OPERATION MANUAL

MULTIQUIP®

Mikasa SERIES

MODEL MVH306GH

REVERSIBLE PLATE COMPACTOR

(HONDA GX270K1SMX2 GASOLINE ENGINE)

Revision #9 (07/09/20)

To find the latest revision of this publication or associated parts manual, visit our website at:
www.multiquip.com

THIS MANUAL MUST ACCOMPANY THE EQUIPMENT AT ALL TIMES.


WARNING
CANCER &
REPRODUCTIVE HARM
www.P65Warnings.ca.gov
P/N 38707

MIKASA MVH306GH REVERSIBLE PLATE COMPACTOR

NOTICE

Specification and part number 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.**

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

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.

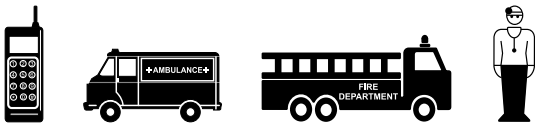
- **ALWAYS** check the equipment for loosened threads or bolts before starting.
- **DO NOT** use the equipment for any purpose other than its intended purposes or applications.
- **ALWAYS** clear the work area of any debris, tools, etc. that would constitute a hazard while the equipment is in operation.

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.



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.

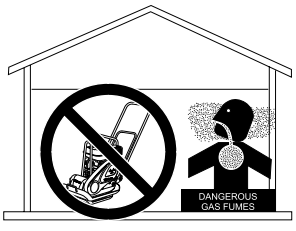
NOTICE

- **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

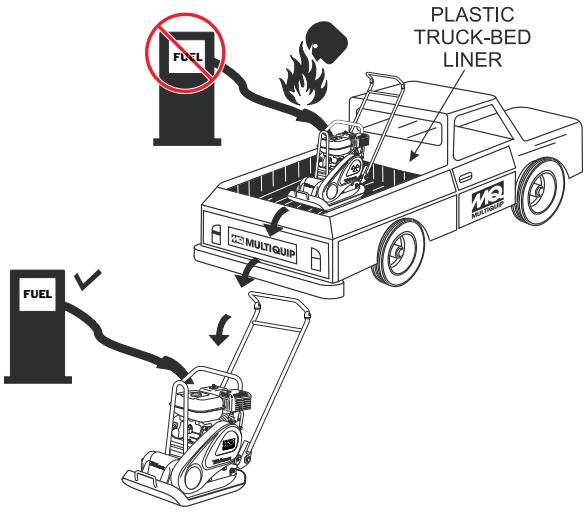
- **NEVER** run engine without an air filter or with a dirty air filter. Severe engine damage may occur. Service air filter frequently to prevent engine malfunction.
- **NEVER** tamper with the factory settings of the engine or engine governor. Damage to the engine or equipment can result if operating 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.

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)

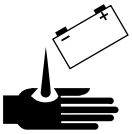
DANGER

- **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 lifitng 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.

Table 1. MVH-306GH Reversible Plate Compactor Specifications	
Centrifugal Force	10,125 lb (4,602 kg)
Vibration Frequency	4,400 vpm (70 Hz)
Traveling Speed	0 to 75 ft/min (0 to 23 m/min)
Plate Size (L x W)	18 x 34 in (45.72 x 86.36 cm)
With External Plate Size (L x W)	24 x 34 in (60.96 x 86.36 cm)
Max. Area of Compaction (no extensions)	6,750 sq. ft. (2,057 sq. meters)
Overall Length	61.8 in (1570 mm)
Overall Width	18.0 in (457 mm)
Overall Height (with handle)	44.1 in (1120 mm)
Overall Height (without handle)	31.7 in (805 mm)
Operating Weight D/DS	673 lbs. (306 kg)
Operating Weight (with extension plates)	706 lbs. (321kg)

Table 2. Engine Specifications		
Engine	**Model**	**HONDA GX270K1SMX2**
	Type	4-Stroke, Single Cylinder, OHV, Gasoline Engine
	Bore X Stroke	3.0 in. X 2.3 in. (77 mm x 58 mm.)
	Displacement	16.5 cu-in (270 cm^3)
	Max Output	9.0 H.P. (6.7 KW) @ 3600 R.P.M.
	Fuel Tank Capacity	1.59 gallons (6.0 liters)
	Fuel	Unleaded Automobile Gasoline
	Lube Oil Capacity	1.16 quarts (1.1 liters)
	Speed Control Method	Centrifugal Fly-weight Type
	Starting Method	Recoil Start
Dimension (L x W x H)		14.0 x 16.9 X 16.1 in. (355 X 430 X 410 mm.)
Dry Net Weight		55.1 lbs (25 Kg.)

