

Operator's Manual

RZT420H Ride-On

with Recycling/Side Discharge Deck



Code 136E Serial No. 280000001

Introduction

Read this information carefully to learn how to operate and maintain your product properly and to avoid injury and product damage. You are responsible for operating the product properly and safely.

Whenever you need service, genuine Hayter parts, or additional information, contact an Authorized Service Dealer or Hayter Customer Service and have the model and serial numbers of your product ready. Figure 1 identifies the location of the model and serial numbers on the product. Write the numbers in the space provided.



1. Model and serial number plate

Write the product model and serial numbers in the space below:

Model No		_
Serial No		_

This manual identifies potential hazards and has safety messages identified by the safety alert symbol (Figure 2), which signals a hazard that may cause serious injury or death if you do not follow the recommended precautions.



1. Safety alert symbol.

This manual uses two other words to highlight information. Important calls attention to special mechanical information and Note emphasizes general information worthy of special attention.

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Safety

Safe Operation Practices for Ride-on (riding) Rotary Lawnmower Machines

This machine meets or exceeds European Standards in effect at the time of production. However, improper use or maintenance by the operator or owner can result in injury. To reduce the potential for injury, comply with these safety instructions and always pay attention to the safety alert symbol, which means CAUTION, WARNING, or DANGER -"personal safety instruction." Failure to comply with the instruction may result in personal injury or death.

Safe Operating Practices

The following instructions are from the EN standard EN 836:1997.

This product is capable of amputating hands and feet and throwing objects. Always follow all safety instructions to avoid serious injury or death.

Training

- Read the instructions carefully. Be familiar with the controls and the proper use of the equipment.
- Never allow children or people unfamiliar with these instructions to use the lawnmower. Local regulations can restrict the age of the operator.
- Never mow while people, especially children, or pets are nearby.
- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.
- Do not carry passengers.
- All drivers should seek and obtain professional and practical instruction. Such instruction should emphasize:
 - the need for care and concentration when working with ride-on machines;
 - control of a ride-on machine sliding on a slope will not be regained by the application of the brake. The main reasons for loss of control are:
 - \diamond insufficient wheel grip;
 - ♦ being driven too fast;
 - ♦ inadequate braking;
 - ♦ the type of machine is unsuitable for its task;

- lack of awareness of the effect of ground conditions, especially slopes;
- \diamond incorrect hitching and load distribution.

Preparation

- While mowing, always wear substantial footwear and long trousers. Do not operate the equipment when barefoot or wearing open sandals.
- Thoroughly inspect the area where the equipment is to be used and remove all objects which may be thrown by the machine.
- Warning-Fuel is highly flammable.
 - Store fuel in containers specifically designed for this purpose.
 - Refuel outdoors only and do not smoke while refuelling.
 - Add fuel before starting the engine. Never remove the cap of the fuel tank or add fuel while the engine is running or when the engine is hot.
 - If fuel is spilled, do not attempt to start the engine but move the machine away from the area of spillage and avoid creating any source of ignition until fuel vapors have dissipated.
 - Replace all fuel tanks and container caps securely.
- Replace faulty silencers.
- Before using, always visually inspect to see that the blades, blade bolts and cutter assembly are not worn or damaged. Replace worn or damaged blades and bolts in sets to preserve balance.
- On multi-bladed machines, take care as rotating one blade can cause other blades to rotate.

Operation

- Be alert, slow down and use caution when making turns. Look behind and to the side before changing directions.
- Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.
- Mow only in daylight or in good artificial light.
- Before attempting to start the engine, disengage all blade attachment clutches and shift into neutral.
- Do not use on slopes of more than 15 degrees.
- Remember there is no such thing as a safe slope. Travel on grass slopes requires particular care. To guard against overturning:
 - do not stop or start suddenly when going up or downhill;
 - use low speeds on slopes and during tight turns;

- stay alert for humps and hollows and other hidden hazards;
- Use care when pulling loads.
 - Use only approved drawbar hitch points.
 - Limit loads to those you can safely control.
 - Do not turn sharply. Use care when reversing.
- Watch out for traffic when crossing or near roadways.
- Stop the blades rotating before crossing surfaces other than grass.
- When using any attachments, never direct discharge of material toward bystanders nor allow anyone near the machine while in operation.
- Never operate the machine with damaged guards or without safety protective devices in place.
- Do not change the engine governor settings or overspeed the engine. Operating the engine at excessive speed can increase the hazard of personal injury.
- Before leaving the operator's position:
 - disengage the power take-off and lower the attachments;
 - change into neutral and set the parking brake;
 - stop the engine and remove the key.
- Disengage drive to attachments, stop the engine, and disconnect the spark plug wire(s) or remove the ignition key
 - before clearing blockages or unclogging chute;
 - before checking, cleaning or working on the lawnmower;
 - after striking a foreign object. Inspect the lawnmower for damage and make repairs before restarting and operating the equipment;
 - if the machine starts to vibrate abnormally (check immediately).
- Disengage drive to attachments when transporting or not in use.
- Stop the engine and disengage drive to attachment
 - before refuelling;
 - before removing the grass catcher;
 - before making height adjustment unless adjustment can be made from the operator's position.
- Reduce the throttle setting during engine run-out and, if the engine is provided with a shut-off valve, turn the fuel off at the conclusion of mowing.

Maintenance and Storage

- Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
- Never store the equipment with fuel in the tank inside a building where fumes can reach an open flame or spark.
- Allow the engine to cool before storing in any enclosure.
- To reduce the fire hazard, keep the engine, silencer, battery compartment and fuel storage area free of grass, leaves, or excessive grease.
- Check the grass catcher frequently for wear or deterioration.
- Replace worn or damaged parts for safety.
- If the fuel tank has to be drained, this should be done outdoors.
- When machine is to be parked, stored or left unattended, lower the cutting means.

Z Turn Riding Mower Safety

The following list contains safety information specific to Hayter products or other safety information that is not included in the CEN standard.

- Engine exhaust contains carbon monoxide, which is an odorless, deadly poison that can kill you. Do not run engine indoors or in an enclosed area.
- Keep hands, feet, hair and loose clothing away from attachment discharge area, underside of cutter deck and any moving parts while engine is running.
- Do not touch equipment or attachment parts which may be hot from operation. Allow to cool before attempting to maintain, adjust, or service.
- Battery acid is poisonous and can cause burns. Avoid contact with skin, eyes and clothing. Protect your face, eyes, and clothing when working with a battery.
- Battery gases can explode. Keep cigarettes, sparks, and flames away from battery.
- Use only genuine Hayter replacement parts to ensure that original standards are maintained.
- Use only Hayter-approved attachments.

Slope Operation

- Do not mow slopes greater than 15 degrees.
- Do not mow near drop-offs, ditches, steep banks, or water. Wheels dropping over edges can cause rollovers, which may result in serious injury, death, or drowning.

- Do not mow slopes when grass is wet. Slippery conditions reduce traction and could cause sliding and loss of control.
- Do not make sudden turns or rapid speed changes.
- Use a walk behind mower and/or a hand trimmer near drop-offs, ditches, steep banks, or water.
- Reduce speed and use extreme caution on slopes.
- Remove or mark obstacles such as rocks, tree limbs, etc. from mowing area. Tall grass can hide obstacles.
- Watch for ditches, holes, rocks dips, and rises that change the operating angle, as rough terrain could overturn the machine.
- Avoid sudden starts when mowing uphill because the mower may tip backwards.
- Be aware that loss of traction may occur going downhill. Weight transfer to the front wheels may cause drive wheels to slip and cause loss of braking and steering.
- Always avoid sudden starting or stopping on a slope. If tyres lose traction, disengage the blades and proceed slowly off the slope.
- Follow the manufacturer's recommendations for wheel weights or counterweights to improve stability.
- Use extreme care with grass catchers or other attachments. These can change the stability of the machine and cause loss of control.

Sound Pressure

This unit has a maximum sound pressure level at the operator's ear of 89 dBA, based on measurements of identical machines per EN 836 and ISO 11201.

Sound Power

This unit has a guaranteed sound power level of 100 dBA, based on measurements of identical machines per ISO 11094.

Vibration

This unit does not exceed a hand/arm vibration level of 4.5 m/s2, based on measurements of identical machines per EN 836 and EN 1033.

This unit does not exceed a whole body vibration level of 0.70 m/s2, based on measurements of identical machines per EN 836 and EN 1032.

