### **OPERATION AND PARTS MANUAL**



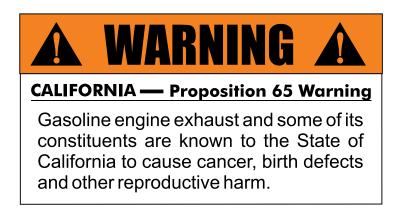
# Mikasa SERIES MODEL MVH208GH REVERSIBLE PLATE COMPACTOR (HONDA GX240UT2SMXC GASOLINE ENGINE)

Revision #1 (07/29/16)

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THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.



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#### NOTICE

Specifications and part numbers are subject to change without notice.



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**.

#### A WARNING

Indicates a hazardous situation which, if not avoided, COULD result in DEATH or SERIOUS INJURY.

#### 

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	
OFF	Accidental starting hazards	
	Eye and hearing hazards	
→ K	Rotating parts hazards	

#### **GENERAL SAFETY**

#### 

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.







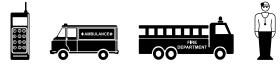
- ALWAYS check the equipment for loosened threads or bolts before starting.
- DO NOT use the equipment for any purpose other than its intended purposes or applications.
- ALWAYS clear the work area of any debris, tools, etc. that would constitute a hazard while the equipment is in operation.

#### 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.



#### COMPACTOR SAFETY

#### A 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.



#### 

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.

#### 

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.



#### A 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.

#### 

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.

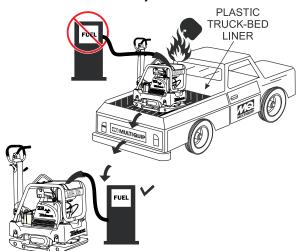


NEVER tip the engine to extreme angles during lifting as it may cause oil to gravitate into the cylinder head, making the engine start difficult.

#### 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.



#### 

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.

#### 

- 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

#### 

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 trowel 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.

#### **EMISSIONS INFORMATION**

#### NOTICE

The diesel engine used in this equipment has been designed to reduce harmful levels of carbon monoxide (CO), hydrocarbons (HC) and nitrogen oxides (NOx) contained in diesel exhaust emissions.

This engine has been certified to meet US EPA Evaporative emissions requirements in the installed configuration.

Attempting to modify or make adjustments to the engine emission system by unauthorized personnel without proper training could damage the equipment or create an unsafe condition.

Additionally, modifying the fuel system may adversely affect evaporative emissions, resulting in fines or other penalties.

#### **Emission Control Label**

The emission control label is an integral part of the emission system and is strictly controlled by regulations.

The label must remain with the engine for its entire life.

If a replacement emission label is needed, please contact your authorized Kohler Engine Distributor.

Table 1. MVH208GH Specifications		
Centrifugal Force 8,317.93 lbf (37 kN)		
Vibration Frequency	5,200 vpm (87 Hz)	
Maximum Traveling Speed	85 ft/min (26 m/min)	
Plate Size (W x L)	19.7 x 28.3 in (500 x 720 mm)	
Operating Weight	463 lbs. (210 kg.)	

Table 2. Engine Specifications		
Engine Make	HONDA	
Engine Model	GX240UT2SMXC	
Engine Type Air-cooled, 4 stroke Gasoline E		
Cylinder Bore X Stroke	3.03 in. x 2.28 in. (77 mm x 58 mm)	
Displacement	16.48 cu-in (270 cc)	
Maximum Ouput	7.1 HP (5.3 kW) @ 3600 RPM	
Fuel Tank Capacity	Approx. 1.4 U.S. gallons (5.3 liters)	
Fuel Type	Unleaded 86 Octane or Higher	
Oil Capacity	1.16 qts (1.1 liters)	
Starting Method	Recoil Start	
Dry Net Weight Recoil/Electric	56.88 lbs (25.8 Kg.)	
Dimensions (L x W x H)	15 x 16.85 x 16.61 in (381 x 428 x 422 mm)	

### DIMENSIONS

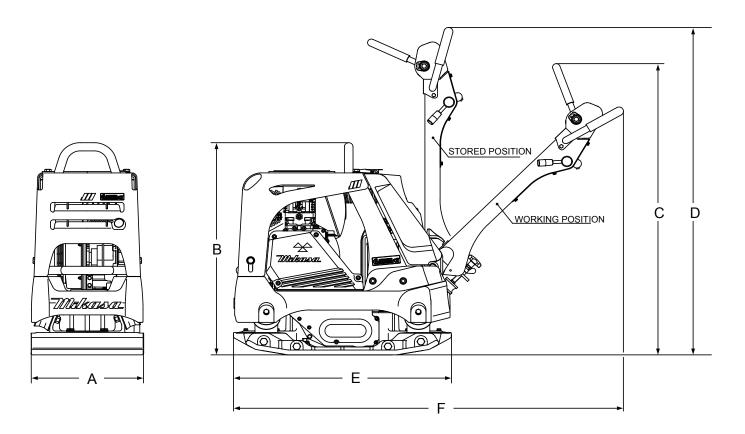


Figure 1. Dimensions

Table 3. Dimensions		
REF. DES	IN. (MM)	
А	19.68 (500)	
В	32.75 (832)	
С	39.2 (995)	
D	48.4 (1230)	
E	28.35 (720)	
F	51.57 (1310)	