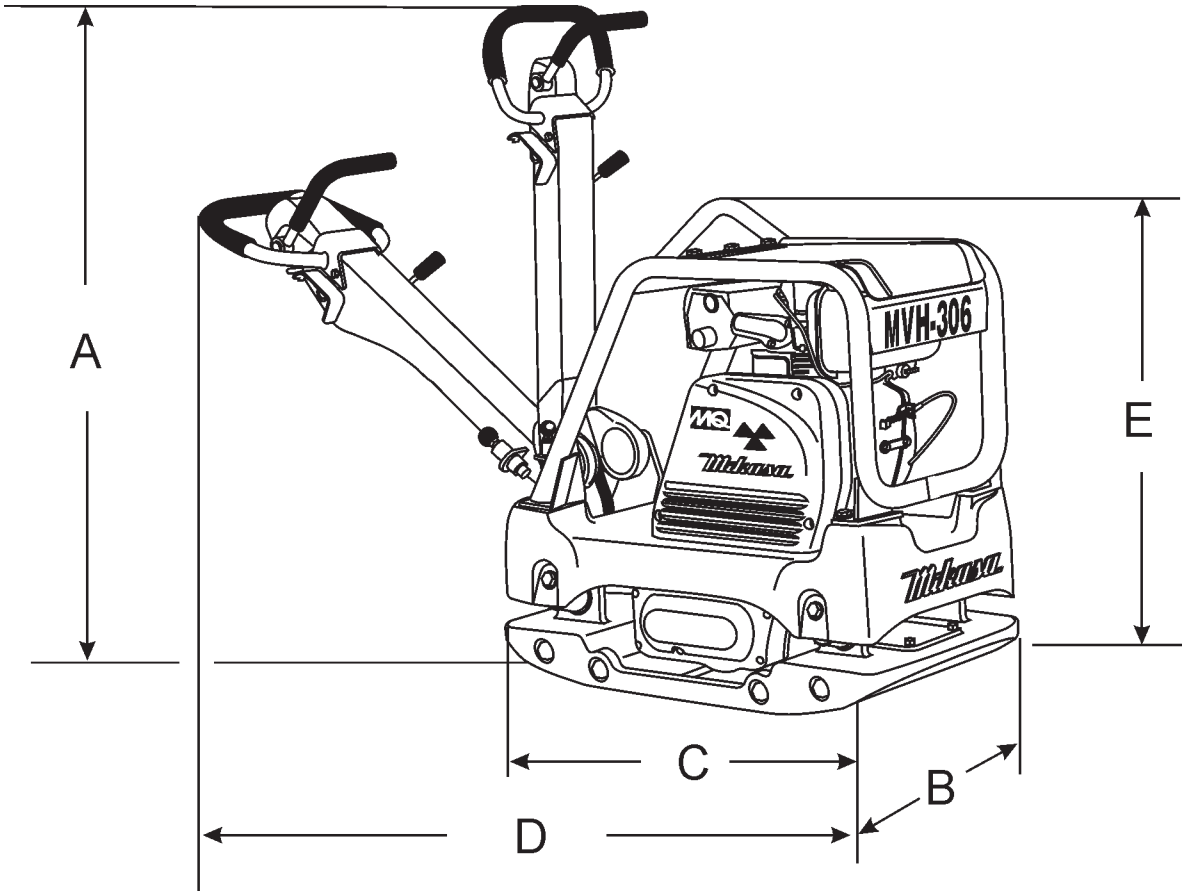


Figure 3. MVH306GH Reversible Plate Compactor Dimensions

Table 3. Dimensions	
REF.	DIMENSIONS
A	53 in. (134.6 cm.)
B	18 in. (46 cm.)
C	34 in. (86 cm.)
D	63.8 in. (162 cm.)
E	31.7 (80.5 cm.)

Plate Compactor

The Mikasa MVH306GH is a walk behind, reversible plate compactor designed for the compaction of sand, clay 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 of the MVH306GH produce low amplitude high frequency vibrations, designed to compact granular soils.

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.

Reversible Vibratory Plates

Reversible vibratory plates have two eccentric weights that allow a smooth transition for forward and reverse travel, plus increased compaction force as the result of dual weights.

Due to their weight and force, reversible plates are ideal for semi-cohesive soils.

Frequency/Speed

The compactor's vibrating plate maximum frequency is 4400 vpm (vibrations per minute). The forward and reverse travel speed of the compactor is approximately 75 ft./minute (23 meters/minute).

Engine

The Mikasa MVH306GH Plate Compactor is equipped with a GX270K1-SMX2 (recoil start) gasoline engine.

Controls

Before starting the MVH306GH Plate Compactor, identify and understand the function of the controls and components as indicated in Figure 4.

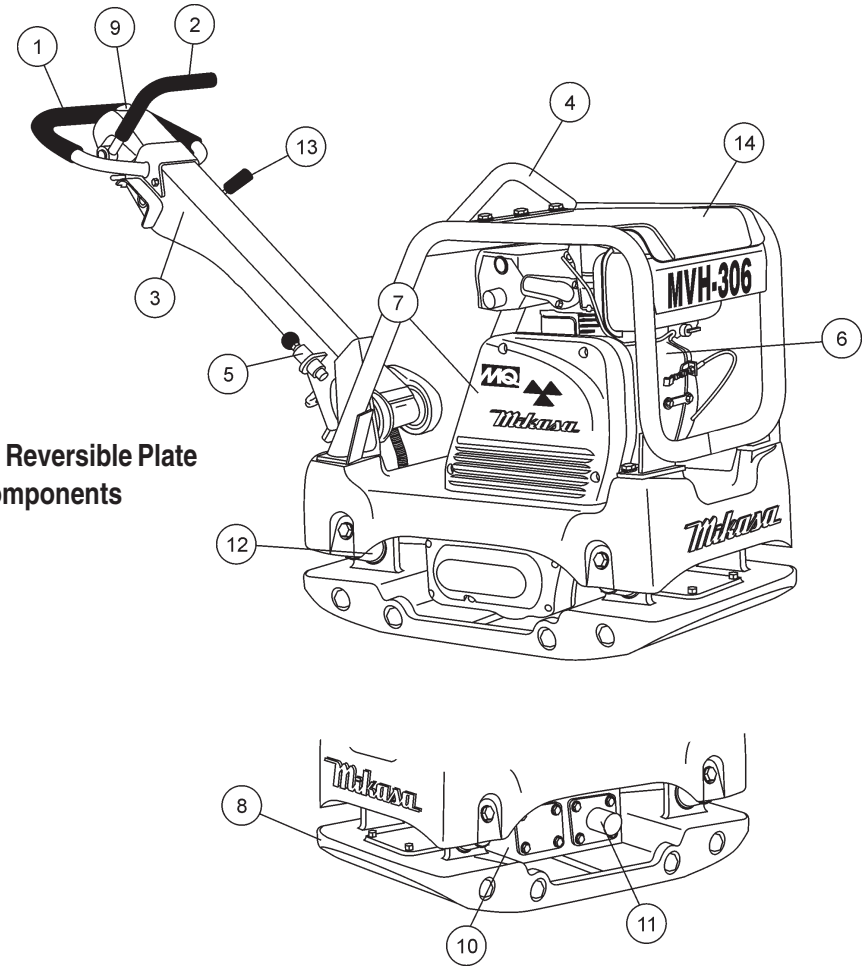


Figure 4. MVH306GH Reversible Plate Compactor Components

Figure 4 illustrates the location of the major components for the MVH306GH Reversible Plate Compactor. The function of each component is described below:

