

OPERATION MANUAL



***Mikasa* SERIES**
MODEL MVB150H
PLATE COMPACTOR
(HONDA GX160UT2SMXE GASOLINE ENGINE)

Revision #1 (06/03/20)

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THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.

PROPOSITION 65 WARNING



[illegible]

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MVB150H Plate Compactor

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NOTICE

Specifications and part numbers are subject to change without notice.

SAFETY INFORMATION




Do not operate or service the equipment before reading the entire manual. Safety precautions should be followed at all times when operating this equipment. Failure to read and understand the safety messages and operating instructions could result in injury to yourself and others.










SAFETY MESSAGES

The four safety messages shown below will inform you about potential hazards that could injure you or others. The safety messages specifically address the level of exposure to the operator and are preceded by one of four words: **DANGER**, **WARNING**, **CAUTION** or **NOTICE**.

SAFETY SYMBOLS

| |
|--|
|  DANGER |
| Indicates a hazardous situation which, if not avoided, WILL result in DEATH or SERIOUS INJURY . |
|  WARNING |
| Indicates a hazardous situation which, if not avoided, COULD result in DEATH or SERIOUS INJURY . |
|  CAUTION |
| Indicates a hazardous situation which, if not avoided, COULD result in MINOR or MODERATE INJURY . |
| NOTICE |
| Addresses practices not related to personal injury. |

Potential hazards associated with the operation of this equipment will be referenced with hazard symbols which may appear throughout this manual in conjunction with safety messages.

| Symbol | Safety Hazard |
|--|-----------------------------|
|  | Lethal exhaust gas hazards |
|  | Explosive fuel hazards |
|  | Burn hazards |
|  | Respiratory hazards |
|  | Accidental starting hazards |
|  | Eye and hearing hazards |
|  | Rotating parts hazards |

SAFETY INFORMATION

GENERAL SAFETY

⚠ CAUTION

- **NEVER** operate this equipment without proper protective clothing, shatterproof glasses, respiratory protection, hearing protection, steel-toed boots and other protective devices required by the job or city and state regulations.



- **NEVER** operate this equipment when not feeling well due to fatigue, illness or when under medication.



- **NEVER** operate this equipment under the influence of drugs or alcohol.



- **ALWAYS** check the equipment for loosened threads or bolts before starting.
- **DO NOT** use the equipment for any purpose other than its intended purposes or applications.
- **ALWAYS** clear the work area of any debris, tools, etc. that would constitute a hazard while the equipment is in operation.

NOTICE

- This equipment should only be operated by trained and qualified personnel 18 years of age and older.
- Whenever necessary, replace nameplate, operation and safety decals when they become difficult read.
- Manufacturer does not assume responsibility for any accident due to equipment modifications. Unauthorized equipment modification will void all warranties.
- **NEVER** use accessories or attachments that are not recommended by Multiquip for this equipment. Damage to the equipment and/or injury to user may result.
- **ALWAYS** know the location of the nearest fire extinguisher.
- **ALWAYS** know the location of the nearest first aid kit.
- **ALWAYS** know the location of the nearest phone or **keep a phone on the job site**. Also, know the phone numbers of the nearest **ambulance, doctor** and **fire department**. This information will be invaluable in the case of an emergency.



SAFETY INFORMATION

COMPACTOR SAFETY

DANGER

- **NEVER** operate the equipment in an explosive atmosphere or near combustible materials. An explosion or fire could result causing severe bodily harm or even death.



WARNING

- **NEVER** disconnect any **emergency or safety devices**. These devices are intended for operator safety. Disconnection of these devices can cause severe injury, bodily harm or even death. Disconnection of any of these devices will void all warranties.

CAUTION

- **NEVER** lubricate components or attempt service on a running machine.

NOTICE

- **ALWAYS** keep the machine in proper running condition.
- Fix damage to machine and replace any broken parts immediately.
- **ALWAYS** store equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children and unauthorized personnel.

ENGINE SAFETY

DANGER

- The engine fuel exhaust gases contain poisonous carbon monoxide. This gas is colorless and odorless, and can cause death if inhaled.
- The engine of this equipment requires an adequate free flow of cooling air. **NEVER** operate this equipment in any enclosed or narrow area where free flow of the air is restricted. If the air flow is restricted it will cause injury to people and property and serious damage to the equipment or engine.



WARNING

- **DO NOT** place hands or fingers inside engine compartment when engine is running.
- **NEVER** operate the engine with heat shields or guards removed.
- Keep fingers, hands hair and clothing away from all moving parts to prevent injury.
- **DO NOT** remove the radiator cap while the engine is hot. High pressure boiling water will gush out of the radiator and severely scald any persons in the general area of the compactor.
- **DO NOT** remove the coolant drain plug while the engine is hot. Hot coolant will gush out of the coolant tank and severely scald any persons in the general area of the compactor.
- **DO NOT** remove the engine oil drain plug while the engine is hot. Hot oil will gush out of the oil tank and severely scald any persons in the general area of the compactor.



CAUTION

- **NEVER** touch the hot exhaust manifold, muffler or cylinder. Allow these parts to cool before servicing equipment.



NOTICE

- **NEVER** run engine without an air filter or with a dirty air filter. Severe engine damage may occur. Service air filter frequently to prevent engine malfunction.
- **NEVER** tamper with the factory settings of the engine or engine governor. Damage to the engine or equipment can result if operating in speed ranges above the maximum allowable.
- **NEVER** tip the engine to extreme angles during lifting as it may cause oil to gravitate into the cylinder head, making the engine start difficult.

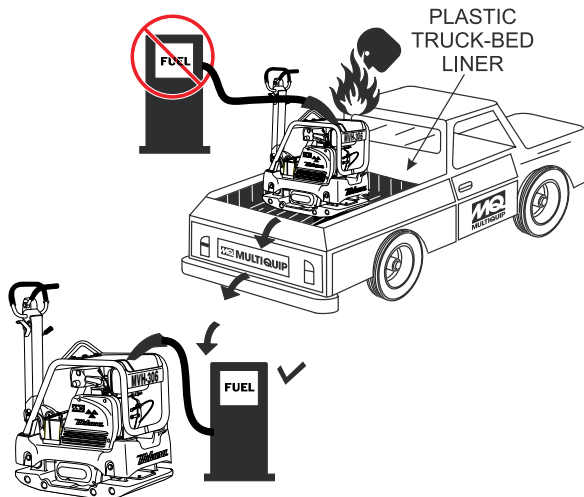


SAFETY INFORMATION

FUEL SAFETY

DANGER

- **DO NOT** add fuel to equipment if it is placed inside truck bed with plastic liner. Possibility exists of explosion or fire due to static electricity.



- **DO NOT** start the engine near spilled fuel or combustible fluids. Diesel fuel is extremely flammable and its vapors can cause an explosion if ignited.
- **ALWAYS** refuel in a well-ventilated area, away from sparks and open flames.
- **ALWAYS** use extreme caution when working with **flammable** liquids.
- **DO NOT** fill the fuel tank while the engine is running or hot.
- **DO NOT** overfill tank, since spilled fuel could ignite if it comes into contact with hot engine parts or sparks from the ignition system.
- Store fuel in appropriate containers, in well-ventilated areas and away from sparks and flames.
- **NEVER** use fuel as a cleaning agent.
- **DO NOT** smoke around or near the equipment. Fire or explosion could result from fuel vapors or if fuel is spilled on a hot engine.