#### DEFINITION OF PLATE COMPACTOR

The Mikasa MVH208GH is a reversible plate compactor designed for efficient compaction of sand, gravel and cohesive soils. This plate compactor is a powerful compacting tool capable of applying a tremendous force in consecutive high frequency vibrations to a soil surface. Its applications include compacting for road, embankments and reservoirs as well as backfilling for gas pipelines, water pipelines and cable installation work.

#### **VIBRATORY PLATES**

The vibratory plates of the compactor produce low amplitude high frequency vibrations, designed to compact granular soils and asphalt.

The resulting vibrations cause forward motion. The engine and handle are vibration isolated from the vibrating plate.

#### FREQUENCY/SPEED

The compactor's vibrating plate produces a vibration frequency of 5,200 VPM (vibrations per minute). The travel speed of the compactor is approximately 85 ft/minute (26 meters/minute).

#### ENGINE

This plate compactor is equipped with a Honda GX240UT2SMXC air cooled, 4-cycle gasoline engine. The engine drives an eccentric weight at a high speed to develop a compaction force.

#### CONTROLS

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

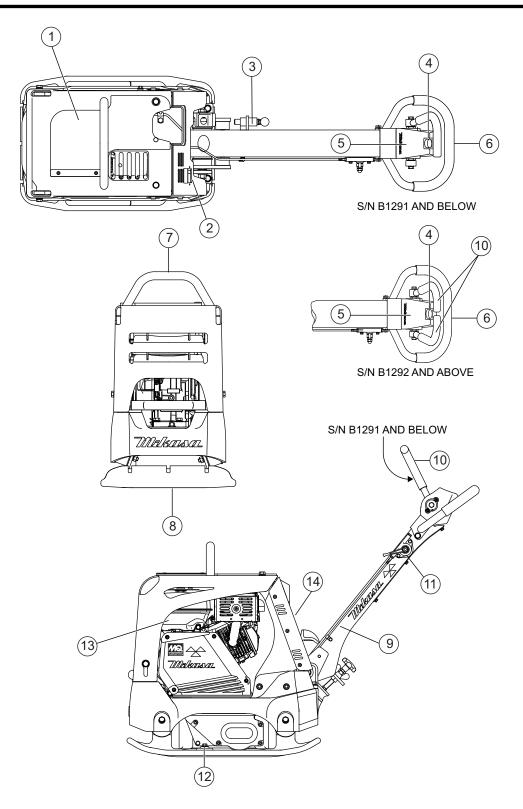




Figure 2 shows the location of the basic controls and components of the MVH208GH Plate Compactor. The function of each control is described below:

- 1. **Rubber Cover** Lift this rubber cover to gain access to the fuel tank.
- 2. **Hour/Tachometer** Displays the cumulative time that the machine has been in use. During operation it displays the rpm reading.
- 3. **Handle Bar Height Adjuster** Adjusts the handle bar to the desired height by loosening the wing nut and turning the grip clockwise to raise the handle bar and counterclockwise to lower the handle bar.
- 4. **Breather Plug** Allow pressure to escape to the air in the form of a gas from heat.
- 5. **Hydraulic Pump (Oil Reservoir)** Regulates hydraulic oil flow produced by the direction of the control lever.
- 6. **Hand Grip** When operating the compactor use this hand grip to maneuver the compactor.
- 7. Lifting Bale When lifting of the compactor is required either by forklift, crane etc., tie rope or chain around this lifting point.

- 8. **Vibrating Plate** A flat, open plate made of durable cast iron construction used in the compacting of soil.
- 9. **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.
- Direction Control Lever Push the lever forward to move compactor in a forward direction. Pull the lever backwards to move compactor in backwards direction. Placing the lever in the middle (midway) will cause the compactor not to move (neutral).
- 11. **Throttle Lever** Controls speed of the plate compactor. Place straight vertically to start, **push** fully counterclockwise for full throttle and fully clockwise to stop plate compactor.
- 12. Vibration Case Oil Filler Used to add oil to the vibration case.
- 13. **Engine**—This plate compactor uses a GX240UT2SMXC gasoline engine. Refer to the owner's manual for engine information.
- 14. Engine ON-OFF Switch Used to turn the engine on or off.