1. **Hand Grip –** When operating the compactor use this hand grip to maneuver the compactor.
2. **Forward & Reverse Lever –** ***Push*** the lever forward, the compactor will move in a forward direction, ***pull*** the lever backwards, the compactor will move in backwards direction. Placing the lever in the middle (midway) will cause the compactor not to move (neutral).
3. **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.
4. **Guard Hook** - Used to lift the machine with crane or other lifting device.
5. **Stopper** - Locks the handle in place in the upward position for stowing.
6. **Engine –** This plate compactor uses a **GX270K1-SMX2** gasoline engine. Refer to the owner's manual for engine information and related topics.
7. **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 exist that your hand may get caught between the V-belt and clutch, thus causing serious injury and bodily harm.
8. **Base Plate –** Designed to compact sand, clay, and asphalt.
9. **Oil Reservoir –** Fill with Shell Tellus Oil 46 or equivalent grade hydraulic oil.
10. **Vibration Case –** Encloses the eccentric, gears and counter weights.
11. **Hydraulic Cylinder –** Activated by moving the travel lever. The cylinder controls the direction of movement by the plate compactor.
12. **Shock Absorber –** Protects plate compactor from damage by absorbing vibration during operation.
13. **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.
14. **Rubber Cover –** Lift this rubber cover to gain access to the fuel tank.

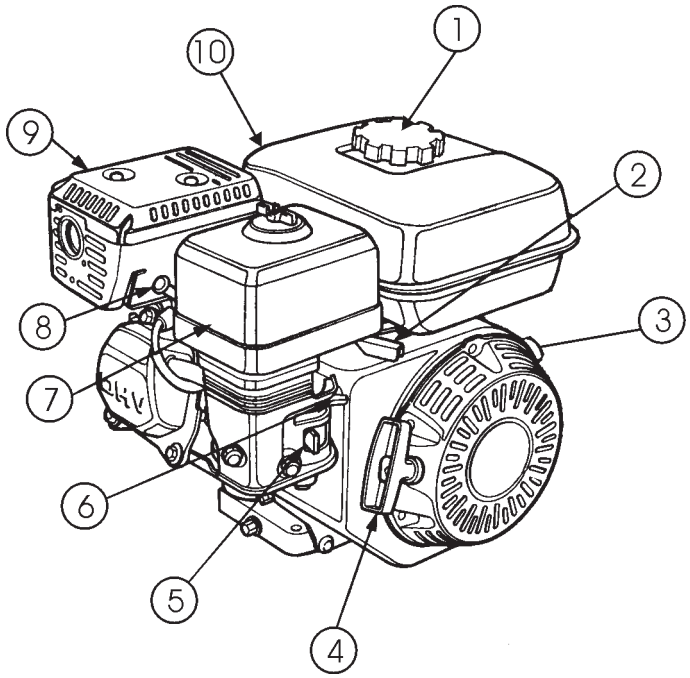


Figure 5. Honda GX270 Engine Components

INITIAL SERVICING

The engine (Figure 5) must be checked for proper lubrication and filled with fuel prior to operation. Refer to the manufacturers engine manual for instructions & details of operation and servicing. The engine shown above is a **HONDA** engine, operation for other types of engines may vary somewhat.

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.

⚠ WARNING

Add fuel to the tank only when the engine is stopped and has cooled 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 cannister 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

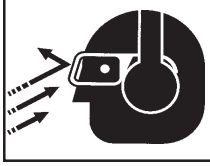
Engine components can generate extreme heat. To prevent burns, **DO NOT** touch these areas while the engine is running or immediately after operating. **NEVER** operate the engine with the muffler removed.

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

⚠ CAUTION

NEVER operate the compactor in a confined area or enclosed area structure that does not provide ample ***free flow of air***.

⚠ CAUTION



ALWAYS wear approved eye and hearing protection before operating the compactor.

Before Starting

1. Read safety instructions at the beginning of manual.
2. Familiarize yourself with the operating and control elements of the machine and the working environment. This includes obstacles in the working area, bearing capacity of the ground and the necessary safety provisions.
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 fastening nuts and bolts for tightness. Loose threads may cause damage to the machine when vibrating.
5. Understand the geographical features and regulations of the job site.
6. Clean the compactor, removing dirt and dust. Particularly, the bottom of the plate, engine cooling air inlet.

Checking Engine Oil Level

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 6) and wipe it clean.
3. Insert and remove the dipstick without screwing it into the filler neck. Check the oil level shown on the dipstick.

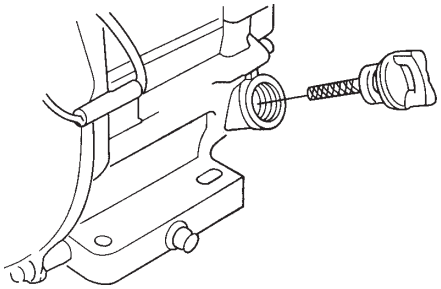


Figure 6. Engine Oil Dipstick Removal

4. If the oil level is low (Figure 7), fill to the edge of the oil filler hole with the recommended oil type (Table 4). Maximum oil capacity is 1.16 quarts (1.10 liters).

