

# OPERATION MANUAL



*Mikasa* SERIES  
**MODEL MVC82VE/VEW**  
**ONE-WAY PLATE COMPACTOR**  
**(ROBIN EX170D40103 ENGINE)**

Revision #2 (10/19/21)

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**THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.**

**PROPOSITION 65 WARNING**

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## **MVC82VE/VEW 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**.






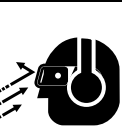

**! CAUTION**

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.



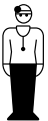
- **NEVER** operate this equipment under the influence of drugs or alcohol.



- **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.



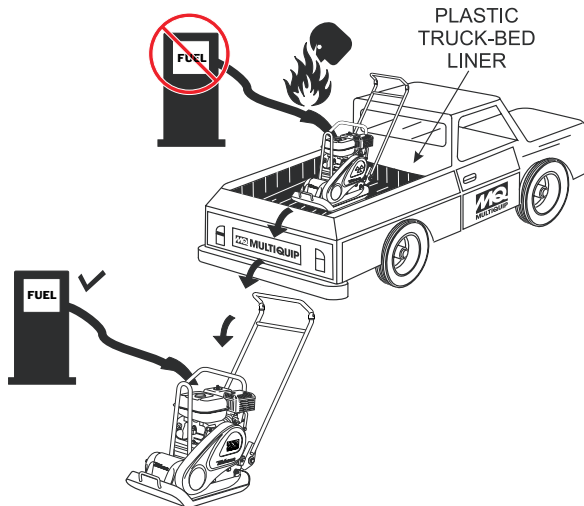



# SAFETY INFORMATION

## 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

### NOTICE

- Dispose of hazardous waste properly. Examples of potentially hazardous waste are used motor oil, fuel and fuel filters. 
- **DO NOT** use food or plastic containers to dispose of hazardous waste.
- **DO NOT** pour waste, oil or fuel directly onto the ground, down a drain or into any water source.

# SPECIFICATIONS

**Table 1. MVC82VE/VEW Specifications**

Centrifugal Force	3,080 lbf (13.7 kN)
Vibration Frequency	5600 vpm (93.3 Hz)
Traveling Speed	0 to 82 ft/min (0 to 25 m/min)
Plate Size (L x W)	22.4 x 17.7 in (570 x 450 mm)
Max. Area of Compaction	7,262 sq. ft./h (675 sq. meters/h)
Operating Weight (MVC82VE)	181 lbs. (82 kg)
Operating Weight (MVC82VEW)	198 lbs. (90 kg)
Vibrating Oil Capacity	0.15 quart (0.14 liter)
Water Tank Capacity (MVC82VEW)	11.6 quarts (11 liters)

**Table 2. Engine Specifications**

Model	ROBIN EX170D40103
Type	Air-cooled, 4-stroke, slant single cylinder horizontal shaft, gasoline engine
Valve Arrangement	OHC
Bore X Stroke	2.64 in. X 1.89 in. (67 mm x 48 mm.)
Displacement	10.3 cu. in. (169 cc)
Max Power Output	4.3 HP (4.2 KW) @ 4000 R.P.M.
Fuel Tank Capacity	3.8 quarts (3.6 liters)
Fuel	Gasoline
Speed Control Method	Centrifugal Flyweight Type
Lube Oil Capacity	0.63 quarts (0.6 liters)
Starting Method	Recoil Start

