Hustler® TrimStar®
Operator's Manual

SMOOTHTRAK™ STEERING

HUSTLER®
ENGINEERING PERFORMANCE™

200 South Ridge Road
Hesston, Kansas
67062

114510 REV E

⚠ WARNING

The engine exhaust from this product contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

NOTICE OF REQUIREMENT OF SPARK ARRESTER MUFFLER

This equipment may create sparks that can start fires around dry vegetation. California Public Resources Code Section 4442.6 provides that it is unlawful to use or operate an internal combustion engine on any forest-covered, brush-covered, or grass-covered land unless the engine is equipped with a spark arrester maintained in effective working order. A spark arrester is a device constructed of nonflammable materials specifically for the purpose of removing and retaining carbon and other flammable particles over 0.0232 of an inch in size from the exhaust flow of an internal combustion engine that uses hydrocarbon fuels or which is qualified and rated by the United States Forest Service. Other states or federal areas may have similar laws. The Operator Should Contact Local Fire Agencies For Laws or Regulations Relating to Fire Prevention Requirements. THIS EQUIPMENT DOES NOT HAVE A SPARK ARRESTER AND YOU SHOULD CONTACT YOUR AUTHORIZED DEALER FOR THE PURCHASE OF A SPARK ARRESTER.

Inspect spark arrester daily; replace every 500 hours or as needed.

The Engine Owner's Manual provides information regarding the U.S. Environmental Protection Agency (EPA) and the California Emission Control Regulation of emission systems, maintenance and warranty.

Keep Engine Owner's Manual with your unit. Should the Engine Owner's Manual become damaged or illegible, replace immediately. Replacements may be ordered per the information found in the Product Information section of the owner's manual.

Federal law and California State law prohibit the following acts or the causing thereof:

1. **The removal or rendering inoperative by any person other than for purposes of maintenance, repair, replacement, of any device or element of design incorporated into any equipment for the purposes of emissions control prior to or after its sales or delivery to the ultimate purchaser or while it is in use, or**
2. **The use of the equipment after such device or element of design has been removed or rendered inoperative by any person.**

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GENERAL INFORMATION

This manual applies to the following Hustler® Turf Equipment product lines:

Hustler® TrimStar®

To the New Owner

Hustler® mower owners and operators **must read** this manual carefully. It contains operation and maintenance information that will help you achieve years of dependable service.

The Engine Owner's Manual, included in the owner's packet, contains engine information that will not be repeated in this manual.

The **owner's responsibilities** include, but are not limited to, making certain that the operators and mechanics:

- read and understand the engine owner's manual before attempting to operate or repair the engine.
- read and understand the mower's operator manual and all decals before operating this machine.
- are qualified and physically able individuals, properly trained in the operation and maintenance of this equipment. Before they are allowed to operate or maintain this machine, they **must** be familiar with its safe operation, operator controls, and decals.
- know they are responsible for their own safety as well as the safety of other persons within the vicinity. **Remember,** the operator is responsible for accidents or hazards occurring to other people or their property.
- who cannot read and understand English have this material explained to them.

IMPORTANT: As the owner/operator you can prevent accidents. You are responsible for accidents or injuries occurring to yourself, other people or property.

Never let children or untrained people operate or service the equipment. Local regulations may restrict the age of the operator.

For more detailed maintenance and adjustment information refer to the proper *General Service Manual* for your machine. Refer to the *Product Literature* section of this manual for information on how to obtain this manual.

Using this Manual

This manual contains general operation information as well as basic adjustment and maintenance information. Since operating conditions vary considerably, all conditions cannot be addressed individually. Through training and experience, operators should develop safe operating practices suitable to most conditions.

Directions used in this manual, for example RIGHT or LEFT, refer to directions when in the operator position and facing forward, unless otherwise stated.

Though current at the time of printing, photographs and illustrations shown may vary slightly from your mower due to subsequent production changes. Hustler® Turf Equipment, Inc. reserves the right to redesign and change the machine as deemed necessary, without notification. If a change has been made to your machine which is not reflected in this manual, contact your Hustler® Dealer for current information.

Warranty Registration

To activate your warranty policy the mower **must** be registered, by your Dealer, with the Manufacturer of Hustler® Turf Equipment within **ten (10) days** following the date of purchase. It is recommended that you contact your Dealer to make sure the mower is registered.

IMPORTANT: The mower and any attachment that displays a model and serial identification number plate **must** be registered with Excel Industries, Inc., manufacturer of Hustler® Turf Equipment, Inc ("Manufacturer").

IMPORTANT: Any unauthorized modification, alteration, or use of non-approved attachments voids the warranty and releases Manufacturer from any liability arising from subsequent use of this equipment. **Do not** use or operate any attachment not approved by Hustler® Turf Equipment, Inc.

IMPORTANT: Damage caused by unauthorized replacement parts is not covered by this warranty. Manufacturer expressly excludes liability for defects or damage caused by such 'unauthorized' articles or service.

Model and Serial Number

Mower model and serial numbers are found on the serial identification plate, located on the left side of the frame directly below the console support and behind the tire.

These numbers are required when the unit is registered with Hustler® Turf Equipment. They will also assure you of the correct service parts when replacement becomes necessary.

Parts and Service

Use original Hustler® replacement parts, or parts that are equivalent in overall performance, that are available from your local Hustler® Dealer. For prompt, efficient service, always provide the following information when ordering parts:

1. Correct part description.
2. Correct part number.
3. Correct model number.
4. Correct serial number.

All arrangements for warranty repair and service must be handled through an authorized Hustler® Dealer.

Product Literature

If you would like to view or print a copy of the product manuals (Operator's Manual, Parts Manual, or General Service Manual) for these mowers go online to www.hustlerturf.com.

Contact your local Hustler® dealer if you require another engine manual.

SAFETY PRECAUTIONS

This safety alert symbol is used to call attention to a message intended to provide a reasonable degree of **PERSONAL SAFETY** for operators and other persons during the normal operation and servicing of this equipment.

DANGER	– denotes immediate hazards which **WILL** result in severe personal injury or death.
WARNING	– denotes a hazard or unsafe practice which **COULD** result in severe personal injury or death.

This manual uses two other words to highlight information:

A. IMPORTANT – calls attention to special mechanical information.

B. NOTE – emphasizes general information worthy of special attention.

The **owner's responsibilities** include, but are not limited to,

- making certain that the operators and mechanics read and understand this manual and all decals before operating this machine.
- making certain that before the operators and mechanics are allowed to operate or maintain this machine, they **must** be familiar with its safe operation, operator controls, and decals.
- ensuring that the operators and mechanics know they are responsible for their own safety as well as the safety of other persons within the vicinity. **Remember,** the operator is responsible for accidents or hazards occurring to other people or their property.

Improper use, adjustment, or maintenance by the operator, mechanic or owner can result in injury or death. Reduce the potential for injuries by following these safety instructions. Pay close attention to the safety alert symbol "▲" and the instructions that follow it. **Failure to comply with these instructions may result in personal injury or death.**

Incorrect usage of this equipment may result in severe injury or death. Personnel operating and maintaining it should be trained in its proper use. They should read this manual completely and thoroughly before attempting to set-up, operate, adjust, or service this equipment.

Safe Operating Practices

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

▲ Never allow persons to operate this mower without proper instruction or allow children to operate the mower. Allow only responsible adults who are familiar with these instructions to operate this mower.

Safe Operation

▲ Evaluate the terrain to determine what accessories and attachments are needed to properly and safely perform the job. Only use accessories and attachments approved by the manufacturer.

- Do not use any unauthorized attachment or modify the mower.
- Follow the manufacturer's recommendation for wheel weights or counterweights.
- If any attachment or additional weight is mounted on the rear of the unit, any sudden movement of the H-Bar® handle could cause the front of mower to come off of the ground resulting in possible loss of control and serious injury.
- The use of any other manufacturer's attachments, including stand-up sulkies, increases the risk of operator injury, therefore, extreme caution must be exercised when using these devises.

▲ Always be alert and inspect area to be mowed for hazards such as rocks, metal objects and other debris which may be thrown or entangled by mower blades. Remove these objects before mowing. Watch out for holes or deep depressions.

▲ Always operate mower in daylight or with adequate working lights.

▲ Never operate the mower when there is a risk for lightning.

Personal Safety

▲ **Always** wear long pants and safety shoes with slip-resistant soles when operating this mower.

- Do not wear sandals, tennis shoes, sneakers, shorts or any type of loose fitting clothing as they may get tangled in moving parts.
- Do not wear a towel from the waist, or use a towel as a headband or neck wrap.

- Long hair or jewelry may get tangled in moving parts.

▲ **Always** wear adequate ear protection, such as earplugs. Prolonged exposure to loud noise can cause impairment or loss of hearing.

- Do not wear radios or music headphones while operating this mower. Safe operation requires your full attention.

▲ **Always** wear safety goggles or safety glasses with side shields when operating this mower.

▲ Do not operate the mower if you are fatigued, sick or while under the influence of alcohol or drugs, if you are pregnant or under 18 years old.

▲ Poor posture or operating the mower for extended periods of time may lead to fatigue or injury, resulting in loss of mower control. Occasionally, stop the mower to stretch and relax.

▲ Data indicates that operators, age 60 years and above, are involved in a large percentage of mower-related injuries. These operators should evaluate their ability to operate the mower safely enough to protect themselves and others from serious injury.

Operation

▲ **If you lose steering control while operating the machine, place the neutral lock/park brake lever in the park brake position immediately. Inspect the machine and involve your Hustler® dealer to resolve the problem before continuing to operate.**

▲ Never leave a running mower unattended for any reason including emptying the catcher or unclogging the discharge chute:

- Always stop on level ground.
- Disengage the deck clutch.
- Place the H-Bar® steering in the neutral position.
- Move the neutral lock/park brake lever to the park brake position.
- Stop the engine.
- Remove the ignition key.
- Wait for the engine and all moving parts to come to a complete stop.

▲ Always inspect mower for damage after striking a foreign object. If damage is found, repair mower immediately.

▲ Turn off the mower blades when not mowing.

▲ Always keep safety shields and covers in place, except for servicing.

▲ Never operate the mower deck with the discharge chute damaged, altered, removed, or in the raised position, except when the entire grass catcher attachment or mulching system is being used.

▲ Always keep clear of the mower blades and attachments during their operation.

- Never put hands or feet under any part of the mower while it is running.

▲ Stop the engine before removing the grass catcher or unclogging the discharge chute. Never clear the discharge chute with the engine running. Disconnect the spark plug wires from the spark plugs before cleaning, being careful not to touch the hot engine or muffler. Turn off the engine and be sure the blades have stopped before cleaning. Use a stick to clear a plugged discharge area. **Never use your hand!**

▲ Follow daily and weekly checklists, making sure hoses are tightly secured and bolts are tightened.

▲ **Clean flammable material from mower. Prevent fires by keeping the engine compartment, top of the deck, exhaust area, battery (if applicable), fuel line, fuel tank and operator's station clean of accumulated trash, grass clippings, and other debris. Always clean up spilled fuel and oil.**

▲ **Prevent fires by keeping the engine and exhaust areas clear of grass clippings and other debris. Do not back mower into flammable materials.**

- Allow the mower, especially the engine, to cool in a well ventilated area before storing inside a building or other enclosure.

▲ Do not change the engine governor setting or over speed the engine. Operating the engine at excessive speed may increase the hazard of personal injury.

▲ When traveling in reverse, rotate handle forward gently and avoid sudden movement. Rapid movement of the handle in either direction could result in a reaction of the mower that can cause serious injury.

- Never rotate forward suddenly on H-Bar® handle while the machine is in rearward motion.

▲ Always be aware of what is behind the machine before backing up.

▲ Slow down before turning.

▲ Never attempt high speed maneuvering, especially in crowded or congested areas.

▲ Always maintain a safe distance from people and pets when mowing. Always stop mower if someone enters the area.

▲ Never carry passengers.

▲ Never direct discharged material toward anyone. Avoid discharging material against a wall or obstruction. Material may ricochet back toward the operator. Always disengage the mower blades and wait for them to stop before crossing gravel drives, walks or roads.

▲ Always observe traffic laws while driving mower from one location to another. Watch for traffic when operating near or crossing roadways.

- Use care when approaching blind corners, shrubs, trees, or other objects that may obscure your vision.

Using a Ramp

- ▲ Exercise extreme caution when loading and unloading a mower onto a truck or trailer with a ramp.
- ▲ Use only a single, full width ramp; do not use individual ramps for each side of the unit. Having a full width ramp provides a surface for the mower frame to contact if the unit starts to tip backwards. It also reduces the risk of a wheel going off and the mower tipping over.
- ▲ Do not exceed a 15 degree angle between the ramp and the ground or between the ramp and the trailer or truck.
- ▲ Avoid sudden acceleration when on a ramp.

Slope Operation

Slopes are a major factor in loss-of-control and tip-over accidents, which can result in severe injury or death. All slopes require extra caution. If you cannot back the mower up the slope or if you feel uneasy on the slope; do not mow it. REMINDER: Only operate on slopes of 15 degrees or less.

- ▲ Use extreme caution when operating on slopes.
  - Be extremely careful changing directions on a slope. Slow down.
  - Do not operate where the machine could slip or tip.
  - Do not operate the TrimStar® mower on slopes when using a stand-up sulky.
  - Turn slowly.
- ▲ To check a slope, attempt to back up it. If the unit can back up the slope without the operator and drive wheels slipping, reduce ground speed and proceed with caution.
- ▲ Always be sure of your footing. Keep a firm hold on the H-Bar® handle and walk - never run.
- ▲ Block or chock the machine when parked on a slope or when trailering.
- ▲ Watch for holes, ruts, bumps, rocks or other hidden objects. Uneven terrain could overturn the mower. Tall grass can hide obstacles.
- ▲ Remove obstacles such as rocks, tree limbs, etc.
- ▲ Keep all movement on slopes slow and gradual. Do not make sudden changes in speed or direction.
- ▲ Avoid starting and stopping on a slope. If tires lose traction, disengage the mower blades and proceed slowly straight down the slope.
- ▲ Never operate the machine on a slope from a position below the mower.
- ▲ Do not mow on wet grass. Slippery conditions reduce traction which could cause sliding and loss of control.
- ▲ Avoid starting and stopping on a slope. If tires lose traction, disengage the mower blades and proceed slowly straight down the slope.
- ▲ The Hustler® mower is capable of operating horizontally (traverse) on moderately steep slopes. When operating on slopes up to 15 degrees, be aware of any conditions that may cause the mower drive tires to lose traction resulting in a possible loss of control of the mower. An operator should not operate on a slope until he is thoroughly familiar with the equipment.

