OPERATION MANUAL

MULTIQUIP®

MODEL V305EH
VIBRATORY ROLLER
(HONDA GX340UT2QAE2 GASOLINE ENGINE)

Revision #3 (06/17/25)

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

NOTES

V305EH
Vibratory Roller

NOTICE

Specifications and part numbers are subject to change without notice.

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

SAFETY MESSAGES

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

SAFETY SYMBOLS

DANGER

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

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.

The following table shows the potential hazards associated with the operation of this equipment.

Symbol	Safety Hazard
	Lethal exhaust gas hazards
	Explosive fuel hazards
	Burn hazards
	Respiratory hazards
	Rotating parts hazards
	Pressurized fluid hazards
	Electric shock hazards
	Runover 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.

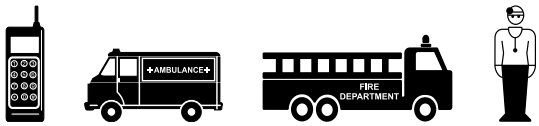
- **ALWAYS** check the equipment for loosened threads or bolts before starting.
- **DO NOT** use the equipment for any purpose other than its intended purposes or applications.
- **ALWAYS** clear the work area of any debris, tools, etc. that would constitute a hazard while the equipment is in operation.

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.



ROLLER 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.
- Never leave the roller unattended with the engine running. Turn off engine.
- Use chock blocks when parking roller on a grade.
- Use extreme care when operating near obstructions, on slippery surfaces, grades, and slide slopes.
- When reversing, particularly on the edges and banks of ditches, as well as in front of obstaces, the operator must stay in a standing position at a safe distance from the machine.
- When operating near any house/building or pipelines, always check the effect of machine vibration. Stop work if necessary.
- **DO NOT** operate the roller with the covers open.
- **ALWAYS** keep the machine away from other personnel and obstacles. Always keep immediate are free of bystanders.

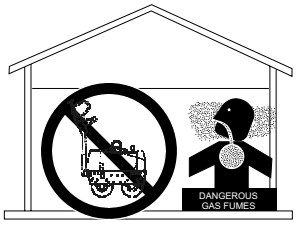
NOTICE

- **ALWAYS** keep the machine in proper running condition.
- Fix damage to machine and replace any broken parts immediately.
- **DO NOT** use worn-out hoses or couplings. Inspect daily.
- **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 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 roller.

⚠ CAUTION

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

- Always turn the engine off before performing maintenance.

NOTICE

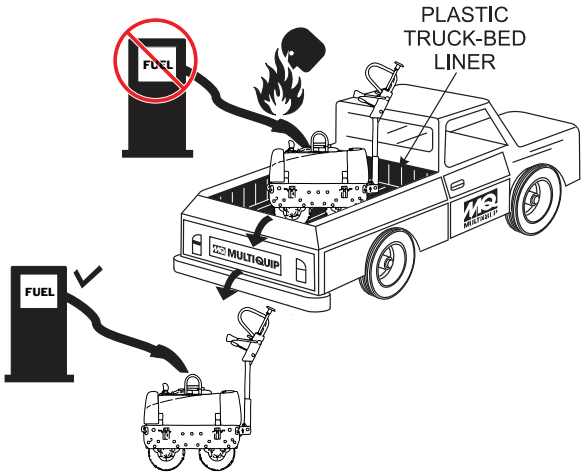
- **NEVER** run engine without an air filter or with a dirty air filter. Severe engine damage may occur. Service air filter frequently to prevent engine malfunction.
- **NEVER** tamper with the factory settings of the engine or engine governor. Damage to the engine or equipment can result if operating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

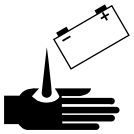
DANGER

- **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 are not damaged and screws are not loose or missing.
- Use lifting equipment capable of lifting the weight of the roller.
- 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 with sufficient bearing capacity to prevent machine from tilting or slipping.
- **DO NOT** lift machine to unnecessary heights.
- **ALWAYS** make sure that roller is secured correctly when transporting on a trailer. Make sure all supports attaching the roller to the trailer are tight.

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. Specifications (Vibratory Roller)	
Centrifugal Force	3,800 lbf (16.9 kN)
Vibration Frequency	4,200 vpm (70 Hz)
Gradeablility (Maximum)	10% or 6°
Overall Length	88.5 in. (2,248 mm)
Overall Height	86.5 in. (2,197 mm)
Drum Diameter	22 in. (559 mm)
Drum Width	29 in. (737 mm)
Overall Width	35 in. (890 mm)
Operating Weight (Empty)	1168 lbs. (530 kg.)
Drive System	Hydrostatic
Working Speed (Forward)	0 - 2.5 mph (0 - 4.0 kph)
Working Speed (Reverse)	0 - 1.7 mph (0 - 2.7 kph)
Water Tank Capacity	7 gallons (26.5 liters)
Curb Clearance (Right)	16.5 in. (419 mm)
Curb Clearance (Left)	4.5 in. (114 mm)
Wall Clearance (Right)	0.75 in. (19 mm)
Wall Clearance (Left)	4.5 in. (114 mm)
Vibration Amplitude	.019 in. (.48 mm)

Table 2. Specifications (Engine)	
Engine Model	HONDA GX340UT2QAE2
Engine Type	Air-cooled, 4 stroke, Overhead Valve, Single Cylinder, Horizontal Shaft Gasoline Engine
Cylinder Bore X Stroke	3.2 in. X 2.5 in. (88 mm x 64 mm.)
Displacement	20.60 cu-in (337 cc)
Net power (in accordance with SAE J1349*)	10.7 H.P. (8 kW)
Fuel Tank Capacity	1.59 gallons (6.0 liters)
Fuel	Unleaded Automobile Gasoline
Oil Capacity	1.16 quarts (1.1 liters)
Oil Alert System	Yes
Speed Control Method	Centrifugal Flyweight Type
Starting Method	Electric/Recoil Start
Dry Net Weight	68.4 lbs (31 Kg.)
Dimensions (L x W x H)	15.0 x 17.7 X 17.4 in. (380 X 450 X 443 mm.)

* The power rating of the engine is the net power output tested on a production engine and measured in accordance with SAE J1349 at 3,600 rpm (net power) and at 2,500 rpm (max net torque). Mass production engines may vary from this value. Actual power output for the engine installed in the machine will vary depending on numerous factors, including the operating speed of the engine in application, environmental conditions, maintenance and other variables.