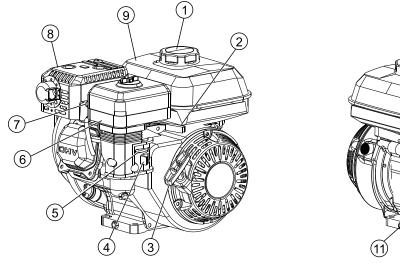


Figure 3. Engine Controls and Components

#### **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.

 Fuel Filler Cap – Remove this cap to add unleaded gasoline to the fuel tank. Make sure cap is tightened securely. DO NOT over fill.

#### 🚺 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.

- 2. **Throttle Lever** Used to adjust engine RPM speed. For normal operation this lever should always be placed in the **RUN** position.
- Recoil Starter (Pull Rope) Manual-starting method. Pull the starter grip until resistance is felt, then pull briskly and smoothly.
- 4. Fuel Valve Lever **OPEN** to let fuel flow, **CLOSE** to stop the flow of fuel.
- 5. **Choke Lever** Used in the starting of a cold engine, or in cold weather conditions. The choke enriches the fuel mixture.

6. **Cyclone Air Cleaner** – Prevents dirt and other debris from entering the fuel system. Remove wing-nut on top of air filter canister to gain access to filter element.

(10)

#### NOTICE

Operating the engine without an air filter, with a damaged air filter, or a filter in need of replacement will allow dirt to enter the engine, causing rapid engine wear.

- Spark Plug Provides spark to the ignition system. Set spark plug gap according to engine manufacturer's instructions. Clean spark plug once a week.
- 8. **Muffler** Used to reduce noise and emissions. **NEVER** touch when *hot!*
- 9. **Fuel Tank** Fill with unleaded gasoline. Reference Table 2 for fuel tank capacity. For additional information refer to Honda engine owner's manual.
- 10. **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 4).
- 11. **Oil Drain Plug** Remove this plug to remove oil from the engine's crankcase.

#### **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.

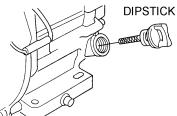


Figure 4. Engine Oil Dipstick Removal

- 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.

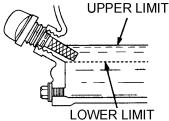


Figure 5. Engine Oil Dipstick (	(Oil Level)
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Table 4. Oil Type			
Season	Temperature	Oil Type	
Summer	25°C or Higher	SAE 10W-30	
Spring/Fall	25°C~10°C	SAE 10W-30/20	
Winter	0°C or Lower	SAE 10W-10	

#### A DANGER

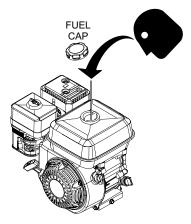


#### EXPLOSIVE FUEL!

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** 

 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.

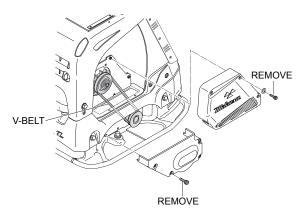


Figure 7. V-Belt Cover Removal

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#### **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

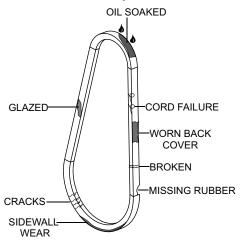


Figure 8. Drive Belt Inspection

#### **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.

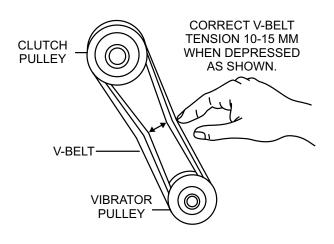
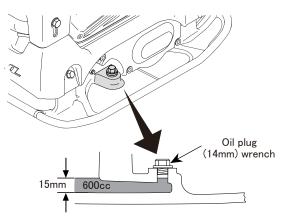


Figure 9. V-Belt Tension

#### 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 re-thread 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

 The vibrator holds approximately 20.3 oz. (600 cc). IMPORTANT, if oil is required, replace using only SAE 10W-30 motor oil.

#### HANDLE BAR

The height of the handle bar can be adjusted for ease of use. Adjust the handle height as follows. Refer to Figure 11.

- 1. Loosen the wing nut.
- 2. Turn the grip clockwise to raise the handle or counterclockwise to lower the handle.
- 3. When the handle bar is raised to the desired height, tighten the wing nut.