  Do not operate on slopes greater than 15 degrees.

  Refer to the *Slope Guide*, when determining the degree of slope to be mowed.

  It is strongly recommended that the operator drive the mower off of the slope slowly, using extreme caution, if any sign of loss of traction is detected. Wait until the condition that caused the problem is resolved before attempting to operate on the slope again.

  Terrain conditions can affect traction resulting in possible loss of control of the mower. Some of the conditions to be aware of are:

  - Wet terrain
  - Depressions in the ground; i.e. holes, ruts, washouts
  - Mounds of dirt
  - Soil type; i.e. sand, loose dirt, gravel, clay
  - Grass type, density, and height
  - Extremely dry conditions of grass
  - Tire pressure

  Any attachments mounted to the mower will also affect the way it handles on a slope. Be aware that each attachment's characteristics vary.

  Another consideration for safe mowing on slopes is to be aware of what is located at the bottom of the slope. Extreme caution should be used when there is a hazard located at the bottom of the slope. Some examples are:

  - Water; i.e. lake, river
  - Cliffs, retaining walls
  - Roads, highways
  - Buildings
  - Rocks

  These are just a few examples of situations when caution must be used when operating on a slope. There are many other possibilities too numerous to mention. Just remember to always exercise extreme caution when operating on any slope.

Children

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

- ▲ Never leave the mower unattended with the ignition key in the switch, especially with children present.

- ▲ Children or bystanders may be injured if they attempt to move or to operate the mower while it is unattended.
  - Always stop on level ground.
  - Disengage the deck clutch.
  - Place the H-Bar® steering in the neutral position.
  - Move the neutral lock/park brake lever to the park brake position.
  - Stop the engine.
  - Remove the ignition key.
  - Wait for the engine and all moving parts to come to a complete stop.
- ▲ Keep children out of the mowing area and under the watchful care of a responsible adult other than the operator.
- ▲ Be alert and turn the mower off if children enter the area.
- ▲ Before and while backing, look behind and down for small children.
- ▲ Never carry children, even with the blades off. They may fall off and be seriously injured or interfere with safe mower operation. Children who have been given rides in the past may suddenly appear in the mowing area for another ride and be run over or backed over by the mower.
- ▲ Never allow children to operate the mower.

Service Precautions

- ▲ Unless specifically required, **DO NOT** have the engine running when servicing or making adjustments to the mower.
  - Park the mower on level ground.
  - Disengage the deck clutch.
  - Place the H-Bar® steering in neutral.
  - Place the neutral lock/park brake lever in park brake position,
  - Lower the deck.
  - Stop the engine.
  - Remove the ignition key.
  - Remove the spark plug wires from the spark plugs, or, if applicable, disconnect the negative battery cable.
  - Wait for all movement to stop before adjusting, cleaning or repairing.
  - Repairs or maintenance requiring engine power should be performed by trained maintenance personnel only.
  - To prevent carbon monoxide poisoning, operate the engine in a well ventilated area only.
  - Read and observe all safety warnings in this manual.
- ▲ Before working on or under the deck, make certain the engine cannot be accidentally started.
- ▲ Except when changing or checking belt, always keep belt covers on mower deck for safety as well as for cleanliness except when changing or checking the belt.
- ▲ Use a stick or similar instrument to clean under the mower making sure that no part of the body, especially arms and hands are under the mower.
- ▲ Always wear adequate eye protection when:
  - servicing the hydraulic system.
  - servicing the battery.
  - grinding mower blades and removing accumulated debris.
- ▲ Never attempt to make any adjustments or repairs to the mower drive system, mower deck or any attachment while the mower engine is running or deck clutch is engaged. Repairs or maintenance requiring engine power should be performed by trained maintenance personnel only.
- ▲ Never work under the machine or attachment unless it is safely supported with jack stands.
  - Make certain machine is secure when it is raised and placed on the jack stands.
  - The jack stands should not allow the machine to move when the engine is running and the drive wheels are rotating.
  - **Use only certified jack stands.** Use only appropriate jack stands, with a minimum weight rating of 2000 pounds (907 kg) to block the unit up.
  - Use in pairs only.
  - Follow the instructions supplied with the jack stands.
- ▲ Exercise caution when releasing spring tension from any of the belt idlers or when working with any of the deck lift components.
- ▲ Do not touch hot parts of machine. Be careful of hot muffler. Allow engine to cool before servicing.
- ▲ Keep nuts and bolts tight, especially the blade attachment bolts. Keep equipment in good working condition.
- ▲ Never tamper with safety devices. Check their proper operation regularly.
- ▲ Grass collection system components are subject to wear, damage and deterioration, which could expose moving parts or allow objects to be thrown. Frequently check components and replace with manufacturer's recommended parts, when necessary.
- ▲ Exercise caution when working under the deck as the mower blades are extremely sharp. Wrap the blade(s) or wear gloves and use extra caution when servicing them.

▲ Use original Hustler® replacement parts, or parts that are equivalent in overall performance, that are available from your local Hustler® Dealer.

- The mower may not comply with the appropriate safety standards if aftermarket parts, accessories, or attachments are used.

Mower Blade Maintenance Precautions

▲ Never attempt to straighten a bent blade by heating, or weld a cracked or broken blade as the blade may break and cause serious injury. Replace worn or damaged blades.

▲ Never work with blades while engine is running or deck clutch switch is engaged (on).

▲ Always wear adequate eye protection when grinding mower blades.

▲ Mower blades are sharp and can cut. Wrap the blade(s) or wear gloves and use extra caution when servicing them.

Battery Service Precautions

▲ Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

▲ Charge batteries in a well-ventilated open area, away from sparks and flames. Unplug charger before connecting or disconnecting from battery. Wear protective clothing and use insulated tools.

▲ Avoid skin and clothing contact with battery acid.

- Always wear eye protection when checking the battery. Acid can cause serious injury to skin and eyes. If contact occurs, flush area with clean water and call a physician immediately. Acid will also damage clothing.
- Do not drink the battery electrolyte.
- Do not allow open flame near the battery when charging.
- Hydrogen gas forms inside the battery. This gas is both toxic and flammable and may cause an explosion if exposed to flame. Always **disconnect** the negative (black) battery cable(s) before disconnecting the positive (red) cable(s). Always **connect** the positive (red) battery cable(s) before connecting the negative (black) cable(s).
- Do not overfill the battery.
- Electrolyte may overflow and damage paint, wiring or structure. When cleaning the battery, use soap and water. Be careful not to get soap and water into the battery. Clean the battery terminals with a solution of four parts water and one part baking soda when they become corroded.

▲ Shorts caused by battery terminals or metal tools touching metal mower components can cause sparks. Sparks can cause a battery gas explosion which will result in personal injury.

- Prevent the battery terminals from touching any metal mower parts when removing or installing the battery.
- Do not allow metal tools to short between the battery terminals and metal mower parts.

▲ Incorrect battery cable routing could cause damage to the mower and battery cables. This can cause sparks which can cause a battery gas explosion which will result in personal injury.

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

Fuel Handling Precautions

▲ **To avoid personal injury or property damage, use extreme care when handling gasoline. Gasoline is extremely flammable and the vapors are explosive.**

- A fire or explosion from gasoline can burn you and others and can damage property.

▲ Observe the usual gasoline handling precautions:

- Do not smoke while refueling. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
- **Do not remove fuel cap or fill tank with engine running or while engine is hot.** Clean up any gasoline spills.
- If gasoline 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 gasoline vapors have dissipated.
- Keep gasoline away from open flame or spark and store machine away from open flame or spark or pilot light such as on a water heater or appliances.
- Refuel outdoors. Never refuel or drain the gasoline from the machine indoors.
- Never attempt to start the engine when there is a strong odor of gasoline fumes present. Locate and correct the cause.
- Store gasoline in an approved container and keep it out of the reach of children. Never buy more than a 30-day supply of gasoline.
- Do not fill fuel containers inside a vehicle or on a truck or trailer bed with interior carpets or plastic truck bed liners. Always place gasoline containers on the ground away from your vehicle before filling.

- When practical, remove the machine from the truck or trailer and refuel the machine with its wheels on the ground. If this is not possible, then refuel such machine on the truck or trailer using a portable container and not a fuel dispenser nozzle. If a fuel 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. Do not use a nozzle lock-open device.
- Never use gasoline for cleaning parts.
- Read and observe safety precautions elsewhere in this manual.

▲ Gasoline is harmful or fatal if swallowed.

▲ Avoid prolonged breathing of vapors.

- Long-term exposure to vapors can cause serious injury and illness.

▲ Keep gasoline away from eyes and skin.

- Keep face away from nozzle and fuel tank or fuel container opening.
- If gasoline is spilled on clothing, change clothing immediately.

Safety and Instructions Decals

The decals are designed to give the operator and mechanic brief daily operational and service information. Use these decals as an extension of this manual. Do not remove or obliterate the decals. Replace unreadable or missing decals.

It is the **owner's responsibility** to make certain that the operators and mechanics read and understand all decals before operating this machine.

WARNING

Specific safety warning decals are located on the equipment near the immediate areas of potential hazards. Do not remove or obliterate these decals. Replace them if they become non-readable.

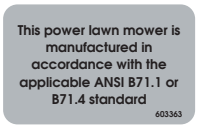
The following illustrations show the safety decals that are located on the mower. A brief explanation is shown to help the operator understand the decal's meaning.

- **Read Operator's Manual and Safety Warning Decals before attempting to operate this machine.**

- **Do not smoke while refueling.**
- **Do not remove the fuel tank cap or fill tank with engine running or while the engine is hot.**
- **Allow the mower, especially the engine, to cool in a well ventilated area before storing inside a building or other enclosure.**
- **Store away from open flame or spark if there is fuel in tank.**
- **Clean up any gasoline spills.**
- **Do not refuel while in enclosed trailer or other enclosed areas.**
- **Maximum of 10% ethanol (E10) in fuel. Fuels with greater than 10% ethanol, (such as E15, E20 and E85) voids warranty. Fuels with greater than 10% ethanol are not approved for use and such use could cause equipment failure and pose a fire hazard.**

Top of Deck Clutch Switch Shown

A. Deck clutch disengaged (OFF) position
B. Deck clutch engaged (ON) position



Part Number 603363

- **This power lawn mower is manufactured in accordance with the applicable ANSI B71.1 or B71.4 standard.**

Part Number 601908

WARNING: Fire

- **Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrestor may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.**

Part Number 601931

WARNING: Thrown objects!

- Always maintain a safe distance from people and pets when mowing.
- Always stop machine if someone enters the area.
- Inspect area to be mowed for hazards such as rocks, metal objects and other debris which may be thrown or entangled by mower blades. Remove these objects before mowing.

Part Number 601787

DANGER:
Rotating blades, pulleys & belts!

- Keep shields and covers in place while machine is in operation
- Keep hands, feet and clothing away from rotating pulleys, belts and blades.

WARNING:
Thrown objects

Part Number 601796

- Never operate the mower deck with side deflector damaged, altered, removed or in raised position, except when the entire grass catcher attachment or mulching system is being used.

DANGER: Battery Hazards!

Part Number 602041

WARNING:
Hot surface!

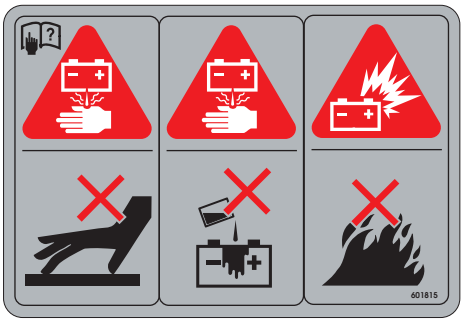
- Keep a safe distance from the machine.

WARNING: Fire!

Part Number 601967

- Clean flammable material from machine. Prevent fires by keeping engine compartment, top of deck, exhaust area, battery, fuel line, fuel tank and operator's station clean of accumulated trash, grass clippings, and other debris. Always clean up spilled fuel and oil.

Part Number 601815



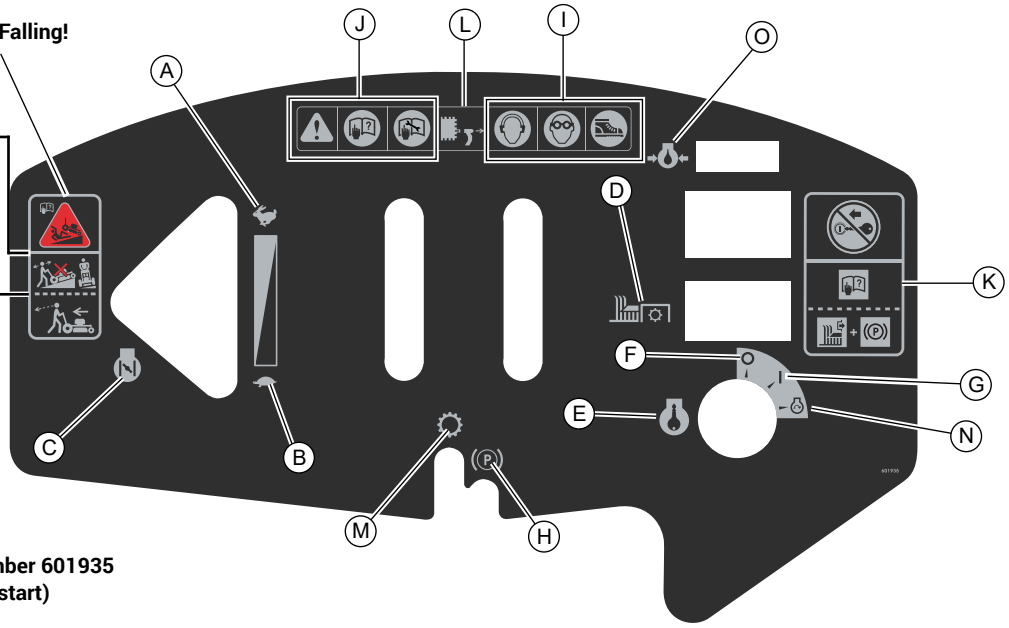
- Avoid skin contact with battery acid

- Do not overfill battery.
- Electrolyte may overflow and damage paint, wiring or structure. When cleaning the battery, use soap and water. Be careful not to get soap and water into the battery. Use soda mixed in water to clean corrosion off the terminals.
- Always wear eye protection when checking the battery, acid can cause serious injury to skin and eyes. If contact occurs, flush area with clean water and call physician immediately. Acid will also damage clothing.