# DIMENSIONS

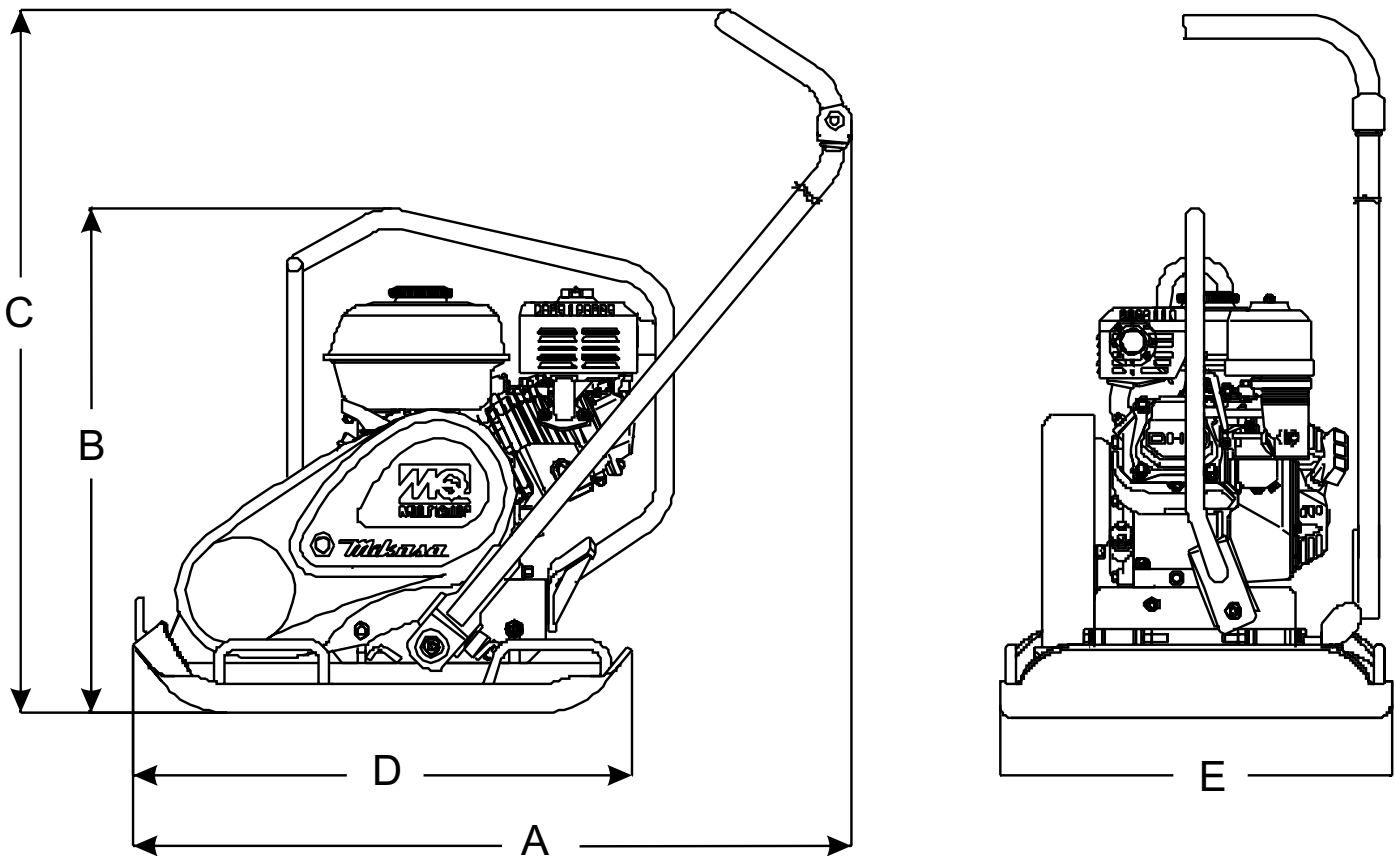


Figure 1. MVC82VE/VEW Dimensions

Table 3. Dimensions

Reference	Description	Measurement
A	Length (including handle)	38.2 in. (970 mm)
B	Height (without handle)	22.4 in. (570 mm)
C	Height (including handle)	38 in (965 mm)
D	Length of Plate	22.4 in (570 mm)
E	Width of Plate	17.7 in (450 mm)

## **GENERAL INFORMATION**

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### **DEFINITION OF PLATE COMPACTOR**

The Mikasa MVC82VE/VEW is a walk-behind, one-way plate compactor designed for the compaction of sand, mixed soils and asphalt. 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 soil compacting for road, embankments and reservoirs as well as backfilling for gas pipelines, water pipelines and cable installation work.

### **VIBRATORY PLATES**

The vibratory plates 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. The heavier the plate, the more compaction force it generates.

### **ANTI-VIBRATION HANDLE SYSTEM (AVT)**

This compactor is equipped with advanced anti-vibration handle design that reduces vibration to the operator by up to 50% compared to other plate compactors.

### **FREQUENCY/SPEED**

The compactor's vibrating plate has a frequency of 5,600 vpm (vibrations per minute). The travel speed of the compactor is approximately 82 feet/minute (25 meters/minute).

