

Gasoline containing up to 10% ethanol (E10) is acceptable for use in this machine. The use of any gasoline exceeding 10% ethanol (E10) will void the product warranty.

Operator's Manual

GT48XLS



581 98 17-49



Please read the operator's manual carefully and make sure you understand the instructions before using the machine.

English



SAFETY RULES

Safe Operation Practices for Ride-On Mowers



DANGER: THIS CUTTING MACHINE IS CAPABLE OF AMPUTATING HANDS AND FEET AND THROWING OBJECTS. FAILURE TO OBSERVE THE FOLLOWING SAFETY INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.



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



WARNING: Do not coast down a hill in neutral, you may lose control of the tractor.



WARNING: Tow only the attachments that are recommended by and comply with specifications of the manufacturer of your tractor. Use common sense when towing. Operate only at the lowest possible speed when on a slope. Too heavy of a load, while on a slope, is dangerous. Tires can lose traction with the ground and cause you to lose control of your tractor.



WARNING

Engine exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.



WARNING

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

I. GENERAL OPERATION

- Read, understand, and follow all instructions on the machine and in the manual before starting.
- Do not put hands or feet near rotating parts or under the machine. Keep clear of the discharge opening at all times.
- Only allow responsible adults, who are familiar with the instructions, to operate the machine.
- Clear the area of objects such as rocks, toys, wire, etc., which could be picked up and thrown by the blades.
- Ensure the area is clear of bystanders before operating. Stop machine if anyone enters the area.
- Never carry passengers.
- Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.
- Never direct discharged material toward anyone. Avoid discharging material against a wall or obstruction. Material may ricochet back toward the operator. Stop the blades when crossing gravel surfaces.
- Do not operate machine without the entire grass catcher, discharge chute, or other safety devices in place and working.
- Slow down before turning.

- Never leave a running machine unattended. Always turn off blades, set parking brake, and stop engine before dismounting. Manually lock ignition switch (or remove ignition key, if equipped).
- Disengage blades when not mowing. Shut off engine and wait for all parts to come to a complete stop before cleaning the machine, removing the grass catcher, or unclogging the discharge chute.
- Operate machine only in daylight or good artificial light.
- Do not operate the machine while under the influence of alcohol or drugs.
- Watch for traffic when operating near or crossing roadways.
- Use extra care when loading or unloading the machine into a trailer or truck.
- Always wear eye protection when operating machine.
- Data indicates that operators, age 60 years and above, are involved in a large percentage of riding mower-related injuries. These operators should evaluate their ability to operate the riding mower safely enough to protect themselves and others from serious injury.
- Follow the manufacturer's recommendation for wheel weights or counterweights.
- Keep machine free of grass, leaves or other debris buildup which can touch hot exhaust / engine parts and burn. Do not allow the mower deck to plow leaves or other debris which can cause build-up to occur. Clean any oil or fuel spillage before operating or storing the machine. Allow machine to cool before storage.

II. SLOPE OPERATION

Slopes are a major factor related to loss of control and tip-over accidents, which can result in severe injury or death. Operation on all slopes requires extra caution. If you cannot back up the slope or if you feel uneasy on it, do not mow it.

- Mow up and down slopes, not across.
- Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could overturn the machine. Tall grass can hide obstacles.
- Choose a low ground speed so that you will not have to stop or shift while on the slope.
- Do not mow on wet grass. Tires may lose traction. Always keep the machine in gear when going down slopes. Do not shift to neutral and coast downhill.
- Avoid starting, stopping, or turning on a slope. If the tires lose traction, disengage the blades and proceed slowly straight down the slope.
- Keep all movement on the slopes slow and gradual. Do not make sudden changes in speed or direction, which could cause the machine to roll over.
- Use extra care while operating machine with grass catchers or other attachments; they can affect the stability of the machine. Do no use on steep slopes.
- Do not try to stabilize the machine by putting your foot on the ground.
- Do not mow near drop-offs, ditches, or embankments. The machine could suddenly roll over if a wheel is over the edge or if the edge caves in.



SAFETY RULES

Safe Operation Practices for Ride-On Mowers



III. CHILDREN



WARNING. CHILDREN CAN BE INJURED BY THIS EQUIPMENT. The American Academy of Pediatrics recommends that children be a minimum of 12 year of age before operating a pedestrian controlled lawn mower and a minimum of 16 years of age before operating a riding lawn mower.

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

- Keep children out of the mowing area and in the watchful care of a responsible adult other than the operator.
- Be alert and turn machine off if a child enters the area.
- Before and while backing, look behind and down for small children.
- Never carry children, even with the blades shut off. They may fall off and be seriously injured or interfere with safe machine 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 machine.
- Never allow children to operate the machine.
- Use extra care when approaching blind corners, shrubs, trees, or other objects that may block your view of a child.

IV. TOWING

- Tow only with a machine that has a hitch designed for towing. Do not attach towed equipment except at the hitch point.
- Follow the manufacturer's recommendation for weight limits for towed equipment and towing on slopes.
- Never allow children or others in or on towed equipment.
- On slopes, the weight of the towed equipment may cause loss of traction and loss of control.
- Travel slowly and allow extra distance to stop.

V. SERVICE

SAFE HANDLING OF GASOLINE

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

- Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
- Use only approved gasoline container.
- Never remove gas cap or add fuel with the engine running. Allow engine to cool before refueling.
- Never fuel the machine indoors.
- Never store the machine or fuel container where there is an open flame, spark, or pilot light such as on a water heater or other appliances.
- Never fill containers inside a vehicle or on a truck or trailer bed with plastic liner. Always place containers on the ground away from your vehicle when filling.
- Remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment with a portable container, rather than from a gasoline dispenser nozzle.
- 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.

- If fuel is spilled on clothing, change clothing immediately.
- Never overfill fuel tank. Replace gas cap and tighten securely.

GENERAL SERVICE

- Never operate machine in a closed area.
- Keep all nuts and bolts tight to ensure the equipment is in safe working condition.
- Never tamper with safety devices. Check their proper operation regularly.
- Keep machine free of grass, leaves, or other debris build-up. Clean oil or fuel spillage and remove any fuel-soaked debris. Allow machine to cool before storing.
- If you strike a foreign object, stop and inspect the machine. Repair, if necessary, before restarting.
- Never make any adjustments or repairs with the engine running.
- Check grass catcher components and the discharge chute frequently and replace with manufacturer's recommended parts, when necessary.
- Mower blades are sharp. Wrap the blade or wear gloves, and use extra caution when servicing them.
- Check brake operation frequently. Adjust and service as required.
- Maintain or replace safety and instruction labels, as necessary.



- Ensure the area is clear of bystanders before operating. Stop machine if anyone enters the area.
- Never carry passengers.
- Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.
- Never carry children, even with the blades shut off. They may fall off and be seriously injured or interfere with safe machine 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 machine.
- Keep children out of the mowing area and in the watchful care of a responsible adult other than the operator.
- Be alert and turn machine off if a child enters the area.
- Before and while backing, look behind and down for small children.
- Mow up and down slopes (15° Max), not across.
- Choose a low ground speed so that you will not have to stop or shift while on the slope.
- Avoid starting, stopping, or turning on a slope. If the tires lose traction, disengage the blades and proceed slowly straight down the slope.
- If machine stops while going uphill, disengage blades, shift into reverse and back down slowly.
- Do not turn on slopes unless necessary, and then, turn slowly and gradually downhill, if possible.
- When loading or unloading this machine, do not exceed the maximum recommended operation angle of 15°.

PRODUCT SPECIFICATIONS

Gasoline Capacity and type:	4 Gallons/15,14 L Unleaded Regular
Oil Type (API SG-SL):	SAE 30 (above 32°F/0°C) SAE 5W-30 (below 32°F0°C)
Oil Capacity:	W/ Filter: 64 oz/1,65 L W/O Filter: 60 oz/1,4 L
Spark Plug:	Champion 5066 (Gap: .030"/0.76 mm)
Charging System:	16 AMPS @ 3600 RPM
Battery:	AMP/HR: 28 MIN. CCA: 230 Case Size: U1R
Blade Bolt Torque:	45-55 Ft. Lbs./62-75 Nm

CONGRATULATIONS on your purchase of a new tractor. It has been designed, engineered and manufactured to give you the best possible dependability and performance.

Should you experience any problem you cannot easily remedy, please contact your nearest authorized service center/department. We have competent, well-trained technicians and the proper tools to service or repair this tractor.

Please read and retain this manual. The instructions will enable you to assemble and maintain your tractor properly. Always observe the "SAFETY RULES".

CUSTOMER RESPONSIBILITIES

- Read and observe the safety rules.
- Follow a regular schedule in maintaining, caring for and using your tractor.
- Follow the instructions under "Maintenance" and "Storage" sections of this manual.
- Wear proper Personal Protective Equipment (PPE) while operating this machine, including (at a minimum) sturdy footwear, eye protection, and hearing protection. Do not mow in short and/or, open toed footwear.
- Always let someone know you are outside mowing.

