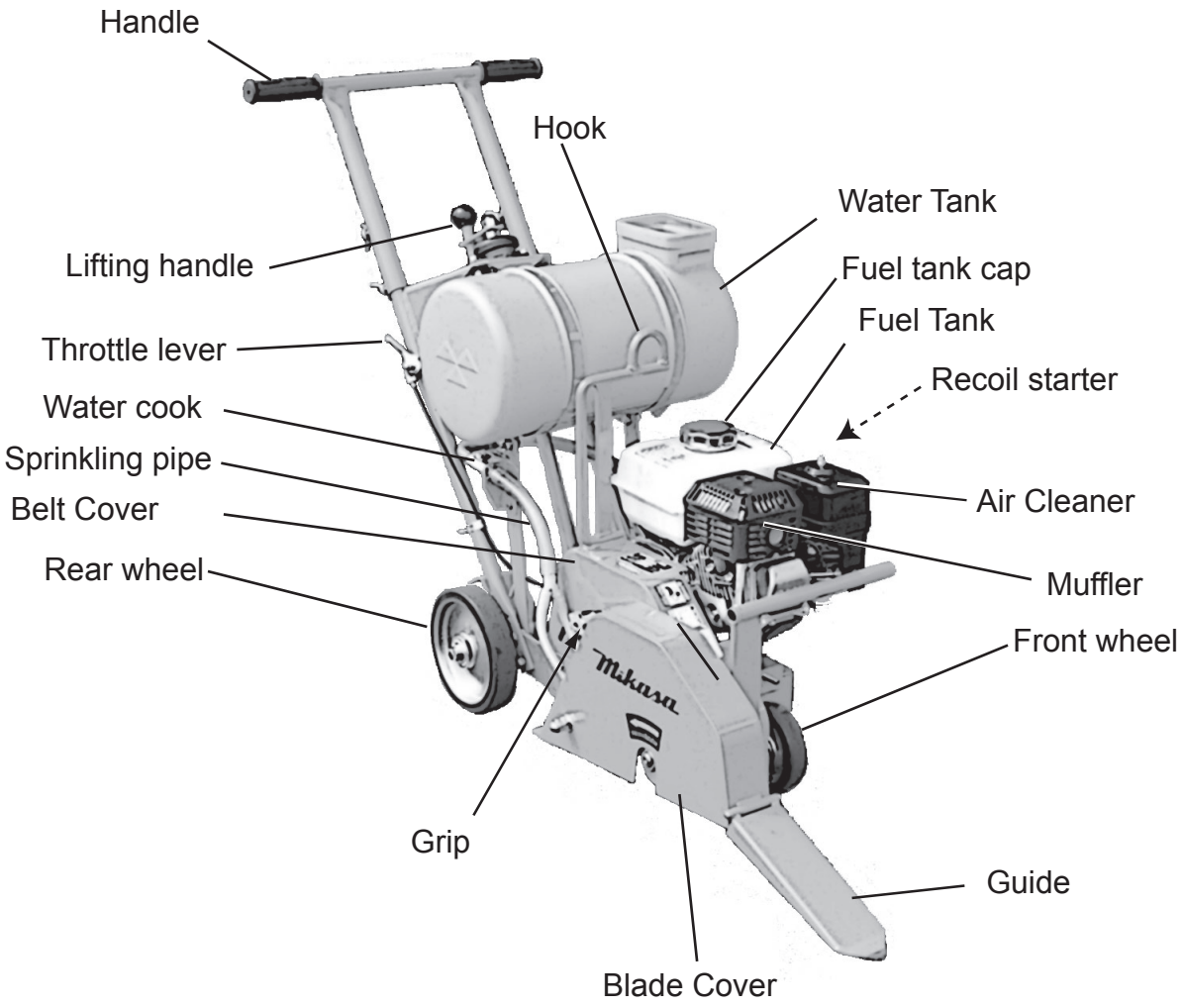
5. General view

5.1 Dimensions (mm)





5. 2 Parts and Compornent



6. Specifications

6.1 Main Body

Model	MCD-1UBLH
Overall Length	1,250 mm
Overall Width	556 mm
Overall Height	970 mm
Blade size	10 inches (254 mm) ~ 12 inches (305 mm)
Axis hole dimension of blade	27 mm
Cutting depth	70 mm ~ 100 mm
Adjusting for cutting depth	Manual lifting screw system
Cooling System of blade	Gravity pour water type
Water tank capacity	20 liters
Max. set speed of engine rotation	3,600 rpm
V-belt dimensions (Quantity)	A-29 (2 pcs)
Dry Weight	74.5 kg
Operating Weight (With Water half quantity)	85.0 kg

6.2 Engine (motor)

Manufacturer and Engine Model	Honda GX200
Type	Air-cooled 4 cycle gasoline
Piston displacement	196 cm^3
Max. Output	4.3 kW (5.8 PS) /3,600 rpm
Fuel	Automobile gasoline
Fuel tank capacity	3.1 liters
Engine oil grade	API SE or later SAE10W-30
Engine oil capacity	0.6 liters
Starter	Recoil

※ Features and specifications are subject to change without notification.

7. Before starting your operation

⚠ DANGER:

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.
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 17 pages.

1 Engine oil (Fig.1)
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).
SAE#30 (for normal temperature)
SAE#20 (for 10 or lower)
SAE10W-30 This oil can be used throughout the year regardless of ambient temperature (up to ambient temperature -20 ℃).