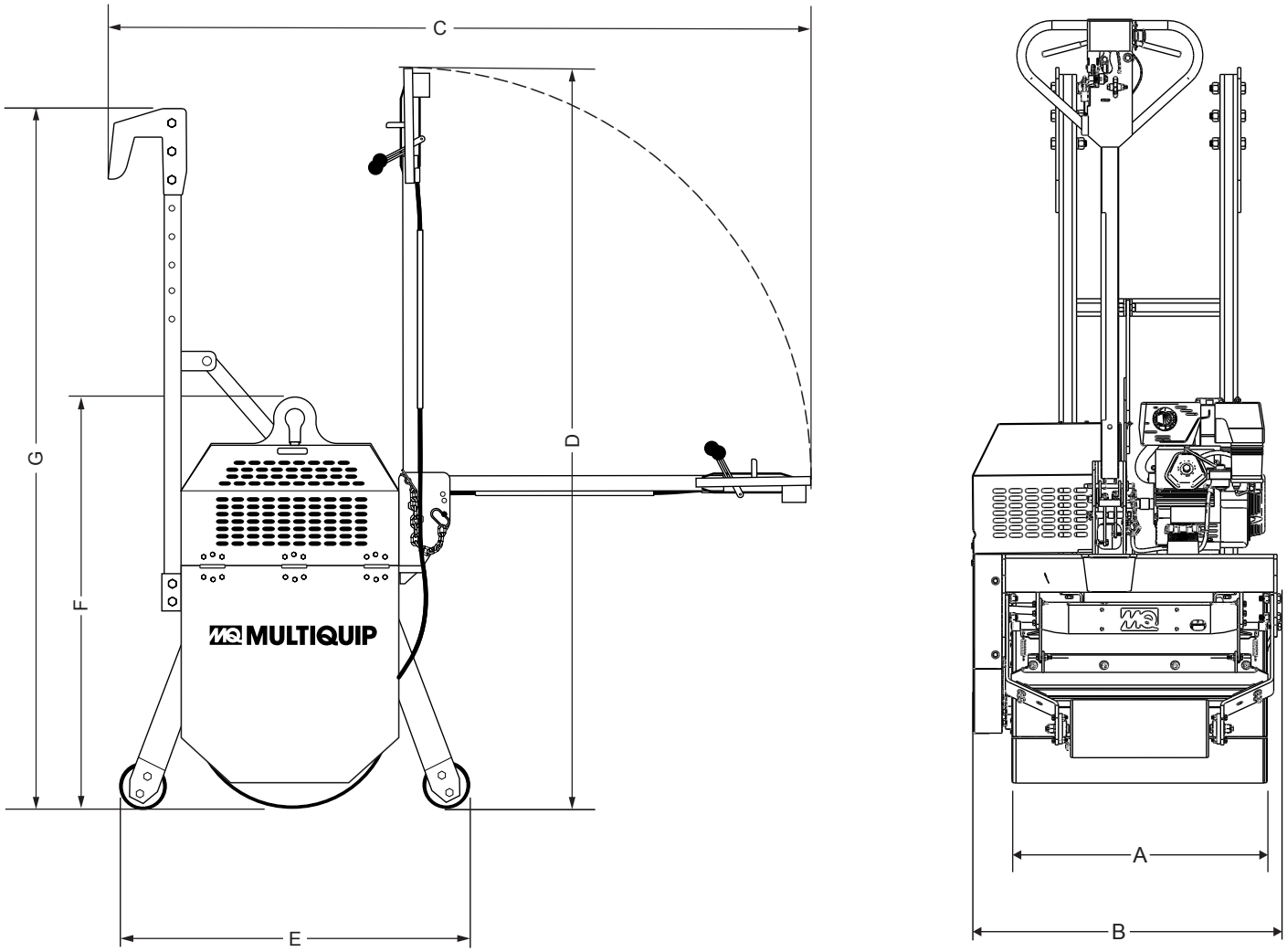


Figure 1. V305EH Dimensions

Table 3. Dimensions (Roller)	
A	29.0 in. (736.6 mm.)
B	35.0 in. (889 mm.)
C	88.5 in. (2,248 mm.)
D	86.5 in. (2,197 mm.)
E	47 in. (1,193.8 mm.)
F	46.25 in. (1,175 mm.)
G	82.5 in. (2,095.5 mm.)

The V305EH Vibratory Roller is a walk-behind vibratory roller specifically designed for the compaction and patching of asphalt type surfaces.

The compaction force is delivered by a 29-inch wide steel drum with beveled edges to help prevent asphalt ***marring***. A fully enclosed hydrostatic drive system offers a variable speed control as well as smooth acceleration and braking.

HYDROSTATIC DRIVE SYSTEM

This hydrostatic design offers a smooth performance, because of a fully integrated hydrostatically-actuated drive system, which provides a variable speed control under varying load conditions. Power from the hydraulic drive system is transferred via a drive belt to a gear reducer.

CONTROLS

The forward-reverse control lever (located on the handle) operates the hydrostatic pump which governs the roller speed and direction of travel. The neutral position of this lever will cause the roller to stop. The vibration control, when actuated, will apply a force of 4,200 vpm (vibrations per minute). This vibratory feature is controlled by an eccentric shaft via an operator controlled mechanical clutch.

FREE WHEEL ENGAGEMENT LEVER

The hydrostatic transmission is equipped with a free wheel engagement lever, which when actuated, allows the oil to circulate freely within the roller. This allows the roller to be moved without the engine running. This lever is only to be used in the event the roller is disabled.

This lever is located on the side of the transmission which faces the front of the roller. It is actuated by placing the handle into the side-lock position. To gain access to this lever, raise the roller's hood. **DO NOT** raise hood while engine is running. **STOP** engine first.

NOTICE

In normal operating conditions, the roller will not move in a forward or reverse direction unless the free wheel engagement lever is in the engage position (forward).

SPRINKLER SYSTEM

A 7 gallon (26.5 liters) water tank with a gravity feed spray bar is provided for wetting the roll for asphaltic pavement rolling. The delivery system is controlled by a mechanical lever located on the handle with three water-flow adjustment settings.

Before starting an asphalt rolling job, be sure all spray bar holes are clear of dirt or foreign matter and are working. Front and rear neoprene rubber scrapers are provided to prevent the build-up of material between the drum and the frame.

Always use clean fresh water in the water tank. A plastic water reservoir is provided to prevent rust. It is suggested to drain and flush water tank and spray bars every 30 days to help the sprinkler system operate smoothly.

TRANSPORTATION

To help transport the roller from job site to job site, adjustable transport hooks have been provided. These transport hooks allow an operator to place the roller on the tailgate of a dump truck without any assistance. The control handle of the roller can be folded vertically for ease of transport and storage.

LIFTING THE ROLLER

When lifting of the roller is required (Figure 2), attach a suitable hook or shackle to the ***lifting eye*** of the roller. Make sure the lifting device is capable of lifting 1,168 lbs (530 kg).

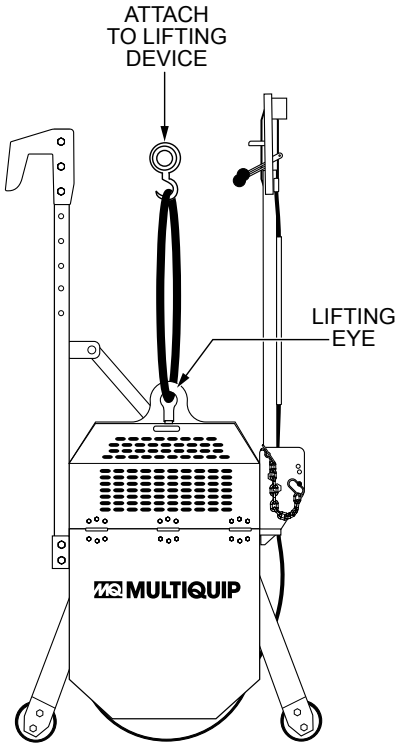


Figure 2. Lifting the Roller

⚠ CAUTION

NEVER stand under, or get onto the roller while it is being lifted or moved.

NOTICE

ONLY use steel ropes or chains that are capable of lifting at least 2,000 lbs (907 kg).

NEVER use any other part of the roller for lifting purposes. Use the lifting eye. Using other parts of the roller for lifting will cause severe damage to the roller.

OPERATING ON SLOPES

Special care must be taken when operating the roller on hills or slopes. There exist the possibility of serious injury to the operator and severe damage to the roller in the event of a roll over. **ALWAYS** operate the roller up and down hills rather than from side to side. For safe operation, hillside slopes should not exceed 6° (10% grade). See Figure 3 below.

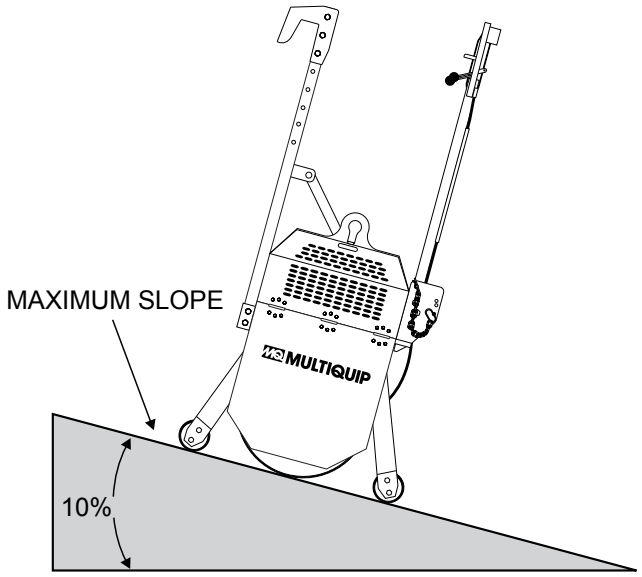


Figure 3. Recommended Slope

Tipping (Rollovers)

NEVER operate the roller on side slopes (Figure 4). The possibility exists of the roller tipping over (roll over), thus causing bodily harm even death and serious damage to the equipment.

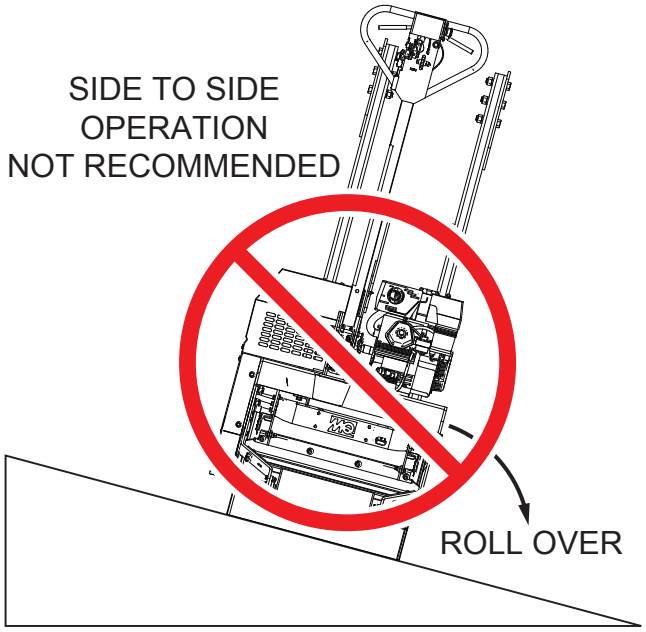


Figure 4. Tipping (Rollover)

In the event the roller does tip over, extreme care must be taken to prevent damage to the engine. When the roller has been tipped over, oil from the engine crankcase can flow into the combustion chamber, which can severely damage the engine the next time it is started.