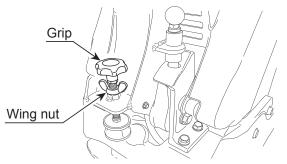


Figure 11. Handle Height Adjustment

#### 



**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 12) to the "**ON**" position.

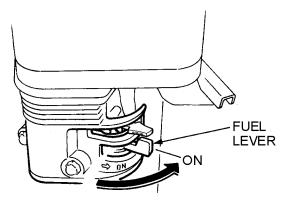


Figure 12. Engine Fuel Valve Lever (ON Position)

2. Move the throttle lever (Figure 13) slightly higher from the *idle* position.

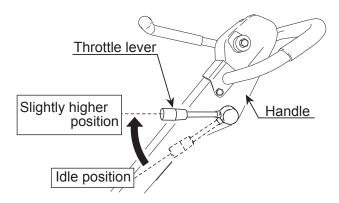


Figure 13. Throttle Lever (Higher Position)

3. Place the choke lever (Figure 14) in the "**CLOSED**" position if starting a cold engine.

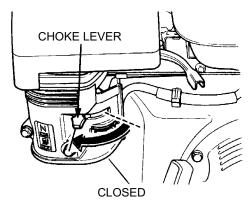
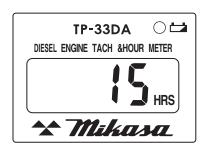


Figure 14. Choke Lever (Closed)

#### 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. When the engine is stopped, the hour tachometer always shows "cumulative time" (Figure 15).



#### Figure 15. Hour Tachometer (Cumulative Time)

5. Place the engine **ON/OFF** switch (Figure 16) in the "**ON**" position.

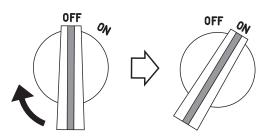


Figure 16. Engine ON/OFF Switch (ON Position)

6. Grasp the starter grip (Figure 17) 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.

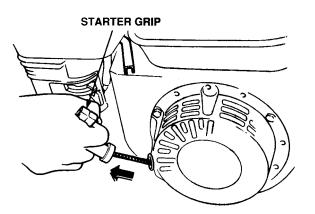


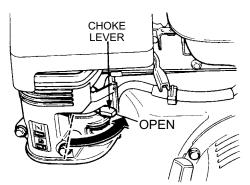
Figure 17. Starter Grip

#### 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.

- 7. When engine starts, release the starter grip and allow the rope to recoil.
- If the choke lever was moved to the "CLOSED" position to start the engine, gradually move it to the "OPEN" position (Figure 18) as the engine warms up. If the engine has not started, repeat steps 1 through 6.



#### Figure 18. Choke Lever (Open)

9. Before the compactor is placed in to operation, run the engine for several minutes. Check for fuel leaks, and noises that would associate with a lose component.

10. During operation, the hour tachometer displays "rotation number" (Figure 19).

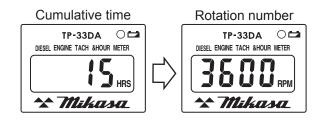


Figure 19. Hour Tachometer (Rotation Number)

### **OPERATION**

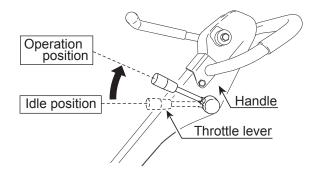
#### **OPERATION**

#### 



**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 *operation* position (Figure 20).



#### Figure 20. Throttle Lever (Operation Position)

2. With the throttle lever in the run position, the engine speed should be around 2,300 RPM, therefore engaging the centrifugal clutch.

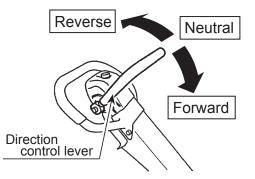
#### NOTICE

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

 The direction control lever allows the machine to be moved either backward or forward (Figure 21). When the direction control lever is pushed forward, the machine moves forward. When pulled backward, the machine moves backward.

#### NOTICE

Your unit may be equipped with direction control levers on both the right and left side of the handle. Earlier models only have one control lever located on the right side of the handle.



#### Figure 21. Direction Control Lever

4. When the direction control lever is the neutral position, the machine vibrates staying at the same location

#### NOTICE

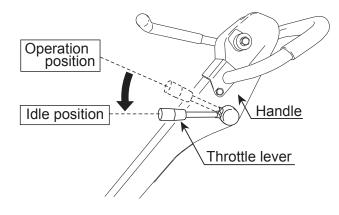
**NEVER** stop the engine suddenly while working at high speeds.

- 5. Compactor traveling speed may drop on soils which contain clay, however there may be cases where traveling speed drops because the compaction plate does not leave the ground surface easily due to the composition of the soil. To rectify this problem do the following:
  - Check the bottom plate to see if clay or equivalent material has been lodged in the plate mechanism. If so, wash with water and remove.
  - Remember the compactor does not work as efficiently on clay or soils that have a high moisture content level.
  - If the soil has a high moisture level, dry soil to appropriate moisture content level or carry out compaction twice.