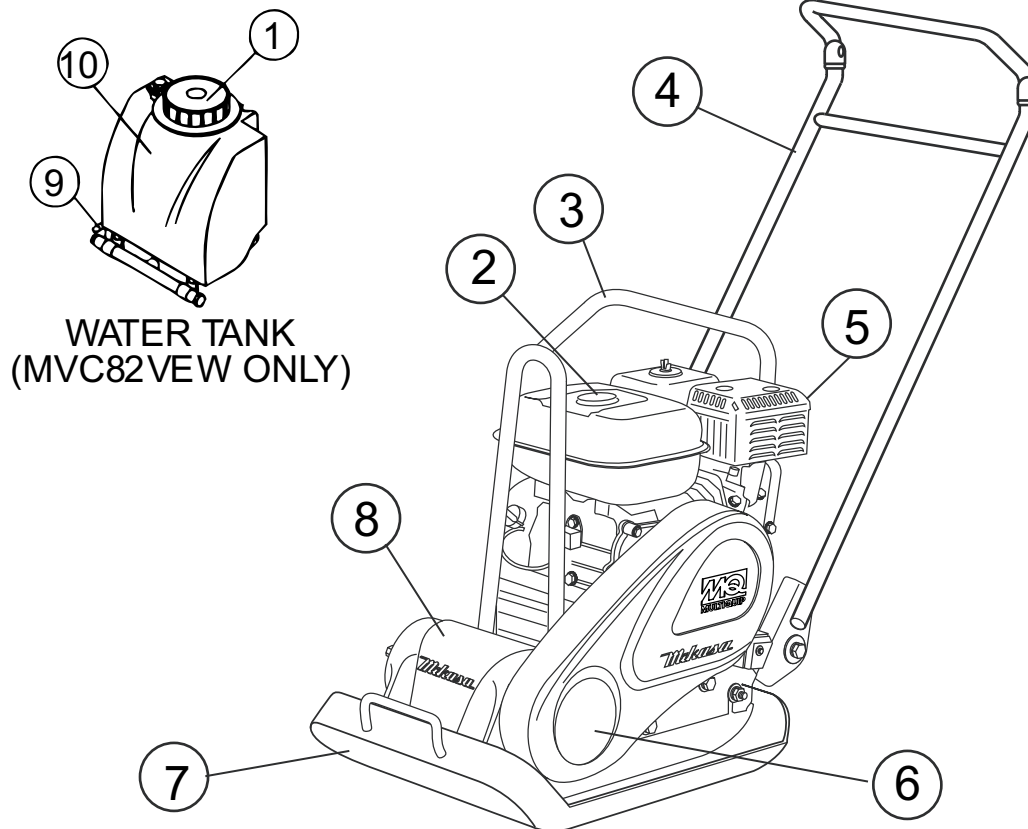
### **ENGINE**

The plate compactor is equipped with a Robin EX170D40103 air-cooled, 4-stroke, gasoline engine.

### **WATER TANK**

The MVC82VEW is equipped with a removable plastic water tank (optional for MVC82VE). The tank provides lubrication to the base plate when compacting asphalt and may be used for dust control in dry work environments. It is intended only for use with water.

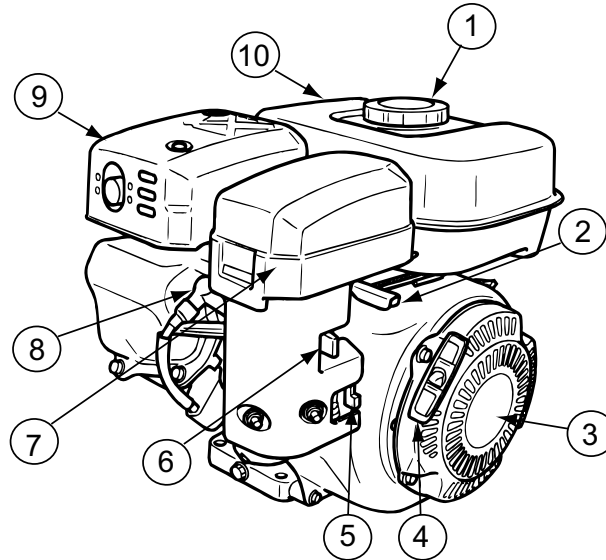
**DO NOT FILL WITH DIESEL FUEL OR GASOLINE AS THIS CREATES BOTH A SAFETY AND ENVIRONMENTAL HAZARD!**