BATTERY SAFETY (ELECTRIC START ONLY)

DANGER

- **DO NOT** drop the battery. There is a possibility that the battery will explode.
- **DO NOT** expose the battery to open flames, sparks, cigarettes, etc. The battery contains combustible gases and liquids. If these gases and liquids come into contact with a flame or spark, an explosion could occur.



WARNING

- **ALWAYS** wear safety glasses when handling the battery to avoid eye irritation. The battery contains acids that can cause injury to the eyes and skin.
- Use well-insulated gloves when picking up the battery.
- **ALWAYS** keep the battery charged. If the battery is not charged, combustible gas will build up.
- **DO NOT** charge battery if frozen. Battery can explode. When frozen, warm the battery to at least 61°F (16°C).
- **ALWAYS** recharge the battery in a well-ventilated environment to avoid the risk of a dangerous concentration of combustible gases.
- If the battery liquid (dilute sulfuric acid) comes into contact with **clothing or skin**, rinse skin or clothing immediately with plenty of water.
- If the battery liquid (dilute sulfuric acid) comes into contact with **eyes**, rinse eyes immediately with plenty of water and contact the nearest doctor or hospital to seek medical attention.



CAUTION

- **ALWAYS** disconnect the **NEGATIVE** battery terminal before performing service on the equipment.
- **ALWAYS** keep battery cables in good working condition. Repair or replace all worn cables.

TRANSPORTING SAFETY

CAUTION

- NEVER allow any person or animal to stand underneath the equipment while lifting.

NOTICE

- Before lifting, make sure that the equipment parts (hook and vibration insulator) are not damaged and screws are not loose or missing.
- Always make sure crane or lifting device has been properly secured to the lifting bail (hook) of the equipment.
- **ALWAYS** shutdown engine before transporting.
- **NEVER** lift the equipment while the engine is running.
- Tighten fuel tank cap securely and close fuel cock to prevent fuel from spilling.
- Use adequate lifting cable (wire or rope) of sufficient strength.
- Use one point suspension hook and lift straight upwards.
- **DO NOT** lift machine to unnecessary heights.
- **ALWAYS** tie down equipment during transport by securing the equipment with rope.

ENVIRONMENTAL SAFETY/DECOMMISSIONING

NOTICE

Decommissioning is a controlled process used to safely retire a piece of equipment that is no longer serviceable. If the equipment poses an unacceptable and unrepairable safety risk due to wear or damage or is no longer cost effective to maintain (beyond life-cycle reliability) and is to be decommissioned (demolition and dismantlement), be sure to follow rules below:

- **DO NOT** pour waste or oil directly onto the ground, down a drain or into any water source.
- Contact your country's Department of Public Works or recycling agency in your area and arrange for proper disposal of any electrical components, waste or oil associated with this equipment.



- When the life cycle of this equipment is over, remove battery and bring to appropriate facility for lead reclamation. Use safety precautions when handling batteries that contain sulfuric acid.

- When the life cycle of this equipment is over, it is recommended that the frame and all other metal parts be sent to a recycling center.

Metal recycling involves the collection of metal from discarded products and its transformation into raw materials to use in manufacturing a new product.

Recyclers and manufacturers alike promote the process of recycling metal. Using a metal recycling center promotes energy cost savings.

SPECIFICATIONS

Table 1. MVB150H Specifications

| | |
|---------------------|-----------------------|
| No. of Rubber Rolls | 4 |
| Centrifugal Force | 3417.09 lbf (15.2 kN) |
| Vibration Frequency | 5,800 vpm (97 Hz) |
| Rubber Roll Width | 21.89 in (556 mm) |
| Vibrator Oil Volume | 0.15 quart (140 cc) |
| Weight | 350.53 lbs. (159 kg) |

Table 2. Engine Specifications

| | |
|--------------------|------------------------------------|
| Engine Make | HONDA |
| Engine Model | GX160UT2SMXE |
| Engine Type | Air-cooled 4 cycle Gasoline Engine |
| Displacement | 9.95 in ³ (163 cc) |
| Maximum Output | 4.9 HP (3.6 kW) @ 3600 RPM |
| Fuel Tank Capacity | Approx. 0.95 gallons (3.6 liters) |
| Fuel Type | Unleaded Automobile Gasoline |
| Oil Capacity | 0.16 gallons (0.6 liters) |
| Oil Type | SAE 10W-30 |
| Starting Method | Recoil Start |
| Cooling System | Forced-air cooling |
| Spark Plug | NGK BPR6ES |

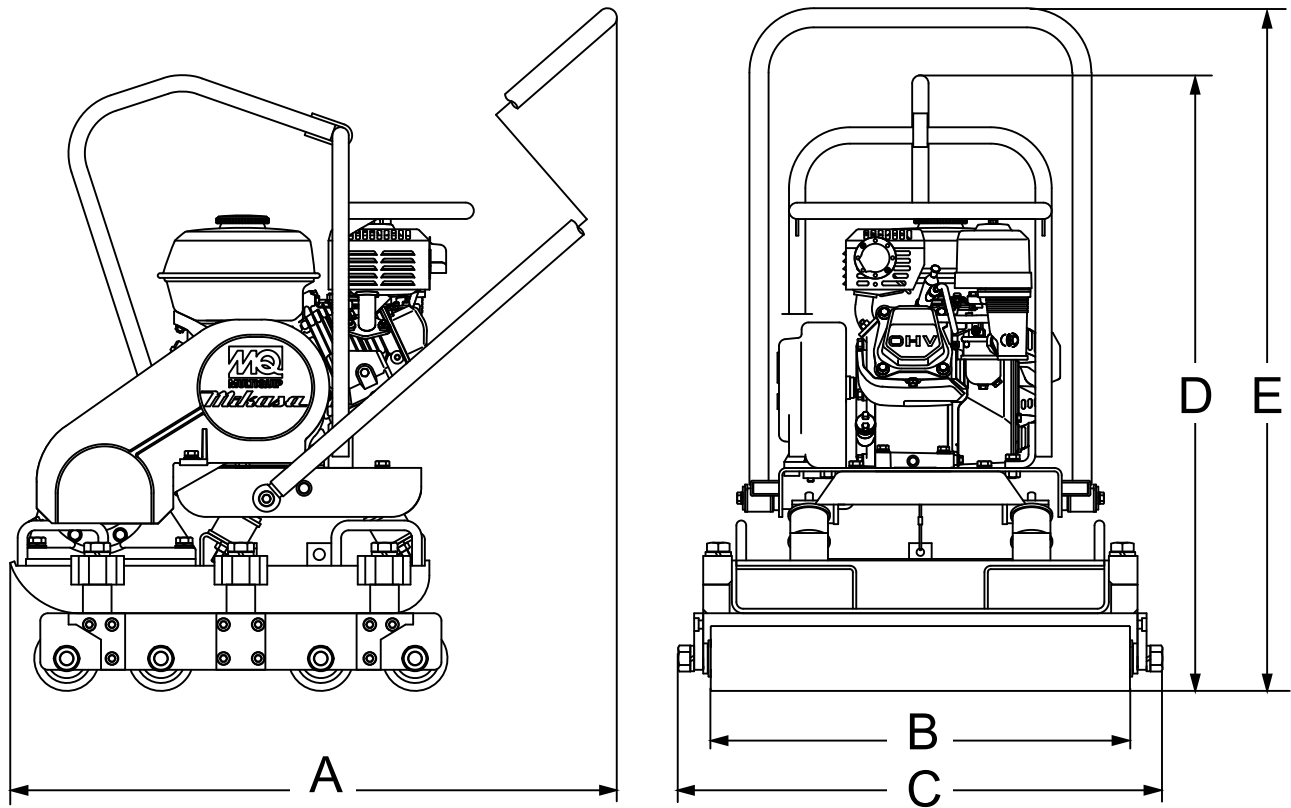


Figure 1. Dimensions

| Table 3. Dimensions | |
|---------------------|--------------|
| REFERENCE | IN. (MM) |
| A | 42.72 (1085) |
| B | 21.89 (556) |
| C | 25.28 (642) |
| D | 32.09 (815) |
| E | 35.63 (905) |