Slope Chart



Safety and Instructional Decals



Safety decals and instructions are easily visible to the operator and are located near any area of potential danger. Replace any decal that is damaged or lost.



1. Entanglement hazard, belt-keep all guards in place.



93-7009

- 1. Warning—don't operate the mower with the deflector up or removed; keep the deflector in place.
- 2. Cutting/dismemberment hazard of hand or foot, mower blade—stay away from moving parts.



1. Indicates the blade is identified as a part from the original machine manufacturer.



105-7015



106-8717

- 1. Read the instructions before servicing or performing maintenance.
- 2. Check tyre pressure every 25 operating hours.
- 3. Grease every 25 operating hours.
- 4. Engine



1. Height of cut



110-6691

- 1. Thrown object hazard—keep bystanders a safe distance from the machine.
- Thrown object hazard, mower—do not operate the without deflector, discharge cover or grass collection system in place.
- 3. Cutting/dismemberment of hand or foot—stay away from moving parts.



1. Height-of-cut





- 1. Parking position
- 4. Neutral

- 2. Fast 3.
- Slow





114-8531

- 1. Bypass lever position for operating the machine
- 2. Bypass lever position for pushing the machine



114-8532

- 1. Bypass lever position for operating the machine
- 2. Bypass lever position for pushing the machine



2.



Some or all of these symbols are on your battery

- 1. Explosion hazard
- 2. No fire, open flame, or smoking.
- 6. Keep bystanders a safe distance from the battery.
- Wear eye protection; explosive gases can cause blindness and other injuries
- 3. Caustic liquid/chemical burn hazard
- 4. Wear eye protection
- Battery acid can cause blindness or severe burns.
 Flush eyes immediately with water and get medical holp fast
- 5. Read the Operator's Manual.
- help fast.10. Contains lead; do not discard.



- 115-2469
- 1. Warning—read the Operator's Manual.
- 2. Warning—read the instructions before servicing or performing maintenance; move the motion control levers to the park (brake) position, remove the ignition key and disconnect the spark plug wire.
- 3. Cutting/dismemberment hazard, mower blade; entanglement hazard, belt—do not open or remove safety shields while engine is running.
- 4. Tipping hazard—do not mow slopes greater than 15 degrees, avoid sudden and sharp turns while on slopes.
- 5. Loss of traction/control hazard, slopes—loss of traction/control on a slope, disengage the blade control switch (PTO), proceed off the slope slowly.
- 6. Crushing/dismemberment hazard of bystanders, reversing; crushing/dismemberment hazard of bystanders—do not carry passengers, look behind and down when reversing.
- 7. Thrown object hazard—keep bystanders a safe distance from the machine, pick up debris before operating, keep deflector in place.

Setup

Loose Parts

Use the chart below to verify that all parts have been shipped.

Procedure	Description	Qty.	Use
1	No parts required	-	Set up the motion control levers.
2	Clevis pin Hair Pin	1 1	Install the seat cable.
3	No parts required	-	Connect the battery.
4	Ignition Key Operator's Manual Engine Operator's Manual	1 1 1	Complete the Setup.

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

1

Setting Up the Motion Control Levers

No Parts Required

Procedure

- Remove the upper bolt (3/8 x 1 inch) and washer; loosen the lower bolt (3/8 x 1 inch) as shown in Figure 3. Raise the motion control levers.
- 2. Align the holes in the motion control lever with the holes in the control arm shaft and install the bolt and washer removed previously (Figure 3). Hand tighten all fasteners. Repeat this for both controls levers.



3. Open the motion control levers and raise the seat (Figure 4). Move the control levers back to the center position (neutral).



4. Verify the motion control levers are properly aligned (Figure 5). Adjust as necessary. Tighten all fasteners.



Figure 5

2 Installing the Seat Cable

Parts needed for this procedure:

1	Clevis pin
1	Hair Pin

Procedure

- 1. Open the motion control levers and raise the seat.
- 2. Locate the seat cable secured to the frame. Locate the clevis and hair pins installed on the loose end of the seat cable.
- 3. Secure the loose end of the seat cable to the frame as shown using the clevis and hair pins (Figure 6).





No Parts Required

Procedure

- 1. Locate the battery and negative battery cable in the left hand console of the machine.
- 2. Remove the fasteners on the negative battery post and use them to secure the negative battery cable to the negative battery cable (Figure 7).



3. Lift the seat from the floor board and place it into the operation position.



Parts needed for this procedure:

1	Ignition Key
1	Operator's Manual
1	Engine Operator's Manual

Procedure

Checking the Tyre Pressure

Check the front and rear tyres for proper inflation. Refer to Checking the Tyre Pressure in the *Operator's Manual* for the recommended inflation pressure.

Checking the Side Discharge Chute

Remove the packing restraint holding the side discharge chute up and lower the chute into place.

Checking the Engine Oil Level

Before you start the engine and use the machine, check the oil level in the engine crankcase; refer to Checking the Oil Level in the *Operator's Manual*.

Checking the Cutter Deck Adjustment

The cutter deck was leveled at the factory. If the cutter deck is not cutting level, adjust the side-to-side level and the front-to-rear blade slope. See the Operator's Manual for the proper procedure.

Review the Remaining Parts

Keep all the following items with the machine:

- Ignition Key
- Operator's Manual
- Engine Operator's Manual

Product Overview



- 1. Footrest
- 2. Height of cut lever
- 3. Fuel gauge
- 4. Control panel
- 5. Motion control levers
 - 6. Operator seat
- Rear drive wheel
 Washout fitting
- Washout fitting
 Cutter deck
- 10. Anti-scalp roller
- 11. Front caster wheel



Controls

Become familiar with all of the controls in Figure 8, Figure 9, and Figure 10 before you start the engine and operate the machine.



Ignition Switch

The ignition switch has three positions, Off, Run and Start. The key will turn to Start and move back to Run upon release. Turning the key to the Off position will stop the engine; however, always remove the key when leaving the machine to prevent someone from accidentally starting the engine (Figure 10).

Throttle/Choke Control

The throttle and choke is combined into one control lever. The throttle controls the engine speed and it has a continuous variable setting from Slow to Fast. Engage the choke by moving the lever past the Fast setting until it stops (Figure 10).

Blade Control Switch (Power Take-Off)

The blade control switch, represented by a power take-off (PTO) symbol, engages and disengages power to the cutter deck blades (Figure 10).

Motion Control Levers and Park Position

The motion control levers are speed sensitive controls of independent wheel motors. Moving a lever forward or backward turns the wheel on the same side forward or in reverse; wheel speed is proportional to the amount the lever is moved. Move the control levers outward from the center to the park position and exit the machine (Figure 20). Always position the motion control levers into the park position when you stop the machine or leave it unattended.

Fuel Gauge

The fuel window located below the operator position can be used to verify the level of petrol in the tank (Figure 11).



1. Fuel gauge window

Height-of-Cut Lever

The height of cut lever allows the operator to lower and raise the deck from the seated position. When the lever is moved up, toward the operator the deck is raised from the ground and when moved down, away from the operator it is lowered toward the ground. Only adjust the height of cut while machine is not moving (Figure 21).

Operation

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

Think Safety First

Please carefully read all of the safety instructions and decals in the safety section. Knowing this information could help you, your family, pets or bystanders avoid injury.



Mowing on wet grass or steep slopes can cause sliding and loss of control.

Wheels dropping over edges can cause rollovers, which may result in serious injury, death or drowning.

A loss of traction is a loss of steering control.

To avoid loss of control and possibility of rollover:

- Do not mow near drop-offs or near water.
- Do not mow slopes greater than 15 degrees.
- Reduce speed and use extreme caution on slopes.
- When mowing slopes, gradually work from lower to higher areas on the incline.
- Avoid sudden turns or rapid speed changes.
- Turn up, into an incline when changing directions on slopes. Turning down the slope reduces traction.
- Attachments change the handling characteristics of the machine. Use extra caution when using attachments with the machine.



Figure 12

- 1. Safe Zone-use the machine here
- 2. Use walk behind mower and/or hand trimmer near drop-offs and water.
- 3. Water

Recommended Fuel

Use **unleaded** regular petrol suitable for automotive use (87 pump octane minimum).

In certain conditions, petrol is extremely flammable and highly explosive. A fire or explosion from petrol can burn you and others and can damage property.