**Figure 2. MVC82VE/VEW Controls and Components**

Figure 2 shows the location of the basic controls and components of the MVC82VE/VEW Plate Compactor. The function of each control is described below:

1. **Water Tank Cap (VEW Only)** — Remove this cap to add water to the water tank.
2. **Fuel Tank Cap** — Remove this cap to add fuel.
3. **Lifting Bale** — When lifting of the compactor is required either by forklift, crane, etc., tie rope or chain around this lifting point.
4. **Handle Bar** — When operating the compactor use this handle bar to maneuver the compactor.
5. **Gasoline Engine** — This plate compactor uses a ROBIN EX170D40103 engine. Refer to the ROBIN owner's manual for engine information and related topics.
6. **Belt Cover** — Remove this cover to gain access to the V-belts. NEVER run the compactor without the V-belt cover. If the V-belt cover is not installed, the possibility exists that your hand may get caught between the V-belt and clutch, causing serious injury and bodily harm.
7. **Vibrating Plate** — A flat, open plate made of durable cast iron construction used in the compacting of soil.
8. **Vibration Case** — Encloses the eccentric, gears and counter weights.
9. **Water Shut-Off Valve (VEW only)** — Turn this valve downward to let water flow from the water tank to the water tube.
10. **Water Tank (VEW only)** — Holds 11.6 quarts of water (removable, no tools required). *DO NOT FILL WITH DIESEL FUEL OR GASOLINE AS THIS CREATES BOTH A SAFETY AND ENVIRONMENTAL HAZARD!*



**Figure 3. Robin Engine Components**

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. **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**



Adding fuel to the tank should be done 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 (lever advanced forward - **SLOW**, lever back toward operator - **FAST**).
3. **Engine ON/OFF Switch** — **ON** position permits engine starting, **OFF** position stops engine operations.
4. **Recoil Starter (pull rope)** — Manual-starting method. Pull the starter grip until resistance is felt, then pull briskly and smoothly.
5. **Fuel Valve Lever** — **OPEN** to let fuel flow, **CLOSE** to stop the flow of fuel.

6. **Choke Lever** — Used in the starting of a cold engine, or in cold weather conditions. The choke enriches the fuel mixture.
7. **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.

**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.

8. **Spark Plug** — Provides spark to the ignition system. Set spark plug gap to 0.6 - 0.7 mm (0.028 - 0.031 inch). Clean spark plug once a week.
9. **Muffler** — Used to reduce noise and emissions.

**! WARNING**



Engine components can generate extreme heat. To prevent burns, **DO NOT** touch these areas while the engine is running or immediately after operating. **NEVER** operate the engine with the muffler removed.

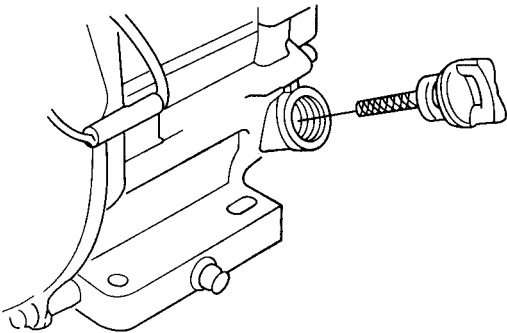
10. **Fuel Tank** — Holds unleaded gasoline. For additional information refer to engine owner's manual.

## BEFORE STARTING

1. Read 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. Loosened screws or bolts due to vibration, could lead to unexpected accident.

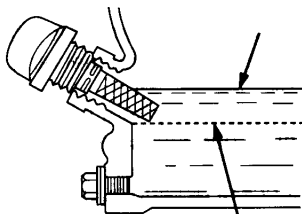
## ENGINE OIL CHECK

1. To check the engine oil level, place the pump on secure level ground with the engine stopped.
2. Remove the filler 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 (Table 4). Maximum oil capacity is 0.63 quarts (0.60 liters).



**Figure 5. Engine Oil Dipstick (Oil Level)**

## NOTICE

The Oil Alert System will automatically stop the engine before the engine falls below safe limits. Always be sure to check the engine oil level prior to starting the engine.

**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	SAE 10W-10

## DANGER



Adding fuel to the tank should be done 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.