GENERAL INFORMATION

DEFINITION OF PLATE COMPACTOR

The Mikasa MVB150H is a block plate compactor designed for surfacing of interlocking blocks. It is used for paving sidewalks, parks and open spaces to flatten the surface irregularities by the machine weight and vibration.

RUBBER ROLLS

The surface flattening is done with four hard rubber rolls while vibration is applied to the surface. This prevents the surface (interlocking blocks) from being damaged.

The appropriate type of interlocking block for this compactor is one having a surface area for two rolls.

ENGINE

This plate compactor is equipped with a Honda GX160UT2SMXE, 4.9 HP air cooled, 4-cycle gasoline engine. The engine drives the eccentric shaft to generate vibrations. The vibrations generated is transmitted to the rubber rolls. See Table 2 for detailed specifications.

CONTROLS

Before starting the compactor, identify and understand the function of all the controls and components.

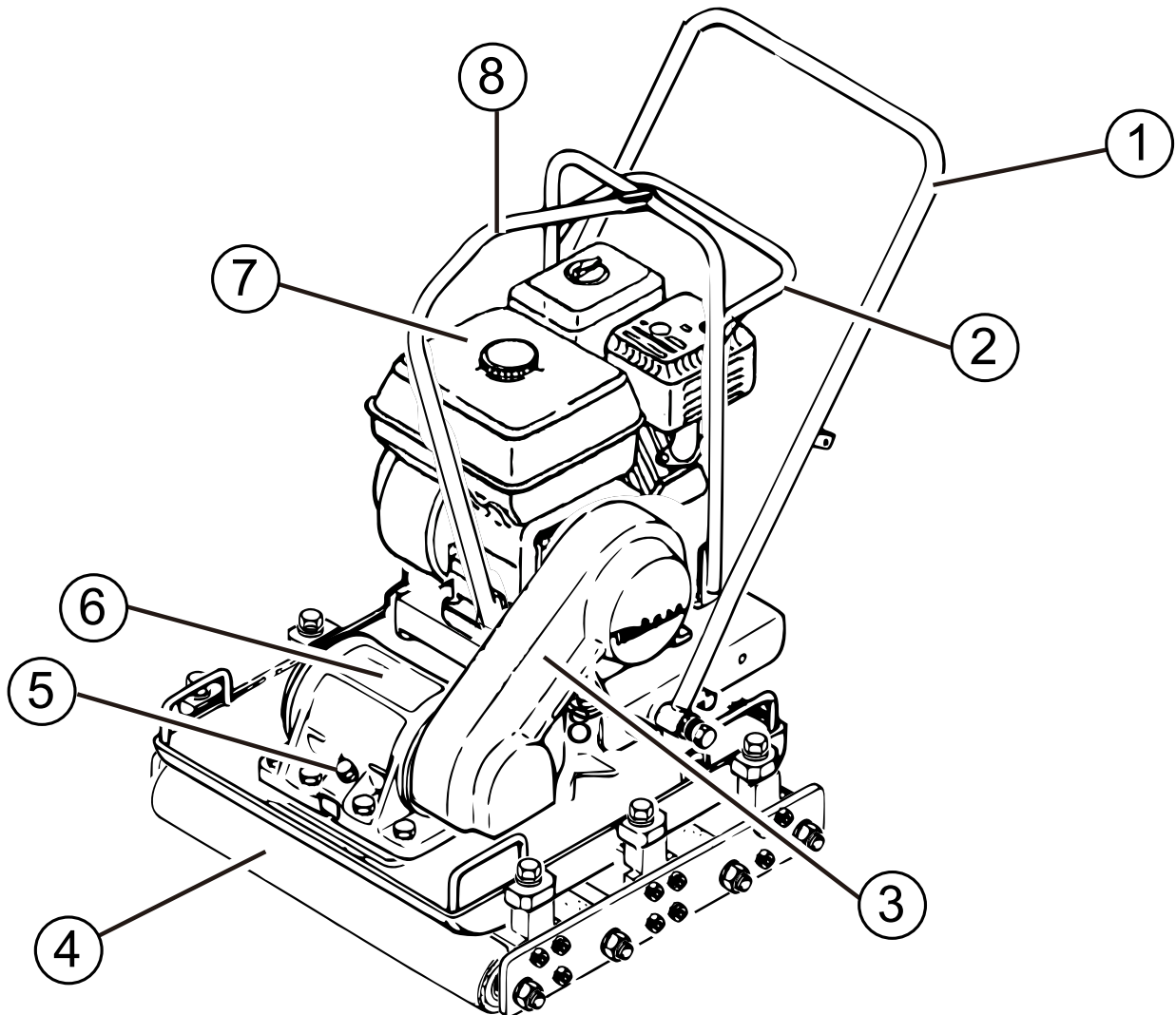


Figure 2. Plate Compactor Components

Figure 2 shows the location of the basic controls and components of the MVB85H Plate Compactor. The function of each control is described below:

1. **Handle Bar** — When operating the compactor, this handle is to be in the downward position. When the compactor is to be **stored**, move the handle bar to the upright position.
2. **Hand Grip** — Use this hand grip to lift the compactor.
3. **Belt Cover** — Remove this cover to gain access to the belt.
4. **Rubber Rolls** — Four hard rubber rolls used in the flattening of surfaces (interlocking blocks).
5. **Vibrator Drain Plug** — Used to drain oil from the vibrator.
6. **Vibrator** — Generates vibration that is transmitted to the rubber rolls.
7. **Engine** — This plate compactor uses a Honda GX160 4.9 HP gasoline engine. Refer to the manufacturer owner's manual for engine information.
8. **Lifting Bale** — When lifting of the compactor is required either by forklift, crane etc., tie rope or chain around this lifting point.