- Do not allow open flame near the battery when charging.
- Hydrogen gas forms inside the battery. This gas is both toxic and flammable and may cause an explosion if exposed to flame. Always remove the negative ground first and replace it last.

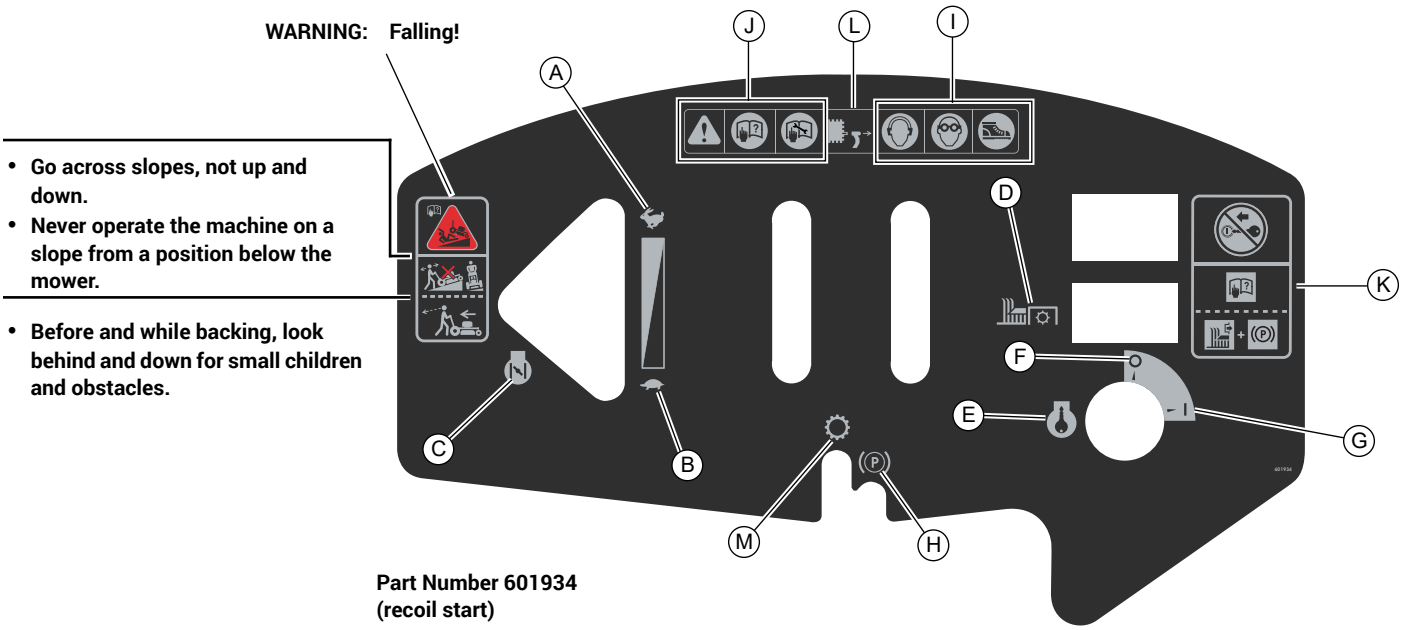
WARNING: Falling!

- Go across slopes, not up and down.
- Never operate the machine on a slope from a position below the mower.
- Before and while backing, look behind and down for small children and obstacles.



Part Number 601935
(electric start)

A. Fast
B. Slow
C. Choke
D. Mower blade engage/disengage switch
E. Ignition switch - insert key
F. OFF
G. ON
H. Neutral lock lever locked/park brake engaged
I. Wear ear protection, eye protection and safety shoes with slip resistant soles when operating this equipment.
J. Read Operator's Manual before attempting to operate this machine. Read Operator's Manual before attempting to service this machine.
K. Before starting the engine:
• Read Operator's Manual
• Disengage mower blades
• Place neutral lock lever in locked position
L. Disconnect spark plug before servicing
M. Neutral lock lever unlocked
N. Engine start position
O. If warning light comes on, check engine oil



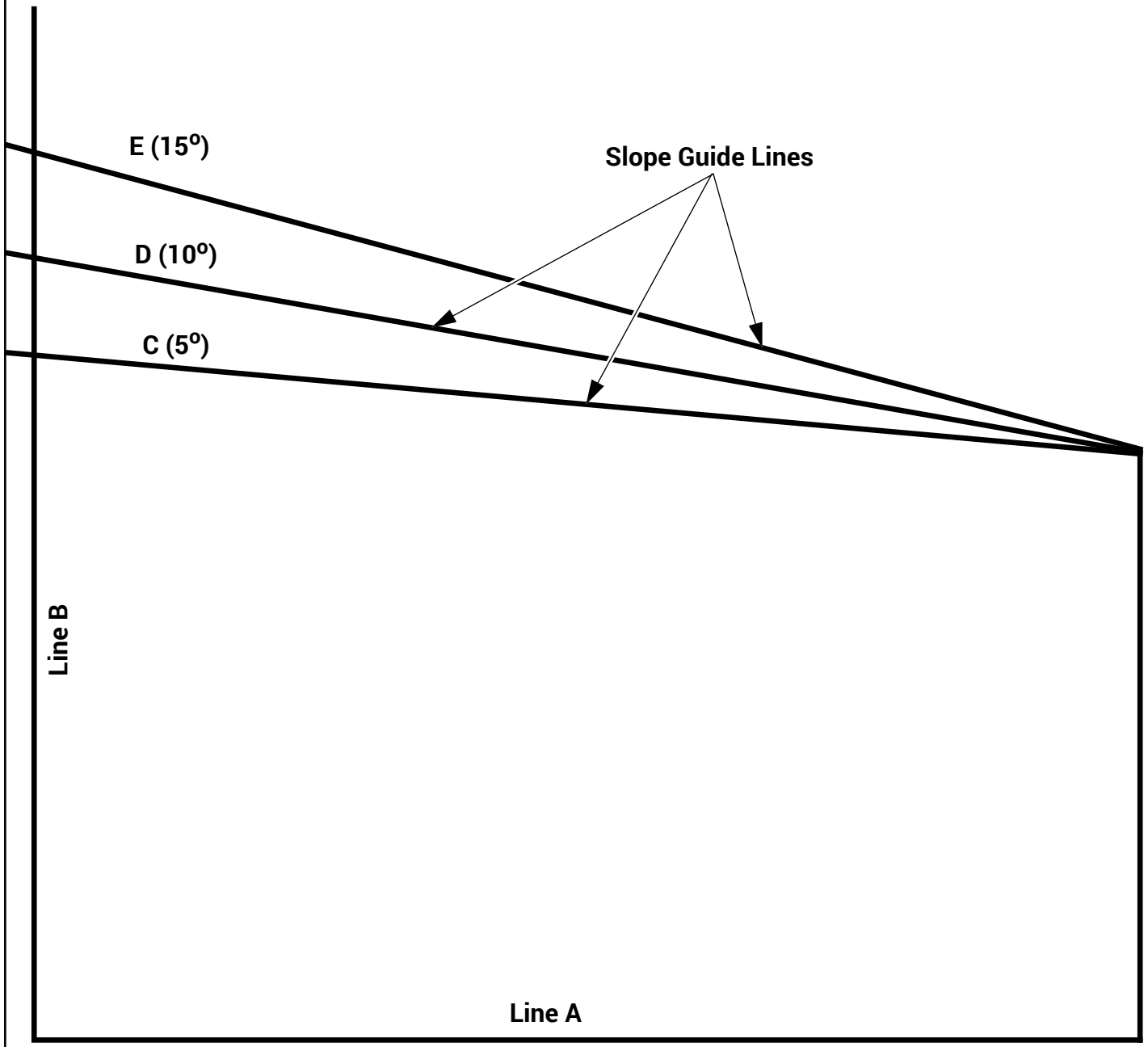
Part Number 601934
(recoil start)

A. Fast
B. Slow
C. Choke
D. Mower blade engage/disengage switch
E. Ignition switch - insert key
F. OFF
G. ON
H. Neutral lock lever locked/park brake engaged
I. Wear ear protection, eye protection and safety shoes with slip resistant soles when operating this equipment.
J. Read Operator's Manual before attempting to operate this machine. Read Operator's Manual before attempting to service this machine.
K. Before starting the engine:
- Read Operator's Manual
- Disengage mower blades
- Place neutral lock lever in locked position

L. Disconnect spark plug before servicing
M. Neutral lock lever unlocked

Slope Guide

Use this diagram when determining the degree of slope to be mowed.



1. Hold this sheet of paper in front of you. Make sure that Line A is horizontal.
2. Align Line B with a vertical surface such as pole, tree or building.
3. Fold the paper along the slope guide lines (C, D or E).
4. Align the closest slope guide line with the ground slope. This will give you a close estimation of the ground slope to be mowed.

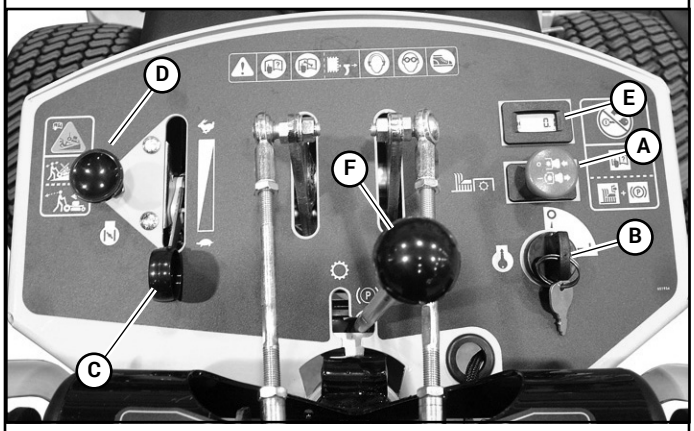
OPERATION

Safe Operating Practices

Refer to the *Safety Precautions* section of this manual for operational and personal safety information.

Control Panel

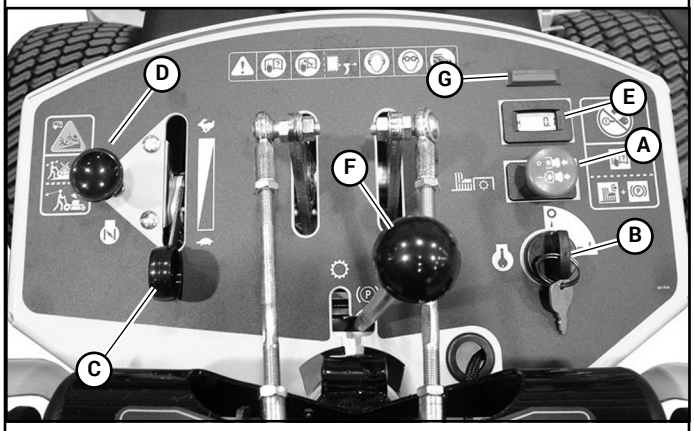
Recoil start mowers



A. Deck clutch switch
B. Ignition switch
C. Throttle
D. Choke
E. Hour meter
F. Neutral lock/park brake lever

Figure 3-1

Electric start mowers

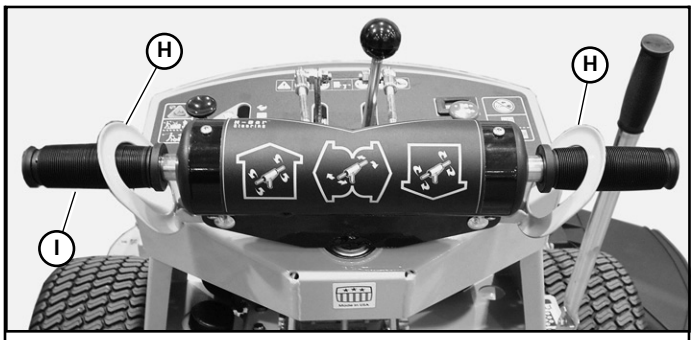


A. Deck clutch switch
B. Ignition switch
C. Throttle
D. Choke
E. Hour meter
F. Neutral lock/park brake lever
G. Oil pressure light

Figure 3-2

A. Deck clutch switch (Figure 3-1 & Figure 3-2) — this switch engages the deck. Pull the switch up to engage and push the switch down to disengage the clutch.

For additional clutch information refer to the *Mower Deck Operation* section of this manual.



H. Operator presence control levers
I. H-Bar® handle

Figure 3-3

B. Ignition switch (Figure 3-1 & Figure 3-2) —

(Recoil start) a two position switch: off and run. With key inserted, rotate it clockwise to RUN position.

(Electric start) a three position switch: "OFF", "RUN", and "START". With key inserted, rotate it clockwise to the "START" position; release the key when the engine starts, and the switch will automatically return to the "RUN" position.

C. Throttle control (Figure 3-1 & Figure 3-2) — a cable is linked to the engine throttle for controlling engine speed. Move the lever forward to increase engine rpm, move the lever rearward to decrease engine rpm.

D. Choke control (Figure 3-1 & Figure 3-2) — a cable is linked to manually operate the engine choke. When the lever is in the down position, the choke is in the "OFF" (run) position. When the knob is pulled up, the choke is in the "ON" (start) position. **Do not** operate the machine in the "ON" (start) position.

E. Electronic hour meter (Figure 3-1 & Figure 3-2) — registers 1/10 hour increments up to 9,999.9 total hours. It is connected to the ignition switch. It records the accumulative time while the ignition key is switched to the "RUN" position.

F. Neutral lock/park brake lever (Figure 3-1 & Figure 3-2) — when this lever is in the neutral lock/park brake position, the transaxles are in neutral and the unit will not move.

Moving the lever out of the neutral lock/park brake position and forward engages the transaxles and allows the **H-Bar®** handle to be rotated.

G. Oil pressure light (Figure 3-2) — this light comes on when the ignition switch is placed in the "RUN" position and stays lit until the engine is running and a safe oil pressure is developed. If the light comes on during operation, shut the engine off immediately and locate and correct the problem.

