

HOVER MOWER BY EASTERN INDUSTRIES

Model HM19H-4
Model HM19H-4-OP



Operator's Manual

Introduction

Read this Manual carefully to learn how to operate and maintain your product properly. The information in this Manual can help you and others avoid injury and product damage. Although Eastern Industries, Inc. designs and produces safe products, you are responsible for operating the product properly and safely.

When you need service, genuine Eastern Industries, Inc. parts, or additional information, contact an Authorized Eastern Industries, Inc. Dealer or Eastern Industries, Inc.'s Customer Service and have the model and serial number of your mower ready. For the Model and Serial numbers refer to the silver tag attached to the rear of the mower housing.

Eastern Industries, Inc.

P O Box 338

Chester, NH 03036

USA

Tel: (800) 444-0407

Fax: (603) 437-0815

www.TheHoverMower.com

Write the Engine model and serial numbers in the space below.

Model # _____

Serial # _____

Contents

	Pages
Safety Instructions	
General Operations	4
Slope Operations	5
Children	6
Service	7
Assembly	
Installing the Handle	10
Filling the Crankcase with Oil	11
Filling the Fuel Tank with Gasoline	12
Operation	
Starting the Engine	13
Stopping the Engine	15
Adjusting the Cutting Height	15
Operating Tips	17
Maintenance	
Recommended Maintenance Schedule	19
Checking the Engine Oil Level	20
Cleaning the Underside of the Lawn Mower	20
Servicing the Air Filter	20
Changing the Engine Oil	21
Maintaining the Cutter Disc	22
Draining the Fuel Tank and Carburetor	23
Servicing the Spark Plug	23
Storage	24
Troubleshooting	25
Schematics and Mower Parts	27
Warranty	31

WARNING!

This mower, when oriented in the front to back position, is capable of continuous operation on slopes reaching 45 degree inclines. The use of this mower on inclines steeper than 45 degrees will cause severe damage to the engine VOIDING ALL APPLICABLE WARRANTIES.

This lawn mower is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

General Operations

1. Read, understand and follow all instructions on the machine and in the Manual. Be thoroughly familiar with the controls and the proper use of the mower before starting.
2. Do not put hands or feet near or under rotating parts.
3. Only allow responsible individuals, who are familiar with the instructions, to operate the mower.
4. Clear the area of objects such as rocks, toys, wire, bones, sticks etc., which could be picked up and thrown by the blade.
5. Be sure the area is clear of other people before mowing. Stop the mower if anyone enters the area.
6. Do not operate the mower when barefoot, wearing open sandal or regular shoes. Always wear heavy boots or substantial footwear.
7. Do not pull mower backwards unless absolutely necessary. Look down and behind before and while moving backwards.
8. Do not operate the mower without proper inspection of the safety and protective devices.
9. Read the Operator's Manual for proper operation and installation of accessories. Only use accessories approved by Eastman Industries.
10. Shut the engine off when crossing gravel drives, walks or roads.
11. Shut the engine off whenever you leave the equipment.
12. Shut the engine off and wait until the blade comes to complete stop before cleaning the mower or unclogging grass and debris.
13. Mow only in daylight or good artificial light.
14. Do not operate the mower while under the influence of alcohol or drugs.
15. Never operate the mower in wet grass. Always be sure of your footing; keep a firm hold on the handle and walk; never run.
16. If the equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
17. Always wear safety goggles or safety glasses with side shields when operating mower.

Slope Operations

Slopes are a major factor related to slip and fall accidents, which can result in severe injury. All slopes require extra caution. If you feel uneasy on a slope, do not mow it.

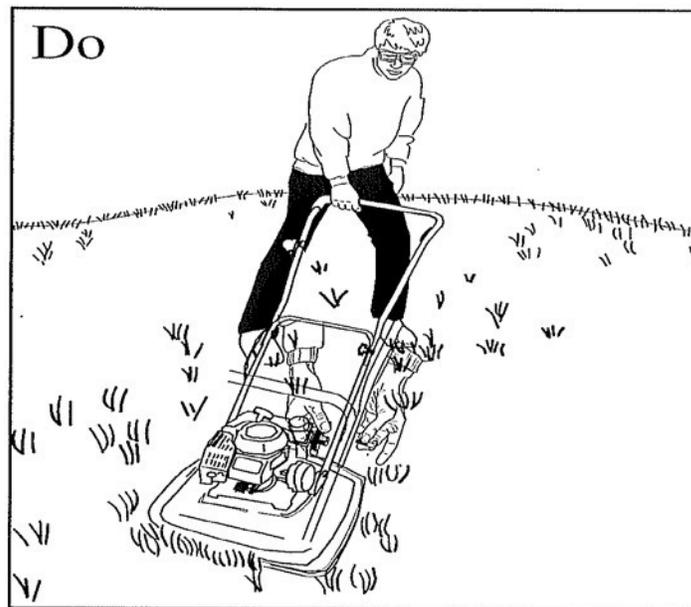
DO:

Mow across the face of slopes; not up and down. Exercise extreme caution when changing directions on slopes.

Always keep the mower below you when mowing on the slope.

Remove objects such as rocks, tree limbs, etc.

Watch for holes, ruts or bumps. Tall grass can hide obstacles.



(Figure 1)

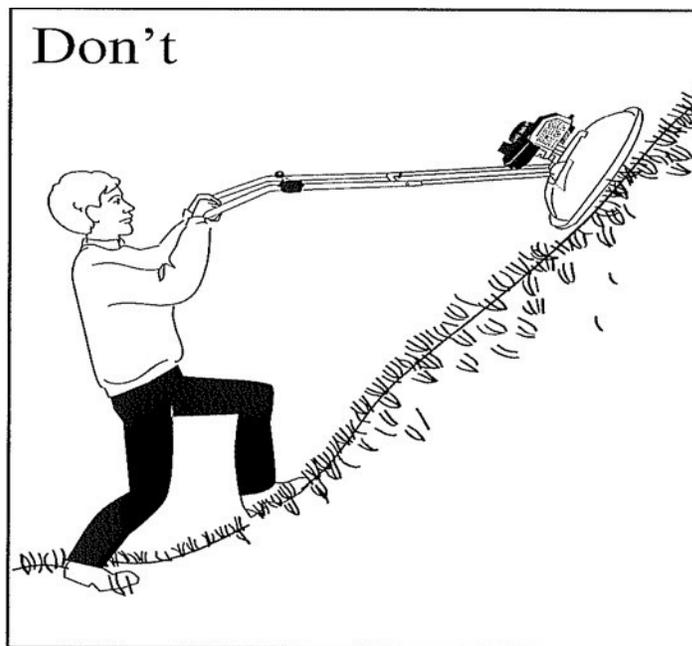
DO NOT:

Do not mow near drop-offs, ditches or embankments. The operator could lose footing or balance.

Do not push the mower up the slope.

Do not mow slopes that are steeper than 45° incline.

Do not mow on wet grass. Reduced footing could cause slipping.



(Figure 2)

Children

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the mower. *Never* assume that children will remain where you last saw them.