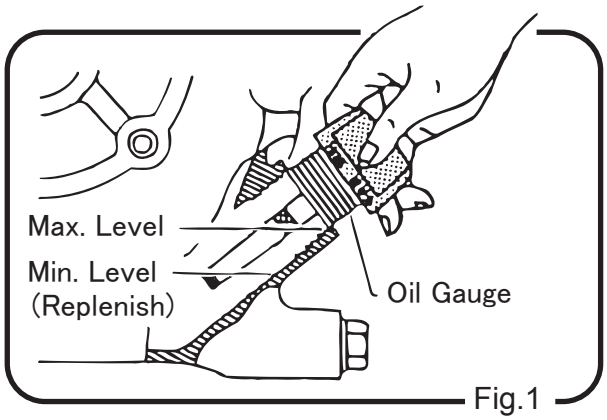


Fig.1

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.

3 V-belt
Check V-belt for any slack or damage. Tension is proper if the belt bends about 10mm when pressed with your finger at midway between two shafts. Retighten as necessary but when replacing, replace both of them simultaneously. Place the usable one in stand-by parts. For adjusting the tension, slide engine longitudinally.

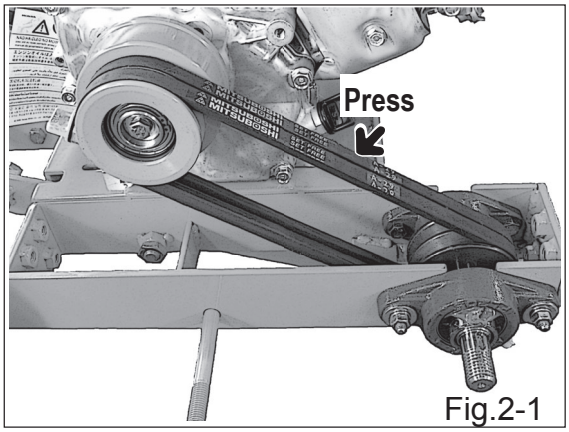


Fig.2-1

Adjusting the belt

A With 4 bolts removed, take off belt cover. (Fig.2-1,2-2,2-3)

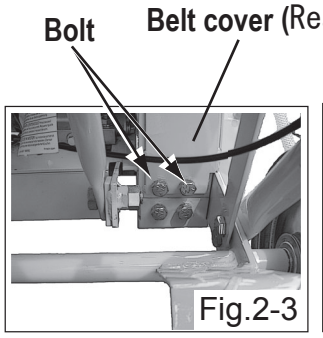


Fig.2-3

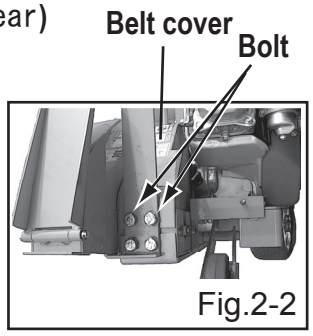


Fig.2-2

B Loosen 4 engine mounting bolts.
Caaution: Bolts should be just loosened; not removed.

C Rotating it clockwise increases the belt tension. (Fig.3)

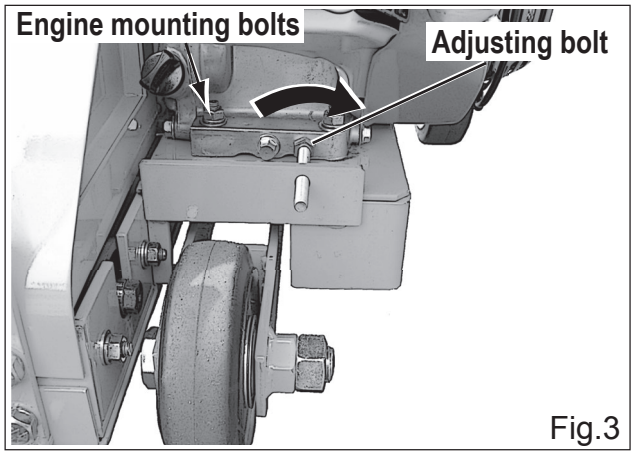


Fig.3

4 Water tank (Capacity: 13 liters)
Use water tank with plenty of water.
Useful life of blade depends on volume of cooling water.
Pay attention to the water level.
(Fig.4)

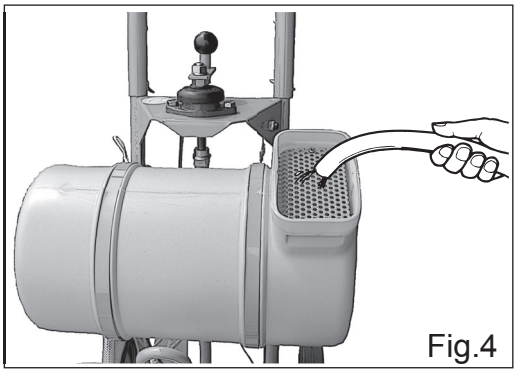


Fig.4

5 Sprinkling pipe
Open the cock to make sure that sprinkler pipe is not clogged.
(Fig.5).

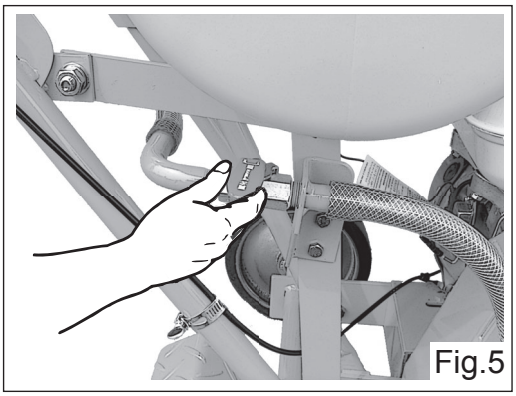


Fig.5

6 Installing the blade:

a. As shown in Fig.6-1, disconnect water pipe at the nipple of water tank bottom. After loosening grip form bolt behind blade cover, open the cover by lifting it upward to rotate it above.