#### STOPPING THE ENGINE

#### Normal Shutdown

1. Move the throttle lever to the *idle* position (Figure 22) and run the engine for three minutes at low speed.



#### Figure 22. Throttle Lever (Idle)

2. Place the engine **ON/OFF** switch (Figure 23) in the **OFF** position.

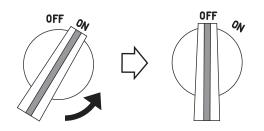


Figure 23. Engine ON/OFF Switch (OFF Position)

3. Place the fuel shut-off lever (Figure 24) in the **OFF** position.

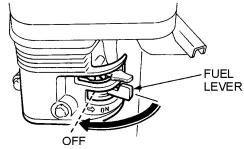


Figure 24. Fuel Valve Lever (OFF)

#### **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.

#### 



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

#### 

**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 shutdown.

#### 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. 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.

#### **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
Enging Oil	CHECK	Х					
Engine Oil	CHANGE		Х				
Air Cleaner	CHECK	Х					
All Cleaner	CHANGE			X (1)			
All Nuts and Bolts	Re-tighten If Necessary	Х					
Spork Dlug	CHECK-CLEAN				Х		
Spark Plug	REPLACE						Х
Cooling Fins	CHECK				Х		
Spark Arrester	CLEAN					Х	
Fuel Tank	CLEAN					Х	
Fuel Filter	CHECK					Х	
Idle Speed	CHECK-ADJUST					X (2)	
Valve Clearance	CHECK-ADJUST						X (2)
Fuel lines	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				
	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				
Daily Before Starting	Guard Frame	Inspect/deformations				
Daily Delote Starting	Shock Absorber	Replace if damaged.				
	Hydraulic Pump	Check/Repair Leaks				
	Hydraulic Pipe System	Check/Repair leaks, Inspect for wear				
	Direction Control Lever	Check bolts/nuts, Inspect for wear				
	Duct Hose	Check for crack/ damage				
Every 20 Hours	Engine Oil/Oil Filter	Replace only after first 20 hrs.				
	Engine Oil	Change				
	Engine Oil Filter	Wash				
Every 100 Hours	Vibrator Oil	Check oil level. Check for leaks/dirt.				
	Hydraulic Oil	Check oil level. Check for leaks.				
	V-Belt	Inspect, replace if damaged or worn.				
Every 200 hours	Clutch	Inspect, replace if not working properly.				
	Engine Bolts	Replace bolts if deformed or elongated.				
	Vibrator Oil	Change				
Every 200 hours	Fuel Filter	Change				
Every 300 hours	Fuel Filter Hydraulic Oil	Change Change				
Every 300 hours		5				

#### **TIGHTENING TORQUE**

Reference Table 7 below (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							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 counter-part is of aluminum								
Bolt threads used with this machine are all right handed								
Material an	Material and quality of material is marked on each bolt, and screw.							

### ENGINE CYCLONE 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**!

#### 

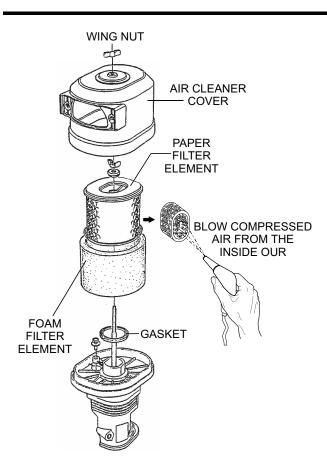


Wear protective equipment such as approved safety glasses or face shields and dust masks or respirators when cleaning air filters with compressed air.

This engine is equipped with a replaceable, high-density paper air cleaner element. See Figure 25 for air cleaner components.

- 1. Remove the air cleaner cover and foam filter element.
- 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/cm<sup>2</sup>) 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.

### MAINTENANCE



#### Figure 25. Cyclone Air Cleaner

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.

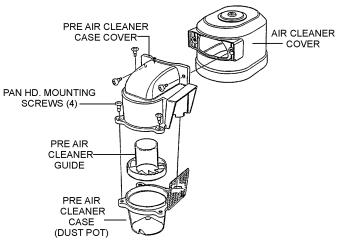
#### NOTICE

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

#### **Dust Pot**

Always clean the dust pot. A clogged dust pot reduces cyclone effect with cleaner element wearing easily.

1. Remove the four pan head screws that secure the dust pot to pre air cleaner case cover. (Figure 26).



#### Figure 26. Removing Dust Pot

- 2. Clean dust pot with water and neutral detergent.
- 3. Reinstall dust pot back onto pre air cleaner case cover.

#### **ENGINE OIL**

#### NOTICE

Drain the engine oil when the oil is warm.

- 1. Remove the oil drain bolt (Figure 27). 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.