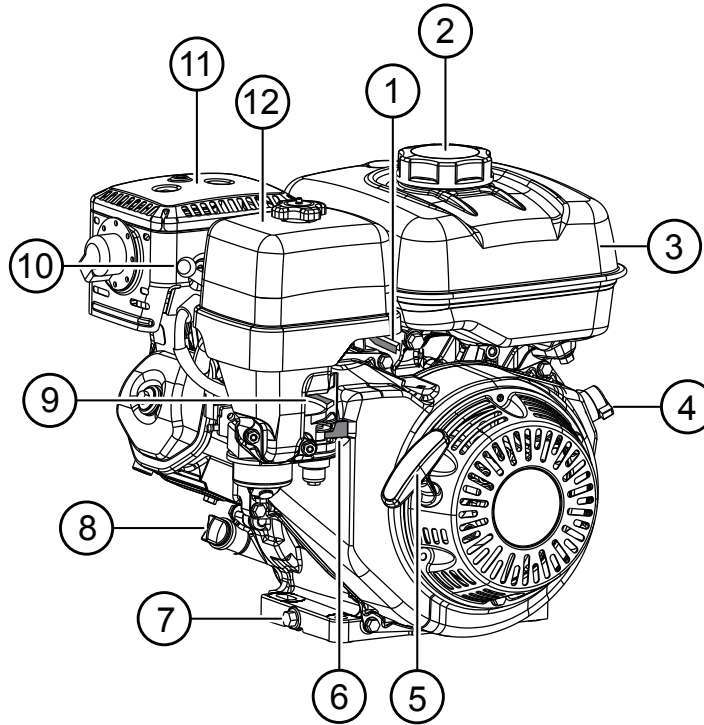


Figure 3. Engine Controls and Components

INITIAL SERVICING

The engine (Figure 3) must be checked for proper lubrication and filled with fuel prior to operation. Refer to the manufacturer's engine manual for instructions and details of operation and servicing.

1. **Throttle Lever** — Used to adjust engine RPM speed. For normal operation this lever should always be placed in the RUN position.
2. **Fuel Cap** — Remove this cap to add unleaded gasoline to the fuel tank. Fill with unleaded gasoline.
3. **Fuel Tank** — Refer to Table 2 for fuel tank capacity. Make sure cap is tightened securely. DO NOT over fill. For additional information refer to Honda engine owner's manual.

4. **Engine ON/OFF Switch** — Used to turn the engine on or off.
5. **Recoil Starter (Pull Rope)** — Pull the starter grip until resistance is felt, then pull briskly and smoothly.
6. **Fuel Valve Lever** — **OPEN** to let fuel flow, **CLOSE** to stop the flow of fuel.
7. **Oil Drain Plug** — Remove this plug to remove oil from the engine's crankcase.
8. **Dipstick/Oil Filler Cap** — Remove this cap to determine if the engine oil is low. Add oil through this filler port as recommended in (Table 5).
9. **Choke Lever** — Used in the starting of a cold engine, or in cold weather conditions. The choke enriches the fuel mixture.
10. **Spark Plug** — Provides spark to the ignition system. Set spark plug gap according to engine manufacturer's instructions. Clean spark plug once a week.
11. **Muffler** — Used to reduce noise and emissions. NEVER touch when hot!
12. **Air Cleaner** — Prevents dirt and other debris from entering the fuel system. Remove wing-nut on top of air filter cover to gain access to filter element. See the maintenance section in this manual for servicing.

DANGER



Add fuel to the tank only when the engine is stopped and has had an opportunity to cool down. In the event of a fuel spill, **DO NOT** attempt to start the engine until the fuel residue has been completely wiped up and the area surrounding the engine is dry.

BEFORE STARTING

1. Read all safety instructions at the beginning of manual.
2. Clean the compactor, removing dirt and dust, particularly the engine cooling air inlet, carburetor and air cleaner.
3. Check the air filter for dirt and dust. If air filter is dirty, replace air filter with a new one as required.
4. Check carburetor for external dirt and dust. Clean with dry compressed air.
5. Check fastening nuts and bolts for tightness.

ENGINE OIL CHECK

1. To check the engine oil level, place the compactor on secure level ground with the engine stopped.
2. Remove the dipstick from the engine oil filler hole (Figure 4) and wipe clean.

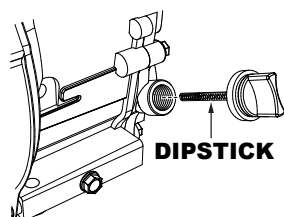


Figure 4. Engine Oil Dipstick Removal

3. Insert and remove the dipstick without screwing it into the filler neck. Check the oil level shown on the dipstick.
4. If the oil level is low (Figure 5), fill to the edge of the oil filler hole with the recommended oil type as listed in Table 4. Refer to Table 2 for maximum engine oil capacity.

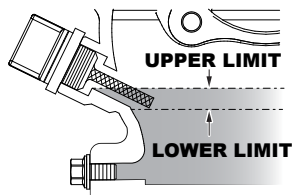


Figure 5. Engine Oil Dipstick (Oil Level)

Table 4. Oil Type

| Season | Temperature | Oil Type |
|-------------|----------------|---------------|
| Summer | 25°C or Higher | SAE 10W-30 |
| Spring/Fall | 25°C~10°C | SAE 10W-30/20 |
| Winter | 0°C or Lower | SAE 10W-10 |

DANGER



EXPLOSIVE FUEL!

Motor fuels are highly flammable and can be dangerous if mishandled. **DO NOT** smoke while refueling. **DO NOT** attempt to refuel the compactor if the engine is hot or running.

FUEL CHECK

1. Visually inspect (Figure 6) to see if fuel level is low. If fuel is low, replenish with unleaded fuel.

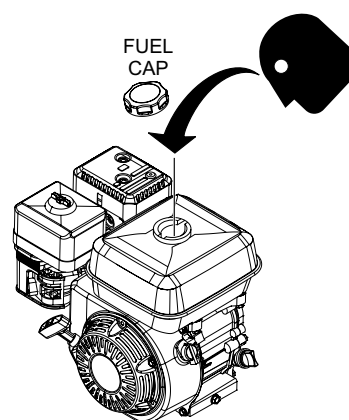


Figure 6. Fuel Check

2. When refueling, be sure to use a strainer for filtration. **DO NOT** top-off fuel. Wipe up any spilled fuel immediately.

V-BELT COVER REMOVAL

To inspect the V-belt, remove the bolts that secure the belt cover to the frame as shown in Figure 7.

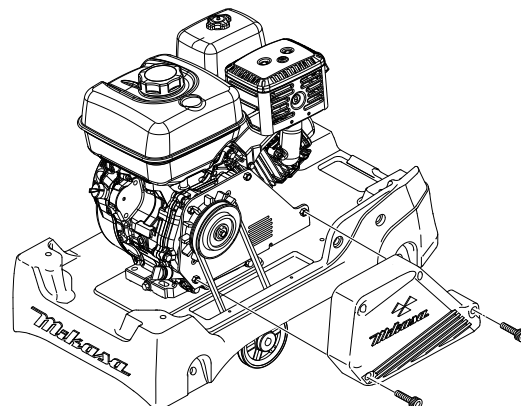


Figure 7. V-Belt Location

V-BELT INSPECTION

Visually examine the V-belt (Figure 8) and determine if it is full of tiny cracks, frayed, has pieces of rubber missing, is peeling or otherwise damaged.

Also, examine the belt and determine if it is **oil soaked** or **"glazed"** (hard shiny appearance on the sides of the belt). Either of these two conditions can cause the belt to run hot, which can weaken it and increase the danger of it breaking.

If the V-belt exhibits any of the referenced wear conditions replace the V-belt immediately.