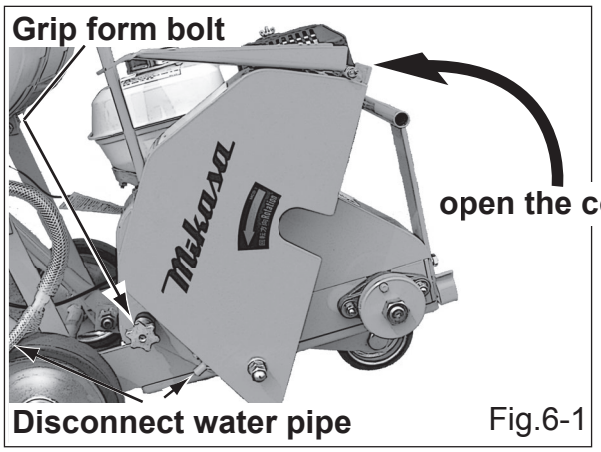


Fig.6-1

b. Place flange (IN), diamond blade and flange (OUT) around the blade shaft in such order, and install washer before tightening sufficiently with nut (right-hand thread). (Fig.6-2)

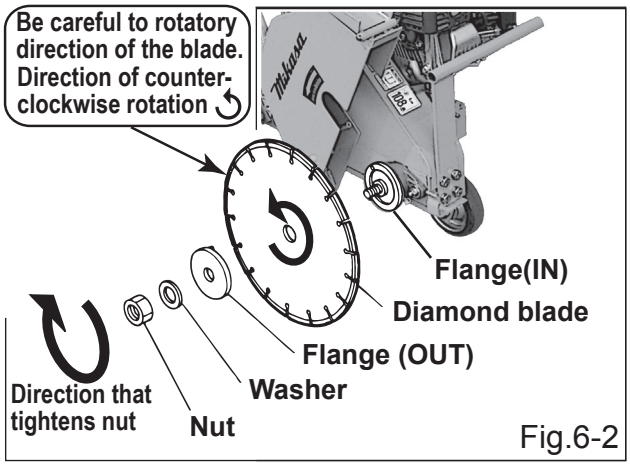


Fig.6-2

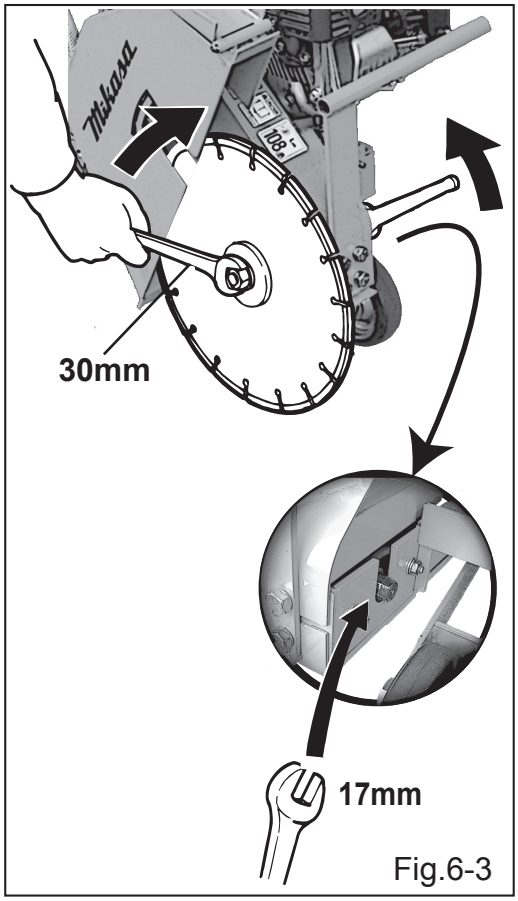


Fig.6-3

Caution
With wrench engaged at designated location of the blade shaft to lock it, rotate nut clockwise to tighten.
(Fig.6-3).

c. After installing the blade, replace blade cover to base and lock it securely with grip form bolt, before replacing water hose to nipple firmly. (Fig.7)

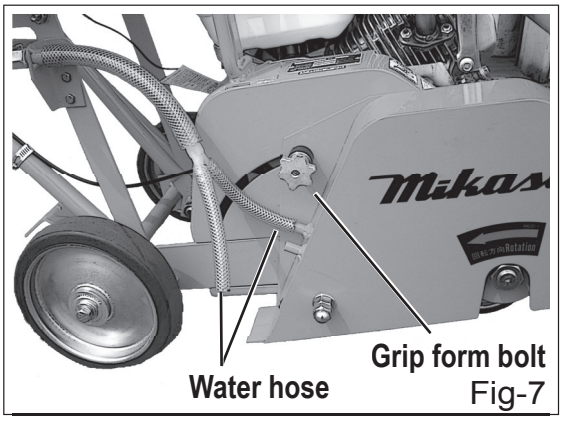


Fig-7

7. Cutting depth adjustment:
This will enable you to exactly adjust the cutting depth by turning the lifting handle.
To lower (feed motion) the machine body, rotate lifting handle clockwise.
To raise the body, rotate the lifting handle counter-clockwise. (Fig.8)

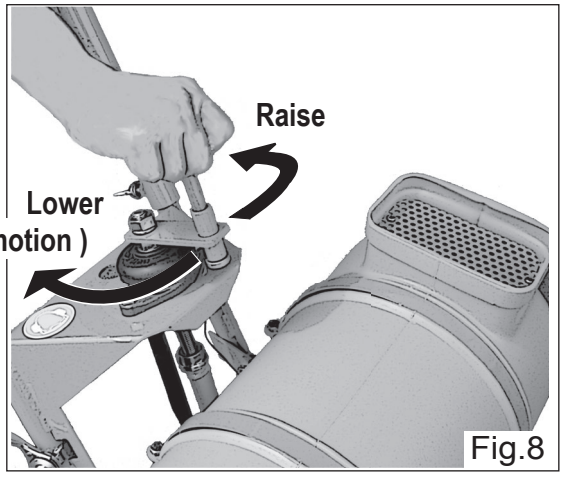


Fig.8

8. Move each operation lever, and check on creak or the wobble.

9. Check bolts and nuts for looseness or any other abnormality.

Cut depth reading method

Cut depth reads scale of cut gauge location. (Fig.8-1)