## FUEL CHECK

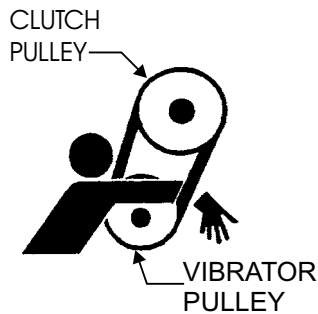
5. Remove the gasoline cap located on top of fuel tank.
6. Visually inspect to see if the fuel level is low. If fuel is low, replenish with unleaded fuel.
7. When refueling, be sure to use a strainer for filtration. **DO NOT** top-off fuel. Wipe up any spilled fuel immediately!



## V-BELT CHECK

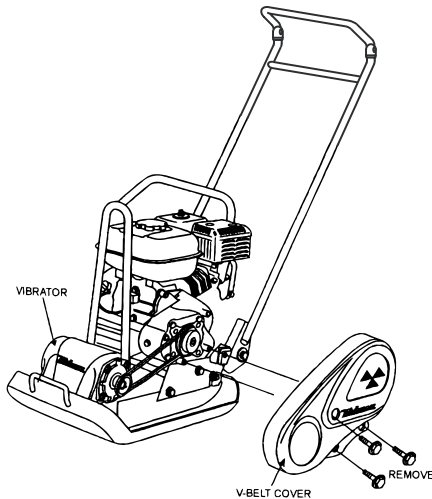
### CAUTION

NEVER attempt to check the V-belt with the engine running. Severe injury can occur if your hand (Figure 6) gets caught between the V-belt and the clutch. Always use safety gloves.



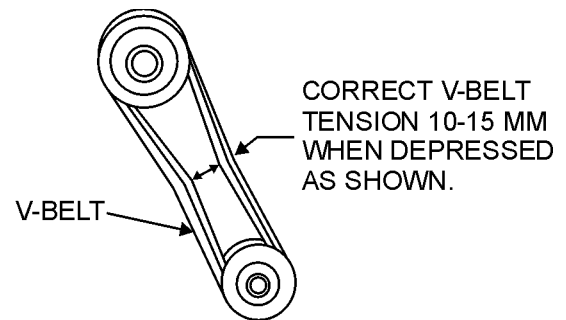
**Figure 6. V-Belt Hazard**

1. To check the V-belt tension, remove the three bolts that secure the belt cover to the frame as shown in Figure 7.



**Figure 7. V-Belt Cover Removal**

2. The V-belt tension is proper if the V-belt bends 10 to 15 mm (Figure 8) when depressed with finger midway between the clutch and vibration pulley shafts.

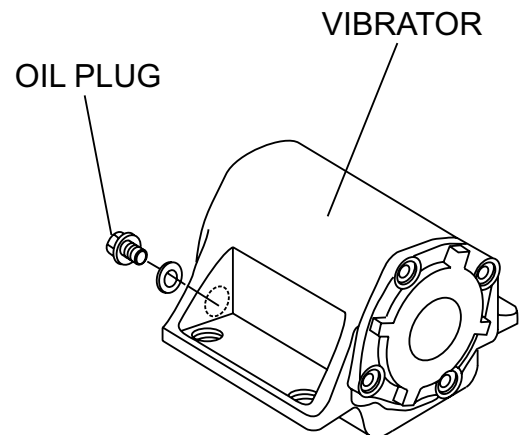


**Figure 8. V-Belt Tension**

3. A loose V-belt will decrease the power transmission output causing reduced compaction and premature wear of the belt.
4. If the V-belt becomes worn or loose, replace it.

## 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 9. The oil level should be up to the oil plug. The vibrator holds 140 cc (approximately 0.3 pint). If oil is required, replace using only SAE10W-30 motor oil.