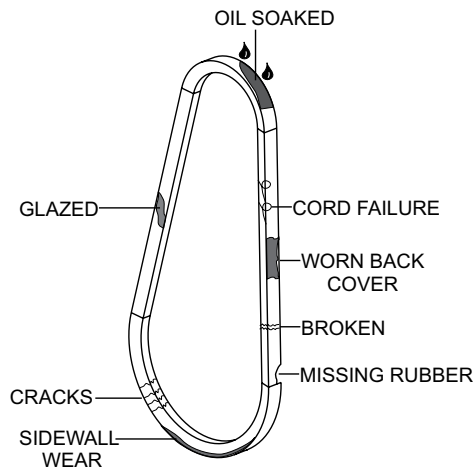


Figure 8. Drive Belt Inspection

V-BELT TENSION

The V-belt tension is proper if the V-belt bends 10 to 15 mm (Figure 9) when depressed with finger at midway between the clutch and vibrator pulleys.

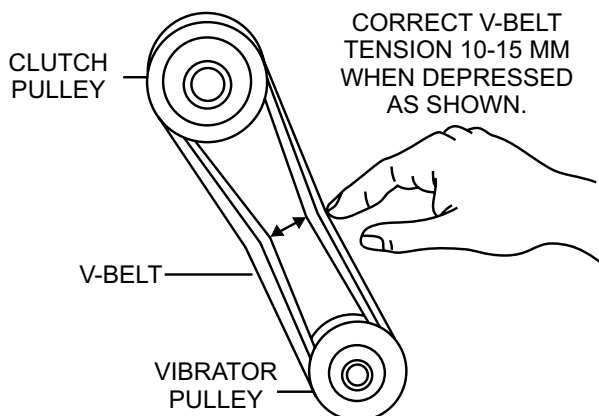


Figure 9. V-Belt Tension

VIBRATOR OIL CHECK

1. Place the plate compactor horizontally on a flat surface. Make sure the compactor is level when checking the oil in the vibrator assembly.
2. Check vibrator oil level by removing the oil plug (vibrator oil gauge) as shown in Figure 10. Clean the oil gauge and rethread back in. Remove the oil gauge again and confirm oil level does not exceed the cross hash of the oil plug. **DO NOT OVERFILL!**

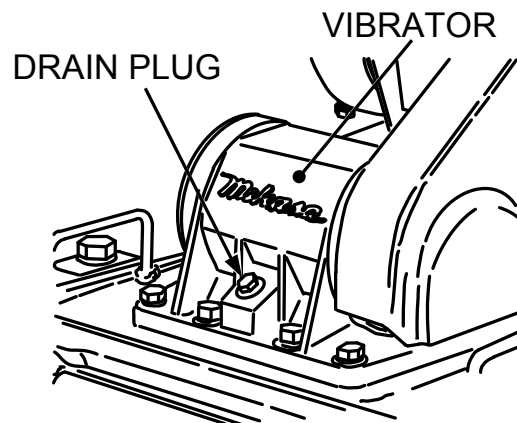


Figure 10. Vibrator Oil Check

3. The vibrator holds approximately 4.73 oz. (140 cc). **IMPORTANT**, if oil is required, replace using only SAE 10W-30 motor oil.

CAUTION



DO NOT attempt to operate the compactor until the Safety, General Information and Inspection sections of this manual have been *read and thoroughly understood*.

This section is intended to assist the operator with the initial startup of the compactor. It is extremely important that this section be read carefully before attempting to use the compactor in the field.

STARTING THE ENGINE

1. Place the engine fuel valve lever (Figure 11) to the "ON" position.

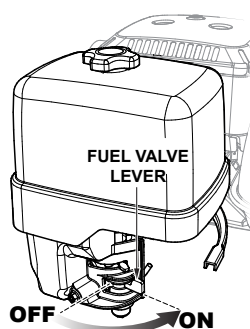


Figure 11. Engine Fuel Valve Lever (ON Position)

2. Move the throttle lever (Figure 12) to the *idle* position.

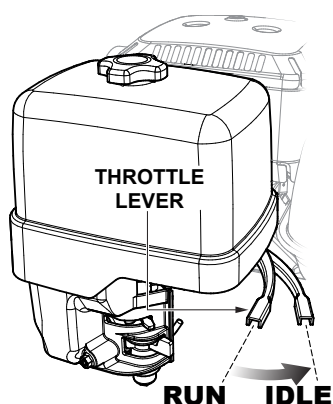


Figure 12. Throttle Lever (Idle Position)

3. Place the choke lever (Figure 13) in the "CLOSED" position if starting a cold engine.

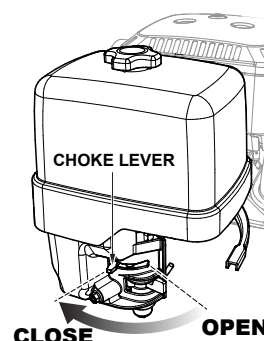


Figure 13. Choke Lever (Closed)

NOTICE

The **CLOSED** position of the choke lever enriches the fuel mixture for starting a **COLD** engine. The **OPEN** position provides the correct fuel mixture for normal operation after starting, and for restarting a warm engine.

4. Place the engine ON/OFF switch (Figure 14) in the "ON" position.

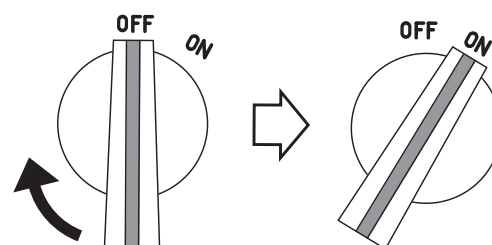


Figure 14. Engine ON/OFF Switch (ON Position)

5. Grasp the starter grip (Figure 15) and slowly pull it out. The resistance becomes the hardest at a certain position, corresponding the compression point. Rewind the rope a little from that point and pull out sharply.

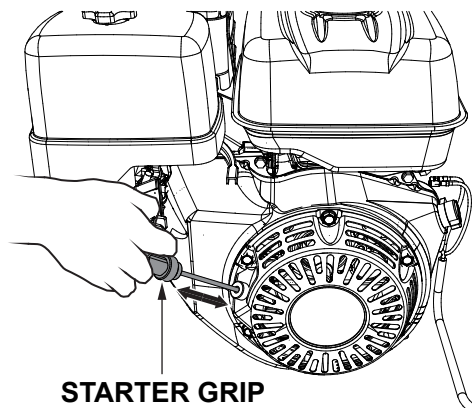


Figure 15. Starter Grip

NOTICE

DO NOT pull the starter rope all the way to the end

DO NOT release the starter rope after pulling. Allow it to rewind as soon as possible.

6. When engine starts, release the starter grip and allow the rope to recoil.

7. If the choke lever was moved to the "CLOSED" position to start the engine, gradually move it to the "OPEN" position (Figure 16) as the engine warms up. If the engine has not started, repeat steps 1 through 6.

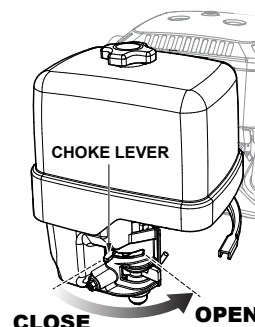


Figure 16. Choke Lever (Open)

8. Before the compactor is placed into operation, run the engine for several minutes. Check for fuel leaks, and noises that would be associated with a loose component.

OPERATION

CAUTION



ALWAYS follow all safety rules in the safety section of this manual before operating compactor. Keep work area clear of debris and other objects that could cause bodily injury or damage to the compactor.