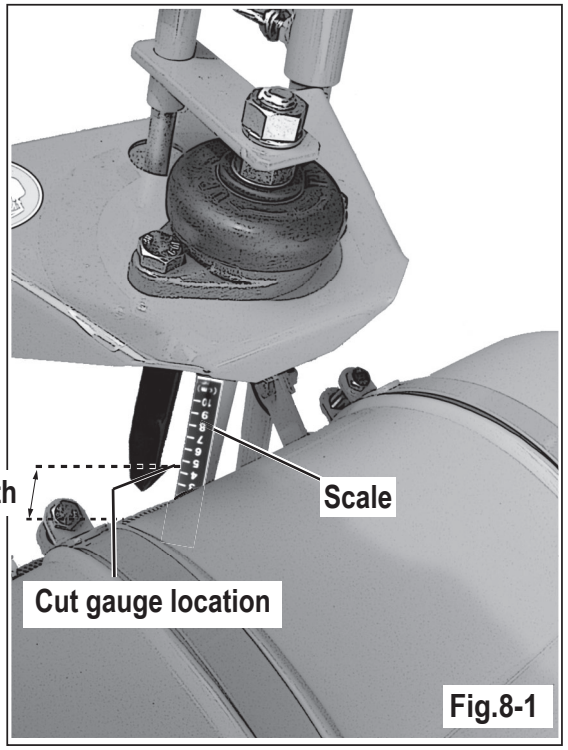


Fig.8-1

8. Operation

8-1 Starting up

1. Move fuel cock lever with FLOW position. (Fig.9)

DANGER: The exhaust gas from the engine is carbon monoxide and is deadly.
Do not run the engine in an unventilated location, such as indoors or in a tunnel.

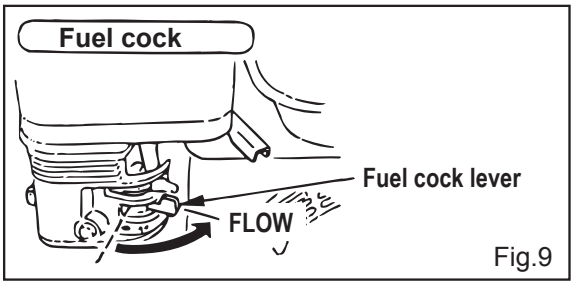


Fig.9

2. When cold or somehow starting is difficult, turn choke lever to START position. This is not necessary when engine is warm. (Fig.10)

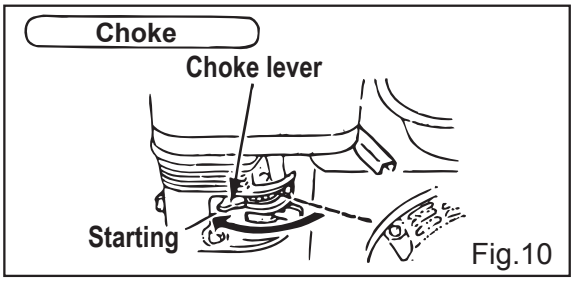


Fig.10

3. Move throttle control lever slightly to high speed side. (Fig.11)

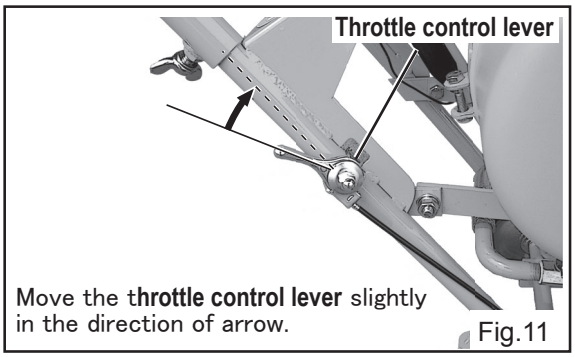


Fig.11

4. Turn engine start switch to ON position. (Fig.12)

5. Hold recoil starter grip and pull it slightly until you feel light resistance. Pull it strongly there. Be careful not to pull it too hard because it may come off. Do not release the grip from the pulled position but return it to starter case before releasing. (Fig.12)

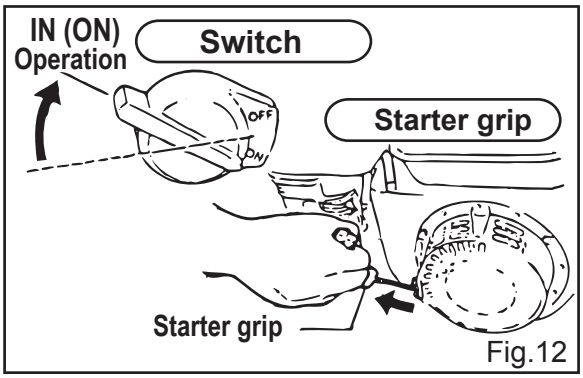


Fig.12

6. If engine has started, while listening to explosion sound, slowly return the choke lever to OPERATION position. (Fig. 13)
After started, be sure to run the engine at low speed for a few minutes.
It must be done in cold weather particularly.
Check for abnormal noise or gas leak in the meantime.

DANGER: Because engine turns blade when start, be careful enough.