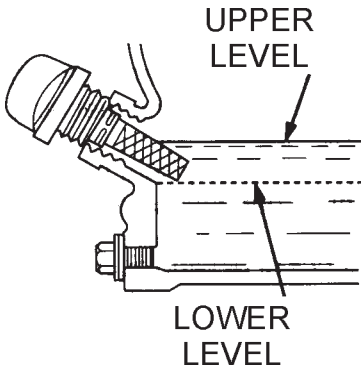


Figure 7. Engine Oil Level

Table 4. Oil Type

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

Checking the Hydraulic Oil Level

1. To check the engine oil level, place the compactor on secure level ground with the engine stopped.
2. Remove the hydraulic oil breather cap located at the top of the hydraulic oil tank (Figure 8).
3. Using a 24 mm wrench, remove the hydraulic oil filler plug.
3. Visually inspect to determine if hydraulic oil level is low. If oil level is low add Shell Tellus 46 hydraulic oil or equivalent through the hand pump oil filler port.

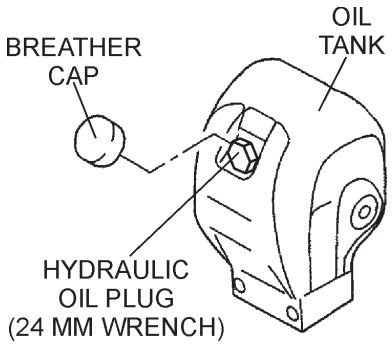


Figure 8. Hydraulic Oil Filler Plug Removal

CAUTION

DO NOT overfill hydraulic oil tank. This could cause oil leaks and sluggish operation. Clean cap and surrounding area before opening to prevent dirt from entering oil tank.

4. When adding hydraulic oil, only fill to the specified oil level as marked on the front of the hydraulic oil tank (Figure 9). **DO NOT** overfill.

Figure 9. Oil Tank (Front View)

Checking the Air Cleaner

1. Loosen the wing nut and remove the air cleaner cover as shown in Figure 10.
2. Remove the paper filter element and inspect it for signs of wear or dirt. If paper filter element is dirty, clean or replace element.

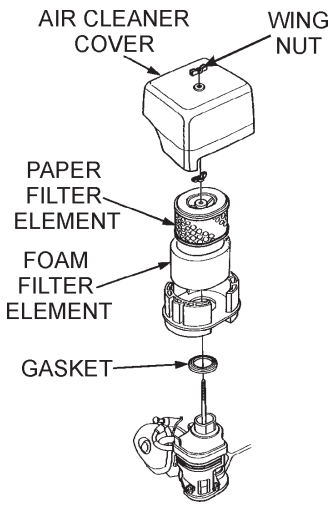
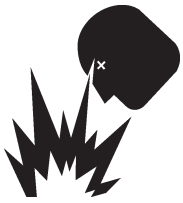


Figure 10. Air Cleaner Element

DANGER



EXPLOSIVE FUEL!

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

Checking The Fuel

1. Remove the fuel cap located on top of fuel tank.
2. Visually inspect to see if fuel level is low. If fuel is low, replenish with unleaded gasoline. (Figure 11).
3. When refueling, be sure to use a strainer for filtration. **DO NOT** top-off fuel. Wipe up any spilled fuel.

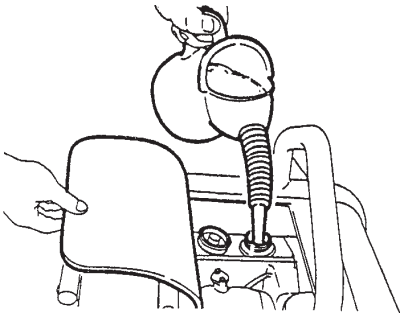


Figure 11. Refueling

CAUTION

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

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

Refer to Figure 4 for the location of controls and components.

Releasing the Handle

1. Pull the handle release pin, (Figure 12) then push down on the hand grip to release the handle.

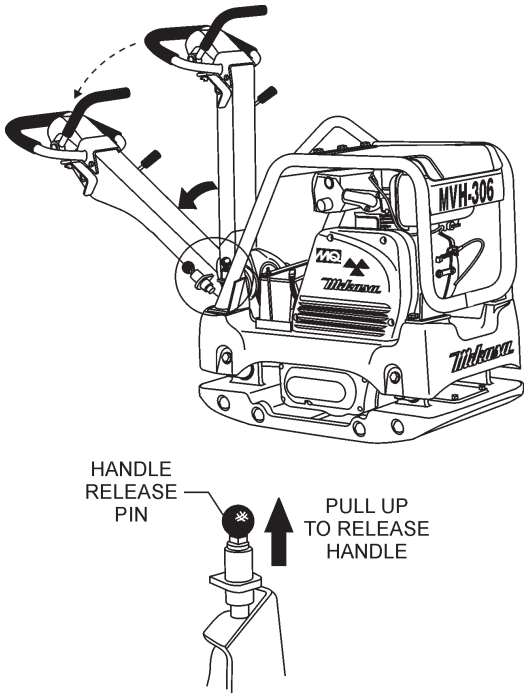


Figure 12. Handle Release Pin

Adjusting Handle Height

The height of the handle is adjustable for your comfort .

1. Loosen the butterfly screw (Figure 13).
2. Turn the grip clockwise to raise the handle or counterclockwise to lower the handle.
3. When the handle is raised to the desired height, tighten the butterfly screw.

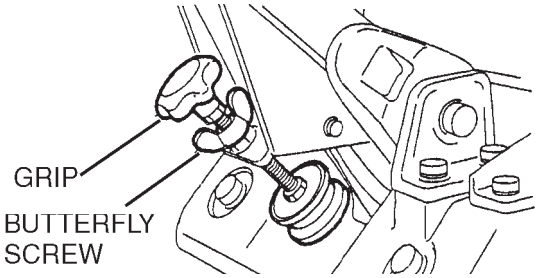


Figure 13. Handle Adjustment

STARTING THE ENGINE

Starting the Engine (*HONDA* engine)

1. Place the engine ***fuel valve lever*** (Figure 14) to the "**ON**" position.

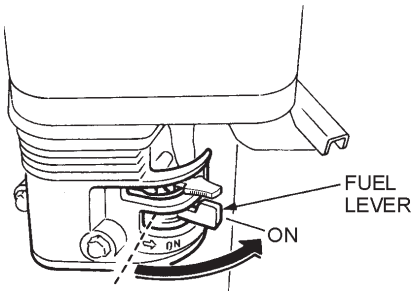


Figure 14. Engine Fuel Valve Lever (ON Position)