IMMEDIATELY after a unit has tipped over upright the unit as soon as possible to prevent oil from leaking into the combustion chamber.

NOTICE

To prevent damage to the engine after a rollover, the unit must **NOT** be started. **NEVER** start a unit after a rollover. **CONTACT** your nearest authorized Multiquip dealer for instructions or servicing.

⚠ CAUTION

NEVER operate the roller on ***side slopes***. The roller may tip over causing injury to personnel and severe damage to the equipment.

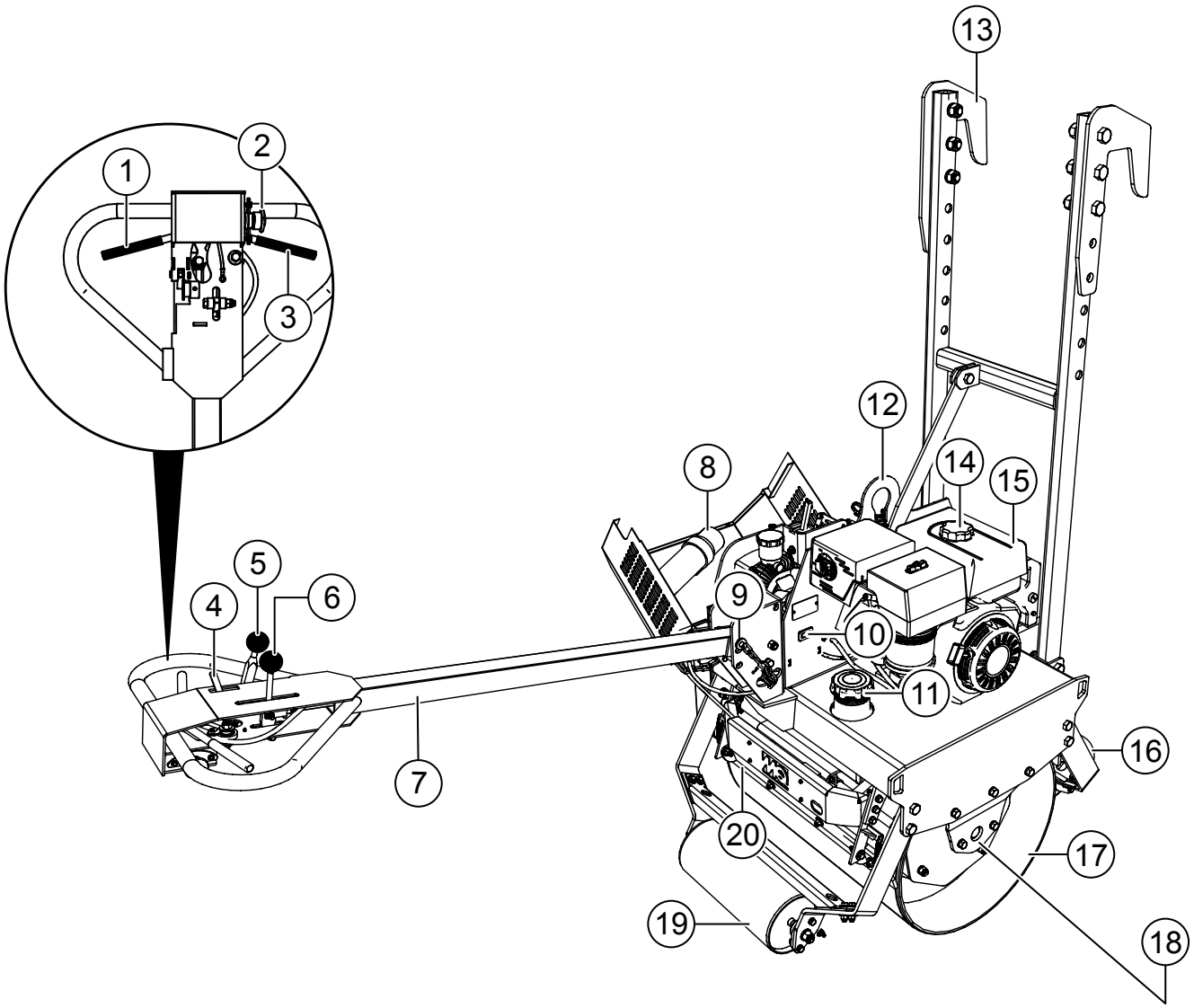


Figure 5. V305EH Components

Figure 5 shows the location of the components for the V305EH roller. The functions are described below:

1. **Forward Travel Lever** — This is a variable speed control lever. Squeeze this lever to make the roller travel in a forward direction.
2. **Emergency Stop Button** — Press this button to stop the roller in the event of an emergency. **DO NOT** use this button as a means of stopping the roller under normal conditions. When starting the engine, make sure that this push button switch is in the up position.
3. **Reverse Travel Lever** — This is a variable speed control lever. Squeeze this lever to make the roller travel in a reverse direction.
4. **Water Shut-Off Release Control** — Closes the water valve.
5. **Water Flow Adjustment Control** — The lever located on the handle opens the water valve. This control has three adjustment settings: low, medium and high water flow. In addition, a water filter is provided to prevent foreign matter from clogging the spray bar holes. Clean this filter as detailed in the maintenance section of this manual.
6. **Vibration Control Lever** — Move this lever to the **ON** position and the eccentric will produce a vibration frequency of 4,200 vpm (vibrations per minute). Move the lever to the **OFF** position to stop the vibrations.
7. **Multi-Position Handle Bar** — This bar can be set to three different positions: stow, middle and low. When transporting the roller, always have the handle bar in the upright (stow) position.
8. **Documentation Canister** — Storage for documentation and other information regarding the roller.
9. **Handle Bar Release Pin** — Remove this pin to position the handle bar to the desired position. Make sure to reinsert release pin and cotter pin after each new position.
10. **Hour/Tachometer** — Indicates the number hours the unit has been in use when engine is off and RPM when engine is running.
11. **Water Tank Filler Port** — Remove this tethered cap to determine the amount of water in the water tank. If low, add clean water through this port. This water tank is made of plastic to prevent rust, and holds 7 gallons (26.5 liters) of water.
12. **Lifting Hook Eye** — Attach a crane or lifting device to this lifting hook eye. The lifting device should have a lifting capacity of 1,168 lbs. (530 kg.)
13. **Transport Hooks** — These hooks are used in the transportation of the roller (Figure 6). The hooks allow the roller to hang over the tailgate of a dump truck.

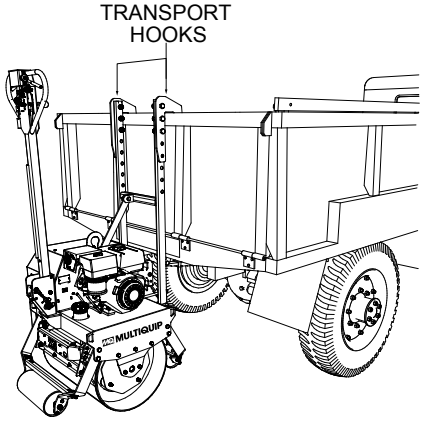


Figure 6. Transport Hooks

14. **Fuel Filler Port** — Remove this cap to determine the amount of fuel in the fuel tank. If low, add fuel through this port.
15. **Engine** — This roller uses a Honda GX340 engine. For additional engine information, read the engine Owner's Manual supplied with the roller.
16. **Front Stabilizer Roller** — This roller aids the roller in maintaining stability (prevents tipping) and simplifies handling when maneuvering the roller.
17. **Main Vibratory Roller** — This roller is a 29-inch wide steel drum with beveled edges. The beveled edges help prevent asphalt marring. The maintenance-free exciter reduces service time.
18. **Zerk Fittings** — Lube and grease these fittings as recommended in the maintenance section of this manual.
19. **Rear Stabilizer Roller** — This roller aids the roller in maintaining stability (prevents tipping) and simplifies handling when maneuvering the roller.
20. **Scraper Blades** — The neoprene rubber blades help prevent the buildup of material between the drum and frame. The blades are spring-loaded for easy replacement.