WARNING: This tractor is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator.

A spark arrester for the muffler is available through your nearest authorized service center/department.


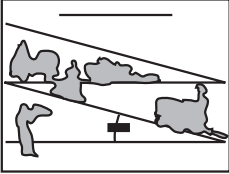
In the state of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands.

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UNASSEMBLED PARTS

<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>(1) Quick Connect</p> </div> <div style="text-align: center;"> <p>Slope Sheet</p>  </div> </div>	<p>*Installed by Dealer *Brush Guard Kit</p>
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ASSEMBLY

Your new tractor has been assembled at the factory with the exception of those parts left unassembled for shipping purposes.

TOOLS REQUIRED FOR ASSEMBLY

A socket wrench set will make assembly easier. Standard wrench sizes are listed.

- | | | |
|--------------------|---------------------|--------|
| (1) 1/2" wrench | Tire pressure gauge | |
| (2) 7/16" wrenches | Utility knife | Pliers |

When right or left hand is mentioned in this manual, it means when you are in the operating position (seated behind the steering wheel).

TO REMOVE TRACTOR FROM CARTON

UNPACK CARTON

- Remove all accessible loose parts and parts cartons from carton.
- Remove end panels and lay side panels flat.
- Check for any additional loose parts or cartons and remove.

BEFORE REMOVING TRACTOR FROM SKID

TO CHECK BATTERY (See Fig. 1)

- Lift hood to raised position.

NOTE: If this battery is put into service after month and year indicated on label (label is located between terminals) charge battery for minimum of one hour at 6-10 amps. (See "BATTERY" in Maintenance section of this manual for charging instructions).

- For battery and battery cable installation see "REPLACING BATTERY" in the "Service and Adjustments" section in this manual.

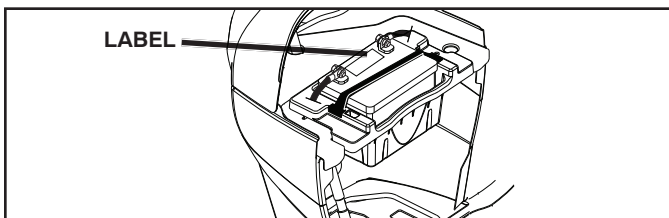


Fig. 1

ADJUST SEAT (See Fig. 2)

- Sit in seat.
- Lift up adjustment lever (A) and slide seat until a comfortable position is reached which allows you to press clutch/brake pedal all the way down.
- Release lever to lock seat in position.

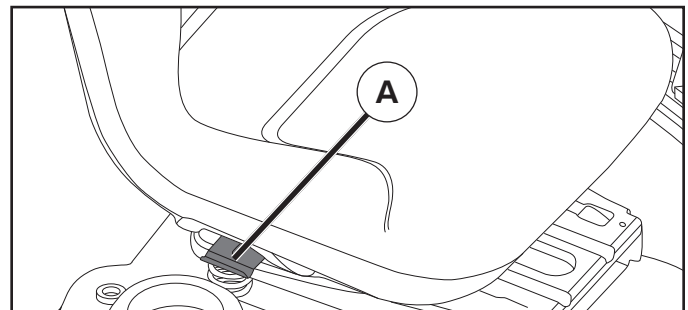


Fig. 2

NOTE: You may now roll your tractor off the skid. Continue using the instructions that follow to remove the tractor from the skid.

WARNING: Before starting, read, understand and follow all instructions in the Operation section of this manual. Ensure tractor is in a well-ventilated area. Ensure the area in front of tractor is clear of other people and objects.

TO ROLL TRACTOR OFF SKID (See Operation section for location and function of controls)

- Raise attachment lift lever to its highest position.
- Release parking brake by depressing brake pedal.
- Place freewheel control in disengaged position to disengage transmission (See "TO TRANSPORT" in the Operation section of this manual).
- Roll tractor forward off skid.

Continue with the instructions that follow.

ASSEMBLY

CHECK TIRE PRESSURE

The tires on your tractor were overinflated at the factory for shipping purposes. Correct tire pressure is important for best cutting performance.

- Reduce tire pressure to PSI shown on tires.

CHECK DECK LEVELNESS

For best cutting results, mower housing should be properly leveled. See "TO LEVEL MOWER HOUSING" in the Service and Adjustments section of this manual.

CHECK FOR PROPER POSITION OF ALL BELTS

See the figures that are shown for replacing motion and mower blade drive belts in the Service and Adjustments section of this manual. Verify that the belts are routed correctly.

CHECK BRAKE SYSTEM

After you learn how to operate your tractor, check to see that the brake is operating properly. See "TO CHECK BRAKE" in the Service and Adjustments section of this manual.

✓ CHECKLIST

BEFORE YOU OPERATE YOUR NEW TRACTOR, WE WISH TO ASSURE THAT YOU RECEIVE THE BEST PERFORMANCE AND SATISFACTION FROM THIS QUALITY PRODUCT.

PLEASE REVIEW THE FOLLOWING CHECKLIST:

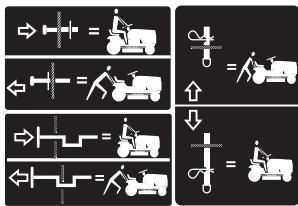
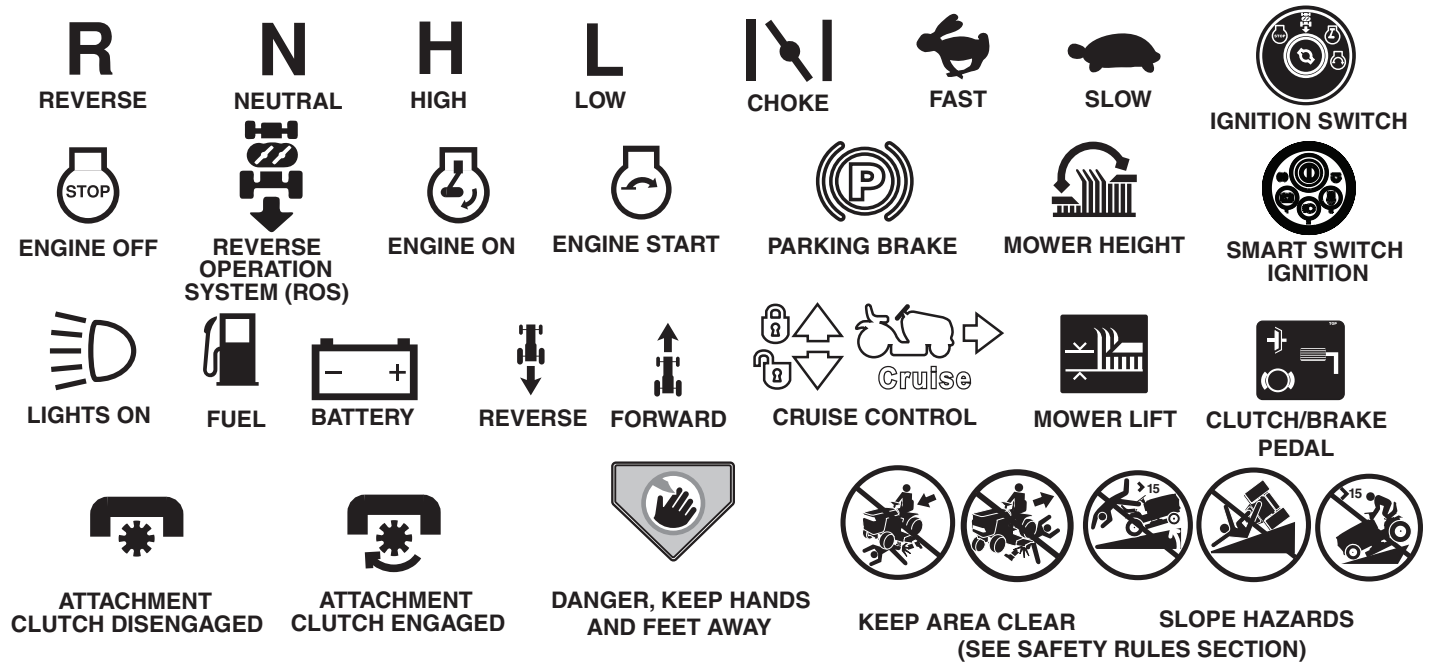
- ✓ All assembly instructions have been completed.
- ✓ No remaining loose parts in carton.
- ✓ Battery is properly prepared and charged.
- ✓ Seat is adjusted comfortably and tightened securely.
- ✓ All tires are properly inflated. (For shipping purposes, the tires were overinflated at the factory).
- ✓ Ensure mower deck is properly leveled side-to-side/front-to-rear for best cutting results. (Tires must be properly inflated for leveling).
- ✓ Check mower and drive belts. Ensure they are routed properly around pulleys and inside all belt keepers.
- ✓ Check wiring. See that all connections are still secure and wires are properly clamped.
- ✓ Before driving tractor, ensure freewheel control is in "transmission engaged" position (see "TO TRANSPORT" in the Operation section of this manual).