1. Keep children out of the mowing area and under the watchful care of a responsible adult.
2. Be alert and turn mower off if children enter the area.
3. Before and while moving backwards, look behind and down for small children.
4. Never allow children to operate the mower.
5. Use extra care when approaching blind corners, shrubs, trees or other objects that may obscure vision.

Service

1. Use extra care in handling gasoline and other fuels. **Gasoline is highly flammable and vapors are explosive.**
 - a) Use only approved containers.
 - b) Never remove gas cap or add fuel with the engine running. Allow engine to cool before refueling. Do not smoke.
 - c) Never refuel the mower indoors.
 - d) Never store the mower or fuel container inside where there is an open flame, such as a water heater.
 - e) Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before filling.
 - f) When practical, remove the mower from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.
 - g) Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
 - h) If fuel is spilled on clothing, change clothing immediately.
2. Never run an engine inside a closed area.
3. Never make adjustments or repairs with the engine running. Disconnect the spark plug wire, and keep the wire away from the plug to prevent accidental starting.
4. Keep all nuts and bolts, especially blade attachment bolts, tight and keep equipment in good condition.
5. Never tamper with safety devices. Check their proper operation regularly.
6. Keep mower free of grass, leaves or other debris build-up. Clean oil or fuel spillage on the mower. Allow mower to cool before storing.
7. Stop and inspect the mower if you strike an object. Repair, if necessary, before restarting.
8. Never attempt to remove grass or debris from mower while the engine is running.

(Continued on next page)

9. Cutter disc components are subject to wear, damage and deterioration, which could allow objects to be thrown. Frequently check components and, when necessary, replace with Eastman Industries' recommended parts.
10. Mower blade is sharp and can cut. Wrap the blade or wear gloves, and use extra caution when servicing it.
11. Do not change the engine governor setting or overspeed the engine.
12. Maintain or replace safety and instruction labels as necessary.

WARNING: In order to prevent accidental starting when setting up, transporting, adjusting or making repairs, always disconnect spark plug wire and place wire where it cannot contact spark plug.

CAUTION: Muffler and other engine parts become extremely hot during operation and remain hot after engine has stopped. To avoid severe burns on contact, stay away from these areas.

Consult the engine manual for more complete instructions regarding engine maintenance and operation.

Assembly

Installing the Handle

1. Mount the lower handle on the handle brackets with two (2) clevis and cotter pins. (Fig 3).

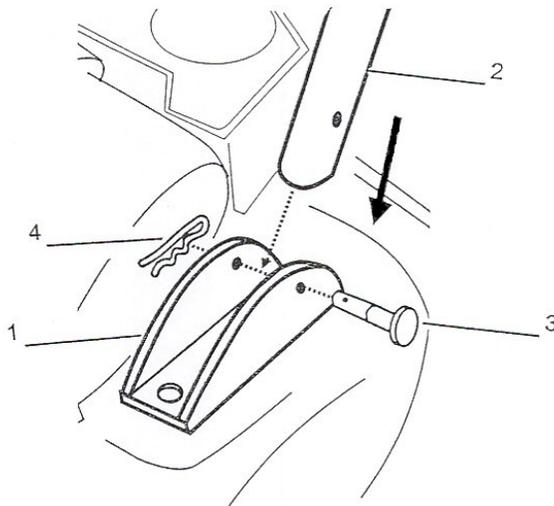


Figure 3

- | | |
|-------------------|-----------------|
| 1. Handle Bracket | 2. Lower Handle |
| 3. Clevis Pin | 4. Cotter Pin |

2. Attach the upper handle to the lower handle, with four (4) 5/16"-18 x 1 1/2" shoulder bolts and wing nuts (Fig 4)

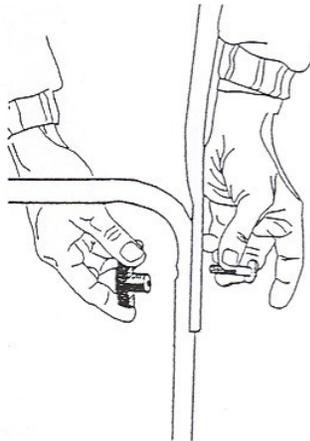


Figure 4

3. Secure the throttle cable neatly behind the handles using black tie wraps. Use one tie wrap for the upper handle and one tie wrap for the lower handle.

Preparing the Engine

IMPORTANT: The Engine is shipped without oil.

Fill the engine with oil prior to startup in order to avoid serious damage to the engine.

Consult the engine manual for more complete instructions regarding engine maintenance and operation.



Filling the Crankcase with Oil

The crankcase holds 0.58 U.S. quarts (0.55 liters) of oil. Use only high-quality SAE 10W30 weight detergent oil that has the American Petroleum Institute (API) service classification SF, SG, or equivalent. SAE 30 W oil is recommended for ambient temperatures exceeding 80 F.

Before each use, ensure that the oil level is between the *Lower* and *Upper limit* marks on the dipstick (Fig.5)

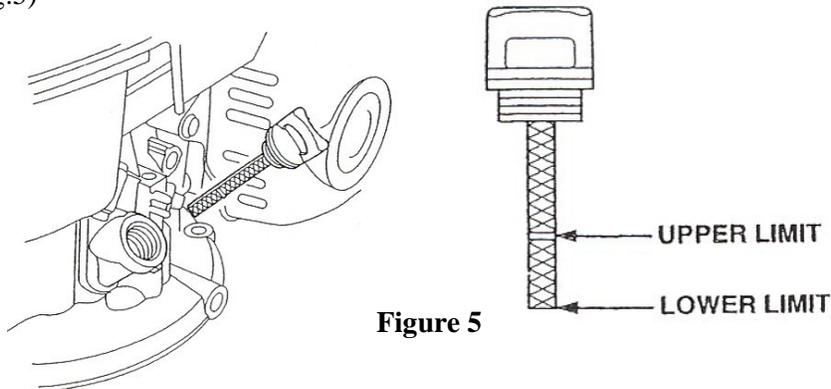


Figure 5

To add oil:

1. Move the lawn mower to a level surface.
2. Stop the engine and wait for the blade to stop.
3. Clean around the dipstick.
4. Remove the dipstick by rotating the cap.
5. Wipe the dipstick clean with a clean cloth.
6. Insert the dipstick into the filler neck BUT DO NOT SCREW IT IN. Then remove the dipstick and read the oil level. (Fig. 5)
7. If the oil level reading is below the *Lower Limit* mark on the dipstick, slowly pour only enough oil into the filler hole to raise the oil level to the *Upper Limit* mark on the dipstick. Do not overfill the crankcase with oil and run the engine; engine damage will result. Drain the excess oil until the oil level on the dipstick is within the limit.
8. Insert the dipstick into the filler neck and rotate the cap clockwise until it is tight.