- Fill the fuel tank outdoors, in an open area, when the engine is cold. Wipe up any petrol that spills.
- Never fill the fuel tank inside an enclosed space.
- Do not fill the fuel tank completely full. Add petrol to the fuel tank until the body of the tank is full. Always leave the neck empty in the fuel tank to allow the petrol to expand.
- Never smoke when handling petrol, and stay away from an open flame or where petrol fumes may be ignited by a spark.
- Store petrol in an approved container and keep it out of the reach of children. Never buy more than a 30-day supply of petrol.
- Do not operate without entire exhaust system in place and in proper working condition.

In certain conditions during fueling, static electricity can be released causing a spark which can ignite the petrol vapors. A fire or explosion from petrol can burn you and others and can damage property.

- Always place petrol containers on the ground away from your vehicle before filling.
- Do not fill petrol containers inside a vehicle or on a truck or trailer bed because interior carpets or plastic truck bed liners may insulate the container and slow the loss of any static charge.
- When practical, remove petrol-powered equipment from the truck or trailer and refuel the equipment with its wheels on the ground.
- If this is not possible, then refuel such equipment on a truck or trailer from a portable container, rather than from a petrol dispenser nozzle.
- If a petrol dispenser nozzle must be used, keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete.

Petrol is harmful or fatal if swallowed. Long-term exposure to vapors can cause serious injury and illness.

- Avoid prolonged breathing of vapors.
- Keep face away from nozzle and fuel tank or conditioner opening.
- Keep fuel away from eyes and skin.

Using Stabilizer/Conditioner

Use a fuel stabilizer/conditioner in the machine to provide the following benefits:

- Keeps petrol fresh during storage of 30 days or less. For longer storage it is recommended that the fuel tank be drained.
- Cleans the engine while it runs.
- Eliminates gum-like varnish buildup in the fuel system, which causes hard starting.

Fuel Gauge

Use the fuel window below the operator to verify the level of petrol before filling the tank (Figure 13).

1. Fuel gauge window

Filling the Fuel Tank

- 1. Shut the engine off and set the motion controls to the park position. Raise the seat so the fuel tank is visible while fueling.
- 2. Clean around the fuel tank cap and remove the cap.
- 3. Add unleaded regular petrol until the body of the tank is full leaving the neck of the tank (Figure 14). The space in the neck of the tank allows petrol to expand. Do not fill the fuel tank completely full.
- 4. Install the fuel tank cap securely. Wipe up any petrol that may have spilled.

- Petrol tank neck
- 3. Fill to here, approximately
- 4. Petrol tank opening

Checking the Engine Oil Level

Before you start the engine and use the machine, check the oil level in the engine crankcase; refer to Checking the Oil Level in the Engine Maintenance section.

Starting the Engine

- 1. Sit down on the seat and move the motion controls outward to the park position.
- 2. Disengage the blades by moving the blade control switch to Off (Figure 15).

3. Move the throttle lever to Choke before starting a cold engine (Figure 16).

Note: A warm or hot engine may not require choking.

position

4. Turn the ignition key to Start to energize the starter. When the engine starts, release the key (Figure 17).

Important: Do not engage the starter for more than 10 seconds at a time. If the engine fails to start, allow a 60 second cool-down period between attempts. Failure to follow these instructions can damage the starter motor.

5. After the engine starts, move the throttle lever to Fast (Figure 16). If the engine stalls or hesitates, move the throttle lever back to Choke for a few seconds. Repeat this as required.

Operating the Blades

The blade control switch, represented by a power take-off (PTO) symbol, engages and disengages power to the cutting blades. This switch controls power to any attachments that draw power from the engine, including the cutter deck and cutting blades.

Engaging the Blades

Important: Do not engage the blades when parked in tall grass. Belt or clutch damage can occur.

- 1. Release pressure on the motion control levers and place the machine in neutral.
- 2. Move the throttle to the Fast position.

Note: Always engage the blades with the throttle in the Fast position.

3. Pull up on the blade control switch to move it to the On position and engage the blades (Figure 18).

Disengaging the Blades

Push down on the blade control switch to move it to the Off position and disengage the blades (Figure 19).

Stopping the Engine

- 1. Disengage the blades by moving the blade control switch to Off (Figure 19).
- 2. Move the throttle lever to between Fast and half throttle (Figure 17).
- 3. Turn the ignition key to Off (Figure 16).

The Safety Interlock System

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If safety interlock switches are disconnected or damaged the machine could operate unexpectedly causing personal injury.

- Do not tamper with the interlock switches.
- Check the operation of the interlock switches daily and replace any damaged switches before operating the machine.

Understanding the Safety Interlock System

The safety interlock system is designed to prevent the engine from starting unless:

- The blades are disengaged.
- The motion control levers are in the park position.

The safety interlock system also is designed to stop the engine when the control levers are out of the park position and you rise from the seat when the blades are engaged.

Testing the Safety Interlock System

Test the safety interlock system before you use the machine each time. If the safety system does not operate as described below, have an Authorized Service Dealer repair the safety system immediately.

- 1. While sitting on the seat, with the control levers in park position, and move the blade control switch to On. Try starting the engine; the engine should not crank.
- 2. While sitting on the seat, move the blade control switch to Off. Move either motion control lever to the center, unlocked position. Try starting the engine; the engine should not crank. Repeat with the other motion control lever.
- 3. While sitting on the seat, move the blade control switch to Off, and lock the motion control levers in the park position. Start the engine. While the engine is running, engage the blade control switch, and rise slightly from the seat; the engine should stop.
- 4. While sitting on the seat, move the blade control switch to Off, and lock the motion control levers in the park position. Start the engine. While the engine is running, move the motion control levers to the center, unlocked position, engage the blade control switch, and rise slightly from the seat; the engine should stop.

Driving Forward or Backward

The throttle control regulates the engine speed as measured in rpm (revolutions per minute). Place the throttle control in the Fast position for best performance. Always operate in the full throttle position.

A

The machine can spin very rapidly. The operator may lose control of the machine and cause personal injury or damage to the machine.

- Use caution when making turns.
- Slow the machine down before making sharp turns.

Forward

- 1. Move the levers to the center, unlocked position.
- 2. To go forward, slowly push the motion control levers forward (Figure 20).

To go straight, apply equal pressure to both motion control levers (Figure 20).

To turn, release pressure on the motion control lever toward the direction you want to turn (Figure 20).

The farther you move the motion control levers in either direction, the faster the machine will move in that direction.

To stop, pull the motion control levers to neutral.

Backward

- 1. Move the levers to the center, unlocked position.
- 2. To go backward, slowly pull the motion control levers rearward (Figure 20).

To go straight, apply equal pressure to both motion control levers (Figure 20).

To turn, release the pressure on the motion control lever toward the direction you want to turn (Figure 20).

To stop, push the motion control levers to neutral.

Stopping the Machine

To stop the machine, move the motion control levers to neutral and outward to the park position, disengage the blade control switch, ensure the throttle is in the fast position, and turn the ignition key to off. Remember to remove the key from the ignition switch.

motion control levers outward to the park position when leaving the machine unattended, even if just for a few minutes.

Adjusting the Height of Cut

1. Raise the height-of-cut lever to the transport position, cutting height position **G** (also the 4-1/2 inch [115 mm]) (Figure 21).

2. To adjust the height of cut, pull inward and up on the lever and move it to the desired position.

Positioning the Seat

The seat can move forward and backward. Position the seat where you have the best control of the machine and are most comfortable.

1. Raise the seat and loosen the adjustment knob just enough that seat can move (Figure 22).

- 1. Adjustment knob
- 2. Move the seat to the desired position and tighten the knob.

Adjusting the Motion Control Levers

Adjusting the Height

The motion control levers can be adjusted higher or lower for maximum operator comfort.

- 1. Remove the 2 bolts holding the control lever to the control arm shaft (Figure 23).
- 2. Move the control lever to the next set of holes. Secure the lever with the 2 bolts (Figure 23).

3. Repeat the adjustment for the opposite control lever.

Adjusting the Tilt

The motion control levers can be tilted fore or aft for maximum operator comfort.

- 1. Loosen the upper bolt holding the control lever to the control arm shaft.
- 2. Loosen the lower bolt just enough to pivot the control lever fore or aft (Figure 23). Tighten both bolts to secure the control in the new position.
- 3. Repeat the adjustment for the opposite control lever.

Pushing the Machine by Hand

Important: Always push the machine by hand. Never tow the machine because damage may occur.