WHILE LEARNING HOW TO USE YOUR TRACTOR, PAY EXTRA ATTENTION TO THE FOLLOWING IMPORTANT ITEMS:

- ✓ Engine oil is at proper level.
- ✓ Fuel tank is filled with fresh, clean, regular unleaded gasoline.
- ✓ Become familiar with all controls, their location and function. Operate them before you start the engine.
- ✓ Ensure brake system is in safe operating condition.
- ✓ Ensure Operator Presence System and Reverse Operation System (ROS) are working properly (See the Operation and Maintenance sections in this manual).
- ✓ It is important to purge the transmission before operating your tractor for the first time. Follow proper starting and transmission purging instructions (See "TO START ENGINE" and "PURGE TRANSMISSION" in the Operation section of this manual).

OPERATION

These symbols may appear on your tractor or in literature supplied with the product. Learn and understand their meaning.



FREE WHEEL
(Automatic Models only)



Failure to follow instructions could result in serious injury or death. The safety alert symbol is used to identify safety information about hazards which can result in death, serious injury and/or property damage.



DANGER indicates a hazard which, if not avoided, will result in death or serious injury.



WARNING indicates a hazard which, if not avoided, could result in death or serious injury.



CAUTION indicates a hazard which, if not avoided, might result in minor or moderate injury.

CAUTION when used **without** the alert symbol, indicates a situation that **could result in damage to the tractor and/or engine.**



HOT SURFACES indicates a hazard which, if not avoided, could result in death, serious injury and/or property damage.



FIRE indicates a hazard which, if not avoided, could result in death, serious injury and/or property damage.

OPERATION

KNOW YOUR TRACTOR

READ THIS MANUAL AND SAFETY RULES BEFORE OPERATING YOUR TRACTOR

Compare the illustrations with your tractor to familiarize yourself with the locations of various controls and adjustments. Save this manual for future reference.

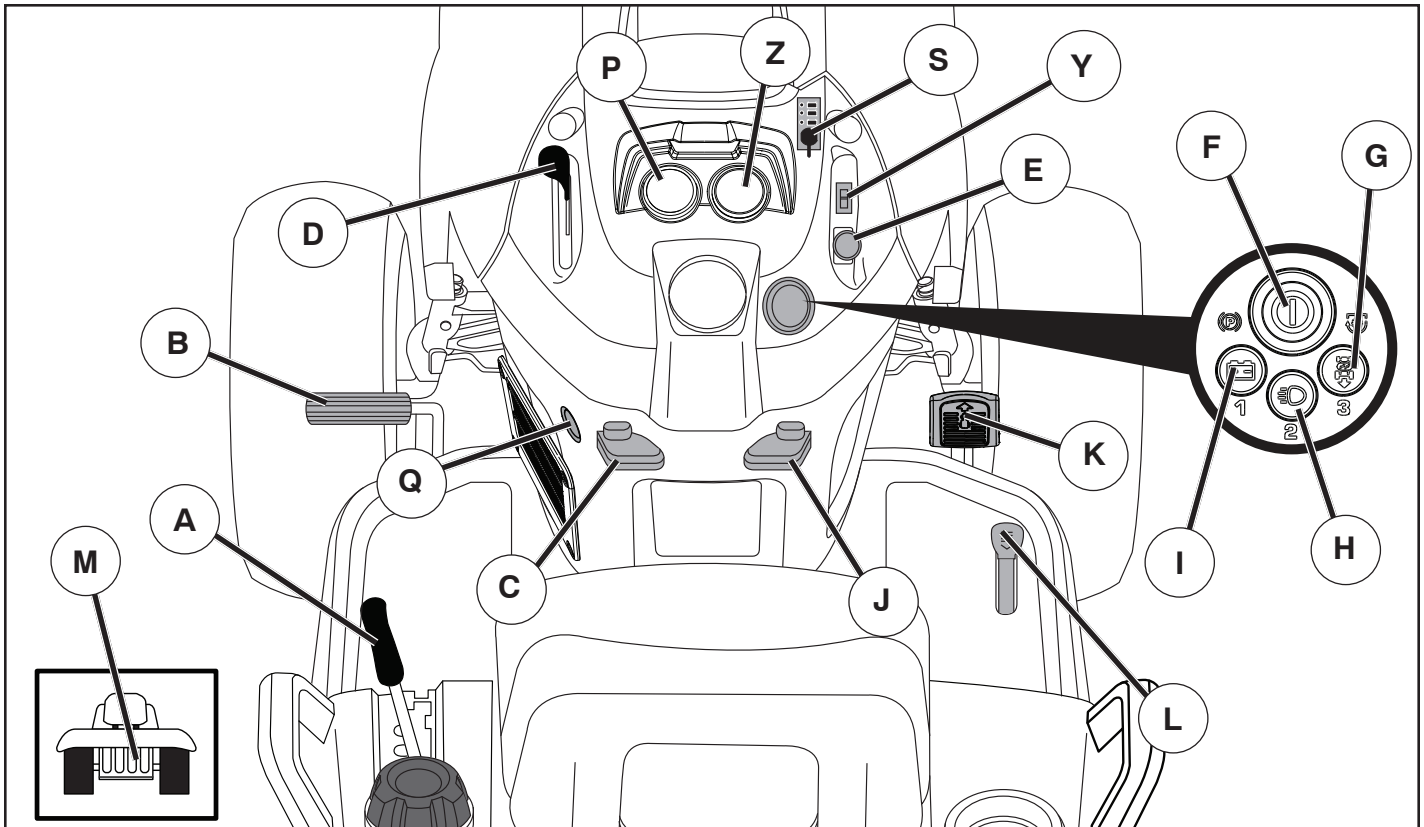


Fig. 3

Our tractors conform to the applicable safety standards of the American National Standards Institute.

(A) ATTACHMENT LIFT LEVER - Used to raise and lower the mower or other attachments mounted to your tractor.

(B) BRAKE PEDAL - Used for braking the tractor and starting the engine.

(C) PARKING BRAKE - Locks clutch/brake pedal into the brake position.

(D) THROTTLE CONTROL - Used to control engine speed.

(E) ATTACHMENT CLUTCH SWITCH - Used to engage the mower blades or other attachments mounted to your tractor.

(F) SMART SWITCH IGNITION (SSI) BUTTON - Used for starting/stopping the engine and confirming/changing safety codes.

(G) REVERSE OPERATION SYSTEM (ROS) - Allows operation of mower deck or other powered attachment while in reverse.

(H) HEADLIGHT BUTTON - Turns the headlights on and off.

(I) BATTERY INDICATOR BUTTON - Used to indicate battery voltage.

(J) CRUISE CONTROL LEVER - Used to set forward movement of tractor at desired speed without holding the forward drive pedal.

(K) FORWARD DRIVE PEDAL - Used for forward movement of tractor.

(L) REVERSE DRIVE PEDAL - Used for reverse movement of tractor.

(M) FREEWHEEL CONTROL - Disengages transmission for pushing or slowly towing the tractor with the engine off.

(P) SERVICE REMINDER / HOUR METER - Indicates when service is required for the engine and mower.

(Q) 12-VOLT POWERPORT - Used for 12 volt accessories.

(S) BATTERY INDICATOR/CHARGING PLUG - Indicates the status of the battery.

(Y) DIFFERENTIAL LOCK SWITCH - Used to engage and disengage the differential lock on transaxle.

(Z) AMMETER - Indicates charging (+) or discharging (-) of battery.

OPERATION



The operation of any tractor can result in foreign objects thrown into the eyes, which can result in severe eye damage. Always wear safety glasses or eye shields while operating your tractor or performing any adjustments or repairs. We recommend standard safety glasses or a wide vision safety mask worn over spectacles.

HOW TO USE YOUR TRACTOR

TO SET PARKING BRAKE (See Fig. 4)

Your tractor is equipped with an operator presence sensing switch. When engine is running, any attempt by the operator to leave the seat without first setting the parking brake will shut off the engine.

- Depress brake pedal (B) all the way down and hold.
- Pull parking brake lever (C) up and hold, release pressure from brake pedal (B), then release parking brake lever. Pedal should remain in brake position. Ensure parking brake will hold tractor secure.