Filling the Fuel Tank with Gasoline

- Use clean, fresh, lead-free gasoline with an octane rating of 86 or higher. Using unleaded gasoline results in fewer combustion deposits and longer engine life.
- Do not use gasoline containing more than 5% methanol, 10% ethanol, or 15% MTBE. Using fuels containing a higher percentage of these additives will damage the engine and void manufacturer's warranty.
- Do not use gasoline that is *stale or has been stored since the last mowing season or longer.*

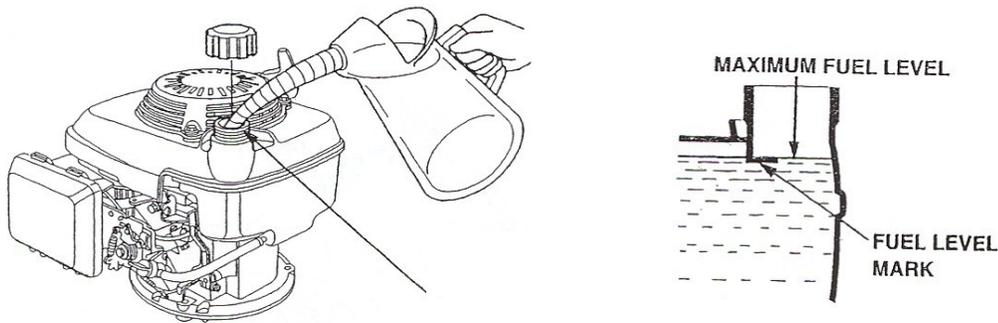


Figure 6

To Fill the Tank:

1. Stop the engine and wait for the blade to stop.
2. Clean around the fuel tank (Fig 6)
3. Remove the cap from the tank.
4. Fill the fuel tank to the bottom of the fuel level limit in the neck of the fuel tank. Do not overfill.
5. Install the cap and wipe up any spilled gasoline.

Operation

Warning: Prior to starting the mower:

1. **Make sure the engine is filled with oil (Fig.5)**
2. **Make sure the mower is placed on grass devoid of rocks and loose branches.**

WARNING: Never carry or tilt the mower with the carburetor leaning toward the ground. This will cause gasoline and engine oil to flow through the carburetor and soak the air filter. Replace the soaked air filter before attempting to start the engine.



Starting the Engine

1. Connect the wire to the spark plug.
2. Open the fuel valve (Fig. 7)

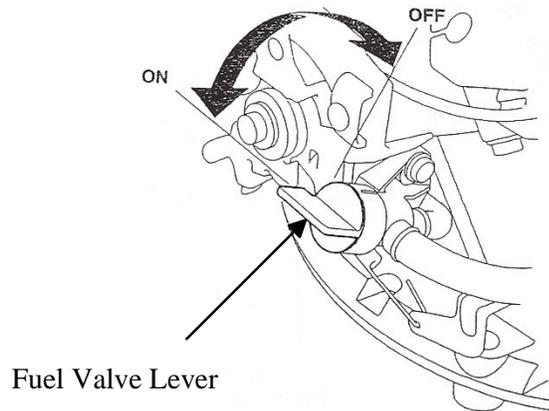


Figure 7

3. Move the throttle control to the (*Choke*) position. (Fig. 8)

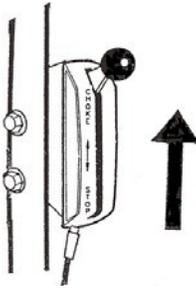


Figure 8

Throttle Control in choke position

**For Mowers equipped with Operator's Presence Control (OPC), pull the OPC arm up toward the handle and hold it securely with left hand. (Fig. 9)

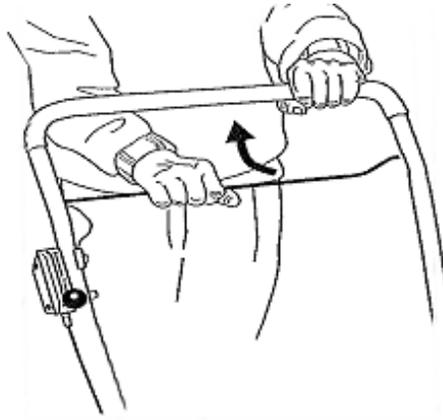


Figure 9

4. Pull the starter handle lightly until you feel resistance, then pull it sharply (Fig 10)



Figure 10

5. Push the throttle control into run position after engine starts. (Fig. 10)

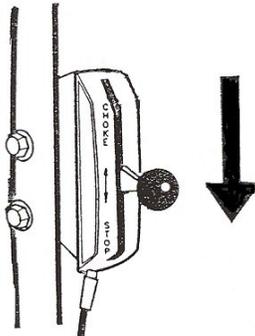


Figure 11

Throttle control in operating position

6. The engine operates at a **FIXED THROTTLE SPEED** for optimum performance.

Stopping the Engine

1. Push the throttle control to (*stop*) position to shut off the engine. (Fig 12)

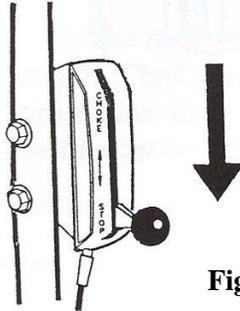


Figure 12

2. Disconnect the wire from the spark plug if you do not use the lawn mower or if you leave it unattended.
3. Shut the fuel valve.
4. For mowers equipped with OPC release the OPC arm to shut off the engine.

Adjusting the Cutting Height

The cutting height can be adjusted from 1/2" – 3". The height is preset at approximately 2". The height can be raised or lowered in 1/4" or 1/2" increments.

1. Stop the engine and wait for the blade to stop before adjusting the cutting height.
2. Tilt the mower to its **left side** making sure the carburetor is on the upside of the mower and away from the ground. **Never tilt the mower with the carburetor pointing toward the ground.**
3. Remove the impeller retaining bolt, flat washer and cutter disc. (Fig. 13)

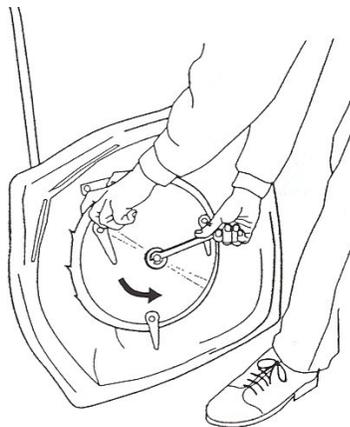


Figure 13

4. **To obtain a higher cut** remove the height adjustment spacer (s) from the impeller hub. Remount the cutter disc to obtain the highest cut - do not use any spacers. Install the flat washer and the Impeller retaining bolt. Tighten the bolt securely. (Fig 14)
5.
 - a. Remove the height adjustment spacer (s) from the impeller hub. (Fig 14)
 - b. Remount the cutter disc.
 - c. Install the flat washer and the impeller retaining bolt.
 - d. Tighten the bolt securely.
 - e. To obtain the maximum cut height, do not use any spacers.
 - f. Use a 3" long Impeller retaining bolt when no adjustment spacers are used.