1. Once the engine has started, move the engine throttle lever quickly to the **run** position (Figure 17).

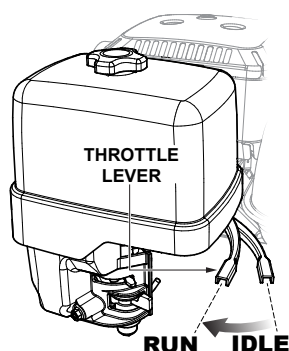


Figure 17. Throttle Lever (Run Position)

NOTICE

ALWAYS move the throttle lever quickly, without hesitation, because increasing the engine speed slowly causes the clutch to slip.

2. Push and pull the handlebar to travel forward and backward and flatten interlocking block.

CAUTION

NEVER operate machine with a person sitting on it. Vibration may cause person to fall off and cause injury.

STOPPING THE ENGINE

Normal Shutdown

1. Move the throttle lever to the **idle** position (Figure 18) and run the engine for three minutes at low speed.

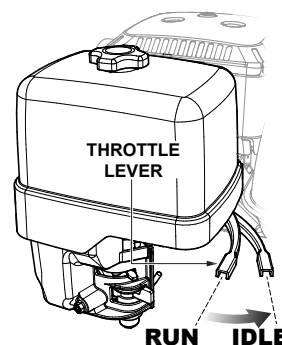


Figure 18. Throttle Lever (Idle)

2. Place the engine **ON/OFF** switch (Figure 19) in the **OFF** position.

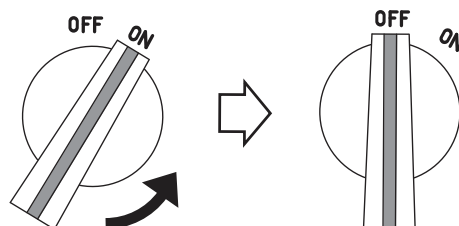


Figure 19. Engine ON/OFF Switch (OFF Position)

3. Place the fuel shut-off lever (Figure 20) in the **OFF** position.

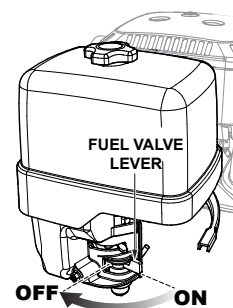


Figure 20. Fuel Valve Lever (OFF)

Emergency Shutdown

1. Move the throttle lever quickly to the **IDLE** position, and place the engine **ON/OFF** switch in the **OFF** position.

GENERAL MAINTENANCE

General maintenance practices are crucial to the performance and longevity of your compactor. This equipment requires routine cleaning, inspection and lubrication. Reference Table 5 and Table 6 for scheduled engine and compactor maintenance.

The following procedures, devoted to maintenance, can prevent serious compactor damage or malfunctioning.

NOTICE

Reference **HONDA** engine manual supplied with your compactor for more detailed engine maintenance and troubleshooting.



CAUTION



ALWAYS allow the engine to cool before servicing. **NEVER** attempt any maintenance work on a hot engine.

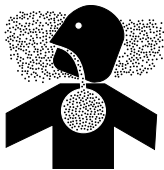


CAUTION

ALWAYS disconnect the spark plug wire from the spark plug and secure away from the engine before performing maintenance or adjustments on the machine.



WARNING



Some maintenance operations may require the engine to be run. Ensure that the maintenance area is well ventilated. Gasoline engine exhaust contains poisonous carbon monoxide gas that can cause unconsciousness and may result in **DEATH**.

General Cleanliness

Clean the compactor daily. Remove all dust and debris buildup (mud, clay etc.). If the compactor is steam-cleaned, ensure that lubrication is accomplished **AFTER** steam cleaning.

NOTICE

Inspection and other services should always be carried out on hard and level ground with the engine shut down.

NOTICE

The inspection intervals listed in the maintenance tables are for operation under normal conditions. Adjust your inspection intervals based on the number hours plate compactor is in use, and particular working conditions.

NOTICE

Inspection and other services should always be carried out on hard and level ground with the engine shutdown.

To make sure your plate compactor is always in good working condition before using, carry out the maintenance inspection in accordance with Table 5 and Table 6.

NOTICE

The inspection intervals listed in the maintenance tables are for operation under normal conditions. Adjust your inspection intervals based on the number hours plate compactor is in use, and particular working conditions.

ENGINE MAINTENANCE

Perform engine maintenance as listed in Table 5.

Table 5. Engine Maintenance Schedule

| Description (3) | Operation | Before | First Month or 10 hrs | Every 3 Months or 25 hrs | Every 6 Months or 50 hrs | Every Year or 100 hrs | Every 2 Years or 200 hrs |
|--------------------|-------------------------|--|-----------------------|--------------------------|--------------------------|-----------------------|--------------------------|
| Engine Oil | CHECK | X | | | | | |
| | CHANGE | | X | | | | |
| Air Cleaner | CHECK | X | | | | | |
| | CHANGE | | | X (1) | | | |
| All Nuts and Bolts | Re-tighten If Necessary | X | | | | | |
| Spark Plug | CHECK-CLEAN | | | | X | | |
| | REPLACE | | | | | | X |
| Cooling Fins | CHECK | | | | X | | |
| Spark Arrester | CLEAN | | | | | X | |
| Fuel Tank | CLEAN | | | | | X | |
| Fuel Filter | CHECK | | | | | X | |
| Idle Speed | CHECK-ADJUST | | | | | X (2) | |
| Valve Clearance | CHECK-ADJUST | | | | | | X (2) |
| Fuel lines | CHECK | Every 2 years (replace if necessary) (2) | | | | | |

1. Service more frequently when used in **DUSTY** areas.
2. These items should be serviced by your service dealer, unless you have the proper tools and are mechanically proficient. Refer to the **HONDA** Shop Manual for service procedures.
3. For commercial use, log hours of operation to determine proper maintenance intervals.

Machine Inspection

Perform machine inspection as listed in Table 6.

| Table 6. Machine Inspection | | |
|-----------------------------|-----------------------|---|
| Interval | Check | Solution |
| Daily Before Starting | Machine | Clean if necessary. |
| | Fuel Tank For Leaks | Repair fuel leaks. |
| | Fuel System for Leaks | Repair fuel leaks. |
| | Engine Oil | Add oil if necessary. |
| | Vibrator Oil | Add oil if necessary. |
| | Air Cleaner Element | Clean/Replace |
| | Guard Frame | Inspect deformations |
| Every 20 Hours | Shock Absorber | Replace if damaged. |
| | Engine Oil | Replace only after first 20 hrs. |
| Every 100 | Engine Oil | Change |
| | Air Cleaner Element | Clean/Replace |
| | Vibrator Oil | Check oil level. Check for leaks. |
| Every 200 hours | V-Belt | Inspect, replace if damaged or worn. |
| | Clutch | Inspect, replace if not working properly. |
| | Engine Bolts | Replace bolts if deformed or elongated. |
| Every 300 hours | Vibrator Oil | Change |
| | Fuel Filter | Change |
| Every 2 years | Fuel Lines | Replace |

Tightening Torque

Refer to Table 7 (Tightening Torque), for retightening of nuts and bolts.

| Table 7. Tightening Torque (in. kg/cm Diameter) | | | | | | | | |
|---|--|-----|------|-------|-------|-------|-------|-------|
| Material | 6mm | 8mm | 10mm | 12mm | 14mm | 16mm | 18mm | 20mm |
| 4T | 70 | 150 | 300 | 500 | 750 | 1,100 | 1,400 | 2,000 |
| 6-8T | 100 | 250 | 500 | 800 | 1,300 | 2,000 | 2,700 | 3,800 |
| 11T | 150 | 400 | 800 | 1,200 | 2,000 | 2,900 | 4,200 | 5,600 |
| * | 100 (6mm) 300 ~ 350 (8mm) 650 ~ 700 (10mm) | | | | | | | |
| ** | In case counterpart is of aluminum | | | | | | | |
| Bolt threads used with this machine are all right handed | | | | | | | | |
| Material and quality of material is marked on each bolt, and screw. | | | | | | | | |

Engine Air Cleaner



DANGER



DO NOT use gasoline or low flash point solvents for cleaning the air cleaner. The possibility exists of fire or explosion which can cause damage to the equipment and severe bodily harm or even **DEATH!**



CAUTION



Wear protective equipment such as approved safety glasses or face shields and dust masks or respirators when cleaning air filters with compressed air.