To Push the Machine

- 1. Park the machine on a level surface and disengage the blade control switch.
- 2. Move the motion control levers outward to park position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- 3. Locate the bypass levers at the rear of the machine, on the left and right side of the frame.
- 4. Move the bypass levers rearward and then down to lock them in place as shown in Figure 24 to disengage the wheel motors. Repeat this on each side of the machine.
- 5. Move the motion control levers inward to the neutral position.

The machine is now able to be pushed by hand.

2. Lever position for pushing the machine

To Operate the Machine

Move the bypass levers upward and push them forward, to the **middle** of the horizontal slot (Figure 24) to engage the wheel motors.

Side Discharge

The cutter deck has a hinged grass deflector that disperses clippings to the side and down toward the turf.

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Without the grass deflector, discharge cover, or complete grass catcher assembly mounted in place, you and others are exposed to blade contact and thrown debris. Contact with rotating cutter deck blade(s) and thrown debris will cause injury or death.

- Never remove the grass deflector from the cutter deck because the grass deflector routes material down toward the turf. If the grass deflector is ever damaged, replace it immediately.
- Never put your hands or feet under the cutter deck.
- Never try to clear discharge area or cutter deck blades unless you move the blade control switch to Off and rotate the ignition key to Off. Also remove the key and pull the wire off the spark plug(s).

Removing and Installing the Discharge Cover

The cutter deck and mower blades shipped with this machine were designed for optimum mulching performance. Side discharge performance can be improved by replacing the mulching blades with standard cutting blades obtained from your local authorized Hayter dealer. To maintain optimum mulching performance, always install the mulching blades that are shipped with this unit when changing back to mulching operation.

Removing the Discharge Cover for Side Discharge

Note: If the bagger attachment is added the machine, standard blades must be installed for proper bagging function.

- 1. Park the machine on a level surface and disengage the blade control switch.
- 2. Move the motion control levers outward to park position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- 3. Remove the two bolts (1/4 x 2-1/2 inches) and two cap nuts (1/4 inch) that secure the discharge cover to the cutter deck (Figure 25).

- 1. Bolt (1/4 x 2-1/2 inches) 3. Discharge cover
- 2. Cap nut (1/4 inch)
- 4. Remove the discharge cover and lower the grass deflector over the discharge opening as shown in Figure 25.

Important: Ensure the cutter deck has a hinged grass deflector that disperses clippings to the side and down toward the turf, while in side discharge mode.

Installing the Discharge Cover for Mulching

- 1. Park the machine on a level surface and disengage the blade control switch.
- 2. Move the motion control levers outward to park position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- 3. Lift the grass deflector and slide the tabs on top of the discharge cover under the grass deflector retaining rod. Rotate the discharge cover down over the opening, and onto the lower lip of the cutter deck (Figure 25).
- 4. Secure the discharge cover to the lower lip of the cutter deck with two bolts (1/4 x 2-1/2 inches) and two cap nuts (1/4 inch) as shown in Figure 25.

Note: Do not overtighten the nuts; this could distort the cover and cause blade contact.

Operating Tips

Fast Throttle Setting

For best mowing and maximum air circulation, operate the engine at the Fast position. Air is required to thoroughly cut grass clippings, so do not set the height-of-cut so low as to totally surround the cutter deck by uncut grass. Always try to have one side of the cutter deck free from uncut grass, which allows air to be drawn into the cutter deck.

Cutting a Lawn for the First Time

Cut grass slightly longer than normal to ensure that the cutting height of the cutter deck does not scalp any uneven ground. However, the cutting height used in the past is generally the best one to use. When cutting grass longer than six inches tall, you may want to cut the lawn twice to ensure an acceptable quality of cut.

Cut 1/3 of the Grass Blade

It is best to cut only about 1/3 of the grass blade. Cutting more than that is not recommended unless grass is sparse, or it is late fall when grass grows more slowly.

Mowing Direction

Alternate mowing direction to keep the grass standing straight. This also helps disperse clippings which enhances decomposition and fertilization.

Mow at Correct Intervals

Normally, mow every four days. But remember, grass grows at different rates at different times. So to maintain the same cutting height, which is a good practice, mow more often in early spring. As the grass growth rate slows in mid summer, mow less frequently. If you cannot mow for an extended period, first mow at a high cutting height; then mow again two days later at a lower height setting.

Cutting Speed

To improve cut quality, use a slower ground speed.

Avoid Cutting Too Low

If the cutting width of the cutter deck is wider than the cutter deck you previously used, raise the cutting height to ensure that uneven turf is not cut too short.

Long Grass

If the grass is ever allowed to grow slightly longer than normal, or if it contains a high degree of moisture, raise the cutting height higher than usual and cut the grass at this setting. Then cut the grass again using the lower, normal setting.

When Stopping

If the machine's forward motion must be stopped while mowing, a clump of grass clippings may drop onto your lawn. To avoid this, move onto a previously cut area with the blades engaged.

Keep the Underside of the Cutter Deck Clean

Clean clippings and dirt from the underside of the cutter deck after each use. If grass and dirt build up inside the cutter deck, cutting quality will eventually become unsatisfactory.

Blade Maintenance

Maintain a sharp blade throughout the cutting season because a sharp blade cuts cleanly without tearing or shredding the grass blades. Tearing and shredding turns grass brown at the edges, which slows growth and increases the chance of disease. Check the cutter blades daily for sharpness, and for any wear or damage. File down any nicks and sharpen the blades as necessary. If a blade is damaged or worn, replace it immediately with a genuine Hayter replacement blade.

Maintenance

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

Recommended Maintenance Schedule(s)

Maintenance Service Interval	Maintenance Procedure
Before each use or daily	 Check the safety interlock system. Check the air cleaner for dirty, loose or damaged parts. Check the engine oil level. Check air intake and cooling areas, clean as necessary. Check the cutting blades. Inspect the grass deflector for damage Clean the cutter deck housing.
Every 25 hours	 Grease all lubrication points. Service the paper element. (more often under extremely dusty, dirty conditions) Check tyre pressure. Check the belts for wear/cracks.
Every 100 hours	 Replace the paper element. (more often under extremely dusty, dirty conditions) Change the engine oil and filter. Clean the blower housing (more often under extremely dusty, dirty conditions). Replace the fuel filter.
Every 200 hours	Check spark plug condition and gap.
Every 500 hours	Replace the spark plug.
Before storage	 Charge the battery and disconnect battery cables. Perform all maintenance procedures listed above before storage. Paint any chipped surfaces.

Important: Refer to your engine operator's manual for additional maintenance procedures.

If you leave the key in the ignition switch, someone could accidently start the engine and seriously injure you or other bystanders.

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Remove the key from the ignition before you do any maintenance. Set the wire aside so that it does not accidentally contact the spark plug.

Premaintenance Procedures

Raising the Seat

Make sure the motion control levers are locked in the park position. Lift the seat forward.

The following components can be accessed by raising the seat:

- Serial plate
- Service decal
- Seat adjustment knob
- Fuel filter
- Fuses
- Battery cables

Accessing the Engine

Components will be hot if the machine has been running. If you touch hot components you may be burned.

Allow the machine to cool before performing maintenance or touching components under the hood.

1. Pull the both of the engine cover retainer straps down and away from the forward facing bends in the cover rod (Figure 26).

2. Lift the engine cover away from the machine (Figure 27) then move the cover rearward to

disengage the tab in the rear of the cover from the engine guard.

Accessing the Battery

- 1. Raise the seat.
- 2. Remove the TORX[®] head fastener retaining the engine cover bracket to the left cover (Figure 28). Remove the bracket and allow the cover rod to be lowered.

3. Remove the TORX[®] head fasteners (T25) securing the left cover to the frame as shown in Figure 29.

- 2. Torx head fasteners (T25)
- 4. Lift the plastic cover away from the machine. Retain all fasteners.

Replace the cover and secure it to the frame using the fasteners removed previously.

Lubrication

Greasing the Bearings

Service Interval: Every 25 hours—Grease all lubrication points.

Grease Type: No. 2 General Purpose Lithium Base Grease

- 1. Park the machine on a level surface and disengage the blade control switch.
- 2. Move the motion control levers outward to the park position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- 3. Clean the grease fittings (Figure 30 and Figure 31) with a rag. Make sure to scrape any paint off of the front of the fitting(s).

1. Front caster tyre

Check tyre pressure every 4. Engine 25 operating hours.

- 4. Connect a grease gun to each fitting (Figure 30 and Figure 31). Pump grease into the fittings until grease begins to ooze out of the bearings.
- 5. Wipe up any excess grease.