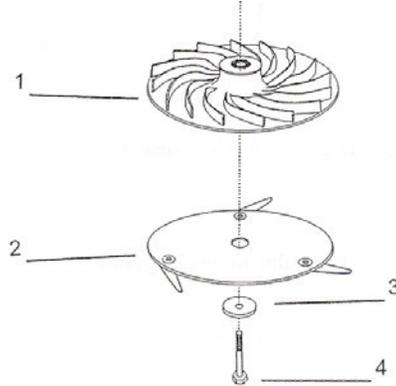


Figure 14

- | | |
|----------------|----------------------------|
| 1. Impeller | 3. Impeller Flat Washer |
| 2. Cutter Disc | 4. Impeller Retaining bolt |

5. **To obtain a lower cut** add height adjustment spacer (s) between the impeller hub and the cutter disc. Remount the cutter disc. Install the flat washer and the impeller retaining bolt. Tighten the bolt securely. (Fig. 15)
 - a. Add height adjustment spacer (s).
 - b. Remount the cutter disc.
 - c. Install the flat washer and the impeller retaining bolt.
 - d. Tighten the bolt securely.
 - e. Use a 3 ½" long impeller retaining bolt when one or two ½" spacer (s) or 2 or more ¼" spacers are used.

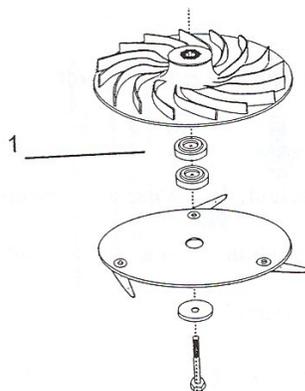


Figure 15

- | |
|-----------------------------|
| 1. Height Adjustment spacer |
|-----------------------------|

Operating Tips

- Review the safety instructions and read this Manual carefully before operating the lawn mower.
- Never mow on slopes with inclines exceeding 45°.
- Never attempt to mow by pushing the lawn mower up the slope.
- Keep the mower pointing down when mowing slopes.
- Always stay above the mower when mowing slopes.
- Walk across the slopes not up and down.
- Clear the area of sticks, stones, wire, branches and other debris that the blade could hit or throw.
- Keep everyone, especially children and pets, away from the area of operation.
- Avoid striking trees, walls, curbs or other solid objects. Never deliberately mow over any object.
- If the lawn mower strikes an object or starts to vibrate, immediately stop the engine, disconnect the wire from the spark plug and examine the lawn mower for damage.
- Maintain sharp blades throughout the cutting season.
- Replace the blades when necessary with original Eastman Industries replacement blades.
- Mow only dry grass or leaves. Wet grass and leaves tend to clump on the yard and can cause the lawn mower to plug or the engine to stall.
- Wet grass or leaves can cause serious injury if you slip and come in contact with the blades.
- Clean the underside of the lawn mower deck after each mowing. Keep the engine in good running condition.
- Clean the air filter frequently. Mulching stirs up more clippings and dust which clogs the air filter and reduces engine performance.
- **Consult the Engine Operator's Manual for more complete instructions regarding engine maintenance and operation.**

Recommended Maintenance Schedule

Note: Determine the left and right sides of the machine from the normal operating position.

Service Interval	Maintenance Procedure
Each Use	<p>Check the engine oil level.</p> <p>Check the blades and blade attachment bolts. Tighten if they are loose.</p> <p>Check the air cleaner.</p> <p>Remove grass clippings from the impeller fins.</p> <p>Remove the grass clippings and dirt from under the housing.</p> <p>Clean the air intake area around the engine.</p>
5 Hours	<p>Check the blades and the blade attachment bolts. Tighten them if they are loose.</p> <p>Replace the blade mounting bolts if they are worn or damaged.</p> <p>Inspect the cutter disc. Change if the cutter disc is bent or the pem inserts are lose or worn.</p>
25 Hours	<p>Clean the air cleaner. (1)</p>
50 Hours	<p>Change the engine oil. (2) (3)</p> <p>Clean – replace the air cleaner. (1)</p> <p>Sharpen or replace the blade; maintain it more frequently if the edge dulls quickly in rough or in sandy conditions.</p> <p>Clean the fuel filter.</p> <p>Check for leaks in the fuel system and/or a deteriorating fuel hose. Replace parts if necessary.</p>
100 Hours	<p>Inspect the spark plug and replace it if necessary.</p> <p>Clean – replace the air cleaner.</p> <p>Clean the cooling system; remove grass clippings, debris, or dirt from the engine air cooling fins and starter. Clean the system more frequently in dirty or high-chaff conditions.</p>
150 Hours	<p>Replace the air filter. Replace it more frequently in dusty conditions.</p> <p>Replace the spark plug.</p>
Storage	<p>Empty the fuel tank before repairs or before storage.</p>

(1) Service more frequently when used in dusty conditions.

(2) Change the engine oil after the first 5 operating hours (first oil change only).

(3) Change the engine oil every 25 hours when used under heavy load or high ambient temperature.

Checking the Engine Oil Level

Before you use the lawn mower, make sure that the oil level is between the *Upper* and the *Lower Limit* marks as shown on the dipstick. If the oil level is below the *Lower Limit* mark, add oil.

Cleaning the Underside of the Lawn Mower Housing

To ensure the best performance, keep the underside of the lawn mower housing clean.

1. Disconnect the spark plug wire and drain the fuel tank.
2. Tip the lawn mower onto its **left side** with the **carburetor and air cleaner on the upside of the mower and away from the ground**. Remove the grass thoroughly and return the mower to up-right position.

Servicing the Air Cleaner

Clean the air filter and foam pre filter every 25 operating hours. Replace the air filter every season or every 150 operating hours - clean and replace the filter and foam pre filter more frequently in dusty conditions.

1. Stop the engine and wait for all moving parts to stop.
2. Disconnect the wire from the spark plug.
3. Press the latch tabs on the top of the air filter cover and remove the cover. (Fig. 16)

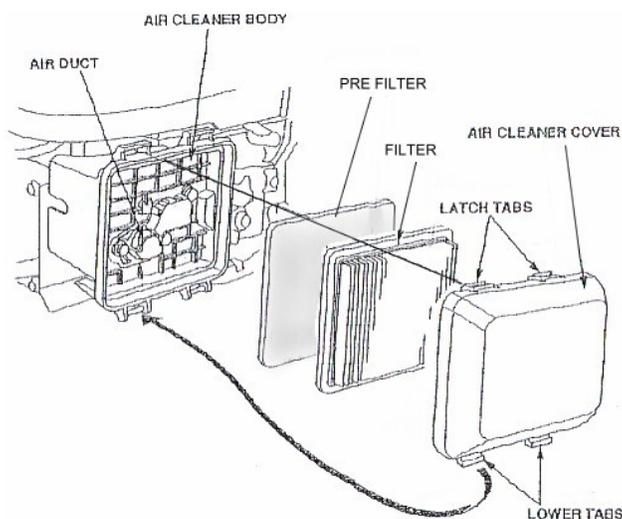


Figure 16

4. Remove the air filter. Tap the filter several times on a hard surface to remove excess dirt, or blow compressed air not exceeding 30 PSI through the filter from the clean side that faces the engine. (Fig 17) *Never try to brush off dirt.*

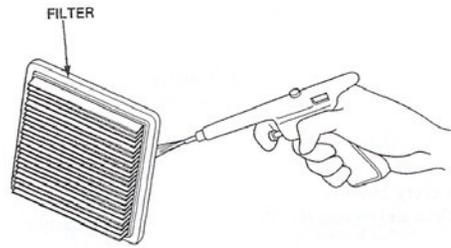


Figure 17

5. Wipe dirt from air cleaner base using a moist rag. Do not allow any dirt to enter into the carburetor air duct.
6. Wash the foam pre filter in Kerosene then soak it in a mixture of 3 parts Kerosene and one part engine oil. Squeeze out excess oil.
7. Install the air filter, foam pre filter and cover.