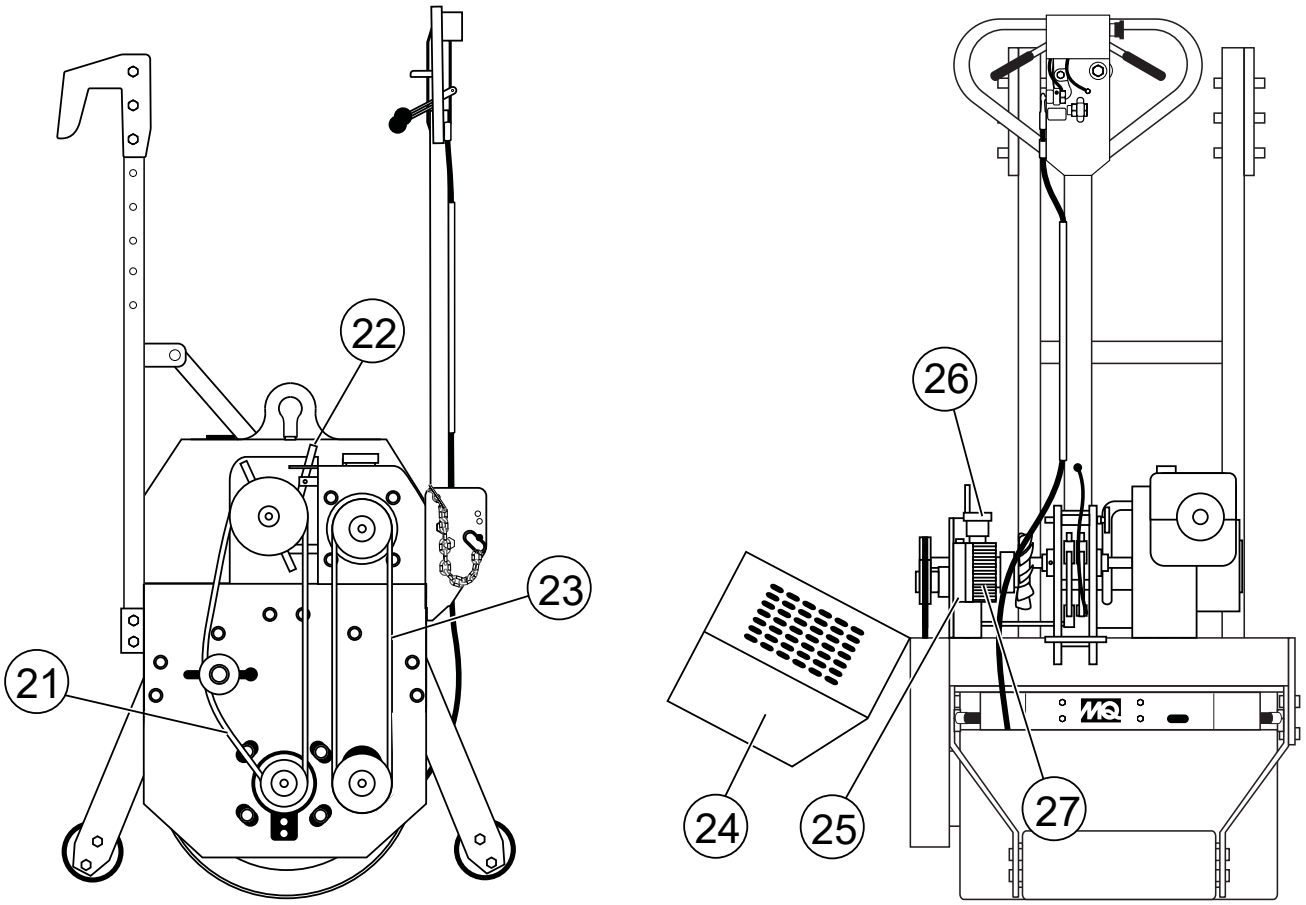


Figure 7. V305EH Roller Components Continued

Figure 7 shows the location of additional components for the V305EH compaction roller. The function of each component or control is described below:

21. **Vibration Drive V-Belt** — This belt is required to make the roller vibrate. Check this V-belt as outlined in the maintenance section of this manual.

22. **Free Wheel Engagement Lever** — Under normal conditions, this lever should be placed in the ***forward*** position (engaged).

    In the event the roller becomes disabled (will not start) and must be moved, place the lever in the side position (disengaged). This will allow the roller drum to rotate (free wheel).

    IMPORTANT: This lever is only to be used in cases where the roller has been disabled. In normal operating conditions, this lever should be left in the engaged position (forward).

23. **Travel Drive V-Belt** — This belt is required to make the roller travel in a forward or reverse direction. Check this V-belt as outlined in the maintenance section of this manual.

24. **Compartment Hood** — Open this hood (tool-free) to gain access to the V-belts, hydrostatic pump, coupling components, freewheel engagement lever, etc.

25. **Hydrostatic Pump** — Provides hydraulic pressure to the drive system.

26. **Hydrostatic Fluid Reservoir** — Fill this reservoir with hydrostatic transmission fluid. Fill with ExxonMobil Nuto 46 or equivalent.

27. **Cogged-Drive Belt** — This belt is used with the hydraulic pump. Check this cogged drive belt as outlined in the maintenance section of this manual.

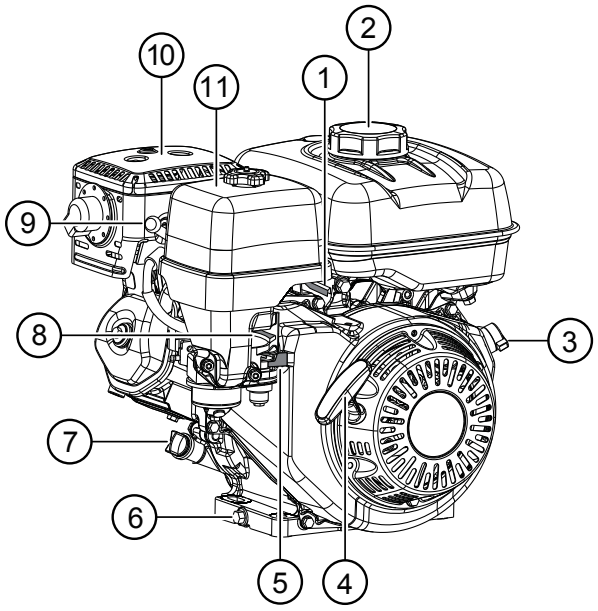


Figure 8. Engine Components

INITIAL SERVICING

The engine (Figure 8) must be checked for proper lubrication and filled with fuel prior to operation. Refer to the manufacturer's engine manual for detailed operation and service instructions.

1. **Throttle Lever** — Adjusts engine RPM speed.
2. **Fuel Filler Cap/Fuel Tank** — Remove this cap to add unleaded gasoline to the fuel tank. Refer to Table 2 for fuel tank capacity. Make sure the cap is tightened securely. **DO NOT** overfill

DANGER

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

3. **Engine ON/OFF Switch** — **ON** position permits engine starting. **OFF** position stops engine operation.
4. **Recoil Starter** — Manual starting method. Pull the starter grip until resistance is felt, then pull briskly and smoothly to start the engine.
5. **Fuel Valve Lever** — Open to allow fuel to flow. Close to prevent fuel flow.
6. **Oil Drain Bolt** — Remove this bolt to drain oil from the engine crankcase.
7. **Oil Filler Cap/Dipstick** — Remove this cap to determine if engine oil is low. Add oil through this filler port as recommended in Table 2.
8. **Choke Lever** — Used in cold weather conditions or for the starting of a cold engine. The choke enriches the fuel mixture.
9. **Spark Plug** — Provides spark to the ignition system. Set the spark plug gap according to the engine manufacturer's instructions. Clean the spark plug once a week.
10. **Muffler** — Reduces noise and emissions. **NEVER** touch the muffler while it is **hot**!

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.

11. **Air Cleaner** — Prevents dirt and other debris from entering the fuel system. Remove the wing nut on top of the air cleaner cover to gain access to the filter elements.

NOTICE

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

BEFORE STARTING

1. Read safety information at the beginning of manual.
2. Remove dirt and dust particularly in 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.
4. Check carburetor for external dirt and dust. Clean with dry compressed air.
5. Check fastening nuts and bolts for tightness.
6. Understand the geographical features and regulations of the job site.

ENGINE OIL CHECK

1. To check the engine oil level, place the machine on secure level ground with the engine stopped.
2. Remove the filler dipstick from the engine oil filler hole (Figure 9) and wipe clean.

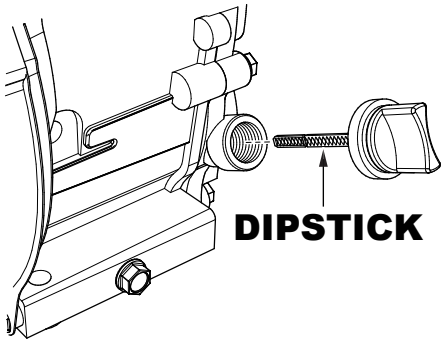


Figure 9. Engine Oil Dipstick

3. Insert and remove the dipstick without screwing it into the filler neck. Check the oil level shown on the dipstick (Figure 10).
4. If the oil level is low, fill to the edge of the oil filler hole with the recommended oil type (Table 4). Maximum oil capacity is 1.16 quarts (1.1 liters).