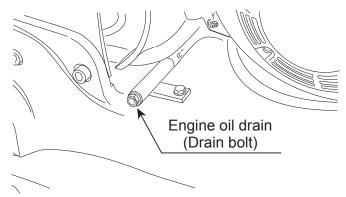
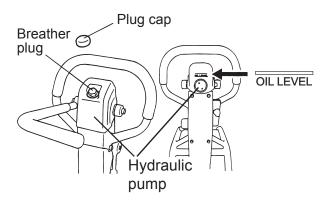


Figure 27. Draining Engine Oil

### MAINTENANCE

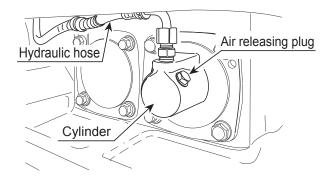
#### HYDRAULIC OIL

1. With the handle in vertical position, remove the plug cap from the hydraulic pump (Figure 28).



#### Figure 28. Removing Plug/Breather Cap

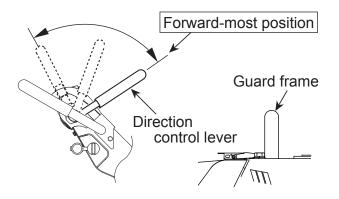
- 2. Remove the breather plug with a 24 mm wrench at the top of the hydraulic pump.
- 3. Remove the hydraulic hose connected to the cylinder on the vibrator side (Figure 29).



#### Figure 29. Removing Hydraulic Hose

- 4. Set the run lever to reverse.
- 5. Drain the hydraulic oil from the pump.
- 6. After the oil is drained, attach the hydraulic hose again to the cylinder on the vibrator side.

7. With the direction control lever at the forward-most position, secure the guard frame with a rope to immobilize (Figure 30).



#### Figure 30. Direction Control Lever (Forward Position)

- 8. Pour hydraulic oil (550 cc) to the hydraulic pump breather plug attachment hole (Figure 28).
- 9. Remove the air releasing plug of vibrator cylinder. Oil will then come out from the air releasing plug. After air bubbles stop coming out, reattach the plug. Tighten securely (Figure 29).
- Release the direction control lever and move the lever forward and reverse several times (until no air bubbles are seen). Keep the lever at the forward position for 10 seconds every time. (Because the check valve is opened at the maximum forward position and air bubble will come out from the oil tank of the hydraulic pump).
- 11. In case the air bleeding is insufficient, repeat steps 9 and 10.
- 12. Attach the hydraulic pump breather plug and put on the plug cap. After making sure the hydraulic oil in the pump is at OIL LEVEL, attach the breather plug.

#### 

**DO NOT** exceed OIL LEVEL of hydraulic oil. If the level is higher, oil will burst out from the breather plug.

#### SPARK PLUG

#### NOTICE

**NEVER** use a spark plug of incorrect heat range.

- 1. Remove and clean spark plug (Figure 31) with a wire brush if it is to be reused. Discard spark plug if the insulator is cracked or chipped.
- 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.

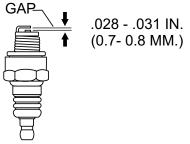


Figure 31. Spark Plug Gap

#### **V-BELT**

Visually examine the V-belt (Figure 32) 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.

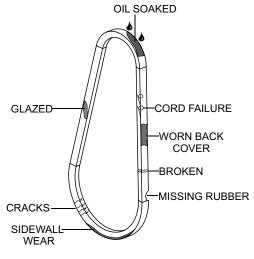
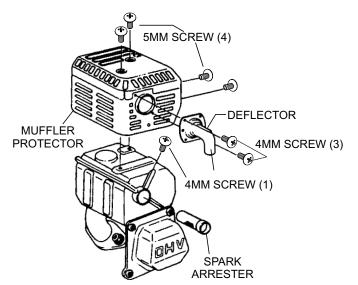


Figure 32. V-Belt Inspection

#### SPARK ARRESTER CLEANING

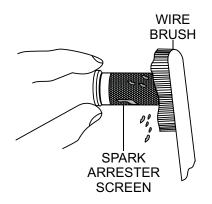
Clean the spark arrester every year or 100 hours.

- 1. Remove the 4 mm screw (3) from the exhaust deflector, then remove the deflector. See (Figure 33).
- 2. Remove the 5 mm screw (4) from the muffler protector, then remove the muffler protector.
- 3. Remove the 4 mm screw from the spark arrestor, then remove the spark arrester.