**Figure 9. Vibrator Oil Plug**

## CAUTION



**DO NOT** attempt to run the compactor until the Safety and Initial Start-up sections have been read and understood.

## 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.

### INITIAL STARTUP

1. Place the fuel valve lever (Figure 10) in the "ON" position.

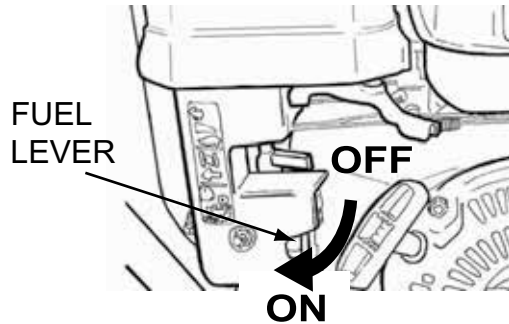


Figure 10. Fuel Valve Lever

2. Place the Engine ON/OFF switch (Figure 11) in the "ON" position.

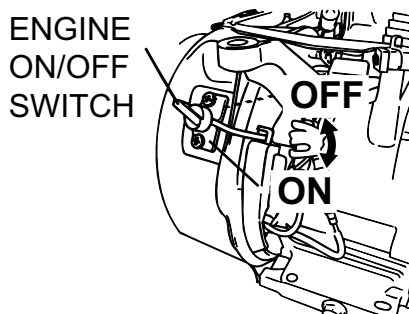


Figure 11. Engine ON/Off Switch

3. Place the Choke Lever (Figure 12) in the "OPEN" position.

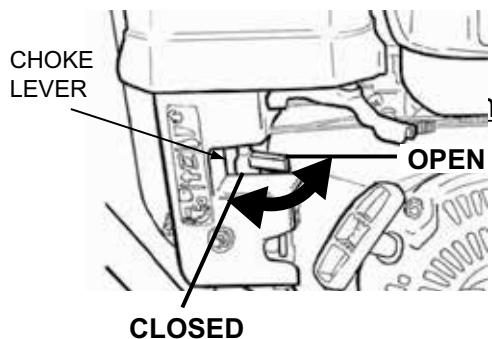


Figure 12. Choke Lever

4. Place the throttle lever (Figure 13) halfway between fast and slow.

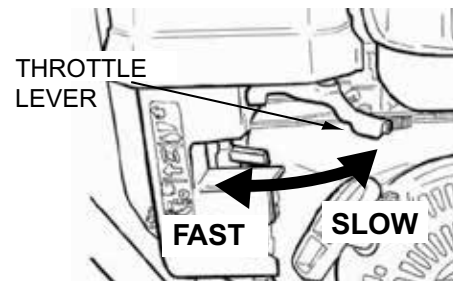


Figure 13. Throttle Lever

5. Grasp the starter grip (Figure 14) 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.

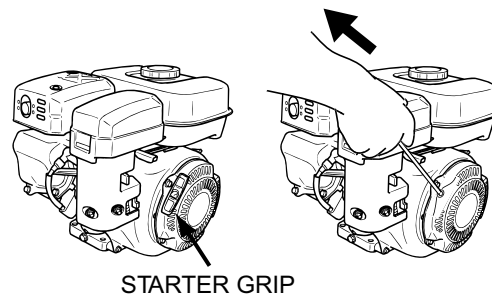


Figure 14. Starter Grip

## CAUTION

**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. If the engine has started, slowly return the choke lever (Figure 11) to the **CLOSED** position. If the engine has not started repeat steps 1 through 5.
7. Before the compactor is put into operation run the engine for 3-5 minutes.
8. Check for abnormal engine noises or fuel leaks.

## OPERATION

1. Once the engine has started, move the engine throttle lever quickly to the fast position.
2. With the throttle lever in the fast position, the engine speed should be around 3,600 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.

3. Firmly grasp the compactor's handle bar with both hands. The compactor will begin moving forward.
4. Slowly walk behind the compactor and be on the lookout for any large objects or foreign matter that might cause damage to the compactor or bodily injury.
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

### CAUTION

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

1. Place the throttle lever (Figure 13) in slow position, and listen for the engine speed to decrease.
2. Place the Engine ON/OFF switch (Figure 11) in the "**OFF**" position.
3. Place the fuel valve lever (Figure 10) in the "**OFF**" position.

## CAUTION

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

## INSPECTION AND MAINTENANCE TABLES

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

**Table 5. Machine Inspection**

Item	Frequency of Inspection
Loose or Missing Screws	Every 8 hours (daily)
Damaged Parts	Every 8 hours (daily)
Function of Controlling System Part	Every 100 hours
Vibrator Oil Check	Every 100 hours
Vibrator Oil Replacement	Every 300 hours
Hydraulic Oil Check	Every 100 hours
Hydraulic Oil Replacement	After first 200 hours, then every 1,000 hours
V-belt (clutch) Check	Every 200 hours

## NOTICE

These inspection intervals are for operation under normal conditions. Adjust your inspection intervals based on the number of hours the plate compactor has been in use, and the type of working conditions it is being used.

## NOTICE

Fuel piping and connections should be replaced every 2 years.