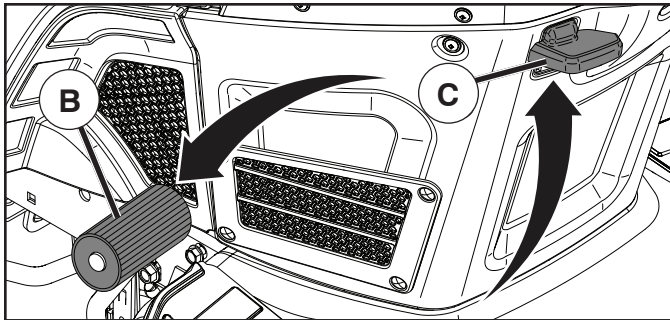
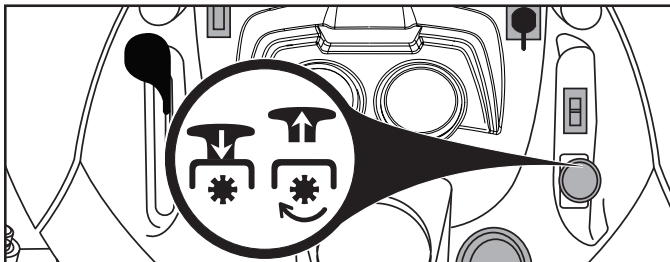


Fig. 4

STOPPING (See Fig. 5)

MOWER BLADES -

- To stop mower blades, place attachment clutch control in the "DISENGAGED" position (⚙️).



(⚙️) ATTACHMENT CLUTCH SWITCH "DISENGAGED"

(⚙️) ATTACHMENT CLUTCH SWITCH "ENGAGED"

Fig. 5

GROUND DRIVE -

- To stop ground drive, depress brake pedal into full "BRAKE" position.

IMPORTANT: FORWARD AND REVERSE DRIVE PEDALS RETURN TO NEUTRAL POSITION WHEN NOT DEPRESSED.

ENGINE -

- Move throttle control (D) to slow position.

NOTE: Failure to move throttle control to slow position and allowing engine to idle before stopping may cause engine to "backfire".

- Press ignition button (F) once to stop engine.

NOTE: Under certain conditions when tractor is standing idle with the engine running, hot engine exhaust gases may cause "browning" of grass. To eliminate this possibility, always stop engine when stopping tractor on grass areas.



CAUTION: Always stop tractor completely, as described above, and set parking brake before leaving the operator's position.

MANUALLY LOCKING THE SMART SWITCH IGNITION

With the engine completely stopped and the Smart Switch Ignition (SSI) button blinking green, the SSI can be manually locked by pressing buttons "1" and "3" at the same time for approximately one second.

NOTE: The tractor is already locked if asleep or if SSI is blinking blue.

SMART SWITCH SAFETY SYSTEM (See Fig. 6)

Your tractor is equipped with an operator presence sensing switch. If the parking brake has not been engaged before the operator leaves the seat, the engine will shut off. To continue mowing, the tractor will need to be restarted. See "TO START ENGINE" in this section of the manual.

TO STOP MOWING

- While seated in operating position, depress brake pedal and set parking brake.

After setting the parking brake, any attempt by the operator to leave the seat will stop the mower blades. The engine will continue to run for approximately five minutes before shutting off. This allows an operator to momentarily leave the seat to remove obstacles without having to restart the tractor.

TO CONTINUE MOWING

- Return to seat.
- Place attachment clutch switch first in "DISENGAGED" position and then in "ENGAGED" position.

NOTE: Any attempt to place attachment clutch switch in the "ENGAGED" position without the operator first being in the seat will immediately shut off engine.

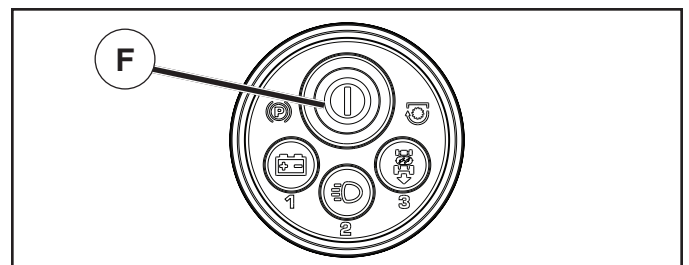


Fig. 6

OPERATION

TO USE THROTTLE CONTROL (D) (See Fig.7)

Always operate engine at full speed (fast).

- Operating engine at less than full speed (fast) reduces the engine's operating efficiency.
- Full speed (fast) offers the best mower performance.

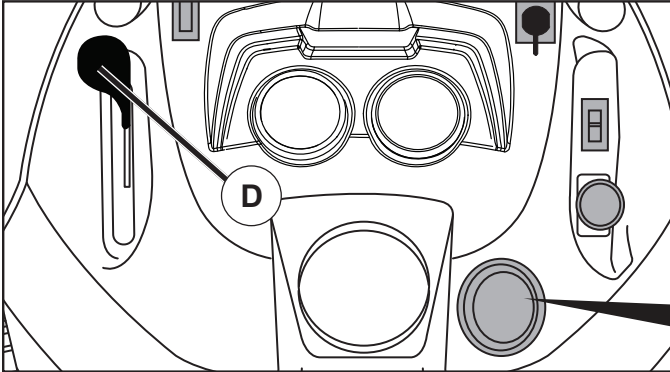


Fig. 7

TO MOVE FORWARD AND BACKWARD (See Fig. 8)

The direction and speed of movement is controlled by the forward and reverse drive pedals.

- Start tractor and release parking brake.
- Slowly depress forward (K) or reverse (L) drive pedal to begin movement. Ground speed increases the further down the pedal is depressed.

TO USE CRUISE CONTROL (J) (See Fig. 8)

The cruise control feature can be used for forward travel only.

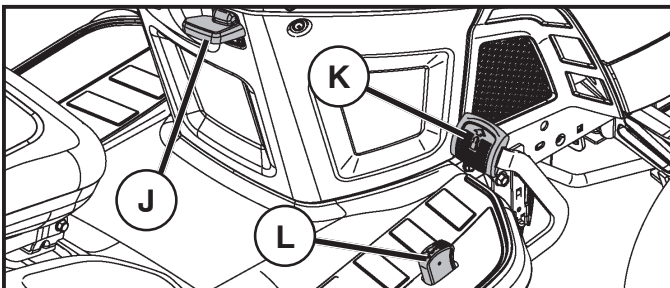


Fig. 8

SYSTEM CHARACTERISTICS

The cruise control should only be used while mowing or transporting on relatively smooth, straight surfaces. Other conditions such as trimming at slow speeds may cause the cruise control to disengage. Do not use the cruise control on slopes, rough terrain or while trimming or turning.

- With forward drive pedal depressed to desired speed, pull cruise control lever (J) up and hold while lifting your foot off the pedal, then release the lever.

To disengage the cruise control, depress the brake pedal or tap on forward drive pedal.

TO USE DIFFERENTIAL LOCK CONTROL (Y) (See Fig. 9)

- To engage differential lock, stop the tractor and push the differential lock switch to the "ON" position.

NOTE: Driving for long periods of time with the differential lock engaged is not detrimental or abusive to the system.



CAUTION: To minimize the risk of damage, avoid engaging differential lock while vehicle is in motion.

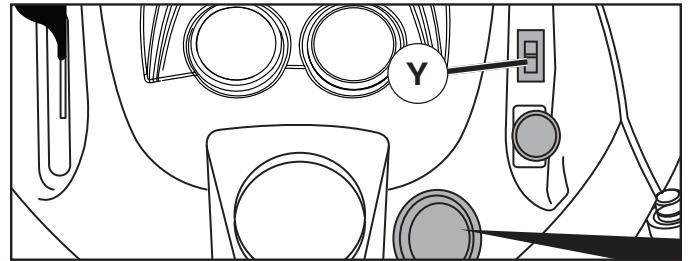


Fig. 9

- Drive tractor forward. As the rear tires rotate the differential lock will engage.

NOTE: Operators may notice displacement or turfing of grass in turns with differential lock engaged.

- To disengage differential lock, push differential lock switch to the "OFF" position. If the differential lock does not disengage, steering the vehicle from side to side will assist.

TO ADJUST MOWER CUTTING HEIGHT (See Fig. 10)

The position of the attachment lift lever (A) determines the cutting height.

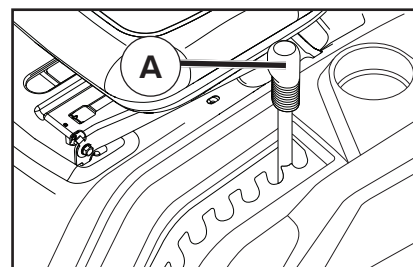


Fig. 10

- Put attachment lift lever in desired cutting height slot. The cutting height range is approximately 1" to 4". The heights are measured from the ground to the blade tip with the engine not running. These heights are approximate and may vary depending upon soil conditions, height of grass and types of grass being mowed.
- The average lawn should be cut to approximately 2-1/2" during the cool season and to over 3" during hot months. For healthier and better looking lawns, mow often and after moderate growth.
- For best cutting performance, grass over 6" in height should be mowed twice. Make the first cut relatively high; the second to desired height.