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

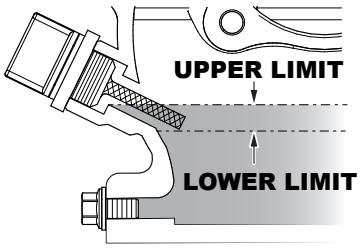


Figure 10. Engine Oil Level

NOTICE

The V305EH roller has an Oil Alert System. This system will automatically stop the in the event of low oil level. **ALWAYS** be sure to check the engine oil level prior to starting the engine.

FUEL CHECK

DANGER

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

1. Remove the fuel cap of the filler port located on top of the engine fuel tank (Figure 11).

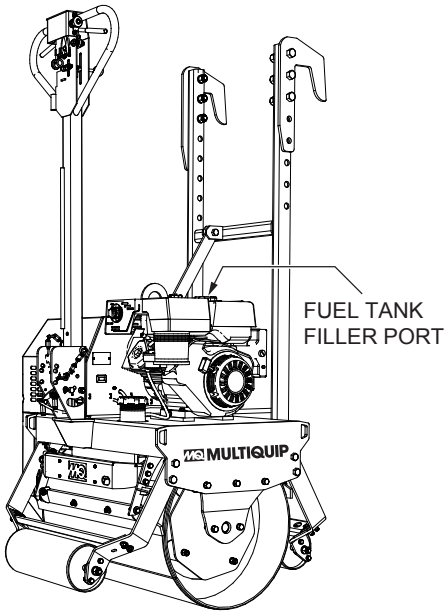


Figure 11. Fuel Tank Filler Port

2. Visually inspect to see if the fuel level is low. If fuel is low, replenish with unleaded gasoline using a strainer

for filtration. **DO NOT** top-off fuel. Wipe up any spilled fuel immediately!

WATER TANK CHECK

1. Check the water tank to see if filled. Add water if necessary. See Figure 12.

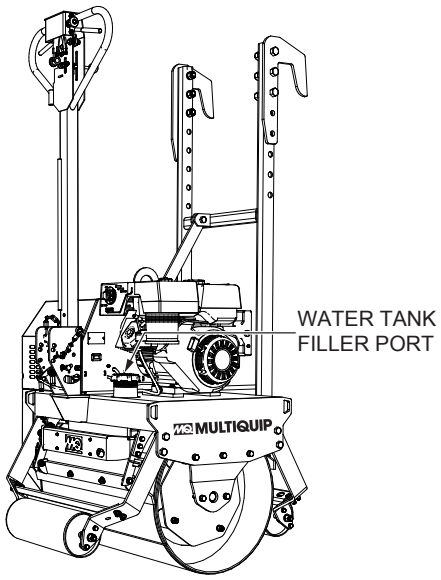


Figure 12. Checking Water Tank

2. Verify that valve for the water tank is ***closed*** (handle control).

HYDRAULIC SYSTEM CHECK

1. Visually inspect the hydraulic fluid in the hydraulic reservoir (Figure 13). If the hydraulic fluid is low, fill the reservoir with ExxonMobil Nuto 46 or equivalent. The correct hydraulic fluid level will be indicated on the reservoir.

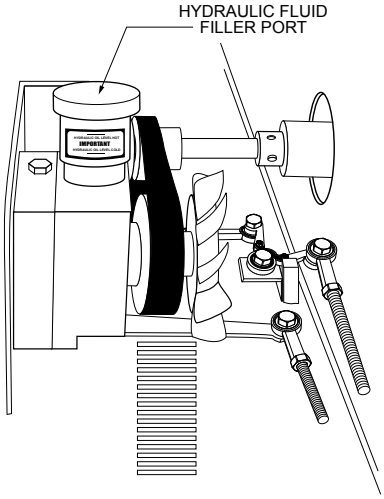


Figure 13. Hydraulic Reservoir Filler Port

V-BELT CHECK

DANGER

ALWAYS keep hands and fingers away from pinch points. **DO NOT** allow anyone to reach in on dangerous sections of the machine to avoid any accidents.

1. Check the tension of the vibratory and travel V-belts (Figure 14). This tension can be checked by the amount of deflection when the belt is pressed midway between the two pulleys. The deflection of the travel belt should be approximately 3/4 of an inch (2 cm). The vibratory V-belt should have a deflection of approximately 2 to 2-3/4 inches (5 to 7 cm).

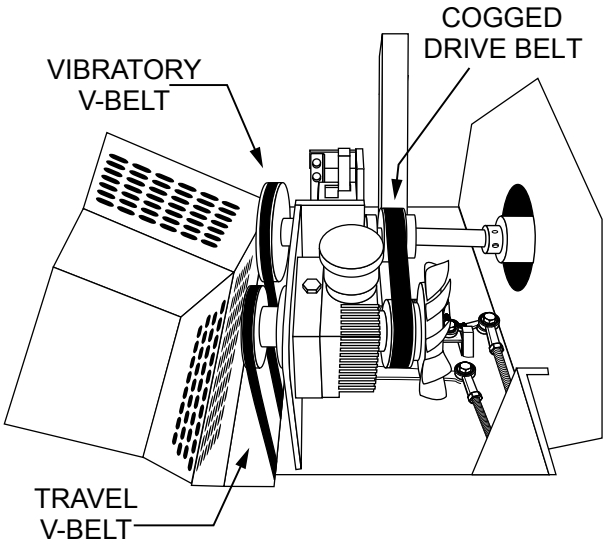


Figure 14. Checking V-Belts

2. Check the tension of the cogged V-belt (hydrostatic pump). This tension can be checked by the amount of deflection when the belt is pressed midway between the two pulleys. The deflection of the travel belt should be approximately 1/2 of an inch (1.27 cm).

GEARBOX LUBRICATION

1. Remove the oil fill drain plug on the gearbox (Figure 15). If the oil level is ***correct,*** oil will begin to leak out. Retighten drain plug.

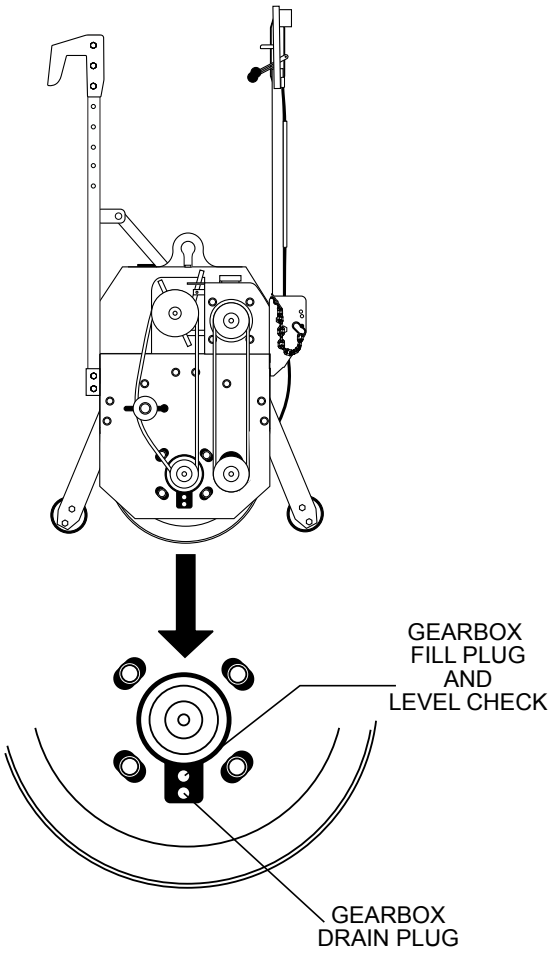


Figure 15. Gearbox Fill and Drain Plugs

2. If the level of the oil in the gearbox is ***low***, no oil will leak out when the drain plug is removed. Add gearbox oil, type SAE 90, through this drain opening. Fill until oil begins to leak out from the drain opening. Retighten drain plug. It is recommended that oil be changed every 300 hours of operation.

HANDLE BAR ADJUSTMENT

1. Adjustment of the handle bar is made by removing the handle bar ***hitch pin***, then pulling the release pin.
2. Once released pin has been removed, position handle bar to desired height (Figure 16 and Figure 17).
3. Insert release pin and lock with hitch pin.