Engine Maintenance

Servicing the Air Cleaner

Service Interval: Before each use or daily—Check the air cleaner for dirty, loose or damaged parts.

This engine is equipped with a replaceable, high density paper air cleaner element. Check the air cleaner daily or before starting the engine. Check for a buildup of dirt and debris around the air cleaner system. Keep this area clean. Also check for loose or damaged components. Replace all bent or damaged air cleaner components.

Note: Operating the engine with loose or damaged air cleaner components could allow unfiltered air into the engine causing premature wear and failure.

Note: Service the air cleaner more often under extremely dusty, dirty conditions.

Servicing Paper Element

Service Interval: Every 25 hours—Service the paper element. (more often under extremely dusty, dirty conditions)

> Every 100 hours—Replace the paper element. (more often under extremely dusty, dirty conditions)

- 1. Remove the air cleaner cover (Figure 32).
- 2. Remove the air cleaner element with the integral rubber seal (Figure 32).
- 3. Gently tap the pleated side of the paper element to dislodge dirt. Do not wash the paper element or use pressurized air, as this will damage the element.

Replace a dirty, bent, or damaged element. Handle new elements carefully; do not use if the rubber seal is damaged.

- 4. Clean all air cleaner components of any accumulated dirt or foreign material. Prevent any dirt from entering the carburettor.
- 5. Install the air cleaner element with the pleated side "out" and seat the rubber seal onto the edges of the air cleaner base (Figure 32).
- 6. Reinstall the air cleaner cover and secure with the two knobs (Figure 32).

Servicing the Engine Oil

Oil Type: Detergent oil (API service SG, SH, SJ, or higher)

Crankcase Capacity: 1.6 qt (1.5 l) when the filter is changed

Viscosity: See the table below.

Checking the Oil Level

Service Interval: Before each use or daily—Check the engine oil level.

- 1. Park the machine on a level surface, disengage the blade control switch, stop the engine, and remove the key.
- 2. Make sure the engine is stopped, level, and is cool so the oil has had time to drain into the sump.
- 3. To keep dirt, grass clippings, etc., out of the engine, clean the area around the oil fill cap/dipstick before removing it.
- 4. Pull and remove the oil fill cap/dipstick; wipe oil off. Reinsert the dipstick and push firmly into place (Figure 34).

- 1. Oil dipstick 3. Oil level
- 2. Filler tube
- 5. Remove the dipstick and check the oil level. (Figure 34).

The oil level should be up to, but not over, the **F** mark on the dipstick.

6. If the level is low, add oil of the proper type, up to the **F** mark on the dipstick. Always check the level with the dipstick before adding more oil.

Note: To prevent extensive engine wear or damage, always maintain the proper oil level in the crankcase. Never operate the engine with the oil level below the "L" mark or over the "F" mark on the dipstick.

Changing the Oil and the Filter

Service Interval: Every 100 hours—Change the engine oil and filter.

Refill with service class SG, SH, SJ or higher oil as specified in the "Viscosity Grades" table.

Change the oil and filter while the engine is still warm. The oil will flow more freely and carry away more impurities. Make sure the engine is level when filling, checking, or changing the oil.

Change the oil and oil filter as follows:

1. Start the engine and let it run until warm. This warms the oil so it drains better.

- 2. Park the machine so that the drain side is slightly lower than the opposite side to assure the oil drains completely.
- 3. Disengage the blade control switch and move the motion controls outward to the park position.
- 4. Stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- 5. Clean the area around the drain valve and on the machine frame. Locate the oil drain hose and slide it over the drain valve (Figure 35).

6. Place the opposite end of the oil drain hose through the drain hole in the frame (Figure 35).

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2.

7. Place a pan underneath machine directly below the drain hole in the frame as shown in Figure 36.

- 8. Turn the drain valve 1/4 counter clockwise to open and allow the oil to drain (Figure 36). Remove the oil fill cap/dipstick (Figure 34).
- 9. Be sure to allow ample time for complete drainage.
- 10. Remove the old filter and wipe off the mounting pad (Figure 36).
- 11. When oil has drained completely, close the oil drain valve. Remove the oil drain hose and wipe up any excess oil on the frame (Figure 36).

Note: Dispose of the used oil at a recycling center.

- 12. Place the new replacement filter in a shallow pan with the open end up. Pour new oil of the proper type, in through the threaded center hole. Stop pouring when the oil reaches the bottom of the threads. Allow a minute or two for the oil to be absorbed by the filter material.
- 13. Apply a thin film of clean oil to the rubber gasket on the new filter.
- 14. Install the replacement oil filter to the mounting pad. Turn the oil filter clockwise until the rubber gasket contacts the pad, then tighten the filter an additional 2/3 to 1 turn (Figure 37).

- Oil filter
 Gasket
- 15. Slowly pour approximately 80% of the specified oil into the filler tube (Figure 34).
- 16. Install the oil fill cap/dipstick and push firmly into place (Figure 34).
- 17. Check the oil level (Figure 34); refer to Checking the Oil Level.
- 18. Slowly add additional oil to bring it to the full mark.
- 19. Install the oil fill cap/dipstick and push firmly into place (Figure 34).

Servicing the Spark Plug

Service Interval: Every 200 hours—Check spark plug condition and gap.

Every 500 hours—Replace the spark plug.

The spark plug is RFI compliant. Equivalent alternate brand plugs can also be used. Spark plug replacement is recommended at 500 hours.

Type: Champion XC12YC (or equivalent)

Air Gap: 0.030 inch (0.76 mm)

Removing the Spark Plug

- 1. Disengage the blade control switch, move the motion controls outward to the park position, stop the engine, and remove the key.
- 2. Pull the wire off of the spark plug (Figure 38). Clean around the spark plug to prevent dirt from falling into the engine and potentially causing damage.

Note: Due to the deep recess around the spark plug, blowing out the cavity with compressed air is usually the most effective method for cleaning. The spark plug is most accessible when the blower housing is removed for cleaning.

3. Remove the spark plug and metal washer.

1. Spark plug and wire location

Checking the Spark Plug

1. Look at the center of the spark plug (Figure 39). If you see light brown or gray on the insulator, the engine is operating properly. A black coating on the insulator usually means the air cleaner is dirty.

Important: Never clean the spark plug. Always replace the spark plug when it has a black coating, worn electrodes, an oily film, or cracks.

2. Check the gap between the center and side electrodes (Figure 39). Bend the side electrode (Figure 39) if the gap is not correct.

- 1. Center electrode insulator 3. Air gap (not to scale)
- 2. Side electrode

Installing the Spark Plug

- 1. Install the spark plug. Make sure that the air gap is set correctly.
- 2. Tighten the spark plug to 30 ft-lb (41 N-m).
- 3. Push the wire onto the spark plug (Figure 38).

Cleaning the Blower Housing

To ensure proper cooling, make sure the grass screen, cooling fins, and other external surfaces of the engine are kept clean at all times.

Annually or every 100 hours of operation (more often under extremely dusty, dirty conditions), remove the blower housing and any other cooling shrouds. Clean the cooling fins and external surfaces as necessary. Make sure the cooling shrouds are reinstalled. Torque the blower housing screws to 5.5 ft-lb (7.5 N-m).

Important: Operating the engine with a blocked grass screen, dirty or plugged cooling fins, and/or cooling shrouds removed, will cause engine damage due to overheating.

Fuel System Maintenance

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In certain conditions, petrol is extremely flammable and highly explosive. A fire or explosion from petrol can burn you and others and can damage property.

- Perform any fuel related maintenance when the engine is cold. Do this outdoors in an open area. Wipe up any spillage.
- Never smoke when draining petrol, and stay away from an open flame or where a spark may ignite the petrol fumes.

Replacing the Fuel Filter

Service Interval: Every 100 hours—Replace the fuel filter.

Never install a dirty filter if it is removed from the fuel line.

- 1. Park the machine on a level surface and disengage the blade control switch.
- 2. Move the motion control levers outward to the park position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- 3. Raise the seat and locate the fuel line coming from the fuel tank below. The fuel filter is in the fuel line between the tank and engine.

- 4. Squeeze the ends of the hose clamps together and slide them away from the filter (Figure 40).
- 5. Remove the filter from the fuel lines.
- 6. Install a new filter with the flow direction arrow coming from the fuel tank and pointing to the engine. Move the hose clamps close to the filter (Figure 40) to secure it in place.

Electrical System Maintenance

Charging the Battery

Removing the Battery

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Battery terminals or metal tools could short against metal machine components causing sparks. Sparks can cause the battery gasses to explode, resulting in personal injury.