Changing the Engine Oil

Change the oil after the first month or after 5 operating hours and then after every 6 months or every 50 operating hours.

1. Run the engine to warm the engine oil.
2. Stop the engine and wait for all moving parts to stop.
3. Disconnect the wire from the spark plug.
4. Turn the fuel valve to off position.
5. Remove the dipstick and drain the oil by tipping the engine toward the oil filler neck. (Fig 18)

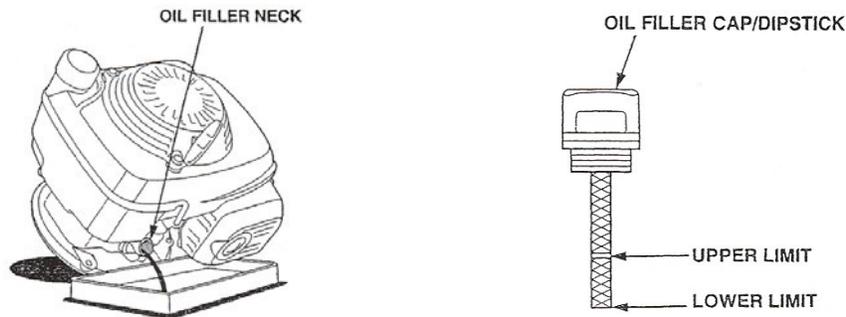


Figure 18

6. Recycle the used oil according to local codes
7. Fill the crankcase to the *Upper Limit* line on the dipstick with fresh oil. (See filling instructions)
8. Wipe up any spilled oil.

Maintaining the Cutter Disc

Always mow with a balanced cutter disc making sure that the pem inserts, the blade attachment bolts and blades are securely fastened to the disc.

1. Stop the engine and wait for all moving parts to stop.
2. Disconnect the wire from the spark plug.
3. Turn the fuel valve to off position.
4. Tip the lawn mower onto its **left side** with the **carburetor and air cleaner on the upside of the mower and away from the ground**.
5. Remove the blade attachment bolts and the blades.
6. Check the cutter disc for fitness by placing a straight edge against the disc. Replace the disc if it is bent, warped or damaged. Never operate the mower with a bent disc. A bent or damaged disc will cause excessive vibration and hazardous operating conditions. Loose components can be thrown causing serious injury or death.
7. Inspect the pem inserts embedded in the disc for looseness or wear. Replace the disc if the pems are loose or damaged. Do not try to tighten the pems if they are loose. Loose pems can be thrown into the operator's path causing serious injury or death.
8. Inspect the blade attachment bolts for looseness or excessive wear. Tighten, if necessary. Replace worn or damaged bolts. Loose or damaged blades and bolts can be thrown into the operator area causing serious injury or death.
9. Inspect the blades for wear or damage. Replace worn and damaged blades. Worn or damaged blades can be thrown into operator area causing serious injury or death.

Removing the Blade

Grasp the cutter disc firmly using a rag or a glove. Remove the blade mounting bolts using a 1/4" Allen wrench.

Installing the Blade

Make certain the blades are mated to the correct blade attachment bolts.

1. Mount the blades on the blade attachment bolts.
2. Screw the blade attachment bolts into the pem fasteners on the cutter disc.
3. The blades should fit snugly into the blade attachment bolts.
4. Tighten the bolts.

Draining the Fuel Tank and Carburetor

Clean the fuel filter element every 50 operating hours.

1. Stop the engine and wait for it to cool down.
2. Disconnect the wire from the spark plug.
3. Remove the carburetor bowl drain bolt with a 10-mm wrench and drain the fuel into an approved gasoline container (Fig 19).
4. Do not force the carburetor bowl off the carburetor body.

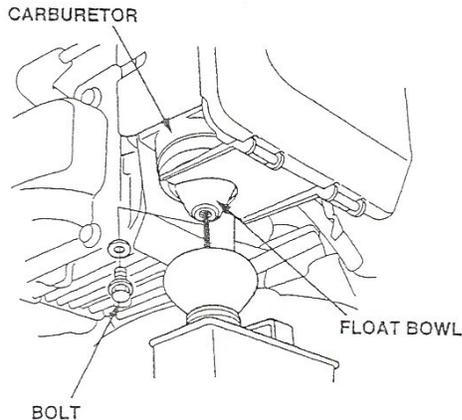


Figure 19

5. Open the fuel valve by turning the lever to the open position.
6. Drain the gasoline completely from the tank, the fuel line and the carburetor into the container.
7. Install the drain bolt and tighten securely.

Servicing the Spark Plug

Check the spark plug after every 150 operating hours. Use an NGK BPR6ES spark plug or equivalent.

1. Stop the engine and wait for all moving parts to stop.
2. Disconnect the wire from the spark plug.
3. Clean around the spark plug.
4. Remove the spark plug from the cylinder head, with a 13/16 inch spark plug wrench.
5. Set the gap on the plug to 0.028 – 0.036 In (0.70 – 0.80 mm)
6. Install the spark plug and the gasket seal.
7. Torque the plug to 17 ft-lb.
8. Connect the wire to the spark plug.

Storage

To prepare the lawn mower for storage, perform the recommended maintenance procedures. Refer to *Maintenance* on page 19.

Store the lawn mower in a dry place. Empty the fuel tank after mowing the last time before storing the lawn mower.

1. Run the lawn mower until the engine stops from running out of fuel.
2. When you can no longer start the engine, it is sufficiently dry.

Preparing the Engine

1. While the engine is still warm, change the oil from the crankcase.
2. Remove the spark plug.
3. Using an oil can, add about one tablespoon of oil to the crankcase through the spark plug hole.
4. Slowly rotate the engine several times, using the starter rope, to distribute the oil.
5. Install the spark plug. **Do Not** connect the wire to the spark plug.

General Information

1. Clean the lawn mower housing.
2. Check the condition of the blade.
3. Service the air filter.
4. Tighten all nuts, bolts and screws.

Removing the Lawn Mower from Storage

1. Check and tighten all fasteners.
2. Remove the spark plug and spin the engine rapidly using the starter to blow excess oil from the cylinder.
3. Clean the spark plug or replace it if it is cracked, broken or if the electrodes are worn.
4. Install the spark plug and torque it to 17 ft-lb. (23 N-m).
5. Fill the fuel tank with fresh gasoline.
6. Check the engine oil level.
7. Connect the wire to the spark plug.