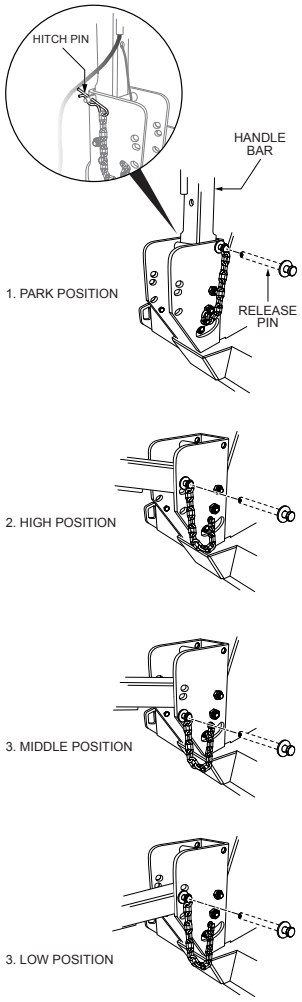


Figure 16. Handle Positions 1

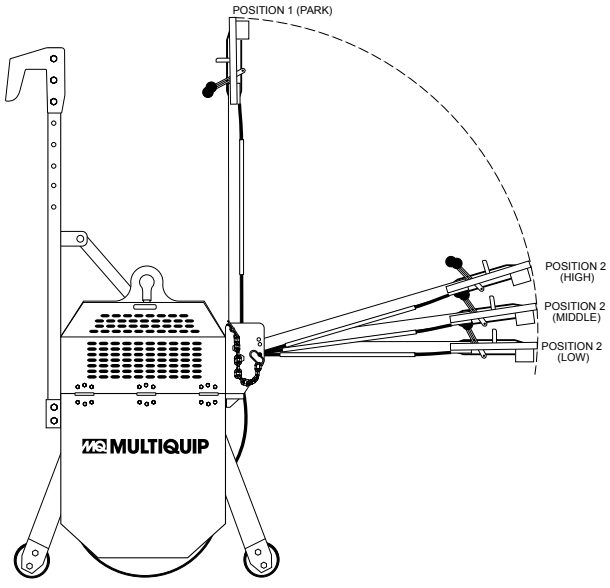


Figure 17. Handle Positions 2

This section is intended to assist the operator with the initial startup of the unit. It is extremely important that this section be read carefully before using the roller in the field. **DO NOT** use your roller until this section is thoroughly understood.

WARNING

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

CAUTION

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

1. **ALWAYS** make sure that the emergency stop button (Figure 18) is pulled all the way out (disengage).

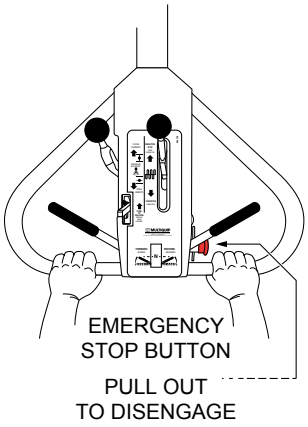


Figure 18. Emergency Stop Button

2. Move the fuel lever (Figure 19) to the ON position.

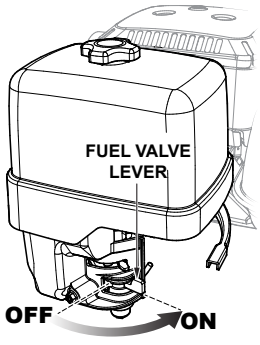


Figure 19. Fuel Lever

3. Place the ***Engine ON/OFF switch*** (Figure 20) in the "ON" position.

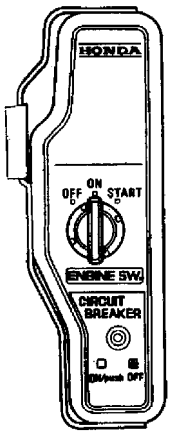


Figure 20. Engine ON/OFF Switch

4. To start a cold engine, move the choke lever (Figure 21) to the **CLOSED** position.

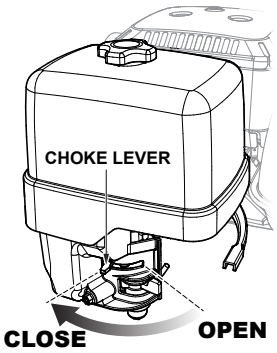


Figure 21. Choke Lever

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.

5. Move the throttle lever (Figure 22) away from the slow position, about 1/3 of the way toward the fast position.

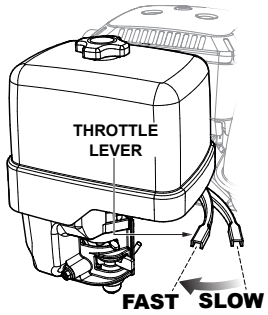


Figure 22. Throttle Lever

6. Turn the ***Engine ON/OFF switch*** on the engine to the **START** position (Figure 23). Release the key when engine starts and key will return to the **ON** position.

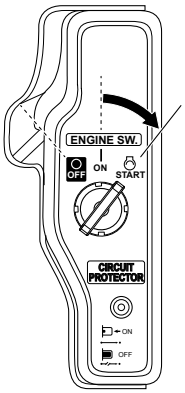


Figure 23. ***Engine ON/OFF*** **Switch (START)**

NOTICE

DO NOT keep the ignition switch in the ***START*** position for more than 5 seconds.

7. If the engine has started, allow switch to return to **ON** position, then slowly return the choke lever (Figure 22) to the ***OPEN*** position. If the engine has not started, repeat steps 1 through 6.
8. Before the roller is placed into operation, run the engine for several minutes. Check for fuel leaks and noises associated with a loose guard or covers.
9. All rolling is done at full throttle. Your engine governor has been set at the factory to ensure an optimum speed setting.

FREE WHEEL ENGAGEMENT LEVER

Before the roller can be put into operation, check and make sure that the ***free wheel engagement lever*** (Figure 24) is in the engaged position (forward). Lift the compartment hood to gain access to this lever.

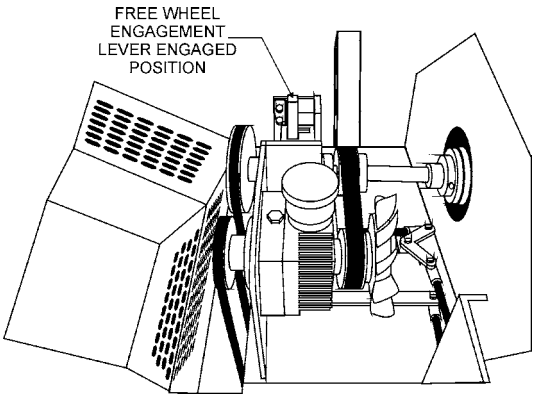


Figure 24. Freewheel Engagement Lever

WATER SPRINKLER SYSTEM

If the water sprinkler is going to be used for a roll of asphalt paving, fill the water tank with clean water.

1. Push the water shut-off release control to the release position (Figure 25).
2. Move the water flow adjustment control to the ***OPEN*** position.
3. The water flow adjustment control has three adjustments. Move control to set to low, medium or high water flow.
4. Return the water shut-off release control to the ***CLOSE*** position when water is not required.

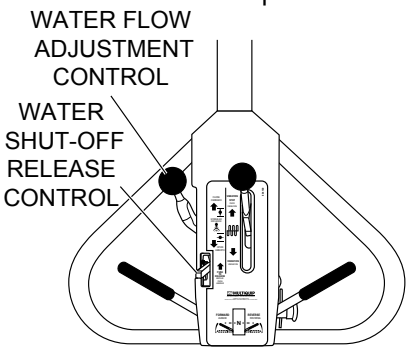


Figure 25. Water Flow Adjustment

TRAVEL LEVERS

1. With the engine running, both forward and reverse travel levers (Figure 26) should be in their neutral positions.

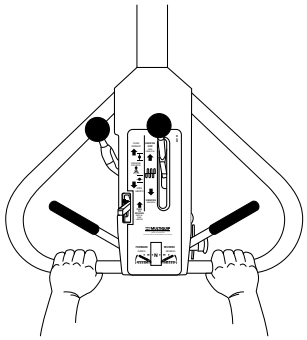


Figure 26. Travel Levers (Neutral Position)

2. Squeeze the ***left*** travel lever (Figure 27) to move roller in a ***forward direction***. Squeezing the lever all the way towards the operator will achieve maximum speed. Use a smooth squeezing action on the drive control lever to prevent abrupt takeoffs.

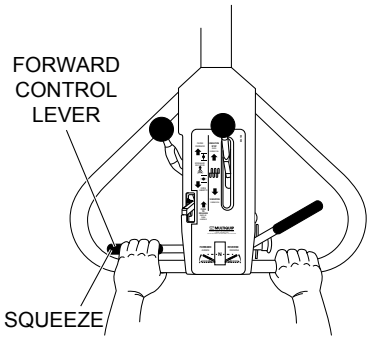


Figure 27. Forward Travel Lever

3. Squeeze the ***right*** travel lever (Figure 28) to move the roller in a ***reverse direction***. Use a smooth squeezing action on the drive control lever to prevent abrupt takeoffs.

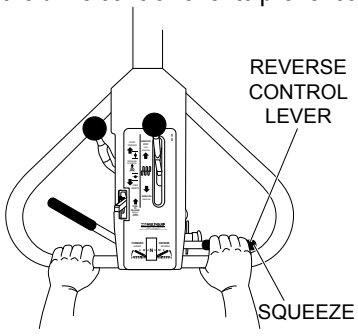


Figure 28. Reverse Travel Lever

VIBRATORY CONTROL

1. For vibratory action with the engine running (full speed), place the vibratory control lever (Figure 29) to the ON position. The roller will now produce a vibratory frequency of 4,400 vps.