#### Figure 33. Spark Arrester Removal

4. Carefully remove carbon deposits from the spark arrester screen (Figure 34) with a wire brush.



#### Figure 34. 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			
	Clutch slips?	Adjust or replace clutch.			
	V-belt slips?	Adjust or replace V-belt.			
	Excessive oil in vibrator?	Fill to correct level.			
Travel speed low and vibration weak.	Trouble in vibrator internals?	Check vibrator assembly for any worn or defective parts, replace any defective parts.			
	Aeration in hydraulic oil for for travel reversing system?	Purge air in hydraulic oil. (Bleed plug)			
	Engine speed incorrect?	Set engine speed to correct RPM.			
	Hydraulic pump problems?	Check hydraulic pump.			
	Direction Control Lever installation wrong?	Correct installation of IDirection Control Lever.			
	Broken or defective oil hose?	Replace oil hose.			
Travels forward or backward but unable to switch direction.	Aeration in hydraulic oil?	Purge air in hydraulic oil. (Bleed plug)			
	Excessive oil in reversing system?	Fill to correct level.			
	Hydraulic pump clogged with trash?	Clean valve inside hydraulic pump.			
	Cylinder piston bearing failure?	Check piston bearing in cylinder for leakage.			
	V-belt disengaged or slips?	Engage V-belt, adjust or replace.			
	Clutch slips?	Adjust clutch, replace if necessary.			
Does not travel in forward or reverse	Vibrator locks?	Check vibrator and correct problem.			
	Cylinder piston bearing failure?	Check piston bearing in cylinder for leakage at USH packing.			
Direction Control Lever operating	Piston inside hydraulic pump not moving smoothly?	Adjust or replace.			
resistance for reverse is high.	Vibrator cylinder piston does not move smoothly	Adjust or replace.			

### **TROUBLESHOOTING (ENGINE)**

	Troubleshooting (Engine)		
Symptom	Possible Problem	Solution	
	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.	
Difficult to start, fuel is available, but no spark at spark plug.	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 transistor ignition unit is broken, and replace defective unit. Check if voltage cord cracked or broken and replace. Check if spark plug if 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)	
	ON/OFF switch is shorted?	Check switch wiring, replace switch.	
	Ignition coil defective?	Replace ignition coil.	
Difficult to start, fuel is available, and spark is present at the spark plug.	Improper spark gap, points dirty?	Set correct spark gap and clean points.	
present at the spant plug.	Condenser insulation worn or short circuiting?	Replace condenser.	
	Spark plug wire broken or short circuiting?	Replace defective spark plug wiring.	
	Wrong fuel type?	Flush fuel system, replace with correct type of fuel.	
Difficult to start, fuel is available, spark is	Water or dust in fuel system?	Flush fuel system.	
present and compression is normal.	Air cleaner dirty?	Clean or replace air cleaner.	
	Choke open?	Close choke.	
	Suction/exhaust valve stuck or protruded?	Reseat valves.	
	Piston ring and/or cylinder worn?	Replace piston rings and/or piston.	
Difficult to start, fuel is available, spark is present and compression is low.	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 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.	
No fuel present at carburetor.	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	
	Air cleaner dirty?	Clean or replace air cleaner.	
Weak in power, compression is proper and	Improper level in carburetor?	Check float adjustment, rebuild carburetor.	
does not misfire.	Defective spark plug?	Clean or replace spark plug.	
	Improper spark plug?	Set to proper gap.	
Weak in power, compression is proper but	Water in fuel system?	Flush fuel system and replace with correct type of fuel.	
misfires.	Dirty spark plug?	Clean or replace spark plug.	
	Ignition coil defective?	Replace ignition coil.	
	Wrong type of fuel?	Replace with correct type of fuel.	
	Cooling fins dirty?	Clean cooling fins.	
Engine overheats	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.	
	Governor adjusted incorrectly?	Adjust governor.	
Rotational speed fluctuates.	Governor spring defective?	Replace governor spring.	
	Fuel flow restricted?	Check entire fuel system for leaks or clogs.	
	Recoil mechanism clogged with dust and dirt?	Clean recoil assembly with soap and water.	
Recoil starter malfunctions. (if applicable)	Spiral spring loose?	Replace spiral spring.	
<b>.</b>	Loose, damaged wiring?	Ensure tight, clean connections on battery and starter.	
Starter malfunctions.	Battery insufficiently charged?	Recharge or replace battery.	
	Starter damaged or internally shorted?	Replace starter.	
	Over-accumulation of exhaust products?	Check and clean valves. Check muffler and replace if necessary.	
Burns too much fuel.	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.	
Exhaust color is continuously write .	Worn rings?	Replace rings.	
	Air cleaner clogged?	Clean or replace air cleaner.	
	Choke valve set to incorrect position?	Adjust choke valve to correct position.	
Exhaust color is continuously "black".	Carburetor defective, seal on carburetor broken?	Replace carburetor or seal.	
	Poor carburetor adjustment, engine runs too rich?	Adjust carburetor.	
	ON/OFF device not activated ON?	Turn on ON/OFF device.	
Will not start, no power with key "ON". (if applicable)	Battery disconnected or discharged?	Check cable connections. Charge or replace battery	
	Ignition switch/wiring defective?	Replace ignition switch. Check wiring.	