H. Operator presence control levers (Figure 3-3) — engages the operator presence switches. If the switch

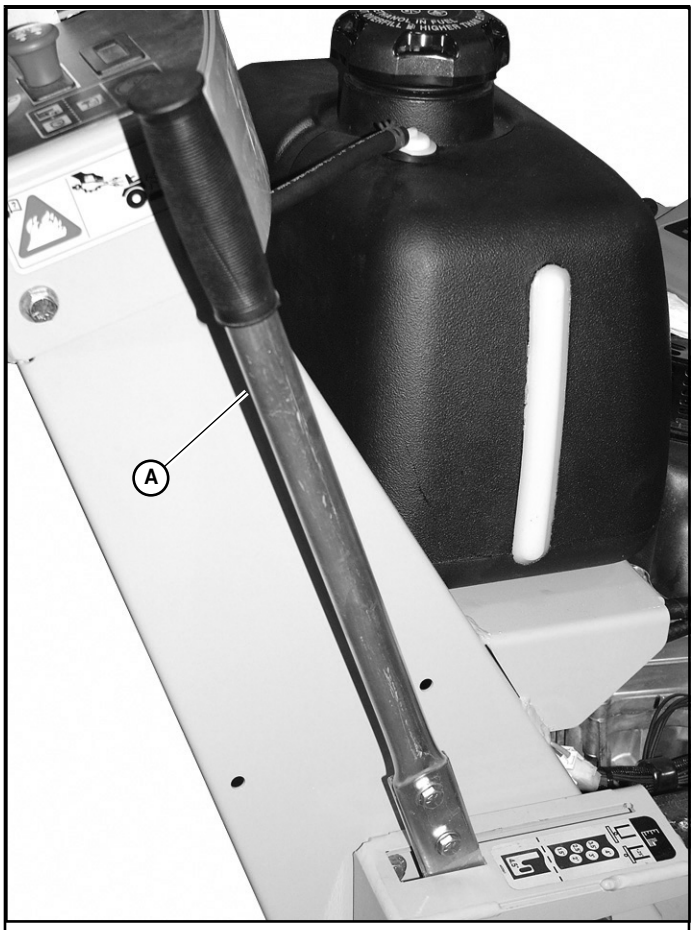
is not engaged the unit will not operate. Refer to the Safety Interlock system for more information.

I. **H-Bar® handle (Figure 3-3)** – this handle controls the unit's acceleration, speed, steering direction and dynamic braking.

Controls

A. **Deck lift lever (Figure 3-4) —** the deck lift lever is used to raise or lower the deck. Pull rearward on the lever to raise the deck and then place the deck height locking pin into the desired cutting height hole.

Pull the deck lift lever to raise the deck when going over obstructions.



A. Deck lift lever

Figure 3-4

Safety Start Interlock System

The mower's safety start interlock system consists of the neutral lock switch, operator presence control switches, and deck clutch switch.

The machine incorporates two operator presence control switches which will stop the mower engine when the operator releases both of the operator presence control levers for any reason while the mower is operating. However, if only one operator presence control lever is released, the unit will continue to operate.

IMPORTANT: Repair this important safety feature immediately if it malfunctions.

This safety feature prevents mower runaway or accidental entanglement during operation.

Check the mower's safety start interlock system daily, prior to operation.

To inspect the system:

1. Place the H-Bar® lever in the neutral position,
2. Move neutral lock/park brake lever to the park brake position.
3. Move deck clutch switch to the disengaged (down) position.
4. Start the engine and allow it to warm up to operating temperature.
5. With the neutral lock/park brake lever in the unlocked position (Figure 3-6) and/or the deck clutch switch engaged (up position), slowly release both operator presence control levers. **The engine should stop.**
6. Place the neutral lock/park brake lever in the park brake (locked) position (Figure 3-5) and the deck clutch switch disengaged (down) position. **The engine should continue to run without the operator presence control switches engaged.**
7. **If the engine fails to stop when:**
   - the deck clutch switch is up, or
   - the neutral lock/park brake lever is unlocked, and
   - both operator presence control levers are released, then
   - check the function of the operator presence control switches. If these switches are not operating properly **(are not opening or closing)** and if the cause can not be determined, contact your Hustler® Dealer.

⚠ WARNING ⚠

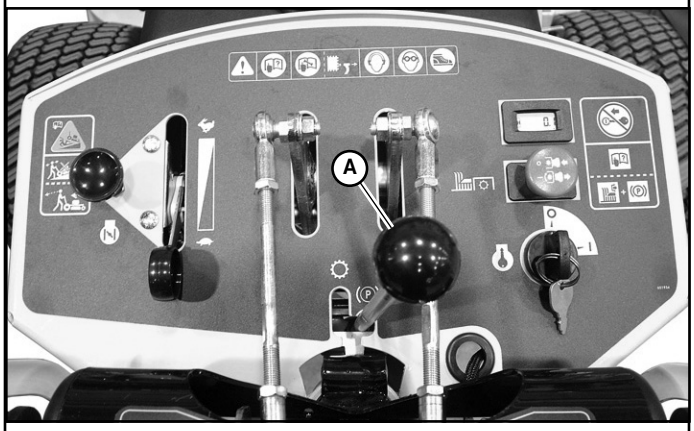
The safety interlock system should always function per steps 5 and 6. If it does not function properly, correct it immediately. Do not operate machine without properly functioning operator presence control switches.

Engine Starting

The mower's safety start interlock system is also designed to protect the operator and others from accidental injury due to unintentional engine starting. The engine starting motor will not engage until:

1. Neutral lock/park brake lever is in the park brake position.

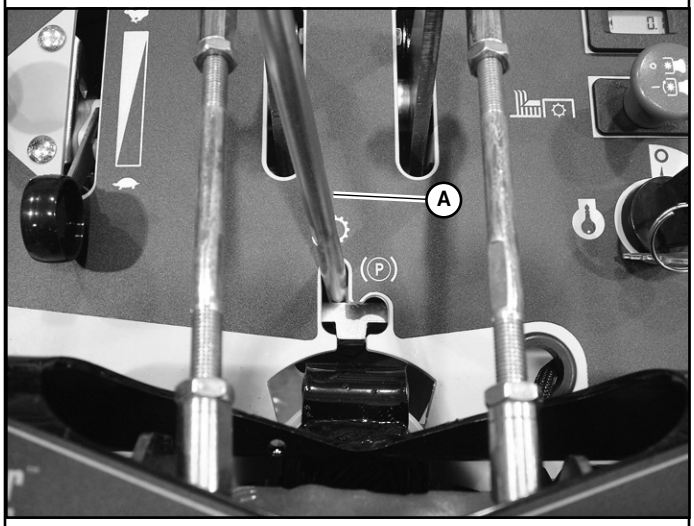
Neutral lock/park brake lever in the locked position



A. Neutral lock/park brake lever

Figure 3-5

Neutral lock/park brake lever in the unlocked position



A. Neutral lock/park brake lever

Figure 3-6

2. Deck clutch switch is in the down (OFF) position.

WARNING

The safety interlock system must not be disconnected or bypassed. Doing so could cause the machine to operate unexpectedly resulting in personal injury.

NOTE: The machine is equipped with operator presence control switches. If for any reason the operator should release both of the operator presence control levers when the neutral lock lever is unlocked or the deck clutch switch is engaged (up position), the engine will stop.

WARNING

On recoil start units only, the operator presence lever/switches should never be engaged when starting the unit. When the operator presence switches are engaged, they override the neutral lock lever and the deck clutch interlock system. Severe personal injury could result when starting the unit if the operator presence switches are engaged.

Start the engine by following these steps. If you encounter difficulty, contact your Hustler® Dealer.

1. Make sure the neutral lock/park brake lever is in the locked position and deck clutch switch is disengaged (down position).
2. Use the choke when the engine is cold, or if a warm engine fails to start within 5 seconds of cranking. Avoid flooding by operating the engine without choking as soon as possible.

   NOTE: If the ambient temperature is below 50°F (10°C), disengage the cold weather pump clutch before attempting to start the engine. Refer to the *Cold weather pump clutch* section for more information.
3. Set the throttle at approximately the 1/2 open position.
4. **Recoil start mowers only -** Insert key in ignition switch and rotate full clockwise. Pull engine recoil start rope.

   Electric start mowers only - Insert key in ignition switch and rotate full clockwise to engage starting motor. Release key when engine starts.

   IMPORTANT: The engine starter should not be operated for periods longer then 30 seconds at a time. An interval of at least two minutes should be allowed between such cranking periods to protect the starter from overheating and burn-out.
5. As soon as the engine begins to run, check to make certain all engine warning lights are off. If not, stop the engine immediately and check for the cause.
6. Perform the test shown in the *Safety Start Interlock System* section to make sure the safety start interlock system operates properly.
7. Allow the engine to idle two minutes before advancing the throttle and/or engaging the deck clutch. Press operator's presence control levers and rotate the H-Bar® slowly forward.

Stopping the Engine

Use the following procedure to shut the engine off.

1. Place the H-Bar® handle in the neutral position.
2. Place the neutral lock/park brake lever in the locked position.

3. Throttle the engine back to low idle, then disengage the deck clutch. Refer to the *Mower Deck Operation* section for more details.
4. Let the engine run at low idle for two minutes.
5. Rotate the ignition key counter-clockwise to the “OFF” position. Remove the key from the switch before leaving the mower.

WARNING

Never leave the machine unattended with key in ignition switch.

Cold Weather Pump Clutch

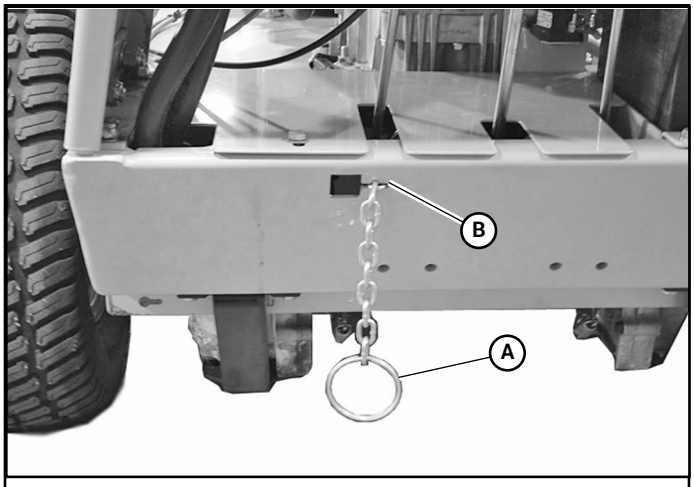
This mower is equipped with a pump clutch that disengages the pump clutch belt. When the belt is disengaged, the engine will start easier in colder temperatures.

To disengage the pump clutch, **pull the chain** until the tension is released from the pump drive belt and latch in the slot. Figure 3-7

To engage the pump clutch, with H-Bar® locked in neutral, release the chain from the latching slot.

NOTE: When engaged the spring should be extended to a dimension of 5.4” – 6.4” (137mm – 163mm). Figure 3-8

IMPORTANT: Never operate the unit with the pump clutch partially engaged. Make sure the clutch is completely released and the chain has slack.



A. Chain | **B.** Slot

Figure 3-7

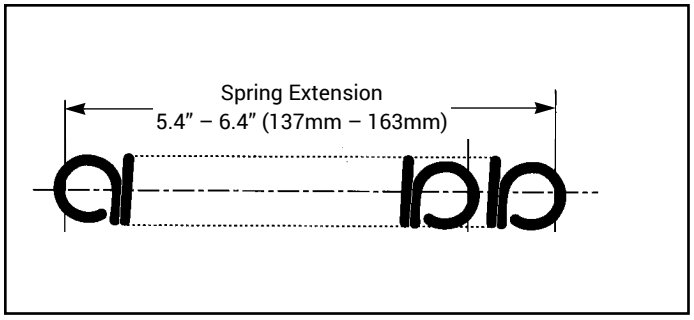


Figure 3-8

Moving the Mower With Stalled Engine

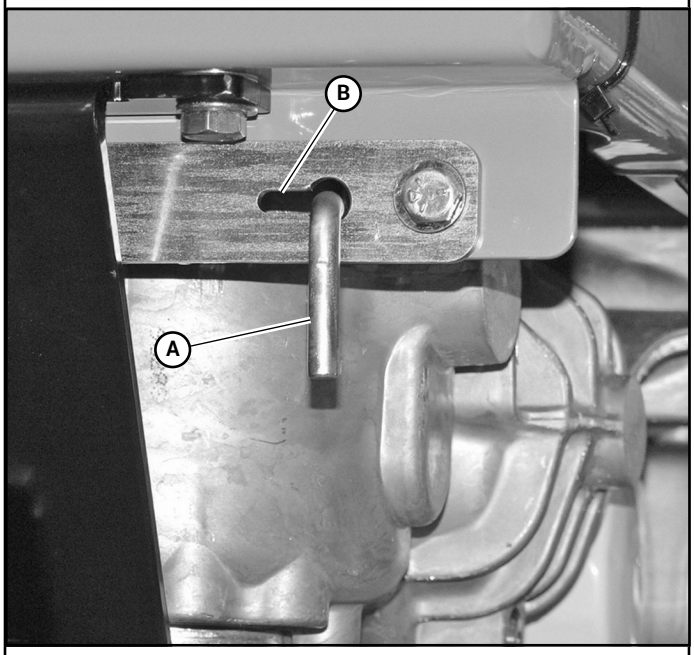
If it becomes necessary to move the unit when the engine is inoperative, the transaxles are equipped with bypass valves. Before moving the unit, pull out on the bypass valve rods and slide them into the slot to lock in position. Figure 3-9

Do not tow the machine. Move it by hand or use a winch to load on a trailer for transporting.

When transporting on another vehicle, the unit must be tied down to the transporting vehicle.

IMPORTANT: Always make certain the two bypass valves are returned to their operating position before running the unit following repairs.

Right transaxle shown



A. Bypass valve rod (shown in operating position)
B. Slot

Figure 3-9

Mower Operation

Driving the Mower

DANGER

Never make sudden stops or reverse direction, especially when maneuvering on a slope. The steering is designed for sensitive response. Rapid movement of the H-Bar® handle in either direction could result in a reaction of the mower that can cause serious injury.

After starting engine, place the neutral lock/park brake lever in the unlocked position and steer as follows:

To go forward, rotate the H-Bar® handle forward. Figure 3-10

To go in reverse, rotate the H-Bar® handle to the neutral position. After achieving neutral, rotate lever rearward. Figure 3-10

To turn left, rotate the H-Bar® handle to the left and out of the neutral position. Figure 3-10

To turn right, rotate the H-Bar® handle to the right and out of the neutral position. Figure 3-10

Zero radius turn, rotate the H-Bar® handle the direction desired with the handle in the neutral position. This will allow the drive wheels to counter-rotate. Figure 3-10

To stop or decrease speed, move the H-Bar® handle to neutral. When going forward rotate handle rearward gently. When going in reverse rotate handle forward. (Figure 3-10) When traveling in reverse rotate handle rearward gently and avoid sudden movement. Any sudden movement could cause the front of the mower to come off of the ground resulting in possible loss of control.