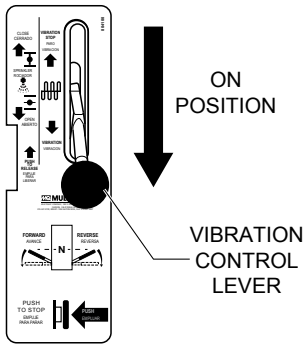


Figure 29. Vibratory Control Lever (ON)

SHUTDOWN

1. Place the vibration control lever (Figure 30) on the roller to the **OFF** position (vibration stops).

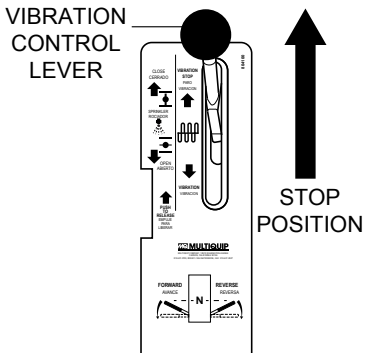


Figure 30. Vibratory Control Lever (OFF)

2. Place the water valve in the **CLOSED** position (if used).
3. Place the ***engine throttle lever*** in the ***slow*** position, and let the engine idle for 3-5 minutes.
4. Place the ***engine ON/OFF switch*** in the **OFF** position and remove the key. Place the key in a safe place.

TRANSPORTING

1. Always make sure that the machine is shut off while being transported.
2. Check that the fuel cap is properly closed and tightened.
3. When traveling long distances or on rugged terrain, drain the fuel of the machine before transporting.
4. Tie down the machine securely on the transportation so that it will not move or topple over.

⚠ CAUTION

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

INSPECTION AND MAINTENANCE SERVICE TABLES

To make sure your vibratory roller is always in good working condition before using, carry out the maintenance inspection procedures.

Table 5. Machine Inspection

ITEM	HOURS OF OPERATION
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)
Eaton Hydrostatic Transmission	Every 100 hours
Vibrator Oil Check	Every 50 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 roller is in use and your particular working conditions.

Table 6. Engine Check

ITEM	HOURS OF OPERATION
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 50 hours

DAILY SERVICE

1. Check for leakage of fuel or oil.
2. Check for loose screws and tighten to the proper torque:

SPARK PLUG

1. Remove and clean the spark plug (Figure 31).
2. Adjust the spark gap to 0.028 ~0.031 inch (0.7~0.8 mm). This unit has electronic ignition, which requires no adjustments.

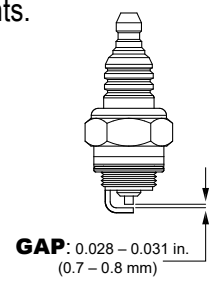


Figure 31. Spark Plug Gap

ENGINE OIL

1. Drain the engine oil when the oil is warm as shown in Figure 32.
2. Remove the oil drain bolt and sealing washer and allow the oil to drain into a suitable container.
3. 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.
4. Install drain bolt with sealing washer and tighten securely.

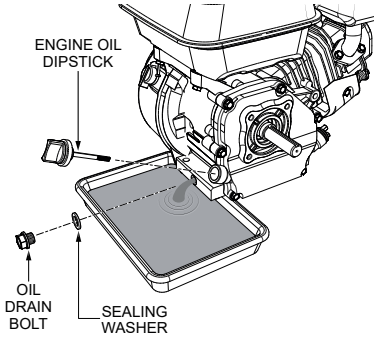


Figure 32. Engine Oil (Draining)

ENGINE AIR CLEANER

1. Remove the air cleaner cover and foam filter element as shown in Figure 33.
2. Tap the paper filter element (Figure 33) several times on a hard surface to remove dirt or blow compressed air [not exceeding 30 psi (207 kPa, 2.1 kgf/cm2)] through the filter element from the 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.

⚠ DANGER

DO NOT use gasoline as a cleaning solvent to avoid creating the risk of fire or an explosion.

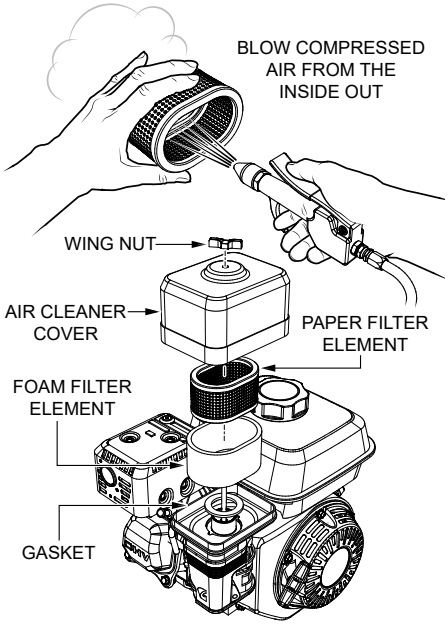


Figure 33. Engine Air Cleaner

MACHINE MAINTENANCE

1. At the end of each day's operation, wash down dust and dirt off the machine. Clean area around drums and scrapers making sure all mud is removed.
2. Drain water tank completely.
3. Cover the machine to prevent dust and store in dry place away from sun exposure.
4. Remove soil and clean the bottom of roller.
5. Check hydraulic pump, piping and hose for any leakage. A loosened hydraulic hose can be a cause for leakage.
6. Check hydraulic hose connections with wrench applied for tightness.
7. Check engine oil.

BATTERY MAINTENANCE

NOTICE

Read and understand the battery safety information in the front of this manual before performing maintenance on the battery.

1. Use a flashlight to check battery electrolyte level. Always check that the engine is stopped.
2. If a battery has not been used for some time, reduce the charge level initially to protect each plate inside the battery.
3. Check the battery terminals periodically to ensure that they are in good condition.
4. Use wire brush or sand paper to clean the battery terminals.
5. Check battery for cracks or any other damage. If white pattern appears inside the battery or paste has accumulated at the bottom, replace the battery.
6. Measure the specific gravity of electrolyte:
   - completely charged: 1.270 - 1.290
   - needs charging: 1.260 or lower
   - If the machine will not be in operation for a long period of time, charge the battery sufficiently, tighten all caps

VIBRATING SHAFT BEARINGS

The system is maintenance-free and does not require lubrication.

HYDROSTATIC TRANSMISSION FLUID (50 HRS)

Inspect the fluid level in the hydraulic fluid reservoir every 50 hours of operation. If low, fill with ExxonMobil Nuto 46 or equivalent.

VIBRATOR CLUTCH ASSEMBLY (50 HRS)

The clutch must be greased every 50 hours of operation (1 shot). Stop the engine with clutch engaged to check V-belt tension.

ENGINE AND VIBRATORY SHAFT SPEED CHECK (100 HRS)

To check the engine and vibratory shaft speed, the use of an "**Vibra-Tak**" tool will be required.

To check engine speed, place the bottom of the Vibra-Tak tool (knurled cap) on the engine shroud. Move sliding sleeve to a position where the maximum throw of wire reed is obtained. Take a reading from edge of sleeve and multiply reading by 1000. The result is the RPM the engine is running at.

If the engine RPM speed is too fast or slow, consult the engine owner's manual on how to adjust the engine speed.

To check the vibrations per minute (vpm) of the roller shaft, place the bottom of the Vibra-Tak tool (knurled cap) on the roller drum while the vibrating clutch is engaged. Adjust and read tool as mentioned above. The ***vibratory shaft speed*** should be 4200 vpm.

AXLE PILLOW BLOCK BEARING (75 HRS)

Lubricate the axle pillow block bearing every 75 hours with 2 shots of EP-3 grease or equivalent.

STABILIZER ROLLS (75 HRS)

Lubricate the stabilizer rolls in 4 places every 75 hours with 2 shots each of EP-3 grease or equivalent.

SCRAPER BLADES (DAILY)

The scraper blades should be cleaned daily after each use to prevent the build-up of dirt, mud, tar and any other foreign matter associated with pavement rolling. Use a high pressure water jet (500-1000 psi) and a strong brush to clean the scraper blades.

ROLLER (DAILY)

Clean the roller daily after each use. If using a pressurized hose, keep the pressure between 500 and 1000 psi. Avoid using harsh chemicals, mild detergent soap will do. Avoid direct high water pressure to the engine, hoses and decals.

WATER TANK (30 DAYS)

Drain and flush the water tank and spray bars every 30 days. When refilling the water tank, use only clean water.

ADJUSTING OR CHANGING TRAVEL V-BELT

1. Unlock the hood retaining latch and lift the hood to gain access to the V-belts. To adjust the ***travel*** V-belt, loosen the four mounting screws on the reduction gearbox (Figure 34).