### **EXPLANATION OF CODE IN REMARKS COLUMN**

The following section explains the different symbols and remarks used in the Parts section of this manual. Use the help numbers found on the back page of the manual if there are any questions.

#### NOTICE

The contents and part numbers listed in the parts section are subject to change **without notice**. Multiquip does not guarantee the availability of the parts listed.

#### SAMPLE PARTS LIST

<u>NO.</u>	PART NO.	PART NAME	QTY.	<b>REMARKS</b>
1	12345	BOLT	1	INCLUDES ITEMS W/%
2%				NOT SOLD SEPARATELY
2%	12347	WASHER, 3/8 IN	٨1	MQ-45T ONLY
3	12348	HOSE	A/R	MAKE LOCALLY
4	12349	BEARING	1	S/N 2345B AND ABOVE

#### NO. Column

**Unique Symbols** — All items with same unique symbol (@, #, +, %, or ) in the number column belong to the same assembly or kit, which is indicated by a note in the "Remarks" column.

**Duplicate Item Numbers** — Duplicate numbers indicate multiple part numbers, which are in effect for the same general item, such as different size saw blade guards in use or a part that has been updated on newer versions of the same machine.

#### NOTICE

When ordering a part that has more than one item number listed, check the remarks column for help in determining the proper part to order.

#### PART NO. Column

**Numbers Used** — Part numbers can be indicated by a number, a blank entry, or TBD.

TBD (To Be Determined) is generally used to show a part that has not been assigned a formal part number at the time of publication.

A blank entry generally indicates that the item is not sold separately or is not sold by Multiquip. Other entries will be clarified in the "Remarks" Column.

#### QTY. Column

**Numbers Used** — Item quantity can be indicated by a number, a blank entry, or A/R.

A/R (As Required) is generally used for hoses or other parts that are sold in bulk and cut to length.

A blank entry generally indicates that the item is not sold separately. Other entries will be clarified in the "Remarks" Column.

#### **REMARKS Column**

Some of the most common notes found in the "Remarks" Column are listed below. Other additional notes needed to describe the item can also be shown.

**Assembly/Kit** — All items on the parts list with the same unique symbol will be included when this item is purchased.

Indicated by:

"INCLUDES ITEMS W/(unique symbol)"

**Serial Number Break** — Used to list an effective serial number range where a particular part is used.

Indicated by:

"S/N XXXXX AND BELOW" "S/N XXXX AND ABOVE" "S/N XXXX TO S/N XXX"

**Specific Model Number Use** — Indicates that the part is used only with the specific model number or model number variant listed. It can also be used to show a part is NOT used on a specific model or model number variant.

Indicated by:

"XXXXX ONLY" "NOT USED ON XXXX"

"Make/Obtain Locally" — Indicates that the part can be purchased at any hardware shop or made out of available items. Examples include battery cables, shims, and certain washers and nuts.

"Not Sold Separately" — Indicates that an item cannot be purchased as a separate item and is either part of an assembly/kit that can be purchased, or is not available for sale through Multiquip.

#### MVH208GH PLATE COMPACTOR WITH HONDA GX240UT2SMXC GASOLINE ENGINE

#### 1 to 5 units

Qty.	P/N	Description
3	.070200383	V-BELT
5	.9807956855	.SPARK PLUG
1	.28462ZE2W11	ROPE, RECOIL STARTER
5	.17210ZE3505	ELEMENT, AIR CLEANER
1	.17620Z4H900	. CAP, FUEL TANK
1	.17672Z4H000	FUEL FILTER, FUEL TANK
4	.939010480	SHOCK ABSORBER

NOTICE

Part numbers on this Suggested Spare Parts list may supersede/replace the part numbers shown in the following parts lists.

## **OPERATION AND PARTS MANUAL**

# **HERE'S HOW TO GET HELP**

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

UNITED STATES					
Multiquip Corporate Office		MQ Parts Department			
18910 Wilmington Ave. Tel. (800) 421-1244   Carson, CA 90746 Fax (310) 537-3927   Contact: mq@multiquip.com Fax (310) 537-3927		800-427-1244 310-537-3700			
Service Department		Warranty Department			
800-421-1244 Fax: 310-537 310-537-3700		37-4259	800-421-1244 310-537-3700	Fax: 3	310-943-2249
Technical Assistance	Technical Assistance				
800-478-1244	800-478-1244 Fax: 310-943-2238				
CANADA			UNITED KINGDOM		
Multiquip			Multiquip (UK) Limited Head Office		
4110 Industriel Boul. Laval, Quebec, Canada H7L 6V3 Contact: infocanda@multiquip.com		Tel: (450) 625-2244 Tel: (877) 963-4411 Fax: (450) 625-8664	,		Tel: 0161 339 2223 Fax: 0161 339 3226

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