**Table 6. Engine Check**

Item	Frequency of Inspection
Oil or Fuel Leak	Every 8 hours (daily)
Tightness of Fastening Threads	Every 8 hours (daily)
Engine Oil Check and Replenishment	Every 8 hours (daily) (Replenish to specified maximum level)
Engine Oil Replacement	After first 25 hours then every 50 to 100 hours
Valve Clearance (Check/Adjust)	After first 25 hours then every 200 hours or every year.
Air Filter Cleaning	Every 100 hours
See separate engine manual for details on engine check.	

## DAILY SERVICE

1. Check for leakage of fuel or oil.
2. Check for loose screws including tightness. See Table 7 (Tightening Torque) for retightening.

**Table 7. Tightening Torque (kg cm)**

Material	Diameter							
	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	300-350	650-700					

\* (for aluminum counterpart)  
(Threads in use with this machine are all right-handed)  
Material and quality of material is marked on each bolt and screw.

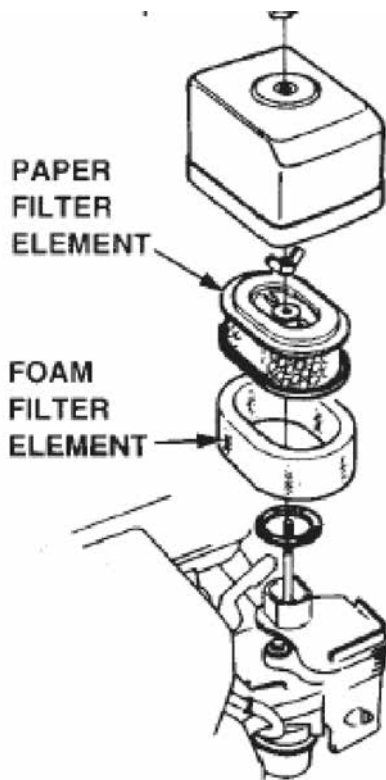
3. Remove soil and clean the bottom of compaction plate.
4. Check hydraulic pump, piping and hose for any leakage. A loosened hydraulic hose can be a cause for leakage. Check hydraulic hose connections with wrench applied for tightness.
5. Check engine oil.

## ENGINE OIL REPLACEMENT

1. Replace engine oil, in first 20 hours of operation and every 100 hours afterwards.
2. Oil may be drained more easily when it is warm after operation (For more details, see separate engine Owner's Manual).

## AIR FILTER

1. Remove the air cleaner cover and foam filter element as shown in Figure 15.



**Figure 15. Air Filter**

2. Tap the paper filter element (Figure 15) 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 air cleaner case side.

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.

## CHECKING AND REPLACING V-BELT AND CLUTCH

After 200 hours of operation, remove the upper belt cover to check the V-belt tension. Tension is proper if the belt bends about 10 mm when depressed strongly with finger between shafts. Loose or worn V-belts reduce power transmission efficiency, causing weak compaction and reducing the life of the belt itself.

### Replacing the V-belt

Remove the upper and lower belt covers. Engage an offset wrench (13 mm) or the like to vibrator pulley (lower) fastening bolt. Engage waste cloth or the like at midway of V-belt on the left side and while pulling it back strongly, rotate the offset wrench clockwise so that the V-belt will come off.

### Reinstalling the V-belt

Engage V-belt to lower vibrator pulley and push the V-belt to left side of upper clutch. In the same manner as in removal, rotate offset wrench clockwise so that the V-belt goes back on.

### Checking Clutch

Check the clutch simultaneously with V-belt checking. With belt removed, visually check outer drum of the clutch for seizure and "V" groove for wear or damage. Clean the "V" groove as necessary. Regularly check the lining or shoe for wear. If the shoe is worn, power transmission becomes deficient and slipping will result.

#### NOTICE

Whenever the compactor's vibration becomes weak or lost during normal operation, regardless of operation hours, check the V-belt and clutch immediately.

## VIBRATOR OIL LEVEL CHECK

1. In every 300 hours of operation, with the machine positioned horizontally, remove vibrator oil level check plug (Figure 6) off vibrator (14 mm wrench) and see if oil is up to filler port. Be sure to clean area around check hole to prevent dirt and dust from entering.
2. In every 300 hours of operation, replace oil (capacity 400 cc). For draining oil through level check hole, have the machine inclined with a sleeper or the like placed under the compaction plate on opposite side.

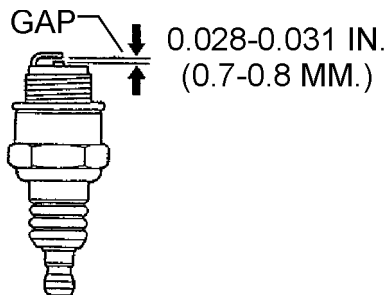
\* Use engine oil 10W-30 for this lubrication.

### NOTICE

Always clean the area around the vibrator oil level check hole before removing oil check plug. This will prevent dirt and debris from entering the system.

## SPARK PLUG

3. Remove and clean the spark plug (Figure 16).



**Figure 16. Spark Plug Gap**

4. Adjust the spark gap to 0.028 ~0.031 inch (0.7~0.8 mm).

## PLATE COMPACTOR STORAGE

For storage of the plate compactor for over 30 days, the following is required:

1. Drain the fuel tank completely or add STA-BIL to the fuel.
2. Run the engine until the fuel is completely consumed.
3. Completely drain the oil from the engine crankcase and follow procedures described in the engine Owner's Manual for engine storage.
4. Completely drain the compactor's hydraulic oil from the vibrating case.
5. Clean entire plate compactor, especially the bottom plate removing all dirt and foreign matter.
6. Cover plate compactor and engine with plastic covering or equivalent and store in a clean, dry place.

# TROUBLESHOOTING

**Table 8. Engine Troubleshooting**

Symptom	Possible Cause	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.
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.
Difficult to start. Fuel is available, SPARK is present at the spark plug and compression is normal.	Spark plug wire broken or short circuiting?	Replace defective spark plug wiring.
	Wrong fuel type?	Flush fuel system and replace with correct type of fuel.
	Water or dust in fuel system?	Flush fuel system.
Difficult to start. Fuel is available, SPARK is present at the spark plug and compression is low.	Air cleaner dirty?	Clean or replace air cleaner.
	Suction/exhaust valve stuck or protruded?	Reseat valves.
	Piston ring and/or cylinder worn?	Replace piston rings or piston.
	Cylinder head and/or spark plug not tightened properly?	Torque cylinder head bolts and spark plug.
No fuel present at carburetor.	Head gasket and/or spark plug gasket damaged?	Replace head and spark plug gaskets.
	Fuel not available 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 clogged?	Replace fuel filter.
	Fuel tank cap breather hole clogged?	Clean or replace fuel tank cap.
Weak in power. Compression is proper and does not misfire.	Air in fuel line?	Bleed fuel line
	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.

# TROUBLESHOOTING

CONTINUED...		
Symptom	Possible Cause	Solution
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.	Spark plug heat value improper?	Replace with correct type of spark plug.
	Incorrect type of fuel?	Replace with correct type of fuel.
	Cooling fins dirty?	Clean cooling fins.
Rotational speed fluctuates.	Governor adjusted correctly?	Adjust governor
	Governor spring defective?	Replace governor spring.
	Fuel flow restricted?	Check entire fuel system for leaks or clogs.
Recoil starter malfunction.	Recoil mechanism clogged with dust and dirt?	Clean recoil assembly with soap and water.
	Spiral spring loose?	Replace spiral spring.

**Table 9. Plate Compactor Troubleshooting**

Symptom	Possible Problem	Solution
Travel speed too low and vibration is weak.	Engine speed too low?	Set engine speed to correct RPM.
	Clutch slips?	Check or replace clutch.
	V-belt slips?	Adjust or replace V-belt.
	Excessive oil in vibrator?	Drain excess oil and fill to proper level.
	Malfunction in vibrator housing?	Check eccentric, gears and counter weights.
	Bearing Failure?	Replace bearing.
	Insufficient engine output?	Check engine, compression.





# 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  
E-MAIL: mq@multiquip.com  
WEBSITE: www.multiquip.com

### CANADA

#### *Multiquip*

(450) 625-2244  
4110 Industriel Boul.  
Laval, Quebec, Canada H7L 6V3  
E-MAIL: infocanada@multiquip.com

### UNITED KINGDOM

#### *Multiquip (UK) Limited Head Office*

0161 339 2223  
Unit 2, Northpoint Industrial Estate,  
Globe Lane,  
Dukinfield, Cheshire SK16 4UJ  
E-MAIL: sales@multiquip.co.uk

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