OPERATION

TO ADJUST GAUGE WHEELS (See Fig. 11)

Gauge wheels are properly adjusted when they are slightly off the ground when mower is at the desired cutting height in operating position. Gauge wheels then keep the deck in proper position to help prevent scalping in most terrain conditions.

NOTE: Adjust gauge wheels with tractor on a flat level surface.

- Adjust mower to desired cutting height. (See "TO ADJUST MOWER CUTTING HEIGHT" in the Operation section of this manual.)
- With mower in desired height of cut position, gauge wheels should be assembled so they are slightly off the ground. Install gauge wheel in appropriate hole as shown and tighten securely.
- Repeat for opposite side installing gauge wheel in same adjustment hole.

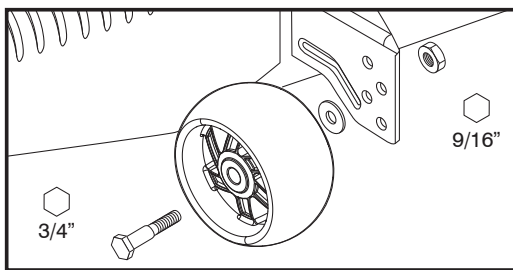


Fig. 11

TO OPERATE MOWER

Your tractor is equipped with an operator presence sensing switch. While engine is running, any attempt by the operator to leave the seat without first setting the parking brake will shut off the engine. You must remain fully and centrally positioned in the seat to prevent the engine from hesitating or cutting off when operating your equipment on rough, rolling terrain or hills.

- Select desired height of cut. (See "TO ADJUST MOWER CUTTING HEIGHT".)
- Start mower blades by engaging attachment clutch control.

TO STOP MOWER BLADES

Disengage attachment clutch control.



CAUTION: Do not operate the mower without either the entire grass catcher, on mowers so equipped, or the deflector chute in place (See Fig. 12).

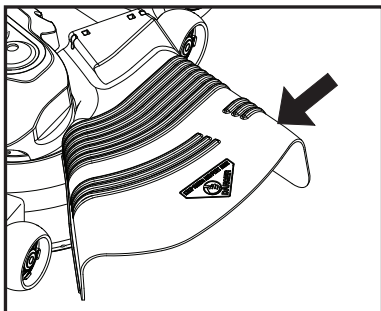


Fig. 12

REVERSE OPERATION SYSTEM (ROS) (See Fig. 13)

Your tractor is equipped with a Reverse Operation System (ROS). Any attempt by the operator to travel in the reverse direction without first pressing the Mow-In-Reverse (MIR) button (G) will stop mower blades.

WARNING: Backing up with the attachment clutch engaged while mowing is strongly discouraged. Allowing reverse operation with the attachment clutch engaged should only be done when the operator decides it is necessary to reposition the machine with the attachment engaged. **Do not mow in reverse unless absolutely necessary.**

USING THE REVERSE OPERATION SYSTEM -

Only use if you are certain no children or other bystanders will enter the mowing area.

- With engine running, depress brake pedal all the way down.
- Press MIR button (G) and ensure the MIR button is lit.
- Look down and behind before and while backing.
- SLOWLY release brake pedal while depressing reverse drive pedal to start movement.
- When use of the ROS is no longer needed, press the MIR button to return to normal operation. The MIR button should no longer be lit.

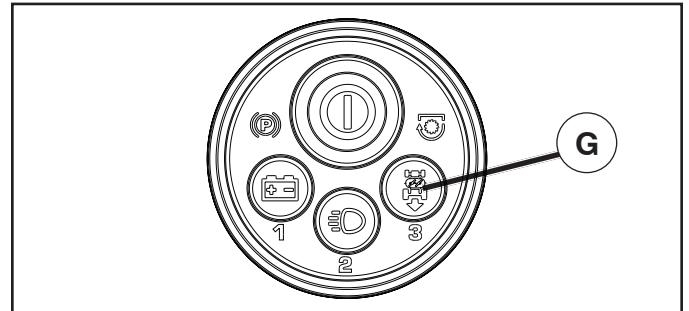


Fig. 13

TO OPERATE ON HILLS



CAUTION: Do not drive up or down hills with slopes greater than 15° and do not drive across any slope.

- Choose the slowest speed before starting up or down hills.
- Avoid stopping or changing speed on hills.
- If stopping is absolutely necessary, push brake pedal quickly to brake position and engage parking brake.
- To restart movement, slowly release parking brake and brake pedal.
- Slowly depress appropriate drive pedal to slowest setting.
- Make all turns slowly.

OPERATION

TO TRANSPORT (See Figs. 3 and 14)

When pushing or towing your tractor, ensure transmission is disengaged by placing freewheel control in freewheeling position. Free wheel control is located at the rear drawbar of tractor.

- Raise attachment lift to highest position with attachment lift control.
- Pull freewheel control out and down into the slot and release so it is held in the disengaged position.
- Do not push or tow tractor at more than two (2) MPH.
- To reengage transmission, reverse above procedure.

NOTE: To protect hood from damage when transporting your tractor on a truck or a trailer, ensure hood is closed and secured to tractor. Use an appropriate means of tying hood to tractor (rope, cord, etc.).

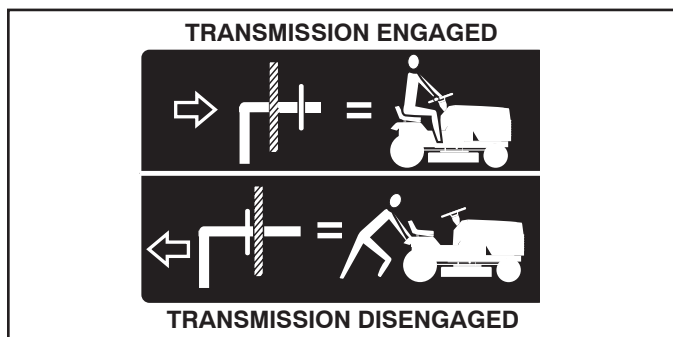


Fig. 14

TOWING CARTS AND OTHER ATTACHMENTS

Tow only the attachments that are recommended by and comply with specifications of the manufacturer of your tractor. Use common sense when towing. Too heavy of a load, while on a slope, is dangerous. Tires can lose traction with the ground and cause you to lose control of your tractor.

HEADLIGHTS

Headlights can be used without your passcode and with the engine off.

WITH ENGINE OFF:

- Press headlight button (H) once to turn headlights on for one minute.
- Press and hold headlight button (H) until headlights blink twice to turn headlights on for five minutes.

NOTE: If the engine is running and shuts off for any reason, the headlights will also shut off.

BATTERY INDICATOR/CHARGING PLUG (See Fig. 15)

The Battery Indicator displays the status of the battery. There are three different indicator lights:

1. RED Charge necessary
2. YELLOW Charge recommended
3. GREEN Charge not necessary

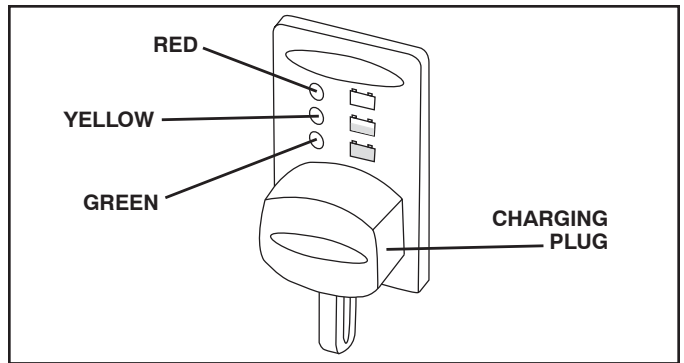
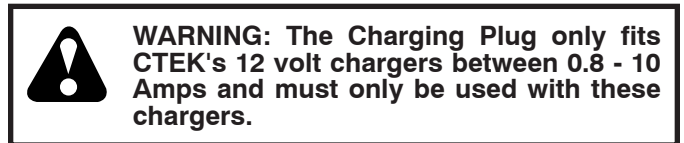


Fig. 15

NOTE: Wait 30 minutes after battery use for accurate charge indication.

For charging, the battery can be charged through the Charging Plug.



See your local dealer for an available charger.

BATTERY INDICATOR BUTTON (See Fig. 16)

The battery indicator button (I) is located on the Smart Start Ignition Switch and is used to display the status of the battery. The indicator will only work after the passcode has been entered and when the engine is not running.

- Press and hold battery indicator button (I) for three (3) seconds.
- The Smart Switch Ignition Button (F) will light up and indicate the battery status as follows:

RED	Charge necessary
RED AND GREEN	Charge recommended
GREEN	Charge not necessary
- Press the Smart Switch Ignition Button (F) once to stop viewing the battery status.

NOTE: When the battery is too low and after the first unsuccessful start attempt, the battery indicator button will blink for two (2) seconds and then stay lit until battery is charged or until approximately five (5) minutes since last attempted start.