- When removing or installing the battery, do not allow the battery terminals to touch any metal parts of the machine.
- Do not allow metal tools to short between the battery terminals and metal parts of the machine.
- 1. Park the machine on a level surface and disengage the blade control switch.
- 2. Move the motion control levers outward to the park position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- 3. Remove the left side console to access the battery. Refer the Accessing the Battery procedure in the Premaintenance Procedures for instructions.
- 4. Disconnect the negative (black) ground cable from the battery post (Figure 41). Retain all fasteners.

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Incorrect battery cable routing could damage the machine and cables causing sparks. Sparks can cause the battery gasses to explode, resulting in personal injury.

- Always disconnect the negative (black) battery cable before disconnecting the positive (red) cable.
- Always connect the positive (red) battery cable before connecting the negative (black) cable.

- 5. Slide the rubber cover up the positive (red) cable. Disconnect the positive (red) cable from the battery post (Figure 41). Retain all fasteners.
- 6. Remove the battery hold-down (Figure 41) and lift the battery from the battery tray.

Figure 41

7.

Battery 1.

- 5. Negative battery post
- Positive battery post 2.
- Wing nut, washer, and bolt 6. Battery hold-down
- Bolt, washer, and nut 3.
- 4 Terminal boot

Charging the Battery

Service Interval: Before storage—Charge the battery and disconnect battery cables.

- 1. Remove the battery from the chassis; refer to Removing the Battery.
- 2. Charge the battery for a minimum of 1 hour at 6 to 10 amps. Do not overcharge the battery.
- 3. When the battery is fully charged, unplug the charger from the electrical outlet, then disconnect the charger leads from the battery posts (Figure 42).

- 1. 2. Negative battery post
 - 4. Black (-) charger lead

Note: Do not run the machine with the battery disconnected, electrical damage may occur.

Installing the Battery

- 1. Position the battery in the tray with the terminal posts toward the operating position (Figure 41).
- 2. Install the positive (red) battery cable to the positive (+) battery terminal using the fasteners removed previously.
- 3. Install the negative battery cable to the negative (-) battery terminal using the fasteners removed previously.
- 4. Slide the red terminal boot onto the positive (red) battery post.
- 5. Secure the battery with the hold-down (Figure 41).
- 6. Install the left side console. Refer to the Accessing the Battery procedure in Premaintenance Procedures for instructions.

Servicing the Fuses

The electrical system is protected by fuses. It requires no maintenance; however, if a fuse blows, check the component/circuit for a malfunction or short.

Fuse:

- Main F1-30 amp, blade-type
- Charge Circuit F2-25 amp, blade-type
- 1. Raise the seat to gain access to the fuse holder (Figure 43).
- 2. To replace a fuse, pull out on the fuse to remove it (Figure 43).

Drive System Maintenance

Checking the Tyre Pressure

Service Interval: Every 25 hours—Check tyre pressure.

Maintain the air pressure in the front and rear tyres as specified. Uneven tyre pressure can cause uneven cut. Check the pressure at the valve stem (Figure 44). Check the tyres when they are cold to get the most accurate pressure reading.

Rear Tyres: 12 psi (83 kPa)

Front Tyres (caster wheels): 35 psi (241 kPa)

1. Valve stem

Cutter Deck Maintenance

Servicing the Cutting Blades

Maintain sharp blades throughout the cutting season because sharp blades cut cleanly without tearing or shredding the grass blades. Tearing and shredding turns grass brown at the edges, which slows growth and increases the chance of disease.

Check the cutter blades daily for sharpness, and for any wear or damage. File down any nicks and sharpen the blades as necessary. If a blade is damaged or worn, replace it immediately with a genuine Hayter replacement blade. For convenient sharpening and replacement, you may want to keep extra blades on hand.

A worn or damaged blade can break, and a piece of the blade could be thrown into the operator's or bystander's area, resulting in serious personal injury or death.

- Inspect the blade periodically for wear or damage.
- Replace a worn or damaged blade.

Before Inspecting or Servicing the Blades

Park the machine on a level surface, disengage the blade control switch, and move the motion control levers outward to the park position. Stop the engine and remove the key.

Inspecting the Blades

Service Interval: Before each use or daily—Check the cutting blades.

- 1. Inspect the cutting edges (Figure 45). If the edges are not sharp or have nicks, remove and sharpen the blades; refer to Sharpening the Blades.
- 2. Inspect the blades, especially the curved area (Figure 45). If you notice any damage, wear, or a slot forming in this area (item 3 in Figure 45), immediately install a new blade.

Checking for Bent Blades

- 1. Raise the height-of-cut lever to the transport position, cutting height position **G** (also the 4-1/2 inch [115 mm]).
- Rotate the blades until the ends face forward and backward (Figure 46). Measure from a level surface to the cutting edge, position A, of the blades (Figure 46). Note this dimension.

- 3. Rotate the opposite ends of the blades forward.
- 4. Measure from a level surface to the cutting edge of the blades at the same position as in step 2. The difference between the dimensions obtained in steps 2 and 3 must not exceed 1/8 inch (3 mm). If this dimension exceeds 1/8 inch (3 mm), the blade is bent and must be replaced. Refer to Removing the Blades and Installing the Blades.

Note: If a bent blade is replaced with a new one and the dimension obtained continue to exceed 1/8 inch (3mm), the blade spindle could be bent. Contact an Authorized Hayter Dealer for service.

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A blade that is bent or damaged could break apart and could seriously injure or kill you or bystanders.

- Always replace bent or damaged blade with a new blade.
- Never file or create sharp notches in the edges or surfaces of blade.

Removing the Blades

The blades must be replaced if a solid object is hit, if the blade is out of balance, or the blade is bent. To ensure optimum performance and continued safety conformance of the machine, use genuine Hayter replacement blades. Replacement blades made by other manufacturers may result in non-conformance with safety standards.

Hold the blade end using a rag or thickly-padded glove. Remove the blade bolt, curved washer, blade stiffener, and blade from the spindle shaft (Figure 47).

Blade
 Curved washer

1.

- Sharpening the Blades
- Use a file to sharpen the cutting edge at both ends of the blade (Figure 48). Maintain the original angle. The blade retains its balance if the same amount of material is removed from both cutting edges.

1. Sharpen at original angle

2. Check the balance of the blade by putting it on a blade balancer (Figure 49). If the blade stays in a horizontal position, the blade is balanced and can be used. If the blade is not balanced, file some metal off the end of the sail area only (Figure 48). Repeat this procedure until the blade is balanced.

Installing the Blades

1. Install the blade onto the spindle shaft (Figure 47).

Important: The curved part of the blade must be pointing upward toward the inside of the cutter deck to ensure proper cutting.

- 2. Install the blade stiffener, the curved washer (cupped side toward the blade) and the blade bolt (Figure 47).
- 3. Torque the blade bolt to 35-65 ft-lb (47-88 N-m).

Leveling the Cutter Deck from Side-to-Side

The cutter deck blades must be level from side to side. Check the side-to-side level any time you install the cutter deck or when you see an uneven cut on your lawn.

- 1. Park the machine on a level surface and disengage the blade control switch.
- 2. Move the motion control levers outward to the park position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- 3. Check the air pressure of all four tyres. If needed, adjust to the recommended inflation; refer to Checking the Tyre Pressure in the Drive System Maintenance section.
- 4. Set the height-of-cut lever to position **D** [3 inch (76 mm)].

5. Carefully rotate the blade(s) side to side (Figure 50). If both measurements are not within 3/16 inch (5 mm), an adjustment is required; continue with this procedure.

Blades side to side 1. 2. Outside cutting edges

- 6. Measure between the outside cutting edges and the flat surface (Figure 50). If both measurements are not within 3/16 inch (5 mm), an adjustment is required; continue with this procedure.
- 7. Move to the left side of the machine. Loosen, but do not remove, the rear locking nut on the hanger bracket (Figure 51).
- 8. Loosen the side locking nut on the hanger bracket just enough to allow the eccentric plate to be adjusted (Figure 51). Use a 3/8 inch drive extension on a socket wrench to manipulate the eccentric plate. Use the wrench to reposition the height of the cutter deck and adjust to the desired height.
- 9. Stop the deck at the adjusted position and tighten the side locking nut on the hanger bracket to hold the new position (Figure 51). Tighten the rear locking nut on the hanger bracket.
- 10. Continue leveling the deck by checking the front-to-rear blade slope; refer to Adjusting the Front-to-Rear Blade Slope.