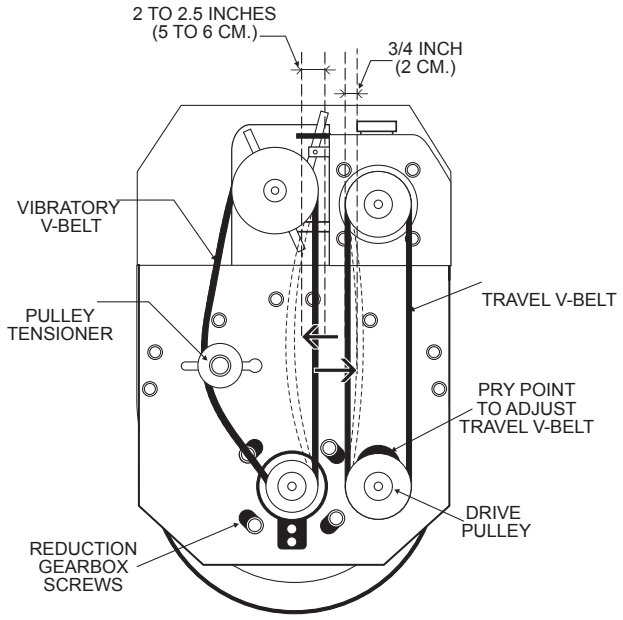


Figure 34. Travel and Vibratory Belts

2. Use the pry point (Figure 34) to achieve correct amount of V-belt tension. Tighten gearbox screws and check belt tension by verifying the amount of deflection when the belt is pressed midway between the two pulleys. This deflection should be approximately 3/4 of an inch (2 cm.).

ADJUSTING OR CHANGING VIBRATORY V-BELT

1. To adjust the vibratory V-belt, loosen the pulley tensioner nut (Figure 34) and adjust the V-belt for approximately 2 to 2 ½ inches (5 to 6 cm.) of deflection.
2. Check V-belt deflection when V-belt is pressed midway between the two pulleys.
3. When the correct amount V-belt deflection has been achieved, retighten pulley tensioner nut.

NOTICE

IMPORTANT! Always adjust the vibratory V-belt to the recommended belt tension.

A tight V-belt will cause the roller to vibrate even if the vibration control lever is in the off position.

A loose V-belt will decrease the vibratory action or there may not be any vibratory action at all.

ADJUSTING OR CHANGING HYDROSTATIC PUMP DRIVE BELT

1. To change or adjust the cogged drive belt (Figure 35) for the hydrostatic pump, loosen the four mounting bolts on the hydrostatic pump.

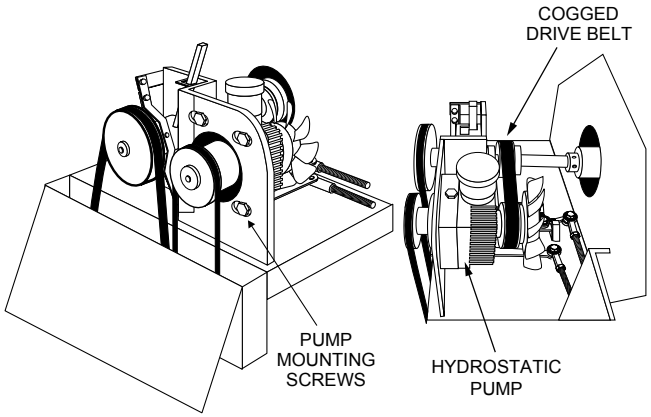


Figure 35. Hydrostatic Pump Drive Belt

⚠ CAUTION

Use ***caution*** when adjusting control rods, since engine is running.

2. Move the pump unit towards the rear of the roller and adjust the cogged belt for approximately 1/2 inch (1.27 cm) deflection when the belt is pressed midway between the two pulleys.
3. When the correct amount of belt deflection has been achieved, retighten hydrostatic pump mounting screws.

ADJUSTING TRAVEL CONTROL ROD

1. To adjust the travel control rod (controls forward, reverse and neutral), it will be necessary to start the engine and run it at ***low*** speed.
2. On the travel control rod, loosen the counter nut on the rod end.
3. Remove retaining screw as shown in Figure 36, then rotate the rod end to acquire desired length.

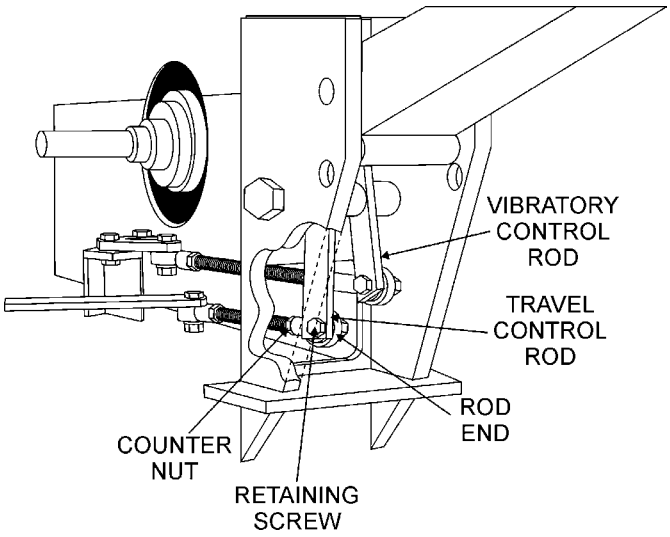


Figure 36. Travel Control Rod

4. Adjust travel rod so that its static position (no force applied on drive control) falls into the neutral position. The roller should not move once adjustment is complete.
5. Retighten all hardware.

ADJUSTING VIBRATORY CONTROL ROD

1. To adjust the vibratory control rod (controls vibration), loosen the counter nut on the rod end of the vibratory control rod.
2. Remove the retaining screw on the rod end and rotate the rod to achieve the desired rod length.
3. Continue adjusting, until clutch operation is adequate. The V-belt for the vibratory action should not move when the control lever is in the **OFF** position. Once adjustment is complete, retighten all hardware.

CLUTCH LUBRICATION

Lubricate the clutch as shown in Figure 37.

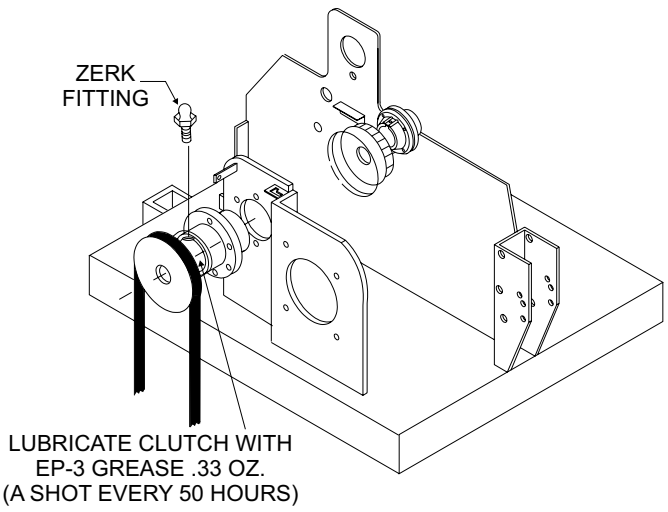


Figure 37. Lubrication Points (Zerk Fittings)

ROLLER STORAGE

For storage of the roller for over 30 days, the following is recommended:

- Drain the fuel tank completely.
- Run the engine until the fuel in the injection system is completely consumed.
- Completely drain used oil from the engine crankcase and fill with fresh clean oil, then follow the procedures described in the engine manual for engine storage.
- Drain water tank.
- Clean the entire roller and engine compartment.
- Remove battery and store it in cool dry place.
- Place roller control handle in the upright position (vertical).
- Cover the roller and place in a clean dry area, that is protected from harsh elements.
- Remove ignition key and store in a safe place.

Troubleshooting - Roller		
SYMPTOM	**POSSIBLE PROBLEM**	**SOLUTION**
Unit does not travel or travel is not smooth.	Damaged rubber coupling and flange?	Replace urethane coupling and flange.
	Defective travel cable and link?	Repair or replace travel cable and link.
	Damaged scraper or too much mud in scraper?	Replace or repair scraper.
	Low oil level?	Replenish or replace oil.
	Damaged hydraulic pump?	Replace hydraulic pump.
	Damaged drum gear reduced?	Repair.
	Bad drum bearings?	Repair or replace.
	Defective rubber shock mounts?	Replace.
	Defective travel V-belt?	Replace.
Unit does not vibrate or has weak vibration.	Defective centrifugal clutch?	Repair or replace clutch.
	Damaged or slipping V-belt?	Replace V-belt or adjust tension.
	Damaged vibration cable and linkage?	Replace or repair vibration cable and linkage.
	Defective clutch vibrator pulley V-belt?	Replace V-belt.

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

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

OPERATION MANUAL

HERE'S HOW TO GET HELP

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

UNITED STATES

Multiquip Inc.

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