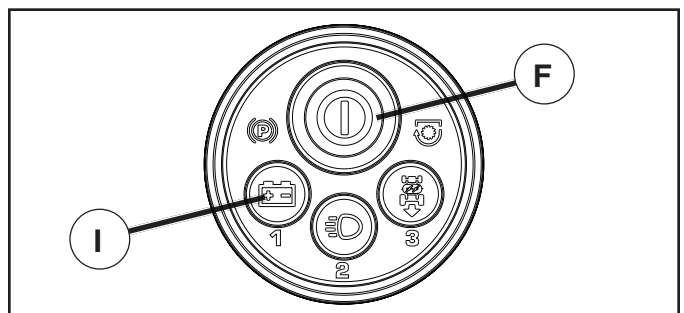


Fig. 16

OPERATION

SERVICE REMINDER/HOUR METER

Service reminder shows the total number of hours the engine has run and flashes to indicate that the engine or mower needs servicing. When service is required, the service reminder will flash for two hours. To service engine and mower, see the Maintenance section of this manual.

BEFORE STARTING THE ENGINE

CHECK ENGINE OIL LEVEL

The engine in your tractor has been shipped from the factory already filled with summer weight oil.

- Check engine oil with tractor on level ground.
- Remove oil fill cap/dipstick and wipe clean, reinsert the dipstick and screw cap tight, wait for a few seconds, remove and read oil level. If necessary, add oil until "FULL" mark on dipstick is reached. Do not overfill.
- For cold weather operation you should change oil for easier starting (See "OIL VISCOSITY CHART" in the Maintenance section of this manual).
- To change engine oil, see the Maintenance section in this manual.

ADD GASOLINE

- Fill fuel tank to bottom of filler neck. Do not overfill. Use fresh, clean, regular gasoline with a minimum of 87 octane. Do not mix oil with gasoline. Purchase fuel in quantities that can be used within 30 days to ensure fuel freshness.



CAUTION: Wipe off any spilled oil or fuel. Do not store, spill or use gasoline near an open flame.

IMPORTANT: WHEN OPERATING IN TEMPERATURES BELOW 32°F (0°C), USE FRESH, CLEAN WINTER GRADE GASOLINE TO HELP ENSURE GOOD COLD WEATHER STARTING.

CAUTION: Alcohol blended fuels (called gasohol or using ethanol or methanol) can attract moisture which leads to separation and formation of acids during storage. Acidic gas can damage the fuel system of an engine while in storage. To avoid engine problems, the fuel system should be emptied before storage of 30 days or longer. Drain the gas tank, start the engine and let it run until the fuel lines and carburetor are empty. Use fresh fuel next season. See Storage Instructions for additional information. Never use engine or carburetor cleaner products in the fuel tank or permanent damage may occur. Fuel stabilizer is an acceptable alternative in minimizing the formation of fuel gum deposits during storage. Add stabilizer to gasoline in fuel tank or storage container. Always follow the mix ratio found on stabilizer container. Run engine at least 10 minutes after adding stabilizer to allow the stabilizer to reach the carburetor. Do not empty the gas tank and carburetor if using fuel stabilizer.

RESERVE FUEL VALVE OPERATION

(See Fig. 17)

1. Raise seat to access reserve fuel valve.
2. In normal operation, valve should be set to primary (as shown in view)
3. If tractor runs out of fuel, rotate valve handle to reserve.
4. Drive tractor to be refueled.
5. After refueling, return valve to primary position.

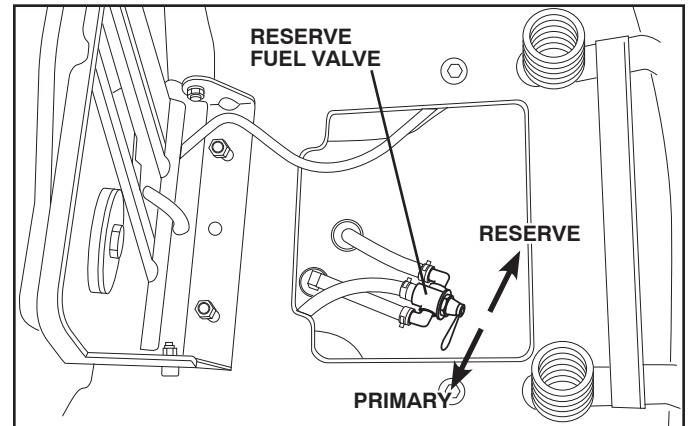


Fig. 17

RESETTING IGNITION SYSTEM PASSCODE

(See Fig. 18)

The Smart Switch Ignition is preset at the factory with the default code "321". To reset or change the passcode, the operator does not have to be seated on the tractor.

1. Press the Smart Switch Ignition (SSI) button (F) once (or sit on the seat). Ensure the indicator is blinking blue.
2. Press and hold the (1) and (3) buttons simultaneously for approximately three (3) seconds until the SSI button changes to solid blue.
3. Using the numbered buttons, enter the desired passcode. The passcode may be anywhere from one to five digits in length.
4. After the desired passcode has been entered, press the SSI button once.

NOTE: When the indicator flashes green, the passcode has been accepted. If the indicator blinks red, the passcode has not been accepted. Wait until the indicator returns to blinking blue and repeat this procedure starting from step two.

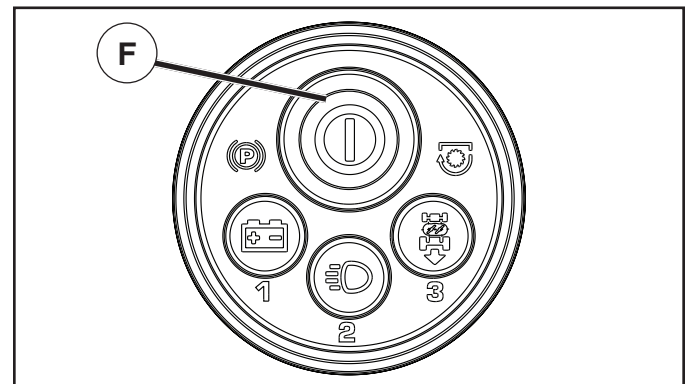


Fig. 18

OPERATION

TO START ENGINE

When starting the engine for the first time or if the engine has run out of fuel, it will take extra cranking time to move fuel from the tank to the engine.

NOTE: The default passcode "321" is preset at the factory and should be changed prior to first use. (See "RESETTING IGNITION SYSTEM PASSCODE" in this section of the manual.)

SMART SWITCH SAFETY SYSTEM (See Fig. 19)

The Smart Switch Ignition is programmed with warning lights to indicate when any part of the safety system is not being followed. The engine will not start until all the following ignition system faults are resolved:

- The park brake symbol will be lit if the parking brake has not been engaged.
- The blade switch symbol will be lit if the attachment clutch control is not in the "DISENGAGED" position.

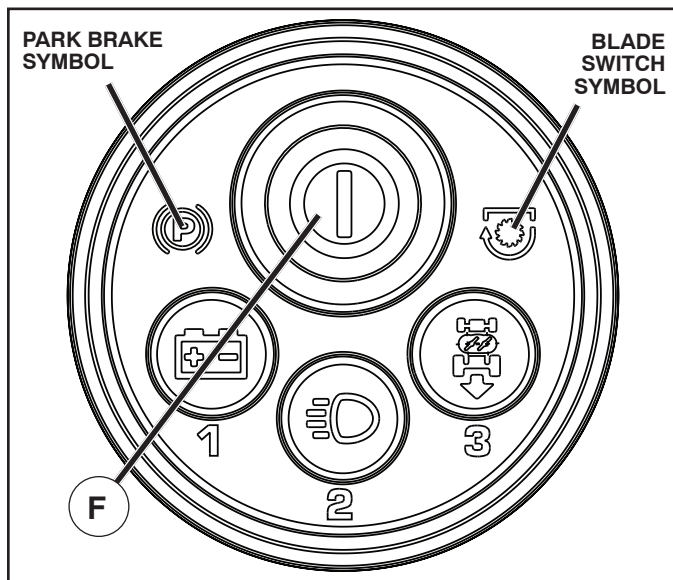


Fig. 19

SMART SWITCH IGNITION

- Ensure freewheel control is in the transmission engaged position.
- Ensure transmission is in the neutral position
- Move attachment clutch control to the "DISENGAGED" position.
- Sit on seat in operating position, depress brake pedal and set parking brake.

PRE-START

1. Press the Smart Switch Ignition (SSI) button (F) once (or sit on the seat). Ensure the indicator is blinking blue.
3. Enter passcode and press the SSI button. If passcode is not accepted, the SSI button will blink red. Wait until the SSI button returns to blinking blue before attempting to re-enter passcode. Once accepted, the SSI button will flash green.
2. Ensure that the Smart Switch Safety System warning lights are not showing any faults present. If any warning lights do indicate faults present, resolve those faults before proceeding continuing with STARTING.

STARTING

NOTE: Before starting, read the warm and cold weather starting procedures below. It is not necessary to hold the SSI button; press once and the engine will crank automatically.

4. When the SSI button flashes green, press the SSI button once to start the engine. The engine will start and the SSI button will change to solid green.

WARM WEATHER STARTING (50°F/10°C and above)

- When engine starts, move the throttle control to the fast position.
- The attachments and ground drive can now be used. If the engine does not accept the load, restart the engine and allow it to warm up for one minute.

COLD WEATHER STARTING (50°F/10°C and below)

- In cold weather conditions, several start-up attempts may be required. Accepting a load may require an engine warm-up period from several seconds to several minutes, depending on the temperature.

AUTOMATIC TRANSMISSION WARM UP

- Before driving the unit in cold weather, the transmission should be warmed up as follows:
 - Ensure the tractor is on level ground.
 - Release the parking brake and let the brake slowly return to operating position.
 - Allow one minute for transmission to warm up. This can be done during the engine warm up period.
- The attachments can also be used during the engine warm-up period after the transmission has been warmed up.

OPERATION

PURGE TRANSMISSION



CAUTION: Never engage or disengage free-wheel lever while the engine is running.

To ensure proper operation and performance, it is recommended that the transmission be purged before operating tractor for the first time. This procedure will remove any trapped air inside the transmission which may have developed during shipping of your tractor.

IMPORTANT: SHOULD YOUR TRANSMISSION REQUIRE REMOVAL FOR SERVICE OR REPLACEMENT, IT SHOULD BE PURGED AFTER REINSTALLATION BEFORE OPERATING THE TRACTOR.

1. Place tractor safely on a level surface - that is clear and open - with engine off and parking brake set.
2. Disengage transmission by placing freewheel control in DISENGAGED position. (See "TO TRANSPORT" in this section of manual.)
3. Sitting in the tractor seat, start engine. After the engine is running, move throttle control to slow position. Disengage parking brake



CAUTION: At any time, during step 4, there may be movement of the drive wheels.

4. Depress forward drive pedal to full forward position, hold for five (5) seconds and release pedal. Depress reverse drive pedal to full reverse position, hold for five (5) seconds and release pedal. Repeat this procedure three (3) times.
5. Shut- off engine and set parking brake.
6. Engage transmission by placing freewheel control in engaged position. (See "TO TRANSPORT" in this section of manual.)
7. Sitting in the tractor seat, start engine. After the engine is running, move throttle control to half (1/2) speed. Disengage parking brake.
8. Drive tractor forward for approximately five feet then backwards for five feet. Repeat this driving procedure three times.

Your transmission is now purged and now ready for normal operation.

MOWING TIPS

- DO NOT use tire chains when the mower housing is attached to tractor.
- Mower should be properly leveled for best mowing performance. See "TO LEVEL MOWER HOUSING" in the Service and Adjustments section of this manual.
- The left hand side of mower should be used for trimming.
- Drive so that clippings are discharged onto the area that has been cut. Have the cut area to the right of the tractor. This will result in a more even distribution of clippings and more uniform cutting.
- When mowing large areas, start by turning to the right so that clippings will discharge away from shrubs, fences, driveways, etc. After one or two rounds, mow in the opposite direction making left hand turns until finished (See Fig. 20).

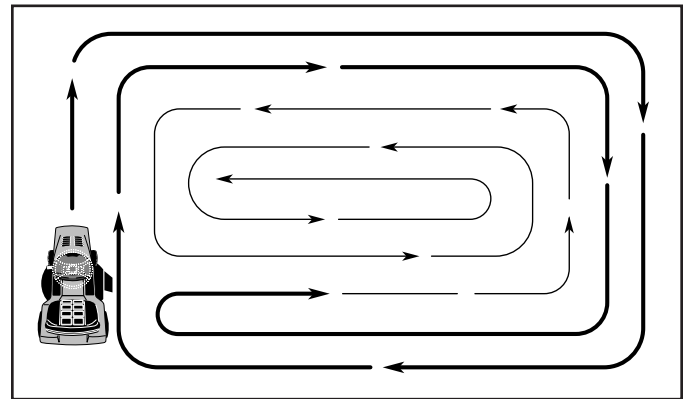


Fig. 20

- If grass is extremely tall, it should be mowed twice to reduce load and possible fire hazard from dried clippings. Make first cut relatively high; the second to the desired height.
- Do not mow grass when it is wet. Wet grass will plug mower and leave undesirable clumps. Allow grass to dry before mowing.
- **Always operate engine at full throttle when mowing** to ensure better mowing performance and proper discharge of material. Regulate ground speed by selecting a low enough gear to give the mower cutting performance as well as the quality of cut desired.
- When operating attachments, select a ground speed that will suit the terrain and give best performance of the attachment being used.

MAINTENANCE

MAINTENANCE SCHEDULE		BEFORE EACH USE	EVERY 8 HOURS	EVERY 25 HOURS	EVERY 50 HOURS	EVERY 100 HOURS	EVERY SEASON	BEFORE STORAGE
TRACTOR	Check Brake Operation	✓	✓					
	Check Tire Pressure	✓	✓					
	Check Operator Presence & ROS Systems	✓						
	Check for Loose Fasteners	✓				✓		✓
	Check/Replace Mower Blades			✓ ³				
	Lubrication Chart			✓				✓
	Check Battery Level			✓ ⁴				
	Clean Battery and Terminals			✓				✓
	Clean Debris Off Steering Plate			✓ ⁵				
	Check Transaxle Cooling			✓				
	Check Mower Levelness				✓			
	Check V-Belts					✓		
ENGINE	Check Engine Oil Level	✓	✓					
	Change Engine Oil (with oil filter)				✓ ^{1,2}			✓
	Change Engine Oil (without oil filter)			✓ ^{1,2}				✓
	Clean Air Filter			✓ ²				
	Clean Air Screen			✓ ²				
	Inspect Muffler/Spark Arrester				✓			
	Replace Oil Filter (If equipped)					✓ ^{1,2}		
	Clean Engine Cooling Fins					✓ ²		
	Replace Spark Plug					✓	✓	
	Replace Air Filter Paper Cartridge					✓ ²		
	Replace Fuel Filter						✓	

1 - Change more often when operating under a heavy load or in high ambient temperatures.
2 - Service more often when operating in dirty or dusty conditions.

3 - Replace blades more often when mowing in sandy soil.
4 - Not required if equipped with maintenance-free battery.

5 - See Cleaning in Maintenance Section.

GENERAL RECOMMENDATIONS

The warranty on this tractor does not cover items that have been subjected to operator abuse or negligence. To receive full value from the warranty, operator must maintain tractor as instructed in this manual.

Some adjustments will need to be made periodically to properly maintain your tractor.

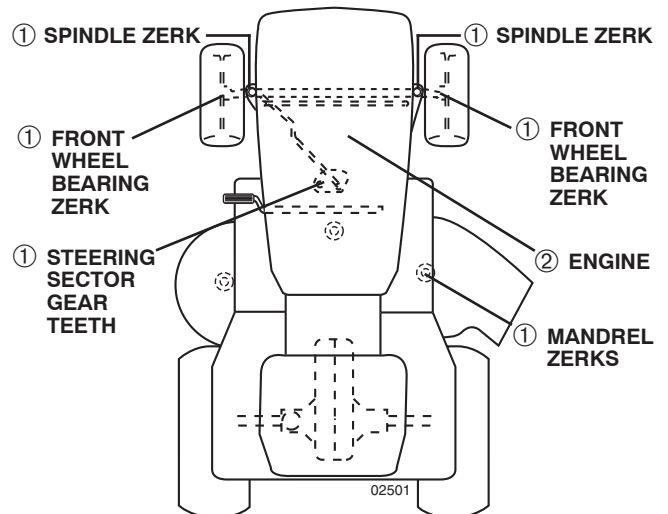
At least once a season, check to see if you should make any of the adjustments described in the Service and Adjustments section of this manual.

- At least once a year you should replace the spark plug, clean or replace air filter, and check blades and belts for wear. A new spark plug and clean air filter assure proper air-fuel mixture and help your engine run better and last longer.

BEFORE EACH USE

- Check engine oil level.
- Check brake operation.
- Check tire pressure.
- Check operator presence and ROS systems for proper operation.
- Check for loose fasteners.

LUBRICATION CHART



- ① General Purpose Grease
- ② Refer to Maintenance "ENGINE" Section

IMPORTANT: DO NOT OIL OR GREASE THE PIVOT POINTS WHICH HAVE SPECIAL NYLON BEARINGS. VISCOUS LUBRICANTS WILL ATTRACT DUST AND DIRT THAT WILL SHORTEN THE LIFE OF THE SELF-LUBRICATING BEARINGS. IF YOU FEEL THEY MUST BE LUBRICATED, USE ONLY A DRY, POWDERED GRAPHITE TYPE LUBRICANT SPARINGLY.