NOTICE

Operating the engine with loose or damaged air cleaner components could allow unfiltered air into the engine causing premature wear and failure.

The Honda GX160UT2SMXE engine is equipped with a replaceable, high-density paper air cleaner element. See (Figure 21) for air cleaner components.

1. Remove the air cleaner cover and foam filter element.
2. Tap the paper filter element several times on a hard surface to remove dirt, or blow compressed air not exceeding 30 psi (207 kPa, 2.1 kgf/cm²) through the filter element from the inside out. **NEVER** brush off dirt. Brushing will force dirt into the fibers. Replace the paper filter element if it is excessively dirty.

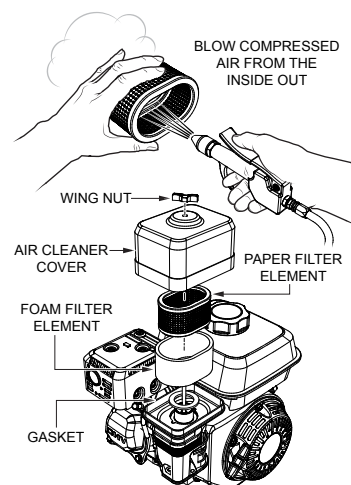


Figure 21. Engine Air Filter

3. Clean foam element in warm, soapy water or nonflammable solvent. Rinse and dry thoroughly. Dip the element in clean engine oil and completely squeeze out the excess oil from the element before installing.
4. Blow compressed air through the air cleaner cover as shown in (Figure 21). Clean inside of air filter cover with warm, soapy water or nonflammable solvent. Rinse and dry thoroughly.

NOTICE

Operating the engine with loose or damaged air cleaner components could allow unfiltered air into the engine causing premature wear and failure.

ENGINE OIL

NOTICE

Drain the engine oil when the oil is warm.

1. Remove the oil drain bolt (Figure 22). and sealing washer and allow the oil to drain into a suitable container.
2. Replace engine oil with recommended type oil as listed in Table 4. For engine oil capacity, see Table 2 (Engine Specifications). **DO NOT** overfill.
3. Reinstall drain bolt with sealing washer and tighten securely.

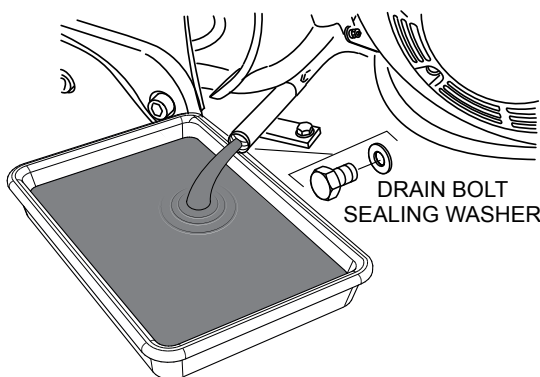


Figure 22. Draining Engine Oil

SPARK PLUG

NOTICE

NEVER use a spark plug of incorrect heat range.

1. Remove and clean spark plug (Figure 23) with a wire brush if it is to be reused. Discard spark plug if the insulator is cracked or chipped.
2. Using a feeler gauge adjust spark plug gap to 0.028 ~0.031 inch (0.7~0.8 mm).
3. Thread spark plug into cylinder hole by hand to prevent cross-threading, then tighten securely.

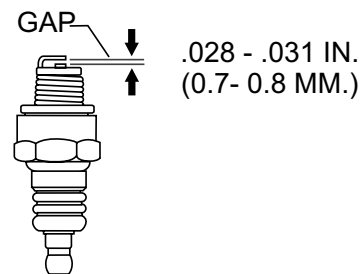


Figure 23. Spark Plug Gap

V-BELT

Visually examine the V-belt (Figure 24) and determine if it is full of tiny cracks, frayed, has pieces of rubber missing, is peeling or otherwise damaged.

Also, examine the belt and determine if it is **oil soaked** or **"glazed"** (hard shiny appearance on the sides of the belt). Either of these two conditions can cause the belt to run hot, which can weaken it and increase the danger of it breaking.

If the V-belt exhibits any of the above wear conditions replace the V-belt immediately.

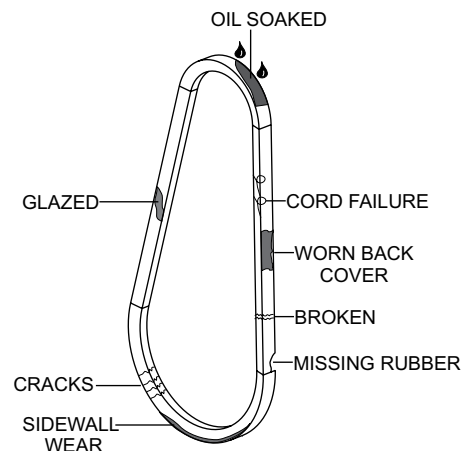


Figure 24. V-Belt Inspection

SPARK ARRESTER CLEANING

Clean the spark arrester every year or 100 hours.

1. Remove the 4 mm screws (3) from the exhaust deflector, then remove the deflector (Figure 25).
2. Remove the 5 mm screws (4) from the muffler protector, then remove the muffler protector.
3. Remove the 4 mm screws from the spark arrester, then remove the spark arrester.

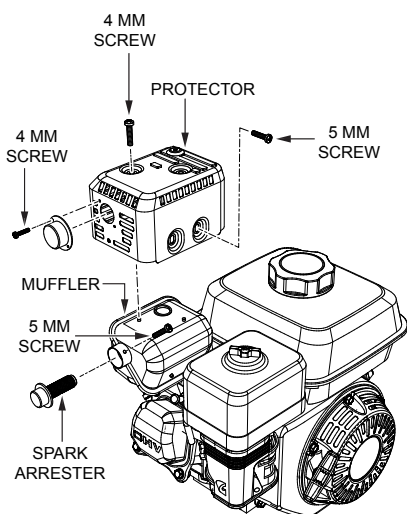


Figure 25. Spark Arrester Removal

4. Carefully remove carbon deposits from the spark arrester screen (Figure 26) with a wire brush.

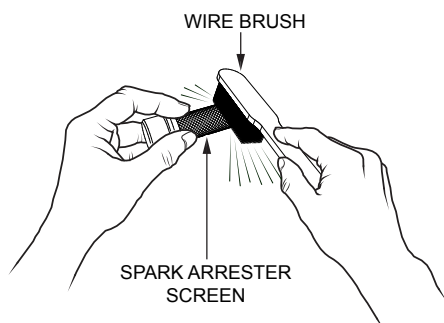


Figure 26. Cleaning The Spark Arrester

5. If the spark arrester is damaged and has breaks or holes, replace with a new one.
6. Reinstall the spark arrester and muffler protector in reverse order of disassembly.