CAUTION: Do not allow the starter grip to snap back against the engine.
Return it gently to prevent damage to the starter.

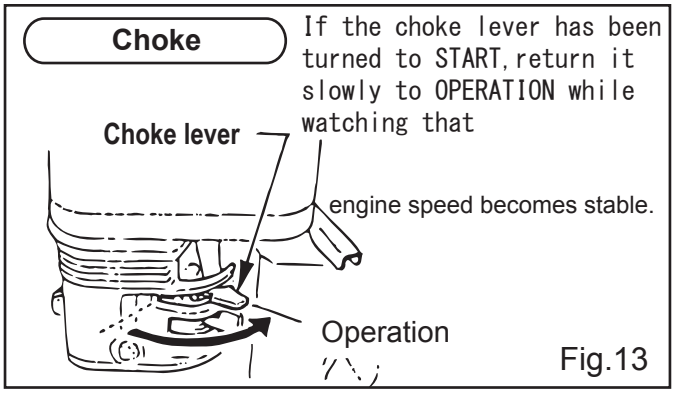


Fig.13

8–2 **Working**

1. Align the blade with cutting line. (Fig.14)
2. Open water cock of water tank to spray water to the blade. (Fig.15)
3. Open throttle lever slowly to set engine revolution to high speed.
4. Turn the lifting handle slowly clockwise and when the blade comes into contact with cutting surface, check the feed gauge at rear right of water tank (looking from operator) before continuing to feed the blade slowly to desired depth. (Fig.16)
5. While listening to engine sound, push the machine slowly for cutting operation.

Caution: Sudden feeding or cutting may damage blade or decrease durability of engine, V-belt, etc..

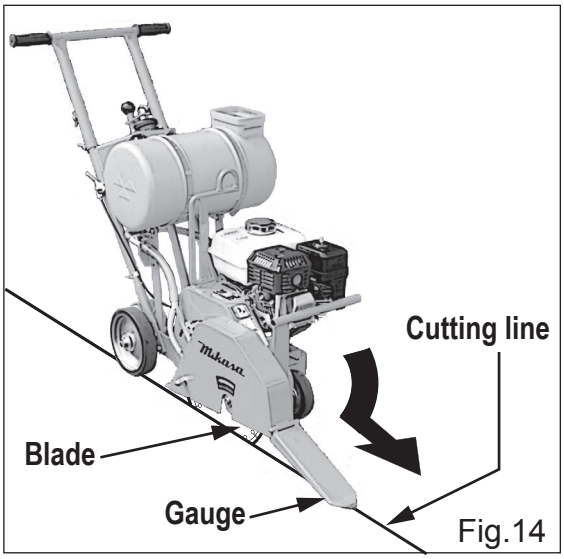


Fig.14

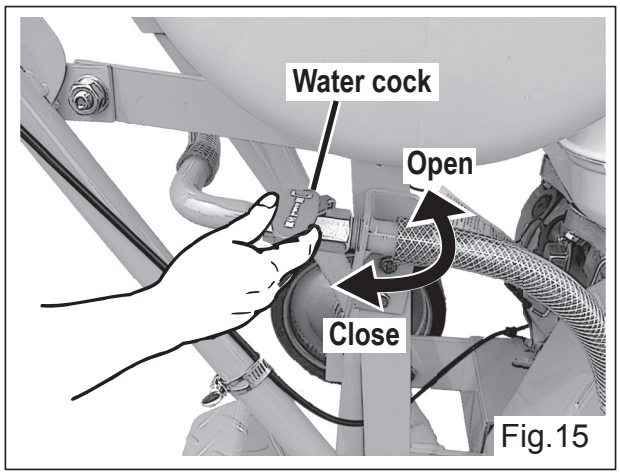


Fig.15

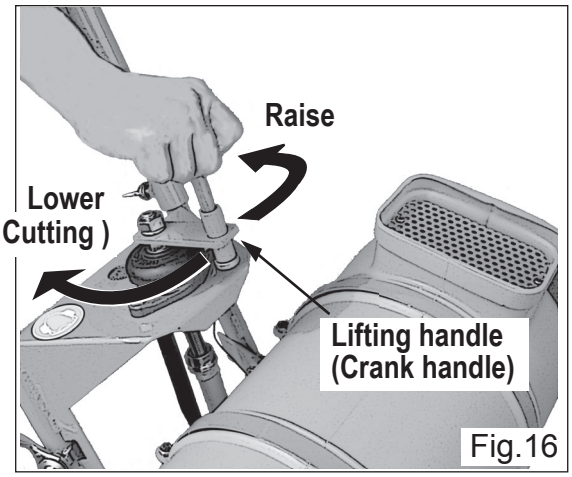


Fig.16

9. Stopping

1. When cutting is completed, turn the lift handle slowly counterclockwise to raise the machine body.
2. Close water cock to stop cooling water spray.
3. Return throttle lever to lower engine speed. Idle the engine for a few minutes to cool down, then turn the stop switch to the STOP (O) position.

Caution: Muffler gets hot during operation. Be careful not to touch it when operating throttle lever.

4. Close fuel cock.

Caution: Immediately after cutting operation, machine is hot on the whole. Be careful not incur a burn.

10. Transport

1. For loading, unloading or moving (except for cutting operation) the machine, be sure to stop engine and remove blade.

2. For lifting the machine, make sure that hook will not incur damage including crack and use one point lifting hook.
   Never attempt to lift by the handle.

   Caution: Never allow any person or animal enter underneath the suspended machine. Try not lift to unnecessary height.

3. Lower the machine slowly.
   Jerky work may damage the machine.

4. For transport, tighten fuel tank cap and close fuel cock to avoid spilling.
   Drain fuel for transporting over long distance or bad road.