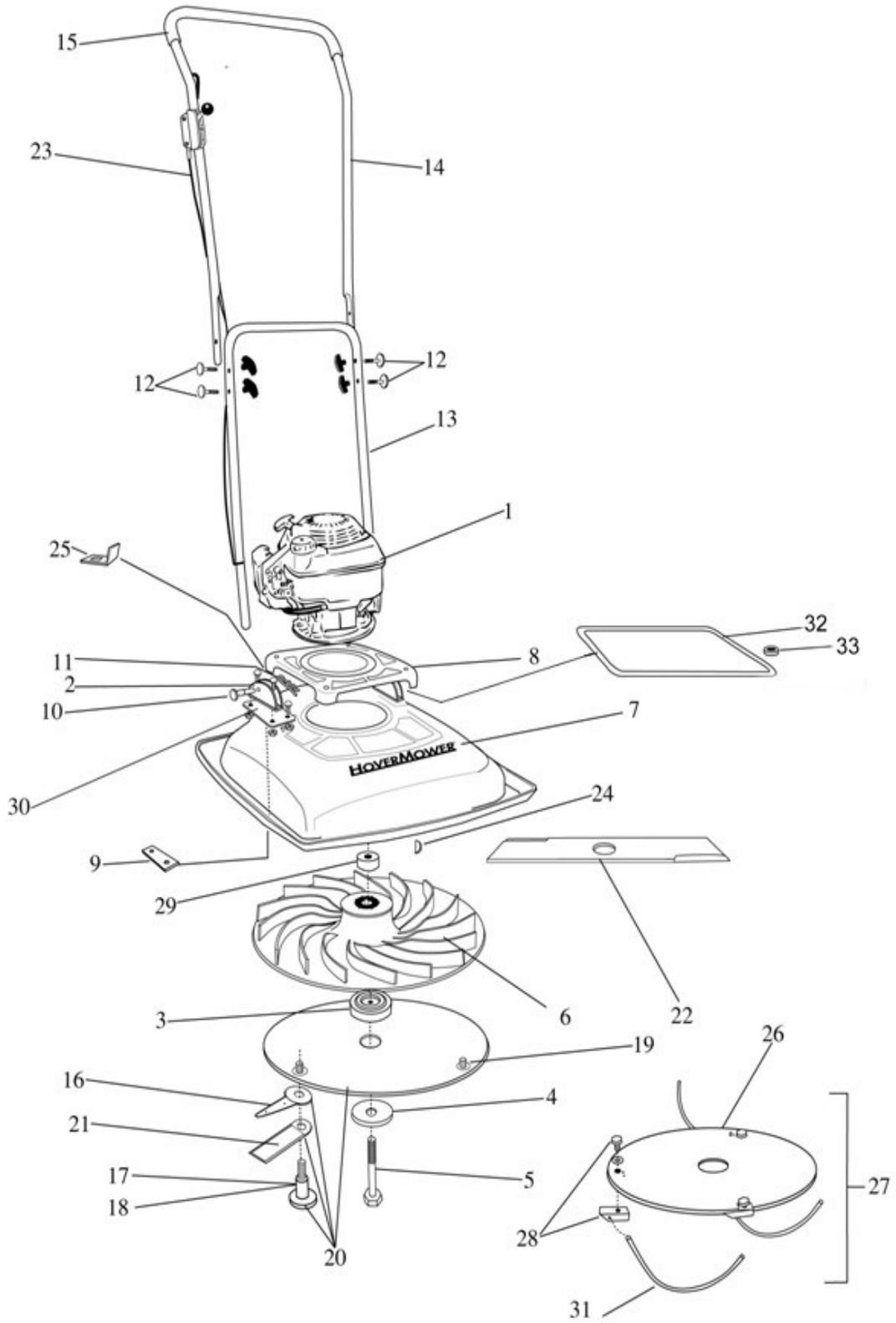
Troubleshooting

Problem	Possible Cause	Corrective Action
Engine does not start	<ol style="list-style-type: none"> 1. The fuel tank is empty or the fuel system contains stale fuel. 2. The air filter is soaked with oil or gasoline. 3. The throttle lever is not in the <i>Choke</i> position. 4. The wire is not connected to the spark plug. 5. The spark plug is pitted, fouled or the gap is incorrect. 	<ol style="list-style-type: none"> 1. Drain and/or fill the fuel tank with fresh gasoline. If the problem persists, contact an Authorized Service Dealer. 2. Replace the filter. 3. Move the throttle lever to the <i>Choke</i> position. 4. Connect the wire to the spark plug. 5. Check the spark plug and adjust the gap if necessary. Replace the spark plug if it is pitted, fouled or cracked.
Engine starts hard or loses power	<ol style="list-style-type: none"> 1. The fuel tank contains stale fuel. 2. The fuel cap vent hole is plugged. 3. The air filter element is dirty and is restricting the airflow. 4. The underside of the lawn mower is clogged with clippings and debris. 5. The spark plug is pitted, fouled or the gap is incorrect. 6. The engine oil level is low or the oil is dirty. 	<ol style="list-style-type: none"> 1. Drain and fill the fuel tank with fresh gasoline. 2. Clean the fuel cap vent hole or replace the fuel cap. 3. Clean the air filter pre-cleaner and/or replace the air filter. 4. Clean the underside of the lawn mower deck, the air intakes and impeller fins. 5. Check the spark plug and adjust the gap if necessary. Replace the spark plug if it is pitted, fouled or cracked. 6. Check the engine oil. Change the oil if it is dirty or add oil if it is low.
The mower does not hover	<ol style="list-style-type: none"> 1. The engine does not run at the correct speed. 2. Air vents are clogged with grass clippings and debris. 3. Impeller fins and underside of the deck are clogged with grass and debris. 	<ol style="list-style-type: none"> 1. Correct the engine speed. 2. Clean and unclog. 3. Remove the impeller. Thoroughly clean the impeller and the deck.

Troubleshooting

Problem	Possible Cause	Corrective Action
Engine runs rough	<ol style="list-style-type: none"><li data-bbox="537 233 904 300">1. The wire is not connected to the spark plug.<li data-bbox="537 338 904 438">2. The spark plug is pitted, fouled or the gap is incorrect.<li data-bbox="537 476 904 543">3. The throttle lever is not in the <i>Run</i> position.<li data-bbox="537 581 904 682">4. The air filter element is dirty and is restricting the air flow.	<ol style="list-style-type: none"><li data-bbox="933 233 1382 258">1. Connect the wire to the spark plug.<li data-bbox="933 338 1446 438">2. Check the spark plug and adjust the gap if necessary. Replace the spark plug if it is pitted, fouled or cracked.<li data-bbox="933 476 1365 543">3. Move the throttle lever to the <i>Run</i> position.<li data-bbox="933 581 1317 648">4. Clean the air filter element or replace the air filter.
Mower or engine vibrates excessively	<ol style="list-style-type: none"><li data-bbox="537 695 904 762">1. The cutter disc is bent or warped.<li data-bbox="537 800 904 867">2. The blade attachment bolts are loose or missing.<li data-bbox="537 905 904 1005">3. The underside of the lawn mower deck contains clippings and debris.<li data-bbox="537 1043 904 1144">4. Cut Height Adjustment spacers are not properly mounted.<li data-bbox="537 1182 904 1249">5. The engine mounting bolts are loose.	<ol style="list-style-type: none"><li data-bbox="933 695 1235 720">1. Replace the cutter disc.<li data-bbox="933 800 1382 825">2. Tighten the blade attachment bolts.<li data-bbox="933 905 1333 972">3. Clean the underside of the lawn mower deck.<li data-bbox="933 1043 1333 1068">4. Remount and tighten properly.<li data-bbox="933 1182 1382 1207">5. Tighten the engine mounting bolts.