STORAGE

1. Wash off dirt and soil from every part with water. While washing, be careful not to let the water splash on the electric components such as the engine muffler.
2. Cover the machine to prevent dust and dirt buildup.
3. Store the machine in a dry area away from direct sunlight.
4. Do not leave the machine outdoors. Keep it indoors.
5. When not used for a long period of time, drain the fuel from the fuel tank.
6. When the machine is used after a long storage period, check the level of engine oil before using.

TROUBLESHOOTING (COMPACTOR)

| Troubleshooting (Compactor) | | |
|--|---|---|
| Symptom | Possible Problem | Solution |
| Travel speed low and vibration weak. | Clutch slips? | Adjust or replace clutch. |
| | V-belt slips? | Adjust or replace V-belt. |
| | Excessive oil in vibrator? | Fill to correct level. |
| | Trouble in vibrator internals? | Check vibrator assembly for any worn or defective parts, replace any defective parts. |
| | Wear/Damage of shock absorber? | Replace shock absorber. |
| Push-Pull of compactor is difficult (heavy). | Bearing of roll is damaged? | Replace bearing. |
| | Water in the bearing of roll causing it to rust? | Replace bearing. Make sure no water gets in. |
| | Strings or other obstructions coiled around rotary parts? | Remove obstructions and clean. |
| | Seal of both ends come in contact with frames? | Adjust. |

TROUBLESHOOTING (ENGINE)

| Troubleshooting (Engine) | | |
|--|---|--|
| Symptom | Possible Problem | Solution |
| Difficult to start, fuel is available, but no spark at spark plug. | Spark plug bridging? | Check gap, insulation or replace spark plug. |
| | Carbon deposit on spark plug? | Clean or replace spark plug. |
| | Short circuit due to deficient spark plug insulation? | Check spark plug insulation, replace if worn. |
| | Improper spark plug gap? | Set to proper gap. |
| | Spark plug is red? | Check transistor ignition unit. |
| | Spark plug is bluish white? | If insufficient compression, repair or replace engine. If injected air leaking, correct leak. If carburetor jets clogged, clean carburetor. |
| | No spark present at tip of spark plug? | Check if transistor ignition unit is broken, and replace defective unit. Check if voltage cord cracked or broken and replace. Check if spark plug is fouled and replace. |
| | No oil? | Add oil as required. |
| | Oil pressure alarm lamp blinks upon starting? (if applicable) | Check automatic shutdown circuit, oil sensor. (if applicable) |
| Difficult to start, fuel is available, and spark is present at the spark plug. | ON/OFF switch is shorted? | Check switch wiring, replace switch. |
| | Ignition coil defective? | Replace ignition coil. |
| | Improper spark gap, points dirty? | Set correct spark gap and clean points. |
| | Condenser insulation worn or short circuiting? | Replace condenser. |
| | Spark plug wire broken or short circuiting? | Replace defective spark plug wiring. |
| Difficult to start, fuel is available, spark is present and compression is normal. | Wrong fuel type? | Flush fuel system, replace with correct type of fuel. |
| | Water or dust in fuel system? | Flush fuel system. |
| | Air cleaner dirty? | Clean or replace air cleaner. |
| | Choke open? | Close choke. |
| Difficult to start, fuel is available, spark is present and compression is low. | Suction/exhaust valve stuck or protruded? | Reseat valves. |
| | Piston ring and/or cylinder worn? | Replace piston rings and/or piston. |
| | Cylinder head and/or spark plug not tightened properly? | Torque cylinder head bolts and spark plug. |
| | Head gasket and/or spark plug gasket damaged? | Replace head and spark plug gaskets. |
| No fuel present at carburetor. | No fuel in fuel tank? | Fill with correct type of fuel. |
| | Fuel cock does not open properly? | Apply lubricant to loosen fuel cock lever, replace if necessary. |
| | Fuel filter/lines clogged? | Replace fuel filter. |
| | Fuel tank cap breather hole clogged? | Clean or replace fuel tank cap. |
| | Air in fuel line? | Bleed fuel line. |

TROUBLESHOOTING (ENGINE)

| Troubleshooting (Engine) - continued | | |
|--|---|---|
| Symptom | Possible Problem | Solution |
| Weak in power, compression is proper and does not misfire. | Air cleaner dirty? | Clean or replace air cleaner. |
| | Improper level in carburetor? | Check float adjustment, rebuild carburetor. |
| | Defective spark plug? | Clean or replace spark plug. |
| | Improper spark plug? | Set to proper gap. |
| Weak in power, compression is proper but misfires. | Water in fuel system? | Flush fuel system and replace with correct type of fuel. |
| | Dirty spark plug? | Clean or replace spark plug. |
| | Ignition coil defective? | Replace ignition coil. |
| Engine overheats. | Wrong type of fuel? | Replace with correct type of fuel. |
| | Cooling fins dirty? | Clean cooling fins. |
| | Intake air restricted? | Clear intake of dirt and debris. Replace air cleaner elements as necessary. |
| | Oil level too low or too high? | Adjust oil to proper level. |
| Rotational speed fluctuates. | Governor adjusted incorrectly? | Adjust governor. |
| | Governor spring defective? | Replace governor spring. |
| | Fuel flow restricted? | Check entire fuel system for leaks or clogs. |
| Recoil starter malfunctions. (if applicable) | Recoil mechanism clogged with dust and dirt? | Clean recoil assembly with soap and water. |
| | Spiral spring loose? | Replace spiral spring. |
| Starter malfunctions. | Loose, damaged wiring? | Ensure tight, clean connections on battery and starter. |
| | Battery insufficiently charged? | Recharge or replace battery. |
| | Starter damaged or internally shorted? | Replace starter. |
| Burns too much fuel. | Over-accumulation of exhaust products? | Check and clean valves. Check muffler and replace if necessary. |
| | Wrong spark plug? | Replace spark plug with manufacturer's suggested type. |
| Exhaust color is continuously white. | Lubricating oil is wrong viscosity? | Replace lubricating oil with correct viscosity. |
| | Worn rings? | Replace rings. |
| Exhaust color is continuously black. | Air cleaner clogged? | Clean or replace air cleaner. |
| | Choke valve set to incorrect position? | Adjust choke valve to correct position. |
| | Carburetor defective, seal on carburetor broken? | Replace carburetor or seal. |
| | Poor carburetor adjustment, engine runs too rich? | Adjust carburetor. |
| Will not start, no power with key ON. (if applicable) | ON/OFF device not activated ON? | Turn on ON/OFF device. |
| | Battery disconnected or discharged? | Check cable connections. Charge or replace battery. |
| | Ignition switch/wiring defective? | Replace ignition switch. Check wiring. |

OPERATION MANUAL

HERE'S HOW TO GET HELP

PLEASE HAVE THE MODEL AND SERIAL
NUMBER ON-HAND WHEN CALLING

UNITED STATES

Multiquip Inc.

(310) 537- 3700
6141 Katella Avenue Suite 200
Cypress, CA 90630
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