To increase speed, rotate the H-Bar® handle's distance further from neutral. The farther the H-Bar® handle is rotated forward from neutral, the faster the unit will travel forward. The farther the H-Bar® handle is rotated rearward from neutral, the faster the unit will go in reverse.

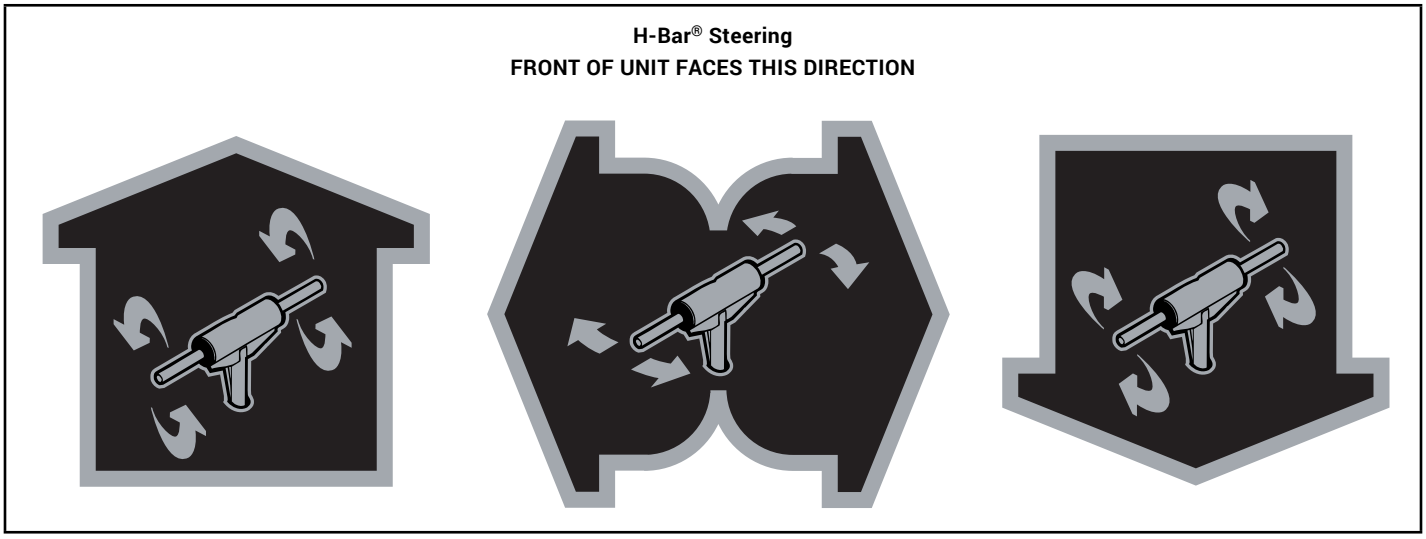


Figure 3-10

Operating Suggestions

DANGER

An inexperienced operator should not mow on slopes or on uneven terrain.

Before attempting normal speed operation an inexperienced operator should:

- be thoroughly familiar with the proper use and operation of the equipment.
- read the manual completely and thoroughly.
- have attempted slow moving maneuvers.

WARNING

If you lose steering control while operating the machine, place the neutral lock/park brake lever in the park brake position immediately. Inspect the machine and involve your **Hustler**® dealer to resolve the problem before continuing to operate.

WARNING

The unit's H-Bar® handle is very responsive: Easy does it! For smooth operation, move the levers slowly, avoiding sudden movement. Skill and ease of operation come with practice and experience.

Inexperienced operators may have a tendency to oversteer and lose control. Practice slow maneuvers at low engine rpm (idle) on a flat open area before attempting normal speed operation.

WARNING

Sharp depressions or raised obstacles (such as gutters or curbs) should not be directly approached at high speed in an attempt to "jump" them as the operator could be thrown from the equipment. Approach at a slow speed and angle one drive wheel at the obstruction. Continue at an angle until the wheel clears and then pivot the opposite wheel around.

When turning on soft wet turf, keep both wheels rolling either forward or backward. Pivoting on one stopped wheel can damage turf, especially when mowing.

Set the throttle at full rpm for maximum performance. This gives maximum power to the drive wheels and deck when needed. The throttle setting directly controls blade speed. Use the H-Bar® handle to control ground speed rather than engine rpm.

When operating the TrimStar® mower on slopes, the operator should mow traversing the slope. The operator should stay more on the uphill side of the unit when mowing.

Keep blades sharp. Many problems with incorrect cutting patterns are **due to dull blades** or blades which have been **sharpened incorrectly.** Information on sharpening blades is listed in this manual's maintenance section. **Blade sharpness should be checked daily.**

DANGER

Never work with blades while the engine is running or deck clutch switch is engaged (on).

Always place the deck clutch switch in the disengaged position, place the neutral lock/park brake lever in the park brake position, turn the engine off and disconnect the negative battery cable.

Block the mower up when you must work under it.

Wear gloves when handling blades.

Always check for blade damage if the mower strikes a rock, branch or other foreign object during mowing!

Direct grass discharge to the right, away from the unmowed area. Generally, this means using a pattern of **left turns.** Avoid throwing grass discharge onto unmowed area. Mowing clippings puts an unnecessary load on the unit and reduces mowing efficiency.

When mowing a lawn for the first time cut grass slightly longer than normal to avoid scalping uneven terrain. When cutting grass taller than six inches, you may want to mow the lawn twice to achieve a better quality of cut.

During normal mowing cut only about 1/3 of the grass blade.

Alternate the mowing direction to keep the grass growing straight and for better dispersion of the clippings.

Remember, grass grows at different rates at different times of the year. Mow more often in the early spring to maintain the same cutting height. As the growth rate slows in midsummer, mow less frequently. If you cannot mow at a regular interval, mow at a high cutting height; then mow again two days later at a lower cutting height.

Raise the cutting height of the mower if the cutting width of the mower is wider than the previous mower. This ensures that uneven turf is not cut too short.

Raise the cutting height of the mower if the grass is slightly taller than normal or if it contains a high degree of moisture. Then mow it again with the cutting height set lower.

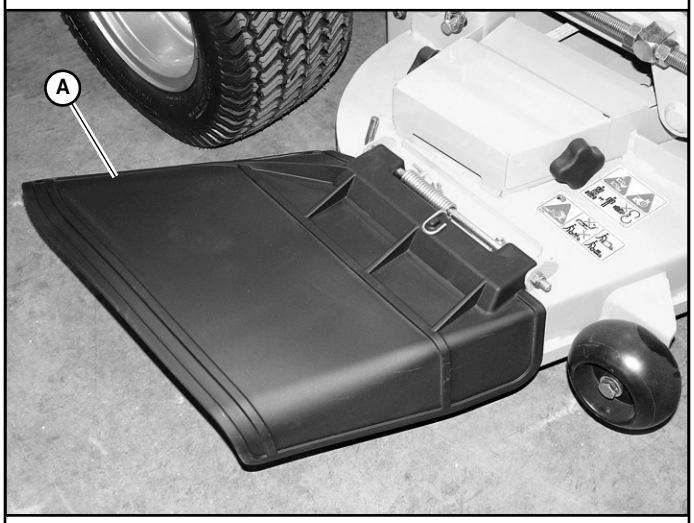
If the machine's forward motion must be stopped while mowing, a clump of grass clippings may drop onto your lawn. To avoid this, move onto a previously cut area with the blades engaged.

WARNING

Never direct the discharge of material from the mower deck toward bystanders.

- Never operate the mower deck with the discharge chute damaged, altered, removed, or in the raised position, except when the entire grass catcher attachment or mulching system is being used. Figure 3-11

Discharge chute may vary from this illustration



A. Discharge chute

Figure 3-11

DANGER

Never attempt to make any adjustments to the mower deck while the engine is running or with the deck drive clutch engaged. Mower blades cannot be seen and are located very close to the deck housing. Fingers and toes can be cut off instantly.

Deck Clutch Operation

Before beginning operation, check to make sure the deck clutch switch is engaging and disengaging the blades properly.

WARNING

Make sure that the area around and under the deck is clear and that there are no bystanders in the immediate area before proceeding.

To check the deck clutch switch:

1. Start the engine and engage the deck clutch.
2. With the deck clutch switch up (clutch engaged) and the engine running, listen to confirm that the mower blades are rotating.
3. Now, push the deck clutch switch down (clutch disengaged), and with the engine running, listen to confirm that the blades have stopped rotating.
4. If the mower blades continue to rotate with the deck clutch switch down, discontinue operation immediately and contact your Hustler® Dealer.

Follow these procedures to maximize clutch life.

1. **Engage the clutch** only when the throttle is set at approximately **2/3 throttle** and there is **no load** on the blades. After clutch engagement, advance the engine throttle to full rpm.

   Engaging the deck clutch at high engine rpm or when under heavy load (in tall grass, for example) can cause belts and/or electric clutch to slip, resulting in premature wear or possible damage.
2. **Disengage the clutch** only when the throttle is set at **less than 1/2 throttle.**

   Never disengage the clutch with the engine running at high rpm. Setting the throttle to less than 1/2 throttle when disengaging the clutch will help extend clutch life.

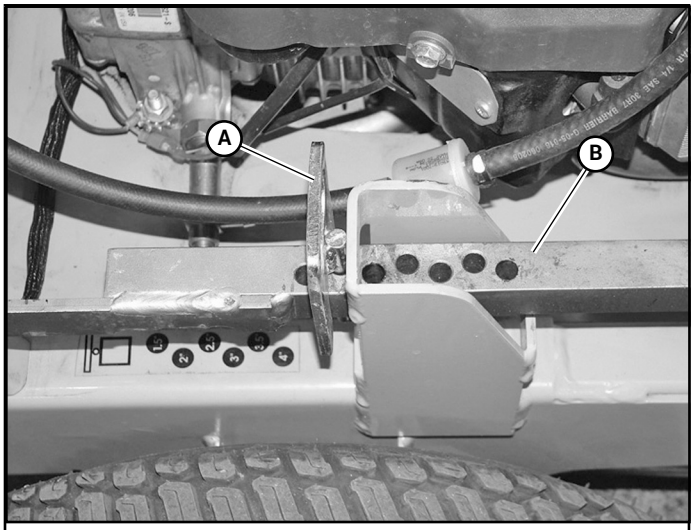
Warranty will not be allowed for deck clutches that fail due to improper engagement and disengagement practices.

Deck Cutting Height Adjustment

Deck height is adjustable in 1/4" (6.4 mm) increments. Figure 3-12

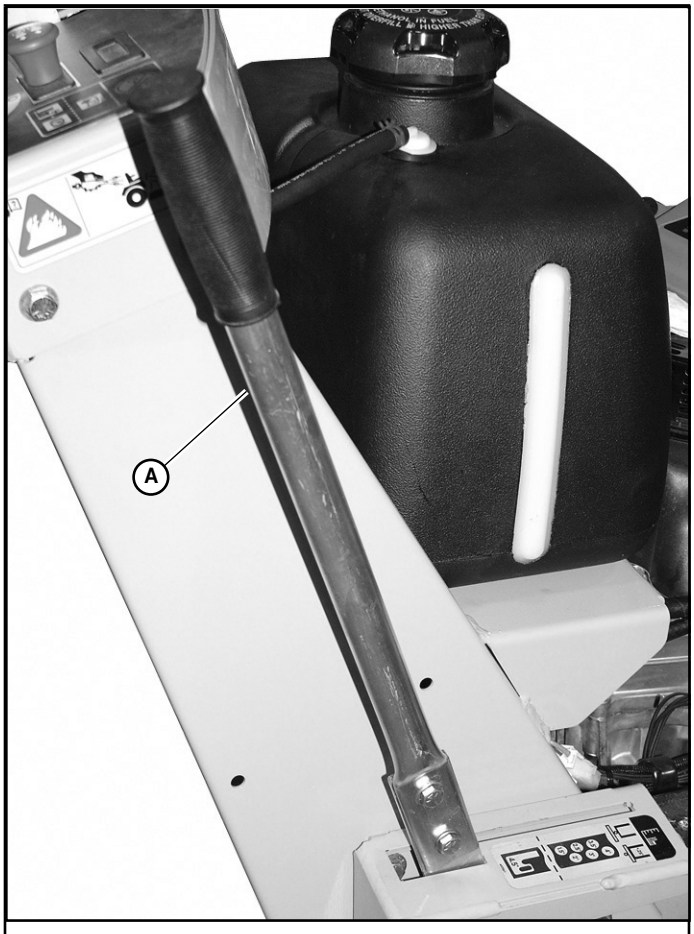
To adjust the cutting height, pull rearward on the deck lift lever to raise the deck and then place the height adjusting stop into the desired cutting height hole. Slowly release the deck lift lever until the height adjusting stop is resting against the bracket.

Move the deck lift lever to the transport position slot when the unit is in the transport mode. Figure 3-13.



A. Height adjusting stop | **B.** Height adjusting bar

Figure 3-12



A. Deck lift lever

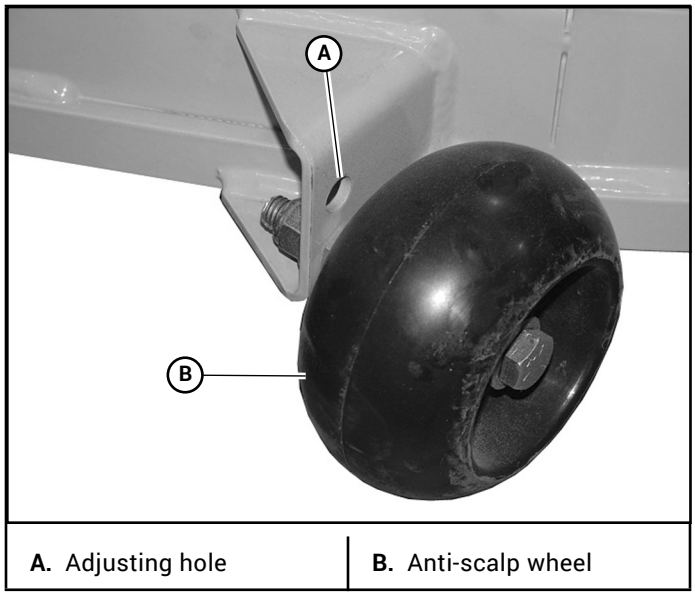
Figure 3-13

Anti-scalp Wheels

Anti-scalp wheels are standard on some TrimStar® mowers. These anti-scalp wheels are designed to minimize scalping when mowing on rough, uneven terrain.