5. Secure the machine to carrier floor with rope to prevent it from moving or turning over.

11. Maintenance and storage

1. Clean the machine by removing residual mortar and water. Particularly, oil the blade mounting area of blade shaft after cleaning. Retighten any loosened fastening parts. Before inspecting the machine, be sure to have the engine shutdown.
2. Apply grease to pillow block, lift handle base and slider base through grease nipple. Particularly, pillow block of the blade shaft should be well greased a few times by means of grease gun after work. Be sure to grease the thread portion of lifting screw as well (Fig.17 and 18).
3. After work, drain water from water tank and piping.
4. Replace fuel hose with new one in every two years.
5. **Proper storage**:
   For long term storage after work;
   1. Drain fuel from fuel tank, piping and carburetor.
   2. With spark plug removed, drip a few drops of engine oil into cylinder and rotate engine manually to let the oil reach everywhere inside the cylinder.
   3. Pull the recoil starter and leave it where compression is felt.
   4. Store the machine away, covered and in such place as it is free from direct sun, moisture and dust.

6. **About engine**
   For daily and periodical inspection or simple maintenance services, see engine manual separated provided.

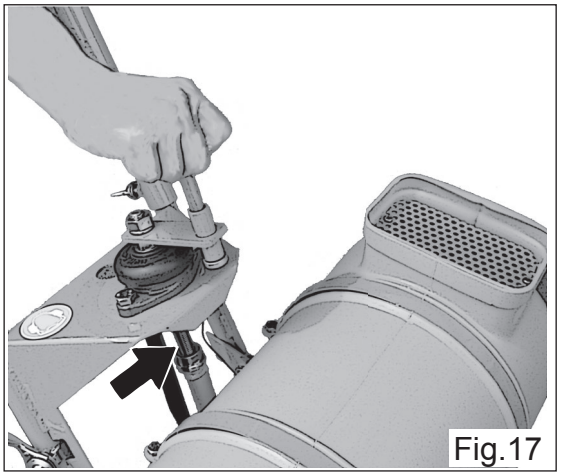


Fig.17

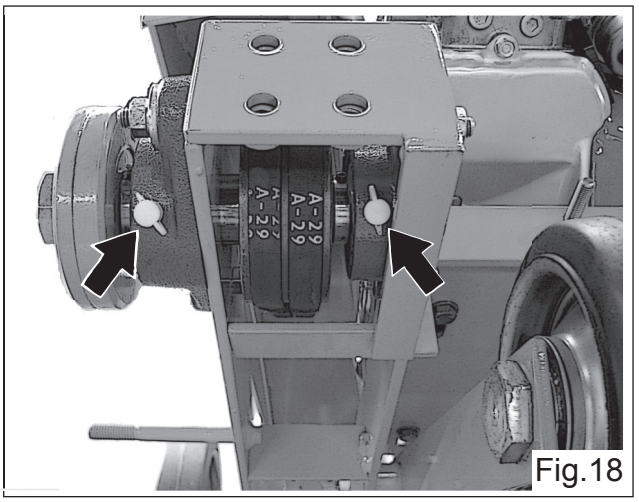


Fig.18

12. Periodic check and coordination

1. Each part check schedule list

Check schedule	Check point	Check item	Type of oils and fats
Daily (before work)	Visual inspection	Crack、Deformation	
	Fuel tank	Leak、Quantity of Fuel、Dirt	Gasoline
	One-point lifting hook	Falling off、Breakage、Crack Looseness & falling off of bolt & nuts	
	Fuel system	Leak	
	Fuel filter	Dirt	
	Engine oil	Leak、Quantity of oil、 Dirt	Engine oil
	Air cleaner	Dust of sponge	
	Blade	Crack、Damage	
	Lifting device	Function validation、 Oils and fats	Grease
	Bolt, nuts	Looseness、Falling off	
20 hours	Engine oil	First time	Engine oil
Every 6 months or 100 hours.	Engine oil	Change	Engine oil
	Lifting device (Fig.17) Lifting screw		
		Crack、Curve、Greasing	Grease
	Pillow block (Fig.18)	Greasing	Grease
	Spark plug	Check-Clean	
	Spark arrester (optional part)	Clean	
	Fuel tank & filter	Clean	
Every year or 200 hours	V-belt	Crack、Tension	
	Air-cleaner element	Replace	
	Spark plug	Replace	
	Engine idle speed	Check-Adjust	
	Engine valve clearance	Check-Adjust	
300 hours	Engine combustion chamber	Clean	
Every 2 years	Fuel line	Change	
Irregular time	Air-cleaner element	Change of necessary	
	Pillow block	Wear, Abnormal noise, Creak Wobble	

・Check schedule (time to check) is for normal condition. It depends on use conditions.

Refer the attached engine instruction manual for the details of check & maintenance for engine.

In order to avoid deficient reassembly, watch carefully normal status of installation before removing or disassembling any part.

Follow the Table of Tightening Torque to tighten the bolts and nuts.