- 2. Rear locking nut
- Side locking nut
- Eccentric adjustment plate
- Socket wrench hole 5.
- 6 Socket wrench with 3/8 inch extension

Adjusting the Front-to-Rear **Blade Slope**

Check the front-to-rear blade level any time you install the cutter deck. If the front of the cutter deck is more than 5/16 inch (7.9 mm) lower than the rear of the cutter deck, adjust the blade level using the following instructions:

- 1. Park the machine on a level surface and disengage the blade control switch.
- 2. Move the motion control levers outward to the park position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- 3. Check the air pressure of all four tyres. If needed, adjust to the recommended inflation; refer to Checking the Tyre Pressure in the Drive System Maintenance section.
- 4. Check and adjust the side-to-side blade level if you have not checked the setting; refer to Leveling the Cutter Deck from Side-to-Side.
- 5. Set the height-of-cut at position \mathbf{D} [3 inch (76 mm)] and carefully rotate the blades so they are facing front to rear (Figure 52).

 Measure from the tip of the front blade to the flat surface and the tip of the rear blade to the flat surface (Figure 52). If the front blade tip is not 1/16-5/16 inch (1.6-7.9 mm) lower than the rear blade tip, adjust the front locknut.

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7. To adjust the front-to-rear blade slope, rotate the adjustment nut in the front of the cutter deck (Figure 53).

- 1. Adjusting rod
 3. Lock nut
- 2. Adjusting block
- 8. To raise the front of the cutter deck, tighten the adjustment nut. To lower the front of the cutter deck, loosen the adjustment nut.

- 9. After adjustment, check the front-to-rear slope again. Continue adjusting the nut until the front blade tip is 1/16-5/16 inch (1.6-7.9 mm) lower than the rear blade tip (Figure 52).
- 10. When the front-to-rear blade slope is correct check the side-to-side level of the cutter deck again; refer to Leveling the Cutter Deck from Side-to-Side.

Removing the Cutter Deck

- 1. Park the machine on a level surface and disengage the blade control switch.
- 2. Move the motion control levers outward to the park position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- 3. Lower the height-of-cut lever to the lowest position.
- 4. Remove the hairpin cotter and clevis pin from the front support rod (Figure 54). Carefully lower the front of the cutter deck to the ground.

5. Lift the cutter deck and hanger brackets clear of the rear lift rod and lower the cutter deck carefully to the ground (Figure 55).

- Cutter deck
 Hanger bracket
- 6. Slide the cutter deck rearward to remove the cutter deck belt from the engine pulley.
- 7. Slide the cutter deck out from underneath the machine.

Note: Retain all parts for future installation.

Cutter Deck Belt Maintenance

Inspecting the Belts

Service Interval: Every 25 hours—Check the belts for wear/cracks.

Check the belts for cracks, frayed edges, burn marks, or any other damage. Replace damaged belts.

Replacing the Cutter Deck Belt

Squealing when the belt is rotating, blades slipping when cutting grass, frayed belt edges, burn marks, and cracks are signs of a worn cutter deck belt. Replace the cutter deck belt if any of these conditions are evident.

- 1. Park the machine on a level surface and disengage the blade control switch.
- 2. Move the motion control levers outward to the park position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- 3. Set the height-of-cut at A [1-1/2 inch (38 mm)].
- 4. Remove the belt covers over the outside spindles.
- 5. Pull the idler pulley in the direction shown in Figure 56 and roll the belt off of the pulleys.

The spring is under tension when installed and can cause personal injury.

Be careful when removing the belt.

- 1. Idler pulley
- Spring
 Engine pulley
- Cutter deck belt
 Outside pulley
- 6. Route the new belt around the engine pulley and cutter deck pulleys (Figure 56).
- Pull the idler pulley in the direction shown in Figure 56 and route the belt onto the idler pulley (Figure 56).
- 8. Install the belt covers over the outside spindles.

Installing the Cutter Deck

- 1. Park the machine on a level surface and disengage the blade control switch.
- 2. Move the motion control levers outward to the park position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- 3. Slide the cutter deck under the machine.
- 4. Lower the height-of-cut lever to the lowest position.
- 5. Lift the rear of the cutter deck and guide the hanger brackets over the rear lift rod (Figure 55).
- 6. Attach the front support rod to the cutter deck with the clevis pin and hairpin cotter (Figure 54).
- 7. Install the cutter deck belt onto the engine pulley; refer to Replacing the Cutter Deck Belt.

Replacing the Grass Deflector

Service Interval: Before each use or daily—Inspect the grass deflector for damage

Never operate the machine without grass deflector, discharge cover or grass collection system in place.

Inspect the grass deflector for damage before each use. Replace any damaged parts before use.

1. Locate items shown in Figure 57.

1.

2.

3.

4.

- 2. Remove the nut (3/8 inch) from the rod under the cutter deck (Figure 57).
- 3. Slide the rod out of the short stand-off, spring, and grass deflector (Figure 57). Remove the damaged or worn grass deflector.
- 4. Replace the grass deflector (Figure 57).
- 5. Slide rod, straight end, through the rear grass deflector bracket.

- 6. Place the spring on the rod, with end wires down, and between the grass deflector brackets. Slide rod through second grass deflector bracket (Figure 57).
- 7. Insert rod at front of grass deflector into short stand-off on deck. Secure rear end of rod into the cutter deck with a nut (3/8 inch) (Figure 57).

Important: The grass deflector must be spring loaded in the down position. Lift the deflector up to test that it snaps to the full down position.

Cleaning

Washing the Underside of the Cutter Deck

Service Interval: Before each use or daily—Clean the cutter deck housing.

Wash the underside of the cutter deck after each use to prevent grass buildup for improved mulch action and clipping dispersal.

- 1. Park the machine on a level surface and disengage the blade control switch.
- 2. Move the motion control levers outward to the park position, stop the engine, remove the key, and wait for all moving parts to stop before leaving the operating position.
- 3. Attach the hose coupling to the end of the cutter deck washout fitting, and turn the water on high (Figure 58).

Note: Spread petroleum jelly on the washout fitting O-ring to make the coupling slide on easier and protect the O-ring.

4. Lower the cutter deck to the lowest height-of-cut.

1. 2.

- 5. Sit on the seat and start the engine. Engage the blade control switch and let the cutter deck run for one to three minutes.
- 6. Disengage the blade control switch, stop the engine, and remove the ignition key. Wait for all moving parts to stop.
- 7. Turn the water off and remove the coupling from the washout fitting.

Note: If the cutter deck is not clean after one washing, soak it and let it stand for 30 minutes. Then repeat the process.

8. Run the cutter deck again for one to three minutes to remove excess water.

Â

A broken or missing washout fitting could expose you and others to thrown objects or blade contact. Contact with blade or thrown debris can cause injury or death.

- Replace broken or missing washout fitting immediately, before using cutter deck again.
- Never put your hands or feet under the cutter deck or through openings in the cutter deck.

Storage

Cleaning and Storage

- 1. Disengage the blade control switch, move the motion controls outward to the park position, stop the engine, and remove the key.
- 2. Remove grass clippings, dirt, and grime from the external parts of the entire machine, especially the engine. Clean dirt and chaff from the outside of the engine cylinder head fins and blower housing.

Important: You can wash the machine with mild detergent and water. Do not pressure wash the machine. Avoid excessive use of water, especially near the control panel, engine, hydraulic pumps, and motors.

- 3. Service the air cleaner; refer to Servicing the Air Cleaner in the Engine Maintenance section.
- 4. Grease and oil the machine; refer to the Lubrication section.
- 5. Change the crankcase oil and filter; refer to Servicing the Engine Oil in the Engine Maintenance section.
- 6. Check the tyre pressure; refer to Checking the Tyre Pressure in the Drive System Maintenance section.
- 7. Charge the battery; refer to Servicing the Battery in the Electrical System Maintenance section.
- 8. Check the condition of the blades; refer to Servicing the Cutting Blades in the Cutter Deck Maintenance section.
- 9. Prepare the machine for storage when non-use occurs over 30 days. Prepare the machine for storage as follows.
- 10. Add a petroleum based stabilizer/conditioner to the fuel in the tank. Follow the mixing instructions from the stabilizer manufacturer. Do not use an alcohol based stabilizer (ethanol or methanol).

Note: A fuel stabilizer/conditioner is most effective when mixed with fresh petrol and used at all times.

Run the engine to distribute the conditioned fuel through the fuel system (5 minutes).