2. Move the throttle lever to the **START position** (Figure 15).

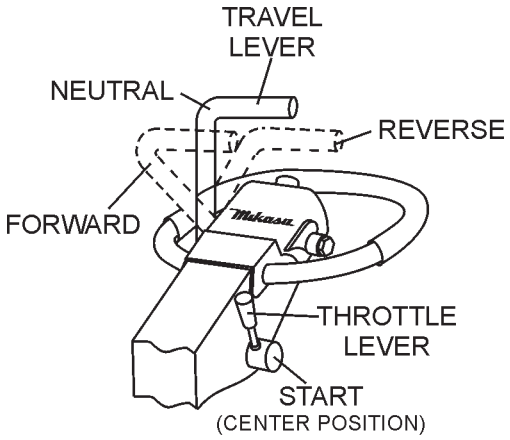


Figure 15. Throttle Lever (Start Position)

3. Place the ***choke lever*** (Figure 16) in the "***OPEN***" position if starting a ***cold*** engine.

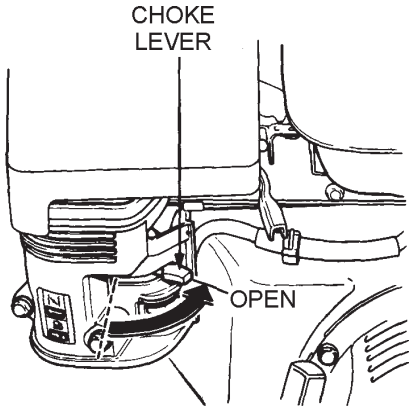


Figure 16. Engine Choke Lever (Open)

4. Place the ***choke lever*** (Figure 17) in the "***CLOSED***" position if starting a ***warm engine*** or the ***temperature is warm.***

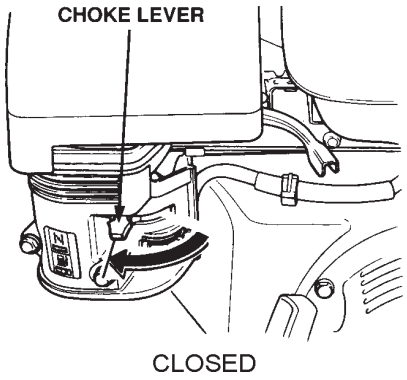


Figure 17. Engine Choke Lever (Closed)

5. Place the ***engine ON/OFF switch*** (Figure 18) in the "***ON***" position.

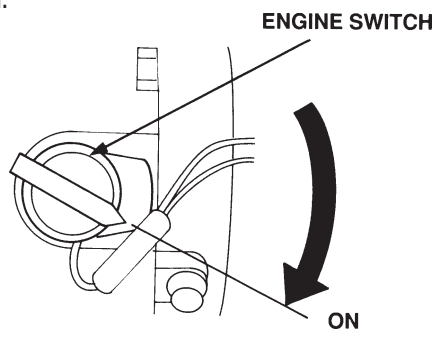


Figure 18. Engine ON/OFF Switch (ON Position)

6. Grasp the starter grip (Figure 19) and slowly pull it out. The resistance becomes the hardest at a certain position, corresponding to the compression point. Pull the starter grip briskly and smoothly for starting.

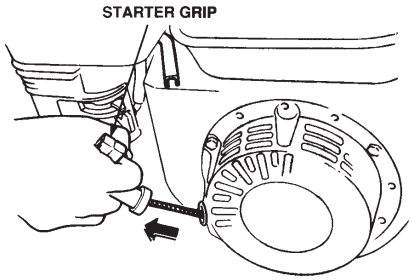


Figure 19. Starter Grip

7. If the engine has started, slowly return the choke lever (Figure 17) to the ***CLOSED*** position. If the engine has not started repeat steps 1 through 6.
8. Before the compactor is placed into operation, run the engine for several minutes. Check for fuel leaks, and noises that would be associated with a loose component.

TRAVELING

1. Grasp the compactor's hand grip (Figure 20), and move the engine throttle lever (Figure 20) 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.

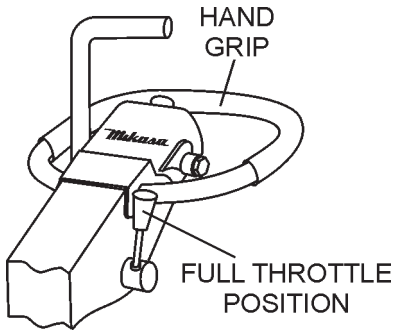


Figure 20. Throttle Lever (Fast)

NOTICE

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

3. To make the compactor move in the forward direction push the travel lever (Figure 21) forward.

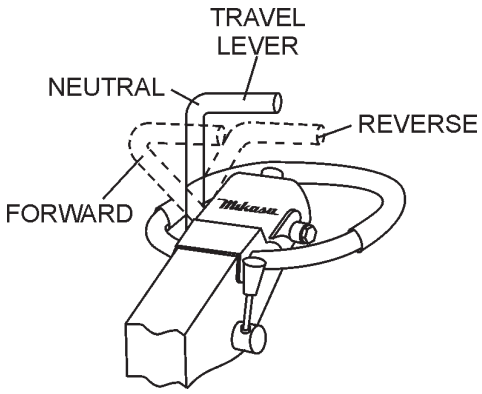


Figure 21. Travel Lever

4. To make the compactor move in the reverse direction pull the travel lever (Figure 21) backwards.
5. Firmly gasp the compactor's hand grip, the compactor will begin moving in the desired position when the direction lever has been placed in the desired position.
6. 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.
7. If travel lever is placed in the neutral position, the machine will vibrate in place.
8. To move the compactor laterally, hold the hand grip firmly and swing compactor. **DO NOT** swing compactor while gripping the travel lever.