MOWER PARTS HM19H-4



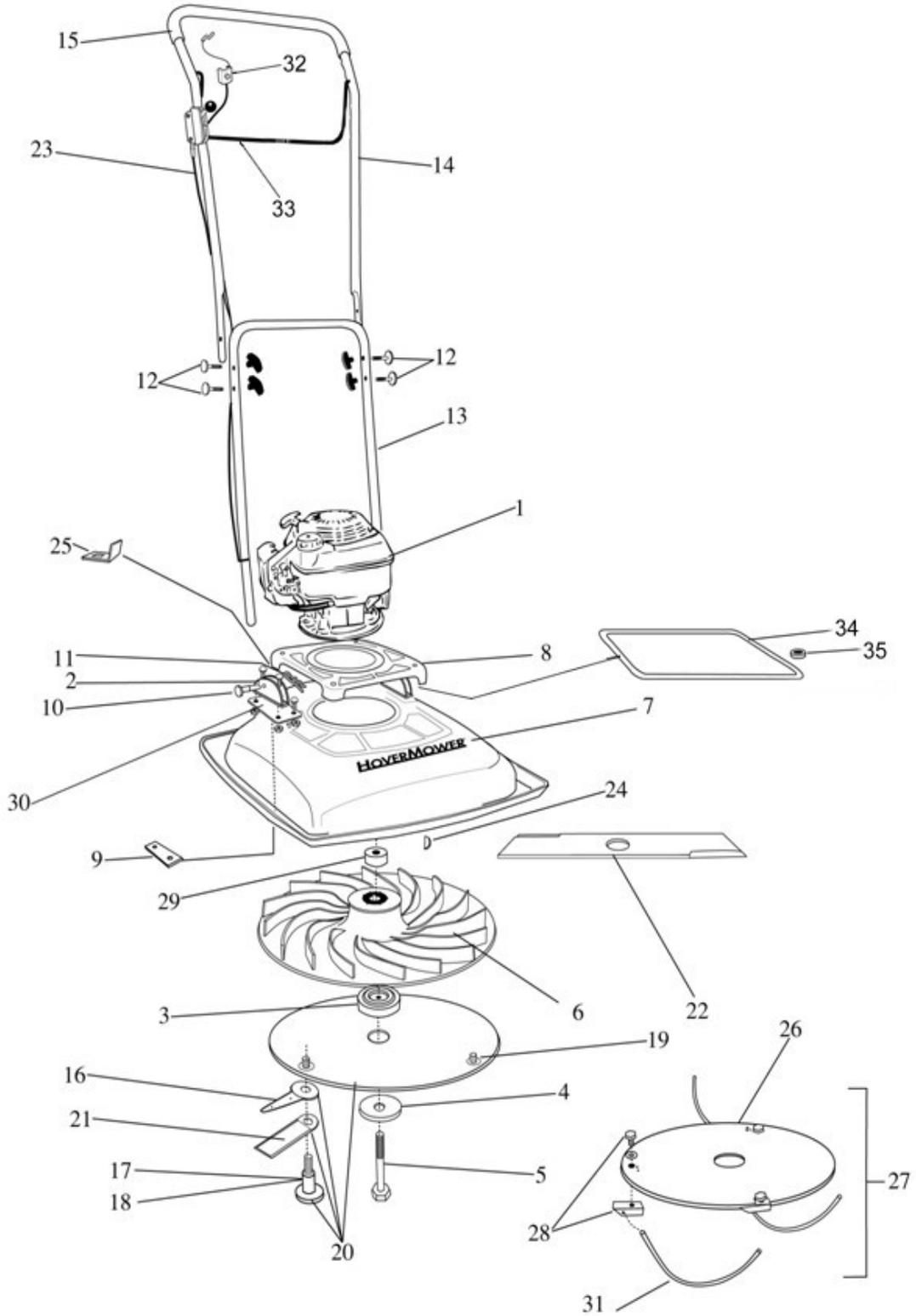
PARTS LIST FOR MOWER # HM19H-4

<u>SCM#</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	HM19GCV160	Honda 5.5 HP, 4 Cycle Engine--U.S & Euro Certified
2	HM 1550	Handle Bracket
3	HM19S-21556A	Height Adjustment Spacer 1/2"
3	HM19S-21556B	Height Adjustment Spacer 1/4"
4	PX5541	Impeller Flat Washer (subs from HM19S-21557)
5	HM19S-215581	Impeller Retaining Bolt 2 1/2"
5	HM19S-215582	Impeller Retaining Bolt 3"
5	HM19S-215583	Impeller Retaining Bolt 3 1/2"
6	HM19S-21560N	Impeller - 15"
7	HM19S-21562 *	Deck with Logos and Decals
8	HM19S-21565	Engine Mount
9	HM 22569	Handle Mounting Plate
10	HM 22573	Clevis Pin
11	HM 2257	Hair Pin Cotter Key
12	HM 22583	Handle Knob W/Hardware
13	HM 1549	Lower Handle
14	HM19H-21585	Upper Handle (With Grip)
15	HM 1582	Handle Grip
16	HM 1601-12	Nylon Blades (Pkg. Of 12)
17	HM 1602-3	Shoulder Bolts for Nylon Blades (Pkg. Of 3)
18	HM 1603-3	Shoulder Bolts for Stainless Steel Blades (Pkg. Of 3)
19	HM19S-21603	Cutter Disc
20	HM19S-21606N	Cutter Disc with Nylon Blades & Bolts
20	HM19S-21606S	Cutter Disc with Stainless Steel Blades & Bolts
21	HM 1605-3	Reversible Stainless Steel Blades (Pkg. Of 3)
22	HM19S-1607 **	Bar Blade (Not Available In The U.S.)
23	HM19H-21571	Throttle Control & Cable
24	HM19S-2175	Impeller Woodruff Key
25	HM 1551N	Handle Stop
26	HM19S-21613	Cutter Disc for Nylon Strings
27	HM19S-21613T	Cutter Disc Assy. with Nylon Strings & Fasteners
28	HM 1600	String Attachment Fastener (Pkg. Of 3)
29	HM19H-215585	Impeller Spacer
30	HM19H-50	Right Handle Bracket Extension Plate
31	HM 1615-1	.130" Magnum Gatorline - 1 lb. Donut
31	HM 1615-3	.130" Magnum Gatorline - 3 lb. Donut
32	HM19S-1566	Impeller Guard
33	HM19S-21611	Retaining Washer
		<u>ACCESSORIES</u>
	HM19S-215584	Impeller "Pull" Bolt
	HM19S-21563	4" Lift Kit
	HM19S-21590	12" Handle Extension Kit(Long Handle, Brake & Throttle Cables)
	HM19S-2170L	Brake Cable Long
	HM19S-2171L	Throttle Cable Long
	HM1549L	Lower Handle Long

* Use HM19H-21563 for European Certification.