Stop the engine, allow it to cool, and drain the fuel tank; refer to Draining the Fuel Tank in the Fuel System Maintenance section.

Restart the engine and run it until it stops.

Choke the engine. Start and run the engine until it will not start.

Dispose of fuel properly. Recycle pursuant to local codes.

Important: Do not store stabilizer/conditioned petrol over 30 days.

- 11. Remove the spark plug(s) and check its condition; refer to Servicing the Spark Plug in the Engine Maintenance section. With the spark plug(s) removed from the engine, pour two tablespoons of engine oil into the spark plug hole. Use the starter to crank the engine and distribute the oil inside the cylinder. Install the spark plug(s). Do not install the wire on the spark plug(s).
- 12. Clean any dirt and chaff from the top of the cutter deck.
- 13. Scrape any heavy buildup of grass and dirt from the underside of the cutter deck, then wash the cutter deck with a garden hose.
- 14. Check the condition of the drive and cutter deck belts.
- 15. Check and tighten all bolts, nuts, and screws. Repair or replace any part that is worn or damaged.
- 16. Paint all scratched or bare metal surfaces. Paint is available from your Authorized Service Dealer.
- 17. Store the machine in a clean, dry garage or storage area. Remove the key from the ignition switch and keep it in a memorable place. Cover the machine to protect it and keep it clean.

Troubleshooting

Problem	Possible Cause	Corrective Action
The engine overheats.	1. The engine load is excessive.	1. Reduce ground speed.
	 The oil level in the crankcase is low. The cooling fins and air passages under the engine blower housing are plugged. 	 Add oil to the crankcase. Remove the obstruction from the cooling fins and air passages.
	4. The air cleaner is dirty.	 Clean or replace the air cleaner element.
	5. Dirt, water, or stale fuel is in fuel system.	5. Contact an Authorized Service Dealer
The starter does not crank	1. The blade control switch is engaged.	 Move the blade control switch to Disengaged.
	 The motion control levers are not in the park position. The operator is not seated. The battery is dead. The electrical connections are corroded or loose. A fuse is blown. A relay or switch is damaged. 	 Move the motion control levers outward to the park position. Sit on the seat. Charge the battery. Check the electrical connections for good contact. Replace the fuse. Contact an Authorized Service Dealer.
The engine will not start, starts hard, or	1. The fuel tank is empty.	1. Fill the fuel tank.
fails to keep running.	 2. The choke is not on. 3. The air cleaner is dirty. 	 Move the choke lever to On. Clean or replace the air cleaner element.
	 The spark plug wire(s) is loose or disconnected. 	4. Install the wire(s) on the spark plug.
	5. The spark plug(s) is pitted, fouled, or the gap is incorrect.	 Install a new, correctly gapped spark plug(s).
	6. There is dirt in fuel filter.	6. Replace the fuel filter.
	7. Dirt, water, or stale fuel is in fuel system.	7. Contact an Authorized Service Dealer.
	8. There is incorrect fuel in the fuel tank.	8. Drain the tank and replace the fuel with the proper type.
	9. The oil level in the crankcase is low.	9. Add oil to the crankcase.
The engine loses power.	1. The engine load is excessive.	1. Reduce ground speed.
	2. The air cleaner is dirty.	2. Clean the air cleaner element.
	3. The oil level in the crankcase is low.	3. Add oil to the crankcase.
	 The cooling fins and air passages under the engine blower housing are plugged. 	 Remove the obstruction from the cooling fins and air passages.
	5. The spark plug(s) is pitted, fouled, or the gap is incorrect.	 Install a new, correctly gapped spark plug(s).
	6. The vent in the fuel cap is closed.	6. Open the vent in the fuel cap.
	7. There is dirt in the fuel filter.	7. Replace the fuel filter.
	 Dirt, water, or stale fuel is in the fuel system. 	8. Contact an Authorized Service Dealer.
	9. There is incorrect fuel in the fuel tank.	9. Drain the tank and replace the fuel with the proper type.
The machine does not drive.	1. The bypass valves are open	1. Close the tow valves.
	2. The traction belts are worn, loose, or broken.	2. Contact an Authorized Service Dealer.
	 The traction belts are off of the pulleys. The transmission has failed. 	 Contact an Authorized Service Dealer. Contact an Authorized Service Dealer.

Problem	Possible Cause	Corrective Action
There is abnormal vibration.	1. The engine mounting bolts are loose.	1. Tighten the engine mounting bolts.
	2. The engine pulley, idler pulley, or blade pulley is loose.	2. Tighten the appropriate pulley.
	 The engine pulley is damaged. The cutting blade(s) is/are bent or unbalanced. 	 Contact an Authorized Service Dealer. Install a new cutting blade(s).
	 A blade mounting bolt is loose. A blade spindle is bent. 	 Tighten the blade mounting bolt. Contact an Authorized Service Dealer.
Uneven cutting height.	1. The blade(s) is not sharp.	1. Sharpen the blade(s).
	 A cutting blade(s) is/are bent. The cutter deck is not level. 	 Install a new cutting blade(s). Level the cutter deck from side-to-side and front-to-rear.
	4. An anti-scalp wheel is not set correctly.	4. Adjust the anti-scalp wheel height.
	 The underside of the cutter deck is dirty. 	5. Clean the underside of the cutter deck.
	6. The tyre pressure is incorrect.	6. Adjust the tyre pressure.
	7. A blade spindle is bent.	7. Contact an Authorized Service Dealer.
The blades do not rotate.	1. The drive belt is worn, loose or broken.	1. Install a new drive belt.
	2. The drive belt is off of the pulley.	 Install the drive belt and check the adjusting shafts and belt guides for the correct position.
	3. The cutter deck belt is worn, loose, or broken.	3. Install a new cutter deck belt.

Schematics

Notes:

Notes:

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LIMITED WARRANTY

Hayter Limited warrants to the original user/purchaser that this unit shall be free from defects in material and workmanship under normal use and service for a period of **three years** from the date of purchase. The manufacturer of major proprietry components ie. engines, gearbox / transaxle (where applicable) furnish their own warranty and services are provided through their authorised network. To qualify for the full benefit of the warranty, the warranty registration card **must** be returned within **14 days** of purchase. Subject to the conditions and exclusions noted in this limited warranty, we shall at our option, repair or replace any warranted part during the applicable period. If you are in doubt or experience any difficulty, please consult a Hayter Authorised Service Dealer for clarification.

To qualify for the extended warranty (second and third year) of the **three year limited warranty** the machine **must** have annual services carried out by an Authorised Hayter Service Dealer. These chargeable services should be carried out within 12 and 24 months of the date of purchase.

Excluded from the extended warranty period are those items which are subject to normal wear and tear e.g. tyres, wheels, cutterblades, belts, cables, grassbags, brush/bristles, batteries and other consumable wearing parts.

All consumer machines which are fitted with a **genuine** Hayter friction disc as original equipment before use, are covered by a **Lifetime Warranty** against the engine crankshaft bending. **Note:** friction washers, blade brake clutch (B.B.C) units and other such devices are not applicable. Only machines fitted with a **genuine** Hayter friction disc, which are used in accordance with the recommended operating and maintenance procedures, are covered.

This warranty does not apply to any unit that has been tampered with, altered, misused, abused or used for hire, and will become invalid if non genuine Hayter parts are fitted. This warranty does not cover minor mechanical adjustments unless they are due to defective material or workmanship. Consult the Owner's Handbook or a Hayter Authorised Service Dealer for assistance when making these adjustments.

A warranty period of 90 days applies to machines used for commercial purposes.

To make a warranty claim, return the unit to a Hayter authorised dealer along with proof of purchase stating the machine serial number and date of purchase. The service receipt(s) or this Owners Handbook with the 1st/2nd year service boxes fully completed, must be produced as proof of entitlement to the extended warranty period. Subject to the conditions and exclusions in this limited warranty, the authorised dealer will, at our option, repair or replace any warranted part within the duration of the warranty period.

This limited warranty gives you specific legal rights and is in addition to any statutory rights to which you may be entitled and your statutory rights are not affected by this warranty. If you need additional information concerning this written warranty, or assistance in obtaining services, please write to : HAYTER LIMITED, Service Department, Spellbrook, Bishop's Stortford, Hertfordshire CM23 4BU

UK ONLY: Details of your local **Hayter** authorised dealer are contained in Yellow Pages and the Hayter website www.hayter.co.uk or contact:- Freephone 0800 616298.

Code

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