Normal Shutdown

1. Return the throttle lever to the **START** position (Figure 15). Allow the machine to cool down for 2 to 3 minutes.
2. Place the travel lever in the **NEUTRAL** position.
3. Place the throttle lever in the **STOP** position (Figure 22) to stop the engine.
4. Turn the engine ON/OFF switch to the "**OFF**" position (Figure 23).
5. Place the ***fuel shut-off lever*** (Figure 24) in the **OFF** position.

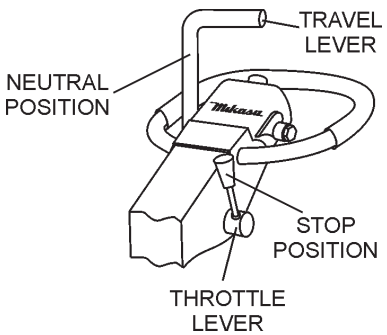


Figure 22. Throttle Lever (Stop)

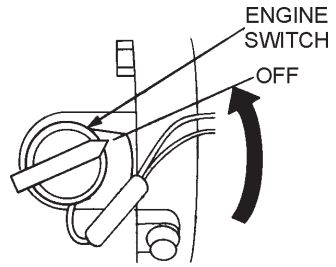


Figure 23. Engine ON/OFF Switch (OFF)

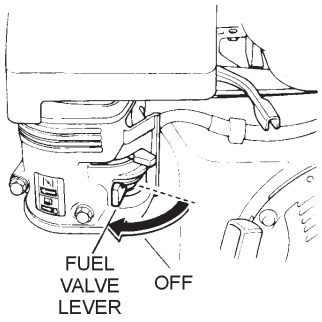


Figure 24. Fuel Valve Lever (OFF)

Emergency Shutdown

1. For a recoil start type engine, move the throttle lever quickly to the ***STOP*** position.

STOWING THE HANDLE

1. Push up the handle upward (Figure 25) until the handle locks in place.

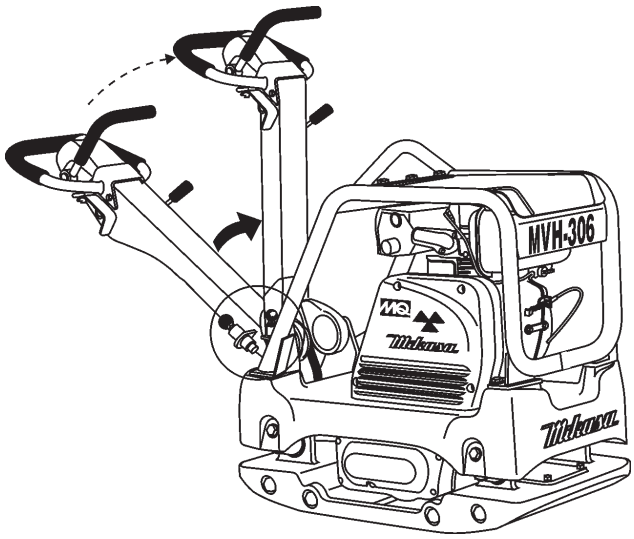


Figure 25. Stowing the Handle

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

Inspection and Maintenance Service Tables.

1. To make sure your plate compactor is always in good working condition before using, carry out the maintenance inspection in accordance with Tables 5 through 7.

TABLE 5. MVH-306GH MACHINE INSPECTION

ITEM	HOURS OF OPERATION	REMARKS
Loose or Missing Screws	Every 8 hours (every day)	
Damaged Parts	Every 8 hours (every day)	
Function of Controlling System Part	Every 8 hours (every day)	
Hydraulic System Leak	Every 100 hours	See page 21
Vibrator Oil Check	Every 100 hours	See page 23
Vibrator Oil Replacement	Every 300 hours	See page 23
Hydraulic Oil Check	Every 100 hours	See page 23
Hydraulic Oil Replacement	First after 200 hours, then every 1,000 hours	See page 23
V-belt (clutch) Check	Every 200 hours	See page 22
Battery Check	Every 100 hours	See page 24

NOTICE

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

NOTICE

Fuel piping and connections should be replaced every 2 years.

TABLE 6. MVH-306GH Engine Check

ITEM	HOURS OF OPERATION
Spark Plug Check	Every 40 hours (every week)
Oil or Fuel Leak	Every 8 hours (every day)
Tightness of Fastening Threads	Every 8 hours (every day)
Engine Oil Check and Replenishment	Every 8 hours (every day) (Replenish to specified maximum level)
Engine Oil Replacement	After first 25 hours then every 50 to 100 hours
Air Filter Cleaning	Every 100 hours
See separate engine manual for details on engine check.	

Daily Service

- Check for leakage of fuel or oil.
- Check for loose screws including tightness. See Table 7 below (tightening torque), for retightening:

TABLE 7. TIGHTENING TORQUE (in. kg/cm) Diameter

Material	6mm	8mm	10mm	12mm	14mm	16mm	18mm	20mm
4T	70	150	300	500	750	1,100	1,400	2,000
6-8T	100	250	500	800	1,300	2,000	2,700	3,800
11T	150	400	800	1,200	2,000	2,900	4,200	5,600
*	100	300~ 350	650 ~ 700					

* (In case counter-part is of aluminum)
(Threads in use with this machine are all right handed)
Material and quality of material is marked on each bolt, and screw.

- Remove soil and clean the bottom of compaction plate.
- Check hand 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.
- Check engine oil.

Spark Plug

1. Remove and clean the spark plug (Figure 26).
2. Adjust the spark gap to 0.028 ~0.031 inch (0.6~0.7 mm). This unit has electronic ignition, which requires no adjustments.

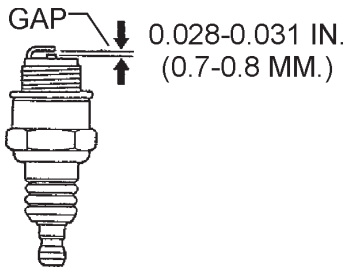


Figure 26. Spark Plug Gap

Engine Oil Replacement

1. Replace engine oil, first in 25 hours of operation and every 50 to 100 hours afterwards.
2. Drain the engine oil when the oil is ***warm*** as shown in Figure 27.
3. Remove the oil drain bolt and sealing washer and allow the oil to drain into a suitable container.
4. Replace engine oil with recommended type oil as listed in Table 4. Engine oil capacity is 1.16 quarts (1.1 liters). **DO NOT** overfill.
5. Install drain bolt with sealing washer and tighten securely.

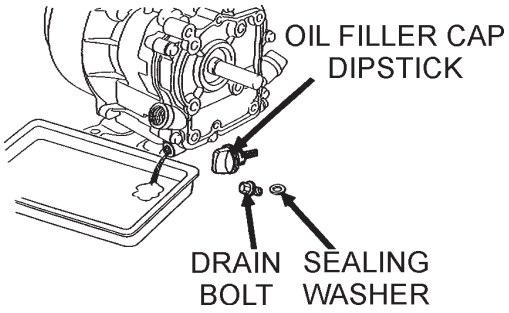


Figure 27. Engine Oil (Draining)

Air Filter

1. Remove the air cleaner cover and foam filter element as shown in Figure 28.
2. Tap the paper filter element (Figure 28) several times on a hard surface to remove dirt, or blow compressed air [not exceeding 30 psi (207 kPa, 2.1 kgf/cm^2)] through the filter element from the air cleaner case side. ***NEVER*** brush off dirt. Brushing will force dirt into the fibers. Replace the paper filter element if it is excessively dirty.
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.

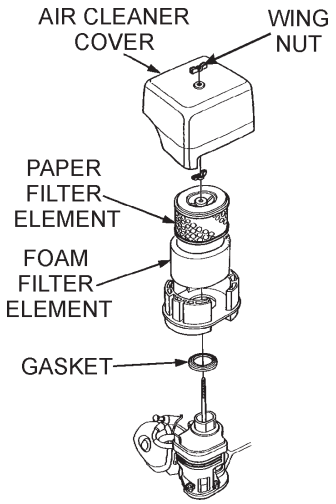


Figure 28. Engine Air Filter

⚠ CAUTION

NEVER attempt to check the V-belt with the engine running. Severe injury can occur if your hand gets caught between the V-belt and the clutch (Figure 29). Always use safety gloves.

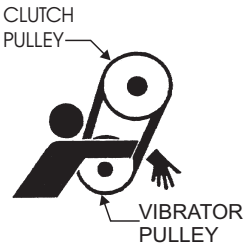


Figure 29. V-Belt Hazard

Checking and Replacing the V-Belt and Clutch

1. After 200 hours of operation, remove the belt cover to check the V-belt tension (Figure 30). Tension is proper if the belt bends about 3/8"(10 mm) when depressed strongly with finger between shafts. Loose or worn V-belts reduces power transmission efficiency, causing weak compaction and reduces the life of the belt itself.

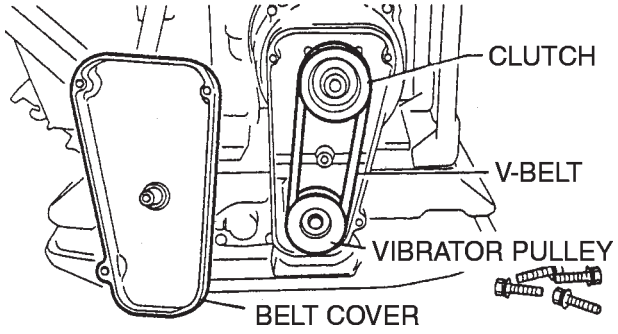


Figure 30. V-Belt Check

- **Replacing the V-belt**

Remove the belt cover. Engage an offset wrench 3/4"(19 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 and, 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 cover removed, check outer drum of the clutch for seizure and "V" groove for wear or damage with your eyes. Clean the "V" groove as necessary. Wear of lining or shoe should be checked with running check. If the shoe is worn, power transmission becomes deficient and slipping will result.

- **Replacing Clutch**

Remove V-belt. Remove bolt at engine power output by giving a shock to an engaged wrench (tapping with hammer or the like)and rotating bolt counterclockwise. Remove clutch with a pulley extractor. To reinstall, reverse the procedure.

⚠ CAUTION

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

NOTICE

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

1. In every 100 hours of operation, with the machine positioned horizontally, use a 3/4" (19 mm) wrench and remove vibrator oil level check plug (Figure 31). Visually inspect and see if vibrator oil level is up to filler port. Be sure to clean area around check hole to prevent dirt and dust from entering.

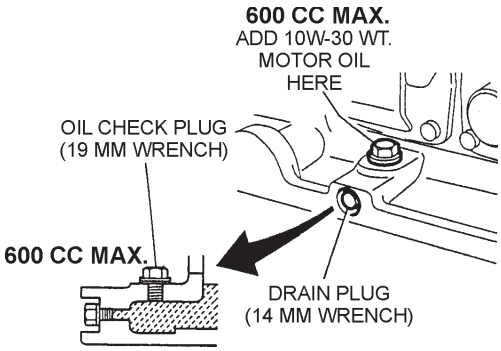


Figure 31. Vibrator Oil Drain and Check Plugs

Draining Vibrator Oil

1. Replace vibrator oil after first 200 hours and in every 1,000 hours of operation.
2. Position handle bar vertically (storage position).
3. Using a 14 mm wrench remove the vibrator oil drain plug (Figure 31) from the vibrating plate assembly.

NOTICE

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.

4. After vibrator oil has been completely drained from machine, fill with 10W-30 motor oil to the appropriate safe operating level (Figure 31).
5. Reinstall drain plug into vibrating plate assembly. Apply seal tape or Loctite #575 to thread portion of drain plug.

Draining Hydraulic Oil

1. Disconnect the hydraulic hose connected to the hydraulic oil cylinder (Figure 32).

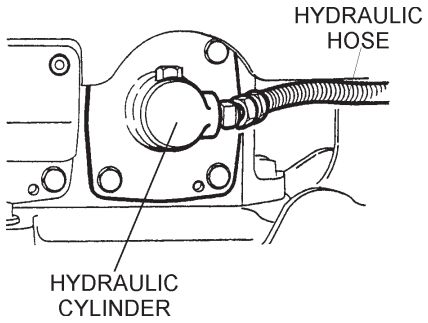


Figure 32. Hydraulic Oil Cylinder

2. Push the travel lever back and forth to drain the hydraulic oil from the hand pump (hydraulic oil reservoir).
3. After draining hydraulic oil, reconnect hydraulic oil hose to cylinder.
4. Place handle in upright position. Pull travel lever all the way back (reverse), and using a rope, secure travel lever to hand grip.

Adding Hydraulic Oil

1. Remove the breather cap and oil plug (Figure 33) from the hydraulic oil tank using a 24mm hex socket.

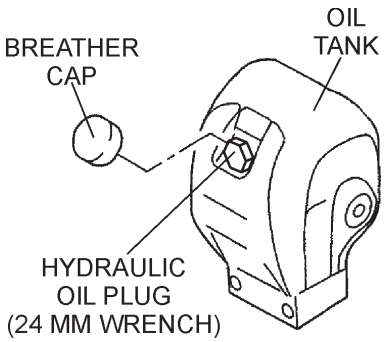


Figure 33. Hydraulic Oil Tank

2. Using a funnel, add ***Shell Tellus Oil #46*** or equivalent to the hydraulic oil tank through the oil filler port (Figure 34). Oil tank capacity is 50.7 fl. oz (1500 cc)

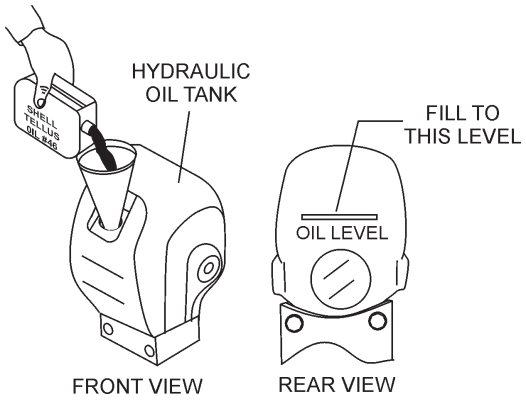


Figure 34. Hydraulic Oil Maintenance

CAUTION

Make sure hydraulic oil is at a normal safe operating level. **DO NOT** over fill. Over filling (excessive oil) will cause excess oil to blow out of breather plug.

3. Loosen bleeder plug located at top of hydraulic cylinder on side of vibrator (Figure 35). Air remaining in the circuit will be forced out of the bleeder plug. Once all air has been purged from the hydraulic system, tighten bleeder plug securely
4. Re-insert oil plug into hydraulic oil tank and tighten securely. Re-install breather cap.

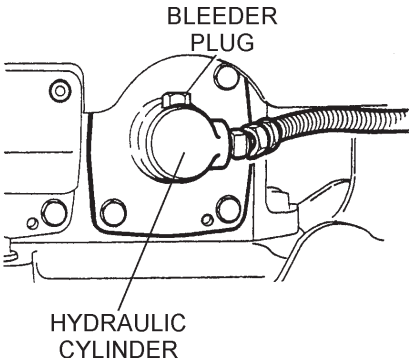


Figure 35. Bleeder Plug

LONG TERM STORAGE

When storing your compactor for long periods do the following:

- Run the engine at idle speed for 3-5 minutes.
- Stop the engine. Drain the engine crankcase oil while the engine is still warm. Fill engine crankcase with fresh oil.
- Wipe any oil or dirt that may have accumulated on the compactor.
- Store compactor in a cool dry place out of reach of children and unauthorized personnel.

Troubleshooting

See Tables 8 (engine) and 9 (plate compactor) on proceeding pages for engine and plate compactor troubleshooting guide.

Practically all breakdowns can be prevented by proper handling and maintenance inspections, but in the event of a breakdown, please take a remedial action following the diagnosis based on the Engine Troubleshooting (Table 8) information shown below. If the problem cannot be remedied, please leave the unit just as it is and consult our company's business office or service plant.

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 dirtry?	Set correct spark gap and clean points.
	Condenser insulation worn or short circuiting?	Replace condenser.
	Spark plug wire broken or short circuiting?	Replace defective spark plug wiring.
Difficult to start, "fuel is available, spark is present and compression is normal"	Wrong fuel type?	Flush fuel system, and replace with correct type of fuel.
	Water or dust in fuel system?	Flush fuel system.
	Air cleaner dirty?	Clean or replace air cleaner.
Difficult to start, "fuel is available, spark is present and compression is low"	Suction/exhaust valve stuck or protruded?	Re-seat valves.
	Piston ring and/or cylinder worn?	Replace piston rings and or piston.
	Cylinder head and/or spark plug not tightened properly?	Torque cylinder head bolts and spark plug.
	Head gasket and/or spark plug gasket damaged?	Replace head and spark plug gaskets.
No fuel present at carburetor.	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.
	Air in fuel line?	Bleed fuel line.

TABLE 8. ENGINE TROUBLESHOOTING (CONTINUED)		
SYMPTOM	**POSSIBLE CAUSE**	**SOLUTION**
"Weak in power" compression is proper and does not misfire.	Air cleaner not clean?	Clean or replace air cleaner
	Improper level in carburetor?	Check float adjustment, re-build carbureator.
	Defective Spark plug?	Clean or replace spark plug.
	Defective Spark plug?	
"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.
	Correct 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.
	Sprial spring loose?	Replace sprial spring.

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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