** Use HM20H-1607 for European Certification.

MOWER PARTS HM19H4-OP



PARTS LIST FOR MOWER # HM19H4-OP

<u>SCM#</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	HM19GCV160-OP	Honda 5.5 HP, 4 Cycle Engine--U.S & Euro Certified
2	HM 1550	Handle Bracket
3	HM19S-21556A	Height Adjustment Spacer 1/2"
3	HM19S-21556B	Height Adjustment Spacer 1/4"
4	PX5541	Impeller Flat Washer (subs from HM19S-21557)
5	HM19S-215581	Impeller Retaining Bolt 2 1/2"
5	HM19S-215582	Impeller Retaining Bolt 3"
5	HM19S-215583	Impeller Retaining Bolt 3 1/2"
6	HM19S-21560N	Impeller - 15"
7	HM19S-21562 *	Deck with Logos and Decals
8	HM19S-21565	Engine Mount
9	HM 22569	Handle Mounting Plate
10	HM 22573	Clevis Pin
11	HM 2257	Hair Pin Cotter Key
12	HM 22583	Handle Knob W/Hardware
13	HM 1549	Lower Handle
14	HM19H-21585	Upper Handle (With Grip)
15	HM 1582	Handle Grip
16	HM 1601-12	Nylon Blades (Pkg. Of 12)
17	HM 1602-3	Shoulder Bolts for Nylon Blades (Pkg. Of 3)
18	HM 1603-3	Shoulder Bolts for Stainless Steel Blades (Pkg. Of 3)
19	HM19S-21603	Cutter Disc
20	HM19S-21606N	Cutter Disc with Nylon Blades & Bolts
20	HM19S-21606S	Cutter Disc with Stainless Steel Blades & Bolts
21	HM 1605-3	Reversible Stainless Steel Blades (Pkg. Of 3)
22	HM19S-1607 **	Bar Blade (Not Available In The U.S.)
23	HM19H-21571	Throttle Control & Cable
24	HM19S-2175	Impeller Woodruff Key
25	HM 1551N	Handle Stop
26	HM19S-21613	Cutter Disc for Nylon Strings
27	HM19S-21613T	Cutter Disc Assy. with Nylon Strings & Fasteners
28	HM 1600	String Attachment Fastener (Pkg. Of 3)
29	HM19H-215585	Impeller Spacer
30	HM19H-50	Right Handle Bracket Extension Plate
31	HM 1615-1	.130" Magnum Gatorline - 1 lb. Donut
31	HM 1615-3	.130" Magnum Gatorline - 3 lb. Donut
32	WM 1016	Brake Cable
33	HM19S-2172N	Bail Arm
34	HM19S-21566	Impeller Guard
35	HM19S-21611	Retaining Washer
		<u>ACCESSORIES</u>
	HM19S-215584	Impeller "Pull" Bolt
	HM19S-21563	4" Lift Kit
	HM19H-21591	12" Handle Extension Kit (Long Handle, Brake & Throttle Cables)
	WM 1016L	Brake Cable, Long
	HM19H-21571L	Throttle Cable, Long
	HM 1549L	Lower Handle Long

* Use HM19H-21563 for European Certification.

** Use HM20H-1607 for European Certification.

EASTERN INDUSTRIES, INC. LIMITED WARRANTY STATEMENT EFFECTIVE MARCH 1, 2017

Eastern Industries, Inc. warrants to the original retail purchaser that this Eastern Industries, Inc. product is free from defects in material and workmanship. Under normal use and maintenance from the date of retail purchase, Eastern Industries, Inc. agrees to repair or replace at Eastern Industries, Inc. discretion, any defective product free of charge at any authorized Eastern Industries, Inc. Servicing Dealer within the time limit listed below.

THIS LIMITED WARRANTY IS EXTENDED TO THE FIRST, ORIGINAL RETAIL PURCHASER ONLY, AND IT IS NOT TRANSFERRABLE TO SUBSEQUENT OWNERS.

RESIDENTIAL OR NON-INCOME PRODUCING USE – 2 YEARS.

Complete unit for residential, or non-income producing use, will be covered by this limited warranty for 2 years from the date of retail purchase.

COMMERCIAL, INSTITUTIONAL, INDUSTRIAL OR INCOME PRODUCING USE – 1 YEAR.

Complete unit will be covered against defects in material and workmanship for a period of 1 year from the date of purchase.

RENTAL USE – 60 DAYS.

Complete unit will be covered against defects in material and workmanship for a period of 60 days from the date of purchase.

DISCLAIMER OF IMPLIED WARRANTIES

This limited warranty is in lieu of all other expressed or implied warranties, including any warranty of **FITNESS FOR A PARTICULAR PURPOSE** and any implied warranty of **MERCHANTABILITY** otherwise applicable to this purpose. Eastern Industries, Inc. shall not be liable for any special incidental or consequential damages.

THE WARRANTY DOES NOT INCLUDE OR COVER:

- Defects, malfunctions or failures resulting from abuse, misuse, neglect, modifications, alternation, normal wear, improper servicing, use of unauthorized attachments, stale fuel or any adverse reaction due to incorrect storage procedures, including failure to provide or perform required maintenance services as prescribed in the owner's Manual. **Preventative maintenance as outlined in the owner's Manual is the customer's responsibility.**
- Cost of regular maintenance service or parts, such as filters, fuel, lubricants, oil changes, spark plugs, blade sharpening, worn blade, cable/linkage adjustments, or brake and clutch adjustments.
- Repairs necessary due to improper fuel, contaminants in the fuel system or failure to properly prepare the fuel system prior to any period of non-use over three months.
- Repair necessary due to failure to properly prepare the mower prior to any period of non-use.
- Pickup and delivery charges.

All repairs covered by this warranty must be performed by an Authorized Eastern Industries, Inc. Service Dealer using Eastern Industries, Inc. parts.

For more information concerning engine warranty refer to the enclosed engine Manual and warranty statement...

OWNER'S RESPONSIBILITY

The owner shall demonstrate reasonable care and follow preventative maintenance, storage, fuel and oil usage as prescribed in the owner's Manual. Should a product difficulty occur, you must, at your expense, arrange to deliver or ship your Eastern Industries, Inc. unit for warranty repairs and arrange for pick-up or return of your unit after the repairs have been made. If you do not know the location of your nearest authorized Eastern Industries, Inc. Servicing Dealer, call Eastern Industries, Inc. at 1-800-444-0407 during normal working hours. Repair parts and accessories replaced under this warranty are warranted only for the balance of the warranty period. All parts replaced under warranty become the property of Eastern Industries, Inc.

GENERAL CONDITIONS

Repair by an Authorized Eastern Industries, Inc. Dealer is your sole remedy under this warranty. Eastern Industries, Inc. is not liable for indirect, incidental or consequential damages in connection with the use of Eastern Industries, Inc. products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty.