

OPERATION MANUAL



Mikasa SERIES
MODEL MVCi60
ONE-WAY PLATE COMPACTOR
(BATTERY ONE BOB10/BOB14
RECHARGEABLE BATTERY)

Revision #0 (11/12/24)

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THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.

PROPOSITION 65 WARNING



MVCi60 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.



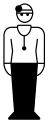
- **NEVER** operate this equipment under the influence of drugs or alcohol.



- **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.

BATTERY SAFETY

CAUTION

- Remove or attach battery in a clear and flat location without any combustible materials nearby.
- After attaching the battery, make sure that the battery hook and fastener are securely attached.

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** stop the motor before transporting.
- **NEVER** lift the equipment with power on.
- **DO NOT** move machine until motor and main body have cooled down.
- Use adequate lifting cable (wire or rope) of sufficient strength.
- Maintain upright position of compactor when transporting.
- **ALWAYS** tie down equipment during transport by securing the equipment with rope so that machine cannot move or tip over.

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. MVCi60 Specifications

Centrifugal Force	2,473 lbf (11 kN)
Vibration Frequency	5880 vpm (98 Hz)
Max Traveling Speed	82 ft/min (25 m/min)
Max. Area of Compaction	7,266 ft ² /hr (675 m ² /hr)
Plate Size (L x W)	23 x 13.8 in (585 x 350 mm)
Rated Operating Time	80 min (BOB10), 110 min (BOB14)
Operating Weight	168 lbs. (76 kg)
Operating Weight (with water tank)	181 lbs. (82 kg)
Water Tank Capacity	9 quarts (8.5 liters)
Charging Time (BOC13 Charger)	95 min (BOB10), 140 min (BOB14)
Handle Type	Vibration Absorbing System (VAS) Folding Handle

Table 2. Exciter (Vibrating Motor)

Type	Three-phase Induction Motor
Model	Exciter kpl. 11kN_E
Rated Output	1.6 PS (1.2 kW)
Rated Current	21.5 A
Rated Voltage	51 V

Table 3. Battery Specifications

Model	BATTERY ONE BOB10/BOB14
Battery Type	Rechargeable Lithium Ion Battery
Dimensions (L x Wx H)	8.7 x 11.4 x 7.7 in (220 x 290 x 196.5 mm)
Weight	BOB10 - 21.4 lb. (9.7 kg), BOB14 - 22.0 lb. (9.96 kg)
Voltage	51 V
Energy Content	BOB10 - 1008 Wh, BOB14 - 1425 Wh
Capacity	BOB10 - 20 Ah, BOB14 - 28 Ah
Charging Temperature Range	41 - 86 °F (5 - 30 °C)
Operating Temperature Range	41 - 104 °F (5 - 40 °C)
Storage Temperature Range	23 - 86 °F (-5 - 30 °C)

SPECIFICATIONS

Table 4. Battery Charger Specifications

Model	Battery One BOC13
Dimensions (L x Wx H)	11.7 x 15.6 x 8.5 in (296 x 396 x 217 mm)
Weight	11.7 lbs. (5.3 kg)
Cable Length	78.7 in (2000 mm)
Rated Voltage	100-240 VAC
Rated Current	2.9 - 7.3 A
Rated Frequency	50/60 Hz
Rated Output	0.65 kW
Output Current	13.5 A
Nominal Output Voltage	48 V
Output Voltage Range	2.7 - 60 VDC
Protection Class	I/Protective earthing
Protection Type	IP65
Operating Temperature Range	32 - 113 °F (0 - 45 °C)
Storage Temperature Range	-20 - 60 °F (-4 - 140 °C)

Table 5. Noise and Vibration Emissions

Measured Sound Power Level in dB(A)	100
Guaranteed Sound Power Level in dB(A)	105
Guaranteed Sound Pressure Level at Operator Station in dB(A)	87
Hand-Arm Vibration in m/s ²	1.8

NOTES:

1. Products are tested for sound pressure level in accordance with European Directives 2000/14/EC and 2005/88/EC, relating to Noise Emission in the Environment by equipment for use outdoors.
2. Products are tested for hand/arm vibration (HAV) level in accordance with European Directives 2002/44/EC and EN500-4 and ISO 5349-1:2001, ISO 5349-2:2001.

DIMENSIONS

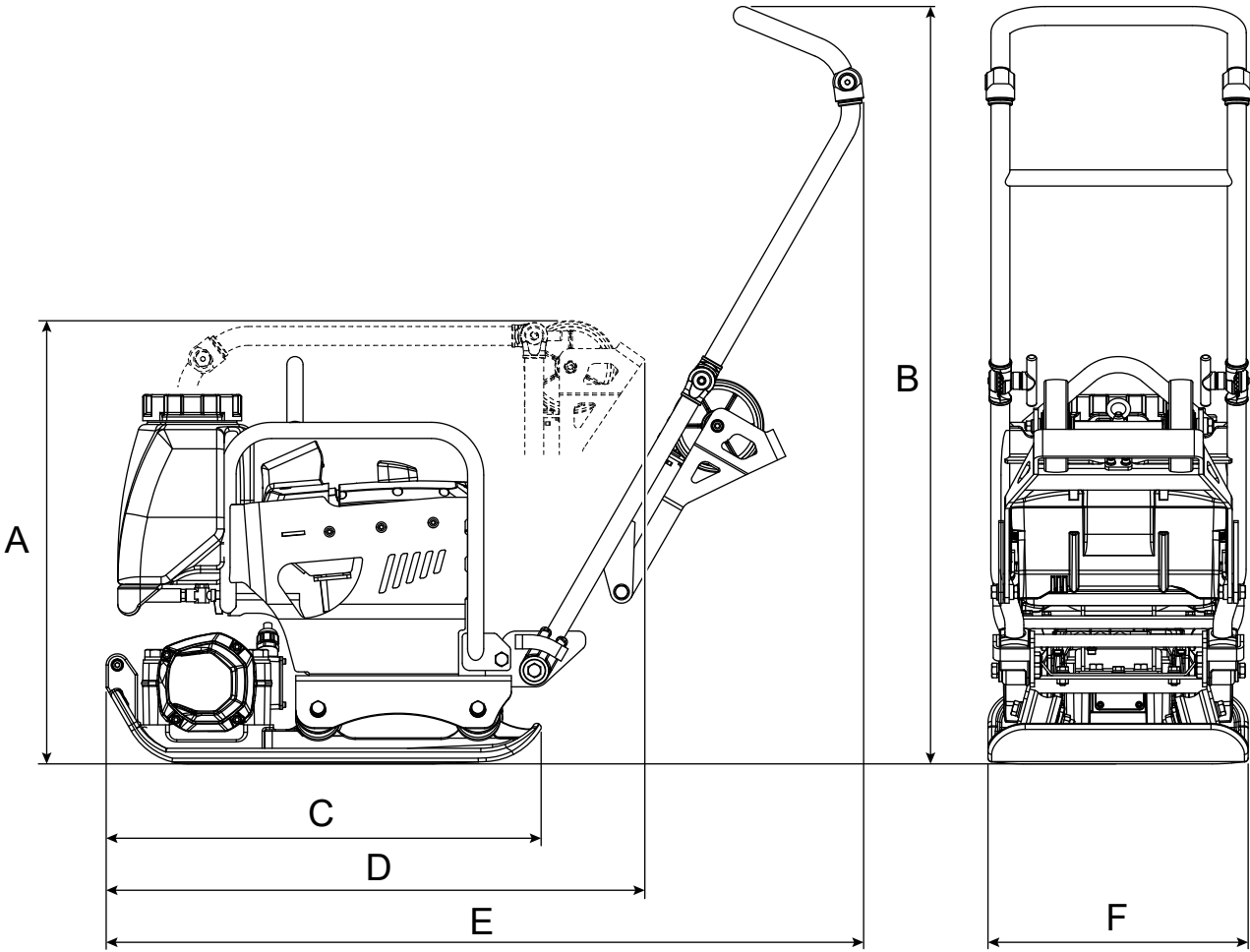


Figure 1. MVCi60 Dimensions

Table 6. Dimensions		
Reference	Description	Measurement
A	Height	23.4 in (595 mm)
B	Height (including handle)	39.8 in (1010 mm)
C	Length of Plate	23 in (585 mm)
D	Length of Plate (including stowed handle)	28.5 in. (725 mm)
E	Length of Plate (including deployed handle)	41.5 in (1055 mm)
F	Width of Plate	13.8 in. (350 mm)

GENERAL INFORMATION

DEFINITION OF PLATE COMPACTOR

The Mikasa MVCi60 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.

The upper section of the plate compactor consists of the DC power unit, handle, guard hook, and water tank.

The lower section of the plate compactor consists of the vibrating plate and vibrator unit that has an eccentric rotor in vibrating case.

The upper and lower sections are assembled by shock absorbers and power unit and vibrating motor are connected by wire harness.

POWER TRANSMISSION

This machine is equipped with the exciter (vibrating motor unit that has an eccentric rotor) and the lithium ion battery as the power unit. Vibration of vibrating plate by exciter causes the machine to travel forward. The vibration and weight of the machine creates compaction force to ground.

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.

FREQUENCY/SPEED

The compactor's vibrating plate has a frequency of 5,880 vpm (vibrations per minute).

VIBRATING MOTOR

The plate compactor is equipped with a 3-phase induction motor.

BATTERY and BATTERY CHARGER

THE MVCi60 uses a Battery One BOB10 or BOB14 rechargeable lithium ion battery and a Battery One BOC13 battery charger.

WATER TANK

The water tank provides lubrication to the base plate when compacting asphalt and may be used for dust control in dry work environments.

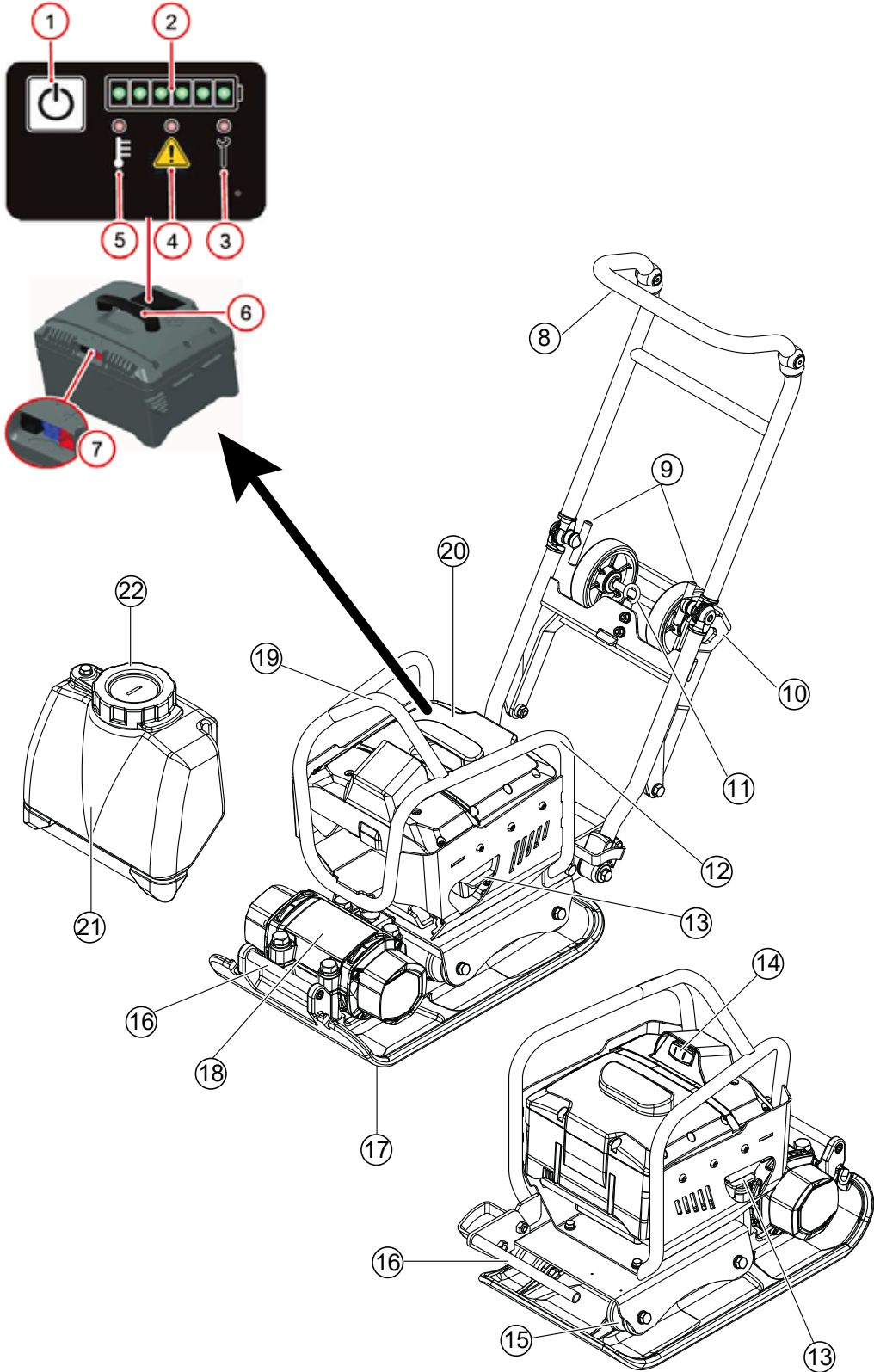


Figure 2. MVCi60 Controls and Components

COMPONENTS

Figure 2 shows the location of the basic controls and components of the MVCi60 Plate Compactor. The function of each control is described below:

1. **Battery Start Button** — Turns on the battery.
2. **Battery Charge Control Light** — Indicates the amount of charge left.
3. **Battery Control Light Diagnosis** — Indicates status of the battery
4. **Battery Light Rechargeable Battery Error** — Indicates battery error.
5. **Battery Control Light Over Temperature/Under Temperature** — Indicates the temperature status of battery
6. **Battery Handle** — Used to securely grasp battery when installing or removing.
7. **Battery Connections (Contact Strip)** — Provides connection to the main unit when battery is properly attached.
8. **Vibration Absorbing System Handle** — Designed to absorb or dampen the vibration during compaction.
9. **Grip Bolt** — Locks the handle in place.
10. **Wheel Kit** — When deployed, used to move plate compactor to a different location.
11. **Lock for Wheel Kit** — Locks the wheel kit in place.
12. **Guard Frame** — Protects unit from being hit by other objects.
13. **Battery Lock Lever** — Locks the battery in place.
14. **ON/OFF Switch** — Used to start and stop unit.
15. **Shock Absorber** — Helps to control the impact and rebound movement of the compactor and smoothens out bumps and vibrations.
16. **Lifting Grip** — Used to lift compactor and move to a different location.
17. **Vibrating Plate** — A flat, open plate made of durable cast iron construction used in the compacting of soil.
18. **Vibrating Motor** — starts the compacting action.
19. **Lifting Hook** — When lifting of the compactor is required either by forklift, crane, etc., tie rope or chain around this lifting point.
20. **Rechargeable Battery** — Lithium Ion Battery.
21. **Water Tank** — Used when your application requires sprinkling. *Do not fill with diesel fuel or gasoline as this creates both a safety and environmental hazard!*
22. **Water Tank Cap** — Unscrew cap to add water to the tank.

BEFORE STARTING

1. Read safety instructions at the beginning of manual.
2. Clean the compactor, removing dirt and dust.
3. Check fastening nuts and bolts for tightness. Loosened screws or bolts due to vibration, could lead to unexpected accident.
4. Make sure that the guard hook and shock absorbers are not damaged. If they are damaged, replace new ones.
5. Replace any missing or damaged safety and operation decals.

BATTERY PACK AND BATTERY CHARGER

NOTICE

Follow the owner's manual provided with the battery pack and battery charger for the following operations:

- Charging and Charge Level
- Cleaning
- Storage
- Disposal

NOTICE

Follow the owner's manual provided with the DC power unit when attaching and removing the battery pack.

BATTERY INSTALLATION

NOTICE

Make sure to use a genuine rechargeable battery.

Connections and contact area of the rechargeable battery must be clean and dry.

When installing the rechargeable battery, make sure the connections point in the direction of the protective cover.

Refer to Figure 3 for location of parts.

Battery Installation

1. Set the ON/OFF switch to the OFF position.
2. Lift the battery by its handle.
3. Carefully insert the battery into the guard rail on the handle.
4. Slide in the battery to the front of the machine until a click is heard to indicate that the battery is locked in place.

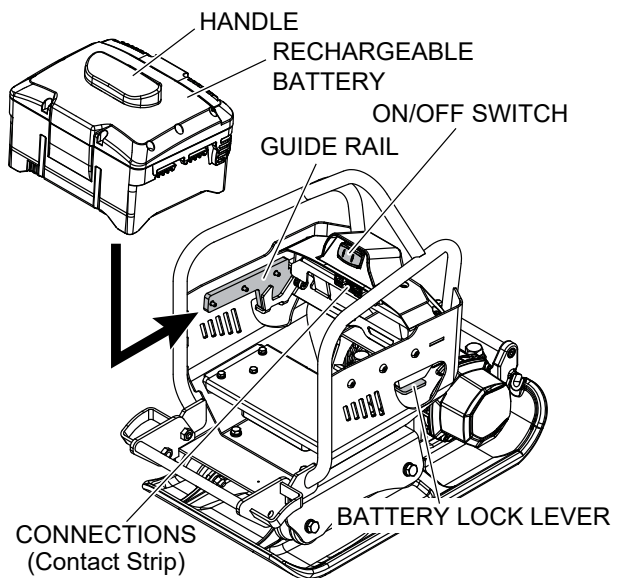


Figure 3. Battery Installation

BATTERY REMOVAL

NOTICE

Make sure the machine is at a complete stop

Refer to Figure 4 for location of parts.

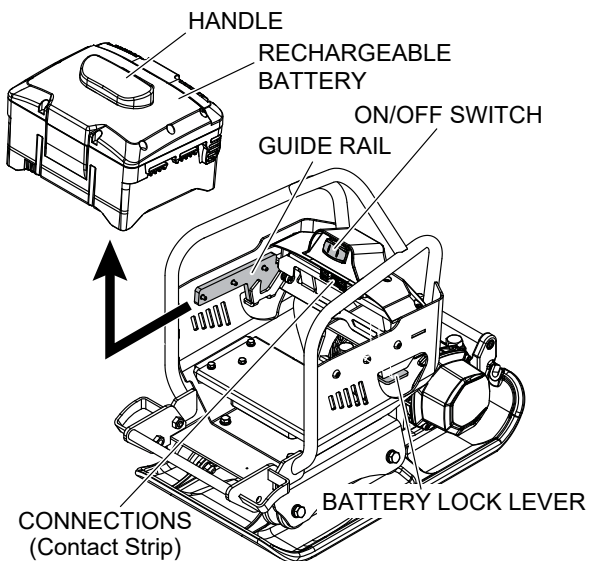


Figure 4. Battery Removal

1. Set the ON/OFF switch to the OFF position.
2. Push the battery lock lever down.
3. Using the other hand, carefully pull the battery handle to the rear until it stops.
4. Pull out the battery by its handle and put it down safely.

HANDLE CHECK

1. Check the handle to make sure it can be correctly changed to operation position from storage position and back (Figure 5).

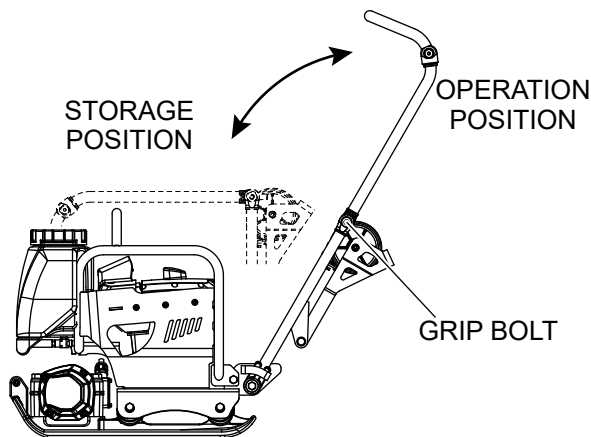


Figure 5. Handle Position

2. When setting handle position, make sure to tighten the grip bolts.

WHEEL KIT CHECK

1. Check that the lock for the wheel kit works. See Figure 6.

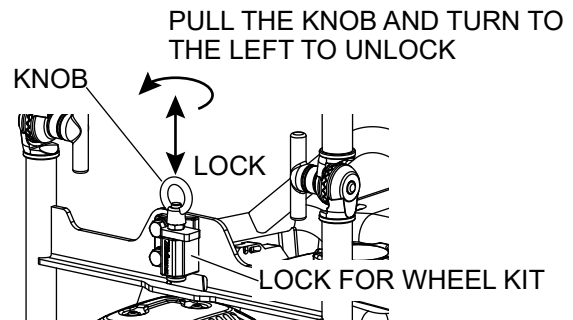


Figure 6. Wheel Kit Lock

2. Check that the wheel kit moves from storage to operating position smoothly. See Figure 7.

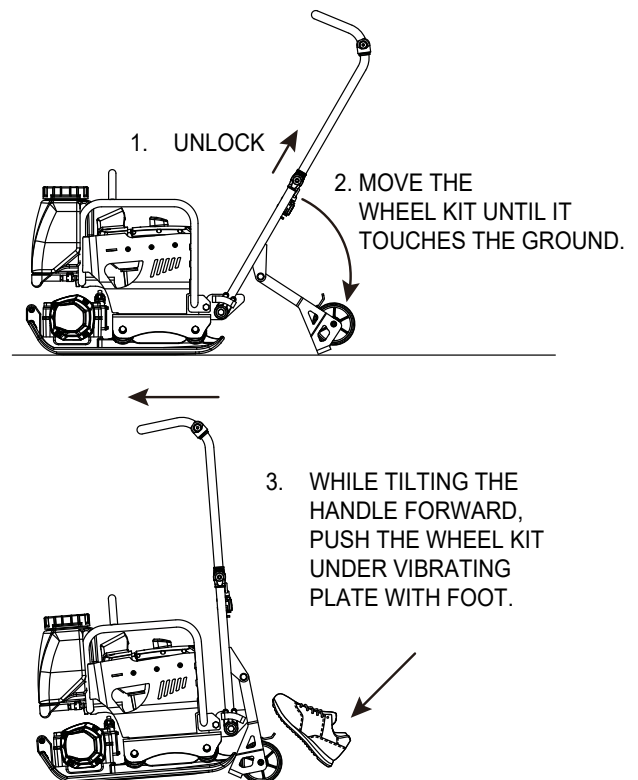


Figure 7. Wheel Kit Position

3. Check that the wheels turn smoothly when unit is moved forward and backward. See Figure 8.

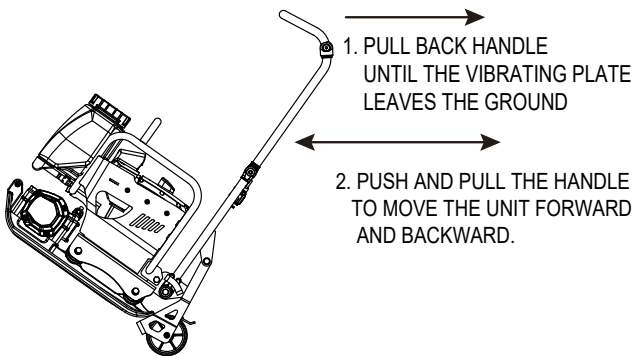


Figure 8. Wheel Kit Movement

WATER TANK CHECK

1. Check the water tank for leaks after filling up with water (Figure 9).

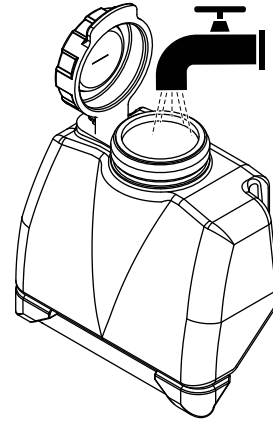


Figure 9. Fill and Leak Check

2. Check the water tank ON and OFF valve (Figure 10).

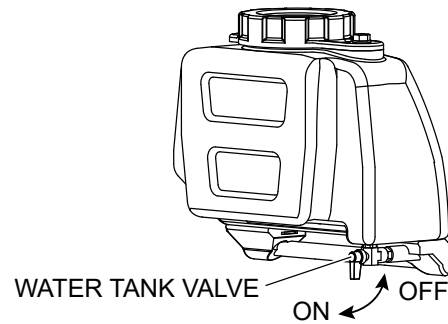


Figure 10. Water Tank ON-OFF Valve

CAUTION

Failure to understand the operation of the plate compactor could result in severe damage to the unit or personal injury.

STARTUP

Refer to Figure 11 for location of buttons and indicators on the Battery Control.

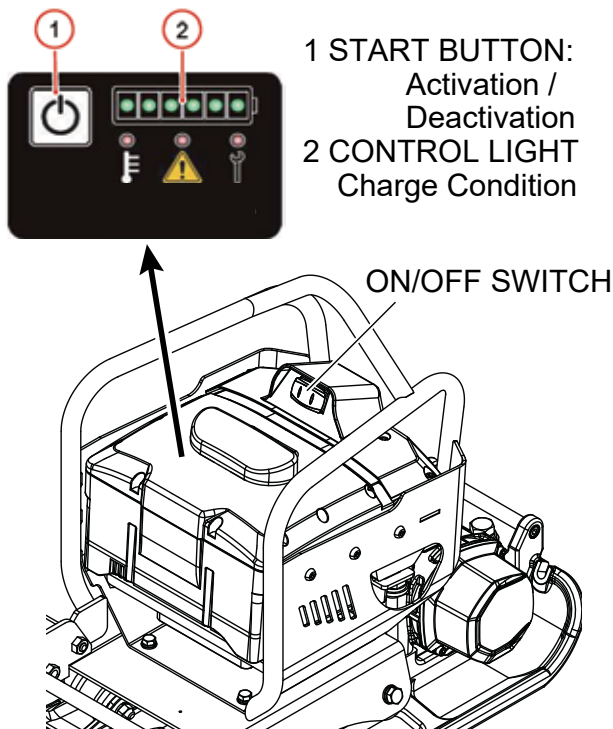


Figure 11. Battery Control

When starting the plate compactor, perform the following:

1. Press START BUTTON on the battery control to activate battery.
2. Check the current battery charge on the control light to make sure charge is sufficient to operate compactor.

OPERATION

1. Hold the machine firmly by the handle.
2. Turn on the ON/OFF switch to start moving the machine forward.

CAUTION

- **DO NOT** use this machine on ground that is harder than the machine can handle, or for driving pilings or tamping rock beds.
- Furthermore, use of the machine on sloping ground, such as the side of an embankment, may make the machine unstable and can cause an accident. It can also result in premature machine wear due to uneven loads on the machine.
- Only use the machine for compacting earth and sand, soil, and asphalt.
- **DO NOT** use the machine for other types of jobs.

STOPPING

1. To stop, press OFF on the ON/OFF switch (Figure 12).
2. Allow the machine to come to a complete stop.

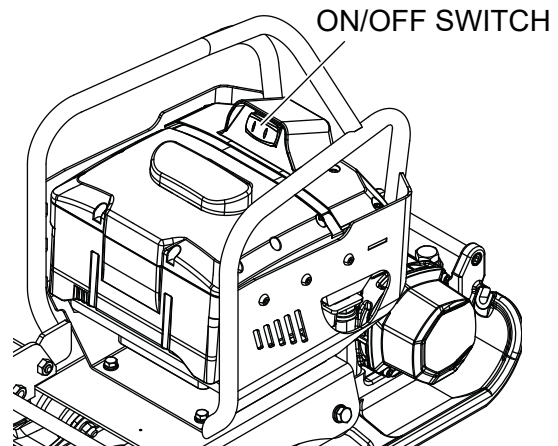


Figure 12. Machine OFF

WATER TANK

1. If your application requires sprinkling work, open the valve of water tank (Figure 13).

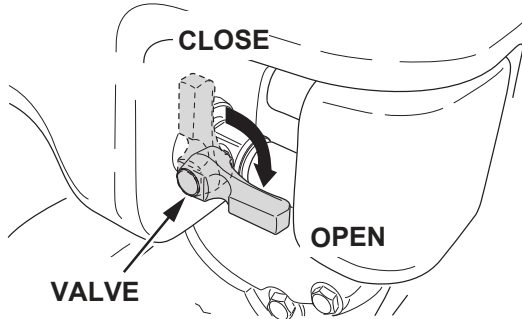


Figure 13. Water Tank Valve (Open)

2. When stopping sprinkling work, close the valve of water tank (Figure 14).

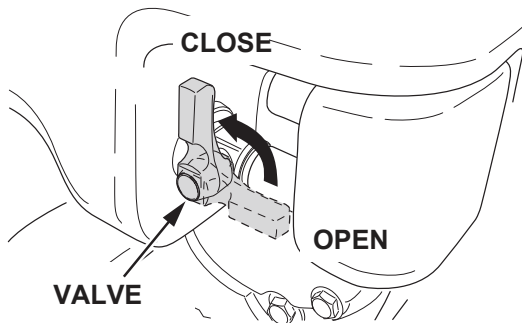


Figure 14. Water Tank Valve (Close)

TRANSPORTATION AND STORAGE

TRANSPORTATION

1. Stop the motor unit before transporting the machine.
2. Do not move the machine until the motor and main body have cooled down enough.
3. Remove the rechargeable battery.
4. Maintain upright position of the rammer on a level ground during transporting.
5. Tie down the rammer with cable (wire or rope) so that it cannot move or tip over during transporting.

STORAGE

1. Follow steps 1 to 3 of TRANSPORTATION section.
2. Wipe plate compactor with a clean dry cloth.

NOTICE

Do not use a hose or pressure washer to spray water on the electrical components. Water entering the electrical components may cause a malfunction.

3. Avoid storage areas with high temperature and high humidity, or environments with severe temperature changes.
4. Keep away from direct sunlight and rain.
5. Put a cover on the machine to protect from dirt.

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, carry out the maintenance inspection in accordance with Table 7 daily, before starting operation.

Table 7. Machine Inspection

Item	Type of Inspection
Vibrating Plate	Wear, Deformation, Breakage, Crack
Handle	Deformation, Breakage, Crack
Guard Frame	Deformation, Breakage, Crack
Lifting Grip	Deformation, Breakage, Crack
Wheel Kit	Operation
Shock Absorber	Deformation, Breakage, Crack
Battery Lock Lever	Operation
Bolts, Nuts	Loose or Missing. See Table 8 for tightening torque.
Power Connection	Wear, Deformation, Breakage, Crack, Dirt

NOTICE

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

Table 8. 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.

PLATE COMPACTOR STORAGE

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

- **STOP** the machine motor.
- **DO NOT** move the machine until the motor and main body have cooled down enough.
- Remove the rechargeable battery.
- Maintain upright position of the compactor on a level ground when storing.
- Store unit indoors covered with plastic sheet in moisture-free and dust-free location out of direct sunlight

TROUBLESHOOTING

Troubleshooting (Compactor)		
Symptom	Possible Problem	Solution
Exciter (vibrating motor does not start)	Battery is not installed correctly?	Reinstall battery.
	Battery charge is low?	Fully charge battery.
	Battery malfunction?	Replace battery.
	Exciter broken?	Replace exciter.

NOTICE

For Troubleshooting information of the Rechargeable Battery and Battery Charger, please refer to corresponding operation manual accompanying the product.

OPERATION MANUAL

HERE'S HOW TO GET HELP

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

UNITED STATES

Multiquip Inc.

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