After setting the cutting height, adjust the anti-scalp wheels so they extend below the deck but **do not contact the ground.** They should always be at least 1/4" to 3/4" (6.35mm to 19.05mm) below the deck. With the unit sitting on a flat level surface, the wheel position can be adjusted up or down as needed from 3/4" to 1-3/4" (19.05 mm to 44.45 mm) below the blade surface. Move the wheels up or down, in 1/2" (12.70 mm) increments, using the different axle mount holes in the wheel mount bracket. Figure 3-14

When adjusting the rear anti-scalp wheels, the wheel should be in the same axle mount hole as the front anti-scalp wheels.



A. Adjusting hole	**B.** Anti-scalp wheel

Figure 3-14

Stand-up Sulkies

Hustler® Turf Equipment does not warrant or accept liability for the use of any attachments not manufactured by Hustler® Turf Equipment, including the use of stand-up sulkies.

All manufacturer's safety instructions issued with any attachments including stand-up sulkies must be followed.

MAINTENANCE & ADJUSTMENTS

Safe Servicing Practices

Refer to the *Safety Precautions* section of this manual for more service safety information.

Service Introduction

Regular maintenance is the best prevention for costly downtime or expensive, premature repair. The following pages contain suggested maintenance information and schedules which the operator should follow on a routine basis. For more detailed information order the correct Parts Manual and General Service Manual for your unit. Refer to the *Product Literature* section of this manual for more information.

Remain alert for unusual noises, which could signal a problem. Visually inspect the machine for any abnormal wear or damage. A good time to detect potential problems is while performing scheduled maintenance service. Correcting the problem as quickly as possible is the best insurance.

Clear away heavy build-up of grease, oil and dirt, especially in the engine and hydraulic component areas; minute dust particles are abrasive to close-tolerance engine and hydraulic assemblies.

Inspect mower daily for grass clippings and wire or string tangles. The underside of the mower deck will collect a build-up of grass clippings and dirt, especially when grass is wet or has high moisture content. This build-up will harden, restricting blade and air movement which will probably result in a poorer quality of cutting. Therefore it should be removed routinely. To do this it will be necessary to raise and block the deck using jack stands or blocks in the full up position. Scrape the build-up off from underneath.

Some repairs require the assistance of a trained service mechanic and should not be attempted by unskilled personnel. Consult your Hustler® service center when assistance is needed.

Torque Values

WARNING

Particular attention must be given to tightening the drive wheel lug nuts and blade spindle bolts. Failure to correctly torque these items may result in the loss of a wheel or blade, which can cause serious damage or personal injury.

Torque values are given below:

	ft-lbs	N•m
Wheel (lug) nuts	70	95
Blade spindle bolt top	118	160
Blade spindle bolt bottom	118	160

Lug nuts only - It is recommended that these be checked after the first 2 hours of operation, initially, every 50 hours and following removal for repair or replacement.

For all other torques refer to the mower's *General Service Manual* for standard torque chart. See *Product Literature* section for ordering information.

For engine torque values, refer to the engine owner's manual.

Tires

It is important for level mowing that the tires have the same amount of air pressure. The recommended pressures are:

Drive wheels . . . . . 8–12 psi (55–83 KPa)

Front wheels . . . . . 8–12 psi (55–83 KPa)

If you wish to use non-pneumatic tires on your Hustler® mower, the tire must be a Hustler® approved tire. Warranty claims will be denied on any mower equipped with unapproved non-pneumatic tires.

Lubrication

Use no more than 1 or 2 ounces (30–60 cc) of SAE multi-purpose grease, (1 to 2 pumps on an average grease gun). Do not force lubricant in to grease zerks. Bearings are sealed and do not require much lubricant.

After every 50 hours of normal operation, apply a SAE multi-purpose grease to the other lubrication points shown on the *Maintenance Locator Chart* found elsewhere in this manual. When operating under extremely dirty conditions, lubricate more frequently than every 50 hours.

To lubricate these points:

1. Wipe away all old grease and dirt from the lubrication fittings to prevent dirt or foreign material from entering as new grease is applied.
2. Use a high pressure grease gun to force in the new grease. Apply pressure until clean grease oozes from each lubrication point.
3. Wipe away any excess grease.

Electrical System

IMPORTANT: Refer to the *Safety* section of this manual for detailed battery servicing safety information.

Electric start mowers only

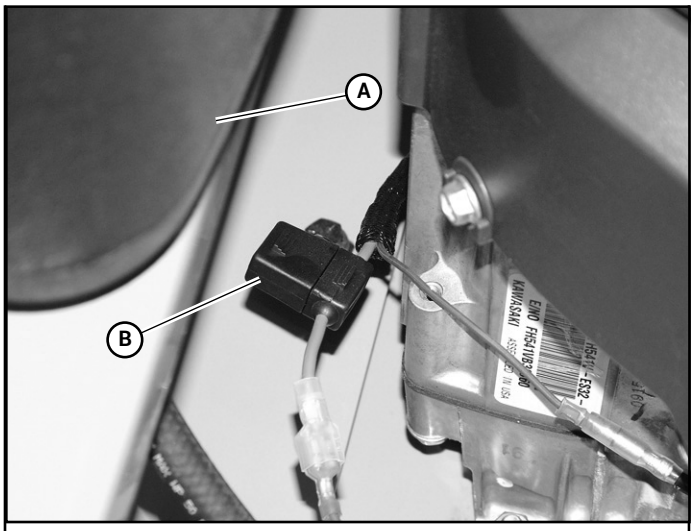
The electrical system is a 12 volt, negative ground. The recommended battery size is:

Garden tractor BCI group U1R with a 225 or better cranking AMP rating

A maintenance-free battery is recommended. Otherwise, follow battery manufacturer's maintenance, safety, storing and charging specifications.

Master in-line fuse

These mowers have a master in-line fuse in the electrical system. This is the main fuse to protect the complete electrical system. It is located below the right front of the fuel tank. Figure 4-1



A. Fuel tank | **B.** Master fuse housing

Figure 4-1

Hydraulic System

This mower is equipped with two integrated hydrostatic transmissions (transaxles).

IMPORTANT: Never use hydraulic or automatic transmission fluid in this system; use only the specified motor oil. Remember, dirt is the primary enemy of any hydraulic system.

Use SAE 20W50 motor oil, 15W50 synthetic oil, or 20W50 synthetic oil when changing the system oil and filter. However, for maximum transmission life use Hustler® 100% synthetic 20W50.

The hydraulic expansion tank is located behind the left rear corner of the engine. Figure 4-2

Check the oil level in the hydraulic system after every 50 hours of operation or weekly, whichever occurs first. Check more often if the system appears to be leaking or otherwise malfunctioning.

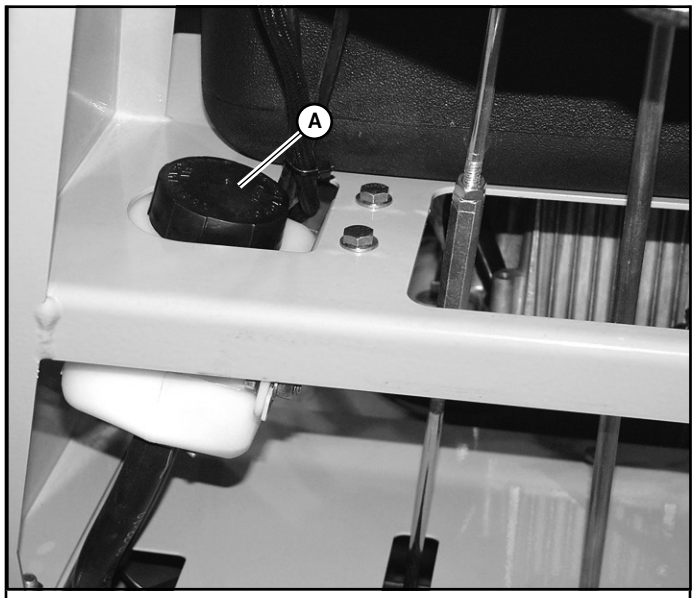
When the hydraulic system oil is cold, the fluid level should be at the "Full Cold" line on the expansion tank.

Initial system oil and filter change **must** be after the first 75 hours of use or 1 year whichever comes first. Thereafter, replace filter and oil in each transaxle every 2 years or 200 hours, whichever comes first.

NOTE: The filter guard must be removed to access the filter. Figure 4-3

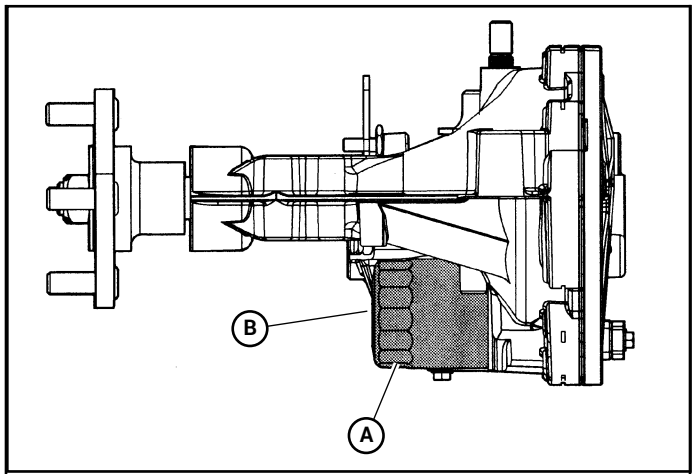
Each transaxle's filter is located per Figure 4-3. A standard oil filter wrench is used to change filter; threads are right handed. **Use a Hustler® approved filter element only.**

IMPORTANT: When washing the mower, direct the spray away (especially if using a power washer) from the transaxle's seals to prevent water intrusion and to ensure component performance.



A. Expansion tank

Figure 4-2



A. Filter | **B.** Filter guard

Figure 4-3

Refer to the Hustler® TrimStar® General Service Manual (P/N 114674) for complete hydraulic oil and filter change procedures.

Fuel and Evaporative Emissions Control System

IMPORTANT: Refer to the *Safety* section of this manual for fuel handling safety information.

IMPORTANT: Refer to the engine owner's manual for additional emissions control information.

Use only Hustler® approved replacement parts.

Your evaporative emission control system may include parts such as:

- fuel tanks
- fuel lines
- fuel line fittings
- fuel caps
- carbon canisters
- canister mounting brackets
- carburetor purge port connection
- filters
- vapor hoses
- clamps, control valves
- control solenoids
- electronic controls
- vacuum control diaphragms
- purge valves
- liquid/vapor separator
- other associated components

WARNING

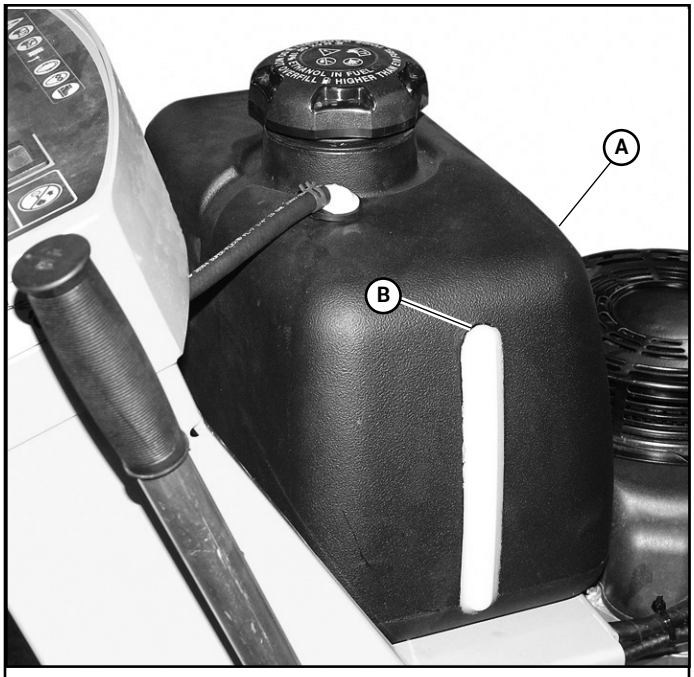
Use of replacement parts not equivalent to the original parts may result in system failure and pose a safety hazard.

The 5.0 U.S. gallon (18.9 liter) fuel tank is located behind the engine. Figure 4-4 & Figure 4-5

Park the mower on level ground before filling the fuel tank.

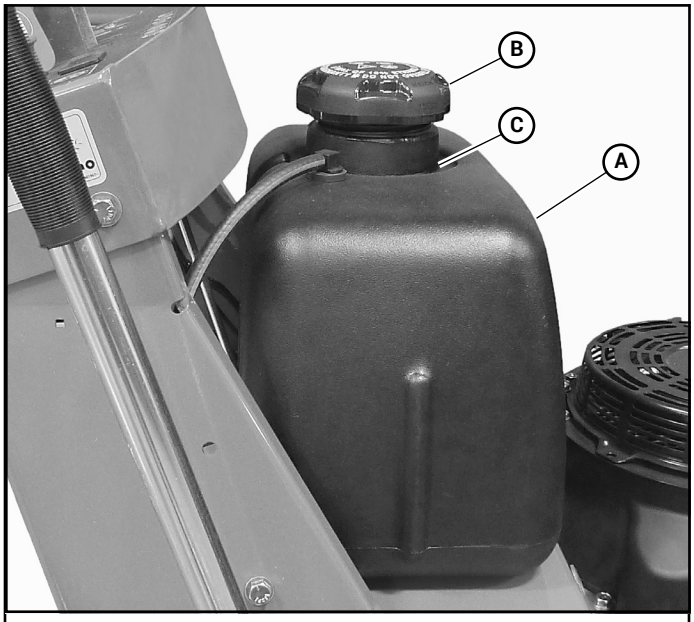
Clean the area around the fuel cap before removing the cap. Remove the fuel cap slowly.

When threading the fuel cap onto the filler neck, tighten the cap until it begins to click, then, continue to turn it until at least three clicks are heard.



A. Fuel tank	**B.** Top of sight glass

Figure 4-4



A. Fuel tank **B.** Fuel cap	**C.** Fuel Neck

Figure 4-5

IMPORTANT: Do not overfill the fuel tank. If the fuel tank has a sight glass, the fuel tank should be filled no higher than to the top of the sight glass. Figure 4-4 Otherwise, the fuel tank should be filled no higher than the bottom of the fill neck. Figure 4-5 The fuel system is designed to leave room for the fuel to expand with fuel temperature changes. Stop filling the tank after the fuel nozzle automatically clicks off.

WARNING

Overfilling the fuel tank may cause the following:

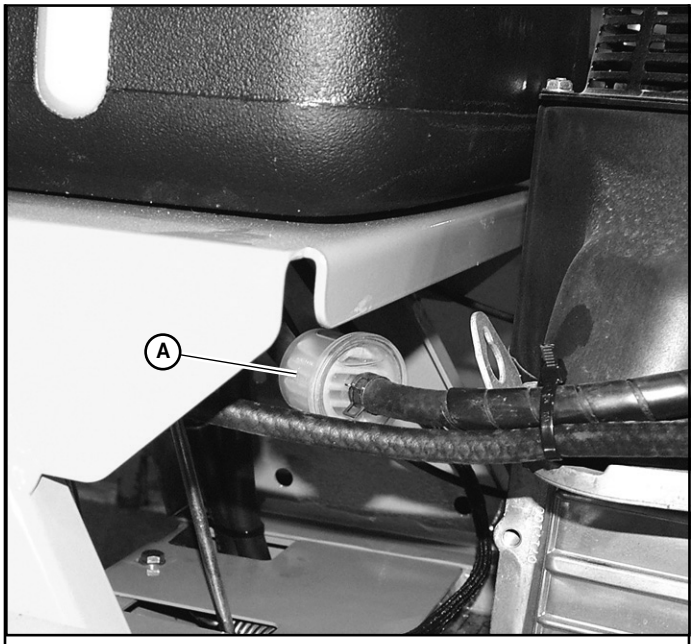
- Engine damage
- Fire hazard!

Use regular unleaded gasoline with an octane rating of 87 or higher. Maximum of 10% ethanol (E10) in fuel. Fuels with greater than 10% ethanol (such as E15, E20 and E85) voids warranty. Fuels with greater than 10% ethanol are not approved for use and such illegal use could cause equipment failure and pose a fire hazard.

Refer to the *Engine Owner's Manual* for additional fuel specification requirements.

The fuel filter is installed in the fuel line between fuel tank and engine fuel pump. Replace filter annually or after every 500 hours of operation, whichever occurs first. Figure 4-6

When replacing the fuel filter, check the fuel line hoses for any cracks or leaks. Replace as needed.



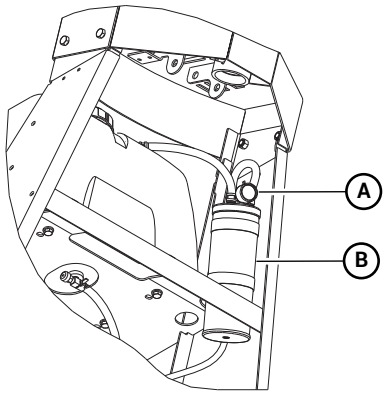
A. Fuel filter

Figure 4-6

Carbon Canister

Some mowers will have a carbon canister incorporated into the fuel system.

This is a mandatory feature that is required on all mowers using gasoline engines that are put into operation in California. Figure 4-8

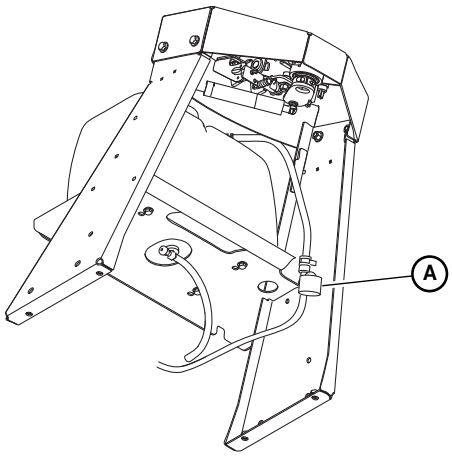


A. Fuel evaporation system filter
B. Carbon canister

Figure 4-7

Fuel Evaporation System Filter

These mowers have a fuel evaporation system filter. This filter must be checked and replaced every 300 hours or annually whichever comes first. Figure 4-8



A. Fuel evaporation system filter

Figure 4-8

Engine Oil and Filter

WARNING

If the engine has been running and is up to operating temperature, allow the engine to cool before changing the oil. Engine and engine oil will be very hot, so be very careful when changing oil and wear the appropriate protective gear to avoid being burned or exposed to engine oil.

Check engine oil daily and after every 4 hours of operation. Mower must be on a level surface when checking oil. Refer to engine manual and maintenance schedule for oil recommendation and capacities. Hustler® Motor Oil is recommended.

Change the engine oil and filter after the first 5 hours of operation and then per the engine manufacturer's recommendations after that. If mower is being operated in extremely dirty conditions, then it is recommended oil be changed more frequently.

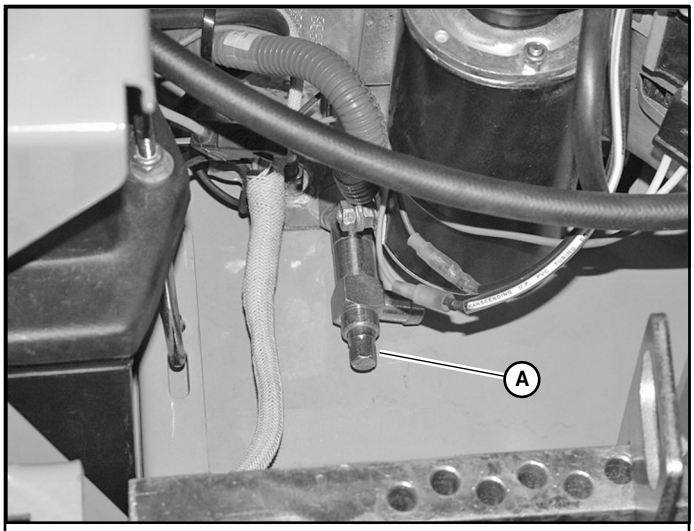
Draining the engine oil:

1. Locate the oil drain valve on the lower right side of the engine. Figure 4-9
2. Locate the oil drain hose that was supplied with the machine. Be sure to clean and clear it of debris that might block the flow of the engine oil.
3. Attach one end of the hose onto the oil drain valve nipple. Make sure the hose is pushed all the way onto the valve.
4. Position the loose end of the hose so that it can drain into a suitable oil drain container.
5. With the hose in position, use a 10 mm wrench or socket and open the valve approximately 4 turns in the counterclockwise direction. Allow 10 minutes for engine oil to adequately drain.
6. After oil is drained, close the valve by turning it in the clockwise direction until it is fully closed.
7. Once the valve is closed, carefully remove the oil drain hose and clean up any spilled oil.

   IMPORTANT: All oil drips or spills **must** be cleaned off of the exhaust system before operating the machine.
8. Clean the oil drain hose and store it appropriately.

Engine Air Filter

Perform engine air filter maintenance per the *Maintenance Schedule* shown elsewhere in this manual.



A. Oil drain valve

Figure 4-9

General Engine Maintenance

Detailed instructions and recommendations for break-in and regular maintenance are specified in the *Engine Owner's Manual*. Please refer to this manual for engine servicing, lubricating oil levels with quality and viscosity recommendations, bolt torques, etc. The engine warranty is backed by the engine manufacturer. Special attention should be paid to applicable data which will not be duplicated here.

Belts

Inspect belts frequently for wear and serviceability. Replace a belt that shows signs of:

- severe cuts
- tears
- separation
- weather checking
- cracking
- burns caused by slipping.

Slight raveling of belt covering does not indicate failure, trim ravelings with a sharp knife.

WARNING

If the pump belt fails, loss of control will occur especially when operating on a slope.

If you lose steering control while operating the machine, place the H-Bar® steering lever in the neutral position immediately and place the neutral lock/park brake lever in the park brake position. Inspect the machine and involve your Hustler® dealer to resolve the problem before continuing to operate.

Inspect the belt pulley grooves and flanges for wear. A new belt, or one in good condition, should never run against the bottom of the groove. Replace the pulley when this is the case, otherwise the belt will lose power and slip excessively.

Never pry a belt to get it on a pulley as this will cut or damage the fibers of the belt covering.

Keep oil and grease away from belts, and never use belt dressings. Any of these will destroy the belt composition in a very short time.

Mower Blades

Mower Blade Maintenance

IMPORTANT: Refer to the *Safety* section of this manual for blade handling safety information.

Refer to the *Mower Blade Replacement* section for blade removal and installation.

WARNING

Mower blades are sharp and can cut. Wrap the blade(s) or wear gloves and use extra caution when servicing them.

Check the mower blades daily, they are the key to power efficiency and well groomed turf. Keep the blades sharp. A dull blade will tear rather than cut the grass, leaving a brown ragged top on the grass within a few hours. A dull blade also requires more power from the engine.

Replace any blade which is bent, cracked or broken.

WARNING

Always check for blade damage:

- if mower strikes a rock, branch or other foreign object during mowing!
- or if an abnormal vibration occurs while operating.

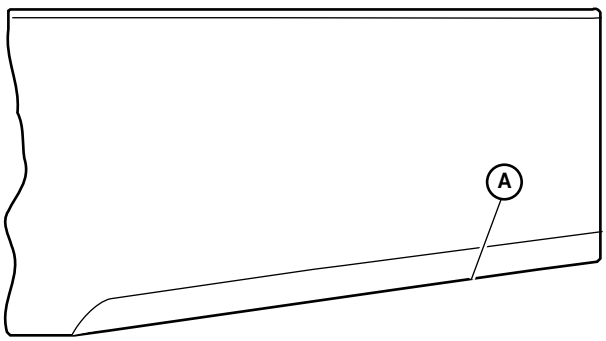
Make all necessary repairs before resuming operation.

Sharpen the blades following the pattern shown. Touch-up sharpening can be done with a file. Figure 4-10

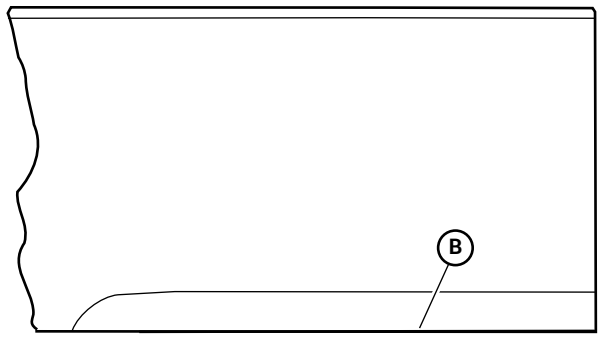
After grinding the blades, check for balance. Blade balancing can be done by placing the blade on an inverted line punch or 5/8" bolt. A commercial balancing tool is also available through most hardware supply stores.

The blade should not lean or tilt. When spinning the blade slowly it should not wobble. Balance the blade before reinstalling.

Lay the blade on a flat surface and check for distortion.



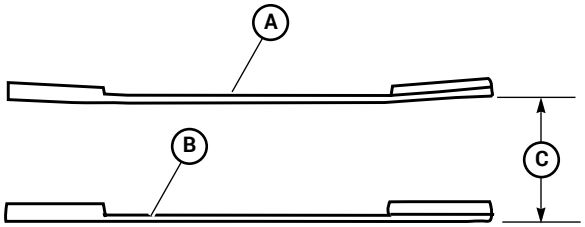
Do not sharpen to original pattern (below). It is easier to get a straight cutting edge following the re-sharpening pattern shown above.



A. Re-sharpening pattern
B. Original edge

Figure 4-10

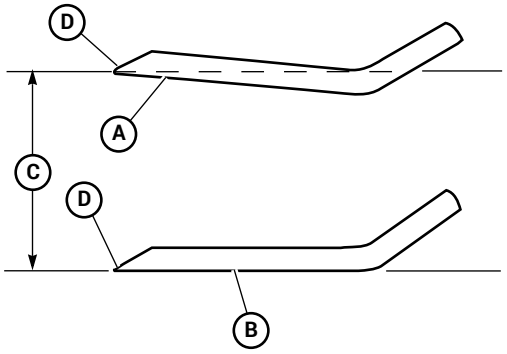
Comparison of Warped and Straight Blades



A. Warped blade — replace
B. Straight blade
C. Cutting plane

Figure 4-11

End view of blades, comparing twisted and straightened blades.



A. Twisted blade edge — replace blade
B. Straight blade edge
C. Cutting plane
D. Cutting edge

Figure 4-12

Mower Blade Replacement

IMPORTANT: Refer to the *Safety* section of this manual for blade handling safety information.

WARNING

Mower blades are sharp and can cut. Wrap the blade(s) or wear gloves and use extra caution when servicing them.

A 15/16" wrench is required to remove the 5/8" cap screw holding the blade to the spindle shaft. **NOTE:** A blade holding tool (P/N 381442) is available from Hustler® Turf Equipment. It is designed to prevent the blades from rotating when they are being removed or installed on the spindle. Contact your Hustler® Dealer for more information.

Do not re-use spindle bolts which have stripped, worn or undercut threads. Torque bolts on spindles to 118 ft-lbs (160.0 N•m) when reinstalling blades.

WARNING

Failure to correctly torque the bolt may result in the loss of the blade which can cause serious injury.

Properly compressed cup washers maintain the correct compression load on the blades. Replace the cup washers if they are cracked or flattened.

IMPORTANT: The blade sail (curved part) must be pointing upward toward the inside of the deck to ensure proper cutting.

When mounting blades, rotate them after installation to ensure blade tips do not touch each other or sides of the mower.