Table of Tightening Torque (kgf-cm)

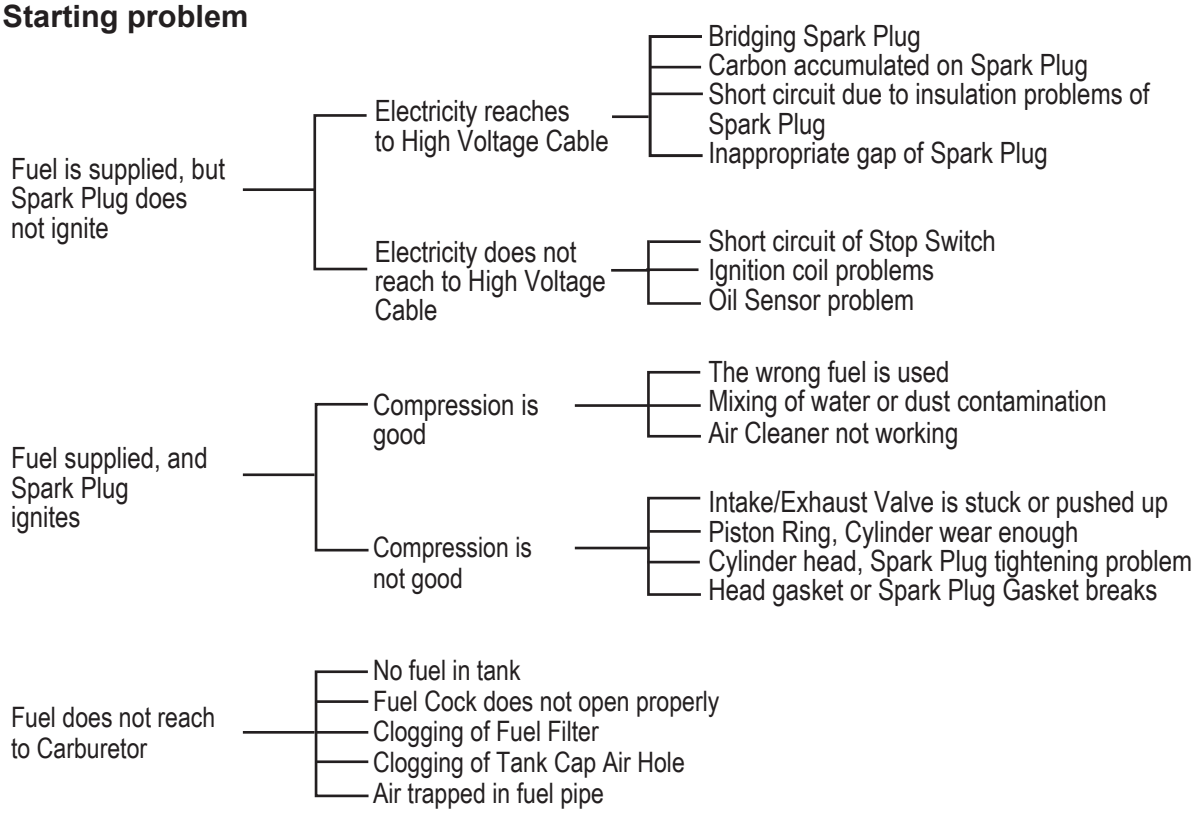
Material	Screw diameter							
	6mm	8mm	10mm	12mm	14mm	16mm	18mm	20mm
4T(SS41)	70	150	300	500	750	1,100	1,400	2,000
6-8T(S45C)	100	250	500	800	1,300	2,000	2,700	3,800
11T(SCM3)	150	400	800	1,200	2,000	2,900	4,200	5,600
In case counter part is made from aluminum	100	300～350	650～700					

※For indication in SI Unit (International Unit System), use the conversion of 1kgf-cm=9.80665N-cm

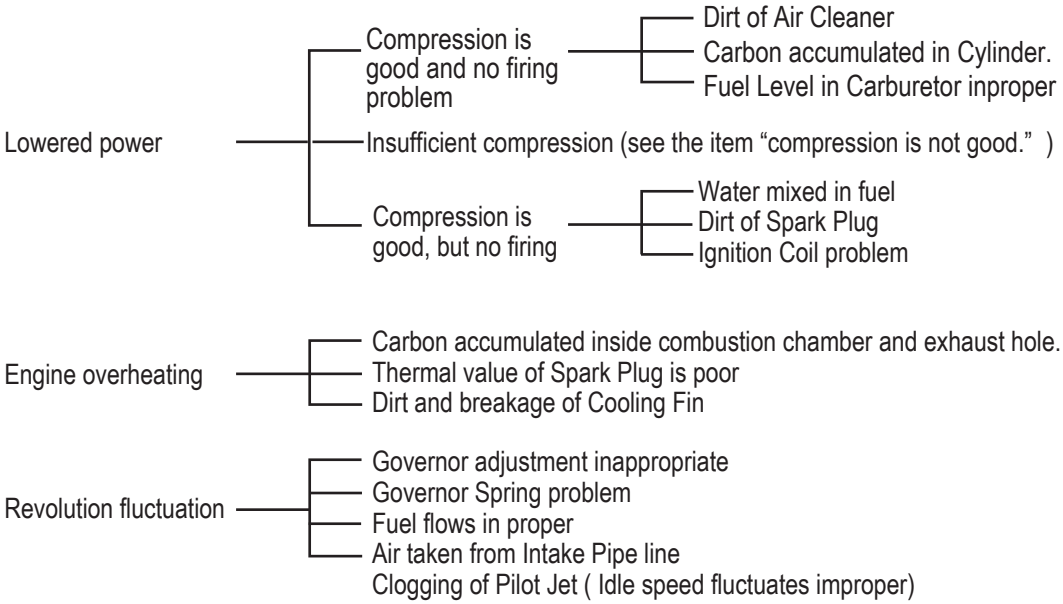
13. Trouble shooting

1. Gasoline engine

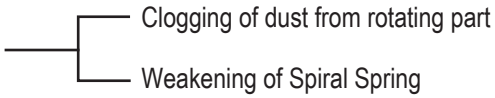
(1) Starting problem



(2) Operation problem



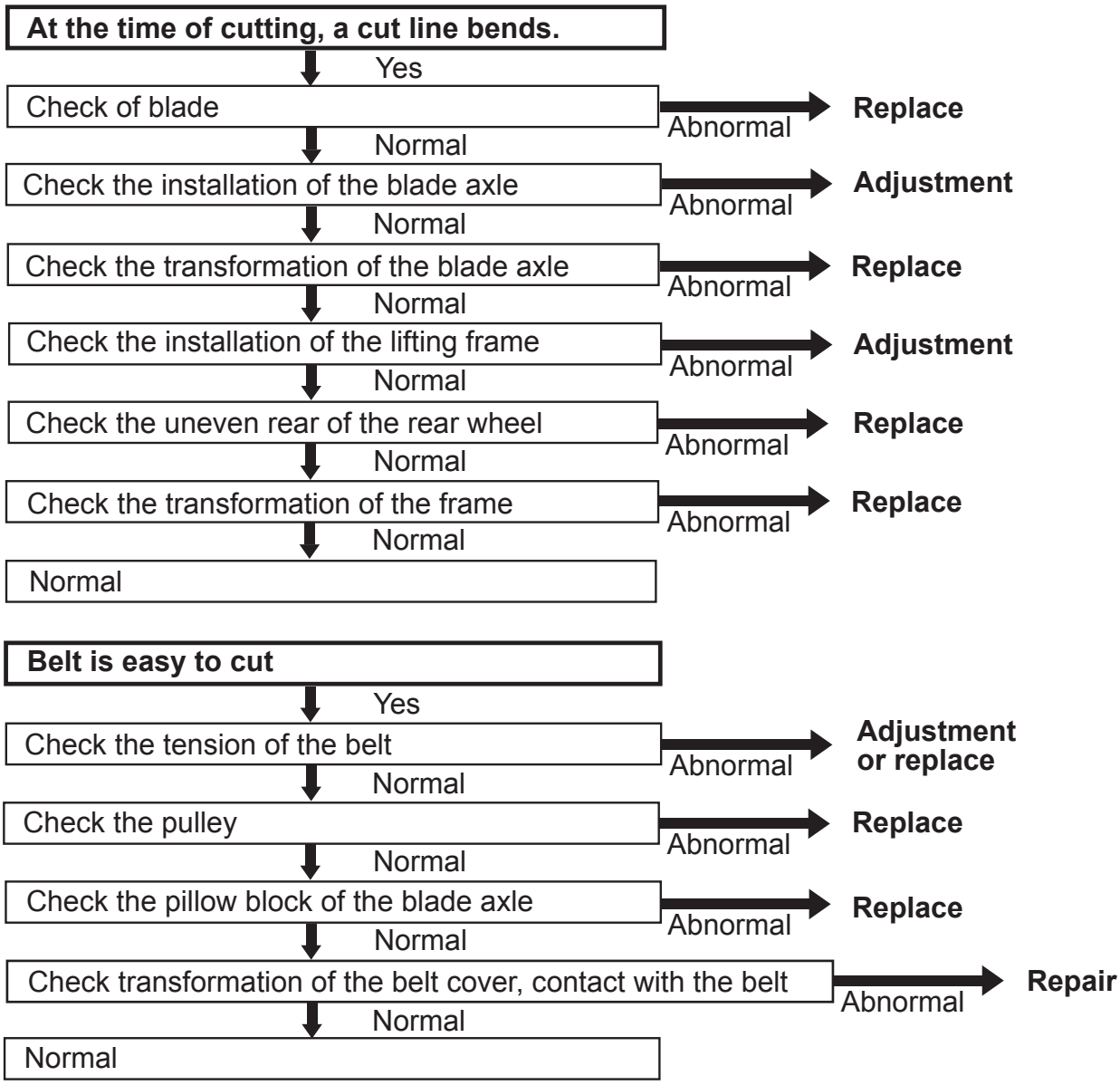
(3) Recoil Starter does not work well



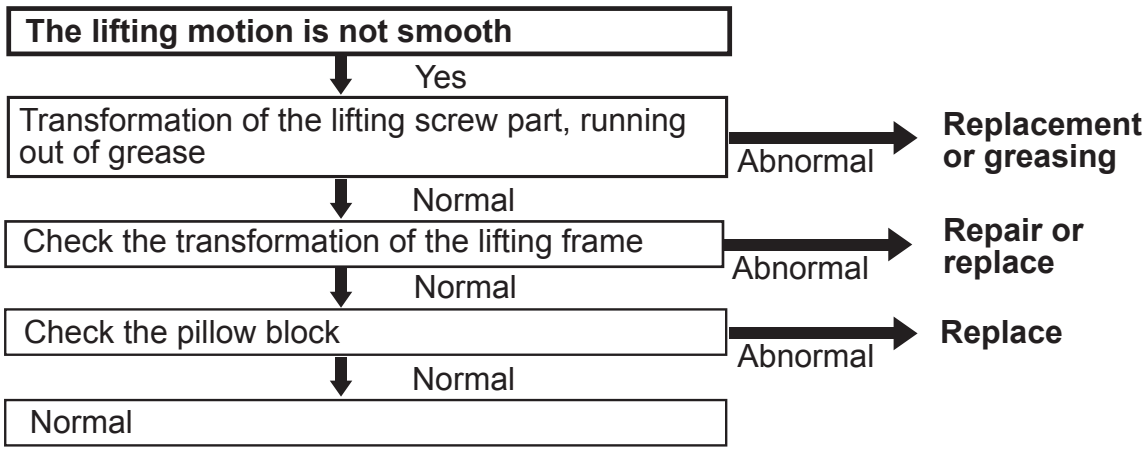
13. Troubleshooting

2. Machine

(1) Blade system



(2) Height Adjusting System



Mikasa

MIKASA SANGYO CO., LTD.
1-4-3,Kanda-Sarugakucho,Chiyoda-ku,Tokyo,101-0064,Japan

PRINTED IN JAPAN