Maintenance Schedule
Figure 4-13, Figure 4-14, Figure 4-15, Figure 4-16, & Figure 4-17

SERVICE AT INTERVALS INDICATED	WEEKLY OR 50 HOURS	MONTHLY OR 100 HOURS	* ANNUALLY OR 300 HOURS
Verify safety start interlock system	Prior to each use		
Visually inspect unit for loose hardware and/or damaged parts	Prior to each use		
Visually inspect tires	Prior to each use		
Check oil level, engine (1)	Prior to each use or every 4 hours		
Clean air intake screen (4)	Prior to each use or every 4 hours		
Check fuel level	Prior to each use		
Blades - sharpen & securely fastened	Prior to each use		
Discharge chute - securely in place & in lowest position	Prior to each use		
Clean engine and transaxle compartment	Daily		
Replace engine air cleaner element (4)(9)	As needed		
Change transaxle oil & filter (7)	Every 200 hours or 2 years		
Grease deck height pivots	X		
Grease front wheel bearings	X		
Change engine oil & filter (1)(3)	X		
Clean cylinder & head fins (9)	X		
Check battery connections	X		
Check tire pressure with a gauge	X		
Check hydraulic oil level	X		
Clean engine exterior (9)	X		
Clean & regap spark plugs (9)		X	
Check pump & deck belt tension and condition (5)		X	
Check fuel system (6)		X	
Check fuel tank grommet (6)		X	
Check hydraulic lines		X	
Tighten lug nuts on wheels (2)		X	
Change fuel filter (6)			X
Replace spark plugs (9)			X
Replace fuel evaporation system filter (8)			X

NOTES:

1. Initial engine oil change is after 5 hours of operation. Thereafter, change oil after every 50 hours operation. Change more often under dusty or dirty conditions and during hot weather periods. Hustler® Motor Oil is recommended.
2. Torque initially and after first 2 hours of operation.
3. Change engine oil filter per the engine manufacturer's recommendations. Refer to *Engine Owner's Manual* for recommendations and other maintenance items.
4. Service more often under dusty or dirty conditions.
5. **Pump drive belt only - Inspect every 6 months or 100 hours** and replace if worn or cracking is noticed. Otherwise, **replace every 200 hours or 2 years** whichever comes first. Refer to *Cold weather pump clutch* section for tensioning information.
6. Check fuel system for any crack or leaks including, but not limited to, fuel line hoses, fuel valve, vent line hoses, vent valve, vapor valve, carbon canister, and grommets. Repair as needed.
7. **Initial** hydraulic system oil and filter change **must** be after the **first 75 hours of use or 1 year whichever comes first.** Thereafter, replace filter and oil in each transaxle **every 2 years or 200 hours**, whichever comes first. Hustler® 100% Synthetic 20W50 Hydrostatic Transmission Oil is recommended.
8. More often under dusty or dirty conditions and during hot weather.
9. Refer to engine owner's manual for engine service information.

* After completing maintenance cycle (300 hours), repeat cycle.

Figure 4-13

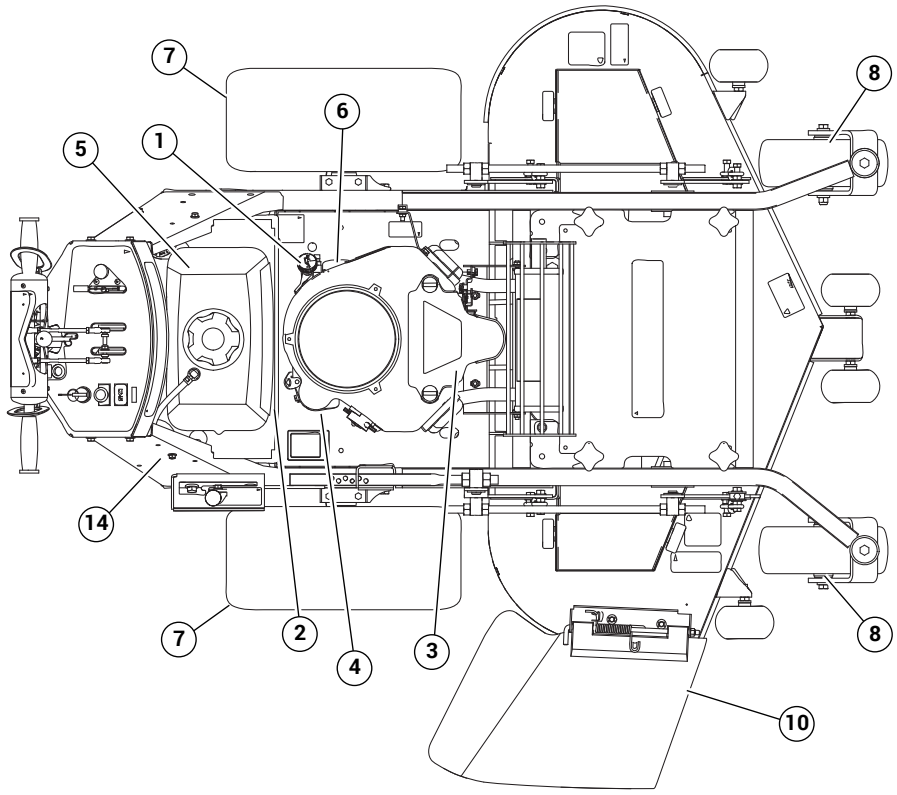


Figure 4-14

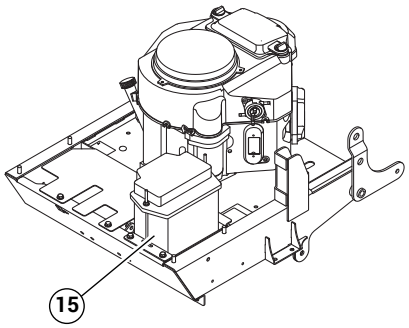
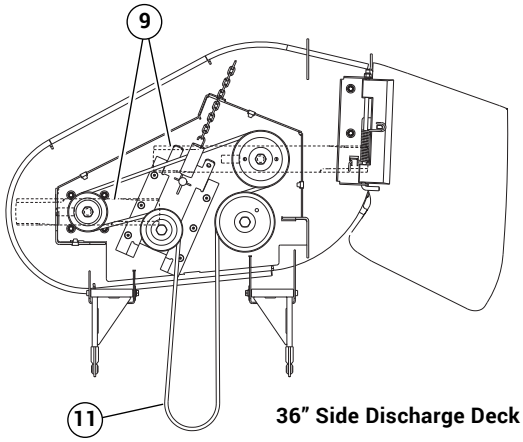


Figure 4-15



36″ Side Discharge Deck

Figure 4-16

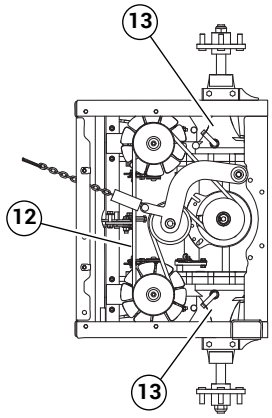
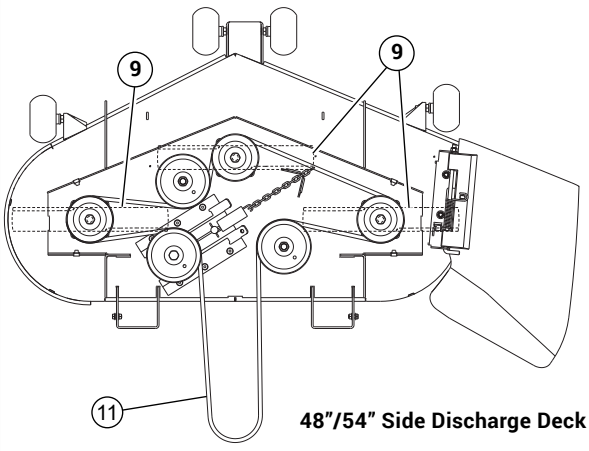


Figure 4-17



48″/54″ Side Discharge Deck

1. Engine oil fill & dipstick
2. Fuel filter
3. Engine air cleaner
4. Engine oil drain
5. Fuel tank
6. Engine oil filter
7. Drive tire
8. Front wheel bearings
9. Blades
10. Discharge chute
11. Deck drive belt
12. Pump belt
13. Transaxle oil filter
14. Evaporative emission system filter
15. Battery

Maintenance Record

Perform the initial hydraulic system oil and filter change after the first 50 hours of use.

Date:	Maintenance/Service Performed:
Dealer:	
Hour Meter Reading:	
Date:	Maintenance/Service Performed:
Dealer:	
Hour Meter Reading:	
Date:	Maintenance/Service Performed:
Dealer:	
Hour Meter Reading:	
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Date:	Maintenance/Service Performed:
Dealer:	
Hour Meter Reading:	

TROUBLESHOOTING

The majority of operating problems that occur with a system can be traced to improper adjustments or delayed service. A consistently applied preventative maintenance program, as outlined in the *Maintenance* section of this manual, will prevent many problems. The following chart is designed to help you locate a problem by suggesting probable causes and the recommended solutions.

SYMPTOMS	PROBABLE CAUSES	SUGGESTED REMEDIES
The engine will not start, starts hard or fails to keep running	Deck clutch engaged	Disengage deck clutch
	No fuel or line plugged	Fill tank or replace line
	Fuel valve is turned off	Open the fuel valve
	There is incorrect fuel in the fuel system	Drain the tank and replace the fuel with the proper type
	There is dirt in the fuel filter	Replace the fuel filter
	Dirt, water or stale fuel in the fuel system	Contact your Dealer
	The choke is not on	Move the choke lever to ON
	Numerous	See engine manual
Engine: Runs with continuous misfiring or engine runs unevenly or erratically	Numerous	See engine manual
Loss of power or system will not operate in either direction	Restrictions in air cleaner	Service air cleaner
	Poor compression	Contact your Dealer
	Steering linkage needs adjustment	Adjust linkage
	Tow valve open	Close tow valve
	The traction drive belt is worn, loose or broken	Install a new traction drive belt
	The traction drive belt is off the pulley	Install the traction drive belt and check for a reason
	For additional causes	See engine manual
Overheating	Air intake screen or cleaning fins clogged	Clean screen and fins
	For additional causes	See engine manual
Low engine oil pressure	Low oil level	Add oil
	Oil diluted or too light	Change oil and check for source of contamination
High oil consumption	Numerous	Contact your Dealer
Mower jerky when starting or operates in one direction only	Steering control linkage needs adjustment	Adjust linkage
	Transaxle component faulty	Contact your Dealer
Mower creeps when H-Bar® handle is in neutral	Steering linkage needs adjustment	Adjust linkage

SYMPTOMS	PROBABLE CAUSES	SUGGESTED REMEDIES
Mower circles or veers in one direction	Steering linkage needs adjustment	Adjust linkage
	Tires improperly inflated	Adjust air pressure to 8–12 psi (55–83 KPa)
	Transxle component faulty	Contact your Dealer
There is abnormal vibration	The engine mounting bolts are loose	Tighten the engine mounting bolts
	The engine pulley, idler pulley or blade pulley is loose	Tighten the appropriate pulley
	The engine pulley is damaged	Contact your Dealer
	The cutting blade(s) is/are bent or unbalanced	Install new cutting blade(s)
	A blade mounting bolt is loose	Tighten the blade mounting bolt
	Spindle bearing is worn or loose	Replace or tighten spindle bearing
	A blade spindle is bent	Contact your Dealer
Uneven cutting height	The blade(s) are not sharp	Sharpen the blades
	A cutting blade(s) is/are bent	Install new cutting blade(s)
	The deck is not level	Level the deck per the Deck leveling section of the General Service Manual
	An anti-scalp wheel is not set correctly	Adjust the height of the anti-scalp wheel
	The underside of the deck is dirty	Clean the underside of the deck
	Tires improperly inflated	Adjust air pressure to 8–12 psi (55–83 KPa)
	A blade spindle is bent	Contact your Dealer
Blades do not rotate	The deck drive belt is worn, loose or broken	Install a new deck drive belt
	The deck drive belt is off the pulley	Install the deck drive belt and check for a reason
	Electric clutch is not engaging	Check and/or replace 10 amp fuse. Contact your dealer

STORAGE

When storing the unit at the end of the mowing season, the mower, engine, and battery should have the following items serviced before storage.

If the mower has been stored for an extended period of time, follow the new season preparation steps before beginning operation.

General Mower Preparation for Storage

1. Remove all grass, dirt, and trash from mower and cutting units.

   IMPORTANT: Wash the machine with a mild detergent and water. Do not pressure wash the machine. Avoid excessive use of water, especially near the control panel and engine.
2. Clean mower and deck and touch up all scrapes with touch-up paint.
3. Install new air filter per *Engine Owner's Manual*.
4. Check thoroughly for any worn or damaged parts that need replacing and order them from your dealer.
5. Thoroughly lubricate machine, according to the *Maintenance* section.
6. Block mower up so weight is off tires. Check tire pressure and inflate to proper operating pressure.

   NOTE: Do not deflate tires.
7. Perform separate engine and battery preparation as listed below.
8. Store mower in a clean, dry place.

Preparation of Engine for Storage

If the mower is to be unused for an extended period of time (30 days or more), the engine will need to be prepared for storage. Use the following procedures before storing the mower.

IMPORTANT: Refer to the *Fuel Handling Precautions* section of this manual for important safety information before proceeding.

1. Add a Hustler® approved fuel stabilizer to the fuel system. Refer to the instructions shown on the fuel stabilizer bottle for proper usage. Hustler® Fuel Stabilizer with Cleaner is recommended. For detailed information consult with your Dealer.
2. Fill the fuel tank(s) with fresh fuel.

   NOTE: Use non-ethanol fuel if possible.

WARNING

To prevent carbon monoxide poisoning, operate the engine in a well ventilated area only.

3. Run the engine for a minimum of 10 minutes.

WARNING

Allow the engine to cool before changing the engine oil. Use caution when changing the engine oil as it will be very hot. You should wear the appropriate protective gear to avoid being burned or exposed to engine oil.

4. Drain the oil from the crankcase while the engine is still warm.
5. Replace the engine oil filter.
6. Refill with fresh oil of the proper viscosity. Hustler® Motor Oil is recommended.
7. Close the fuel shut-off valve (if equipped).
8. Check the oil filler cap and fuel tank cap(s) to make certain they are securely in place.
9. Refer to the engine manual for more information.

Preparation of Battery for Storage (if applicable)

When the machine is to be unused for long periods, it is best to disconnect the battery and remove it from the unit. At this time perform the following battery maintenance:

1. Remove the battery from machine.
2. Clean the battery, terminals, and cable connectors.
3. Charge the battery, if necessary.
4. Store the battery in a cool, dry place (do not expose to freezing temperatures).
5. Always keep the battery fully charged. Especially important to prevent battery damage when the temperature is below 32°F (0°C).

New Season Preparation

Before starting the mower following post season storage, the following service is required:

1. Clean mower, removing trash and dirt accumulation.
2. Check engine oil and hydraulic oil levels.
3. Install fully charged battery and attach the battery cables (if applicable).
4. Fill fuel tank(s) with fresh fuel. Run machine at half speed for 5 minutes, checking operation of the H-Bar®

handle. Stop engine and check for oil leaks, loose fittings and so forth.

WARNING

At start of new season always check that fresh oil has been added to machine. If oil is drained at season's end and not replaced, engine damage will result.

5. Tighten any bolts that have loosened and make sure all hair pins, cotter pins and clevis pins are in place.
6. Install all safety shields and review safety precautions listed in this manual.
7. Check and inflate tires to 8–12 psi (55–83 KPa).
8. Refer to engine manual for more information.

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