MAINTENANCE

TRACTOR

Always observe safety rules when performing any maintenance.

BRAKE OPERATION

If tractor requires more than five (5) feet to stop at highest speed in highest gear on a level, dry concrete or paved surface, then brake must be checked and adjusted. (See "TO CHECK BRAKE" in the Service and Adjustments section of this manual.)

TIRES

- Maintain proper air pressure in all tires. (See the sides of tires for proper PSI.)
- Keep tires free of gasoline, oil, or insect control chemicals which can harm rubber.
- Avoid stumps, stones, deep ruts, sharp objects and other hazards that may cause tire damage.

NOTE: To seal tire punctures and prevent flat tires due to slow leaks, tire sealant may be purchased from your local parts dealer. Tire sealant also prevents tire dry rot and corrosion.

OPERATOR PRESENCE SYSTEM AND REVERSE OPERATION SYSTEM (ROS) (See Fig. 21)

Ensure operator presence and reverse operation systems are working properly. If your tractor does not function as described, repair the problem immediately.

- The engine should not start unless the brake pedal is fully depressed, and the attachment clutch control is in the disengaged position.

CHECK OPERATOR PRESENCE SYSTEM

- While the engine is running, any attempt by the operator to leave the seat without first setting the parking brake should shut off the engine.
- With the engine running, the parking brake engaged, and the attachment clutch engaged, any attempt by the operator to leave the seat should shut off the attachment clutch.
- The attachment clutch should never operate unless the operator is in the seat.

CHECK REVERSE OPERATION (ROS) SYSTEM

- With the engine running, the Smart Switch Ignition (SSI) button (F) solid green, and the attachment clutch engaged, any attempt by the operator to shift in reverse will disengage the attachment clutch.
- With the engine running, the Smart Switch Ignition (SSI) button (F) solid green, and the Mow-In-Reverse (MIR) button (G) lit, any attempt by the operator to shift in reverse should NOT disengage the attachment clutch.

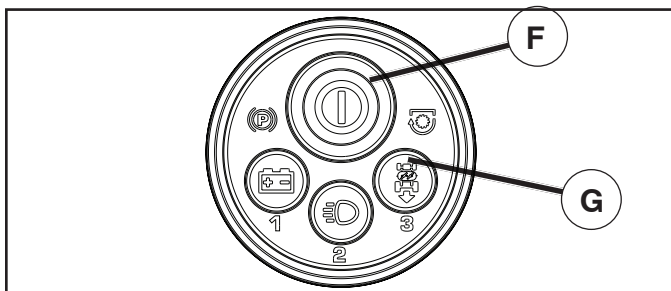


Fig. 21

BLADE CARE

For best results mower blades must be kept sharp. Replace bent or damaged blades.



CAUTION: Use only a replacement blade approved by the manufacturer of your tractor. Using a blade not approved by the manufacturer of your tractor is hazardous, could damage your tractor and void your warranty.

BLADE REMOVAL (See Fig. 22)

- Raise mower to highest position to allow access to blades.

NOTE: Protect your hands with gloves and/or wrap blade with heavy cloth.

- Remove blade bolt by turning counterclockwise.
- Install new or resharpened blade with stamped "THIS SIDE UP" facing deck and mandrel assembly.

IMPORTANT: To ensure proper assembly, center hole in blade must align with star on mandrel assembly.

- Install and tighten blade bolt securely (45-55 Ft. Lbs./ 62-75 Nm).

IMPORTANT: SPECIAL BLADE BOLT IS HEAT TREATED.

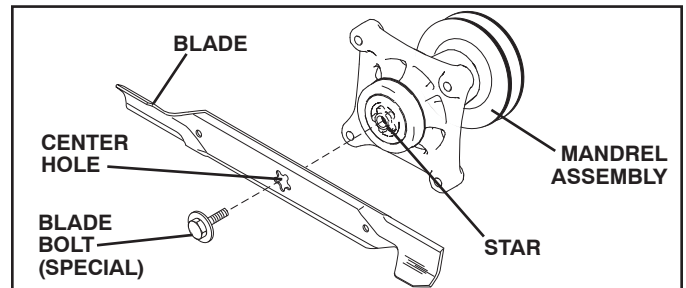


Fig. 22

BATTERY

Your tractor has a battery charging system which is sufficient for normal use. However, periodic charging of the battery with an automotive charger will extend its life.

- Keep battery and terminals clean.
- Keep battery bolts tight.
- Keep small vent holes open.
- Recharge at 6-10 amperes for 1 hour.

NOTE: The original equipment battery on your tractor is maintenance free. Do not attempt to open or remove caps or covers. Adding or checking level of electrolyte is not necessary.

TO CLEAN BATTERY AND TERMINALS

Corrosion and dirt on the battery and terminals can cause the battery to "leak" power.

- Remove terminal guard.
- Disconnect BLACK battery cable first then RED battery cable and remove battery from tractor.
- Rinse the battery with plain water and dry.
- Clean terminals and battery cable ends with wire brush until bright.
- Coat terminals with grease or petroleum jelly.
- Reinstall battery. (See "REPLACING BATTERY" in the Service and Adjustments section of this manual.)

MAINTENANCE

TRANSAXLE MAINTENANCE

The transmission fan and cooling fins should be kept clean to ensure proper cooling.

Do not attempt to clean fan or transmission while engine is running or while the transmission is hot. To prevent possible damage to seals, do not use high pressure water or steam to clean transmission.

- Inspect cooling fan to ensure fan blades are intact and clean.
- Inspect cooling fins for dirt, grass clippings and other materials. To prevent damage to seals, do not use compressed air or high pressure sprayer to clean cooling fins.

TRANSAXLE PUMP FLUID

The transaxle was sealed at the factory and fluid maintenance is not required for the life of the transaxle. Should the transaxle ever leak or require servicing, contact your nearest authorized service center/department.

V-BELTS

Check V-belts for deterioration and wear after 100 hours of operation and replace if necessary. The belts are not adjustable. Replace belts if they begin to slip from wear.

ENGINE

LUBRICATION

Only use high quality detergent oil rated with API service classification SG-SL. Select the oil's SAE viscosity grade according to your expected operating temperature.

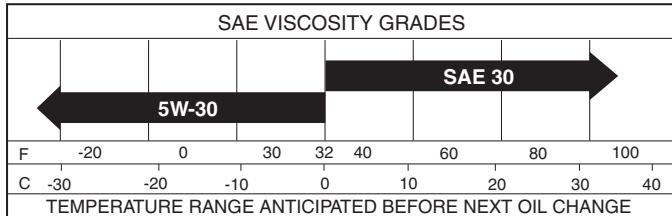


Fig. 23

NOTE: Although multi-viscosity oils (5W30, 10W30 etc.) improve starting in cold weather, they will result in increased oil consumption when used above 32°F/0°C. Check your engine oil level more frequently to avoid possible engine damage from running low on oil.

Change the oil after every 50 hours of operation or at least once a year if the tractor is not used for 50 hours in one year.

Check the crankcase oil level before starting the engine and after each eight (8) hours of operation. Tighten oil fill cap/dipstick securely each time you check the oil level.

TO CHANGE ENGINE OIL (See Fig. 23 - 25)

Determine temperature range expected before oil change. All oil must meet API service classification SG-SL.

- Ensure tractor is on level surface.
- Oil will drain more freely when warm.
- Catch oil in a suitable container.

LOWER DASH COVER REMOVAL

- Raise hood.
- Remove fastener from lower dash cover.

CAUTION: Remove lower dash cover carefully to ensure cover tabs are not broken.

- Slide lower dash cover up to release cover tabs from tapered slots in lower dash and remove.

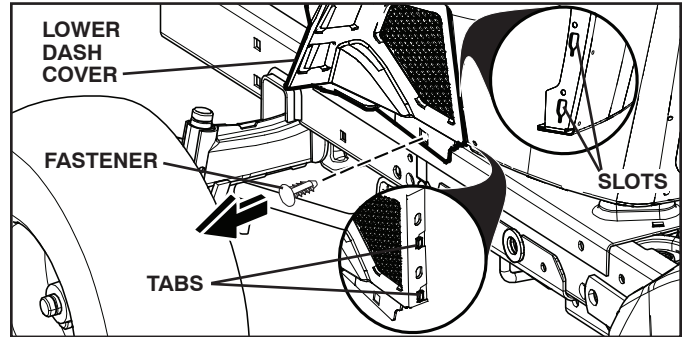


Fig. 24

1. Remove oil fill cap/dipstick. Be careful not to allow dirt to enter the engine when changing oil.
2. Slide oil drain extension from the docking position on the engine blower housing and extend outward from engine.

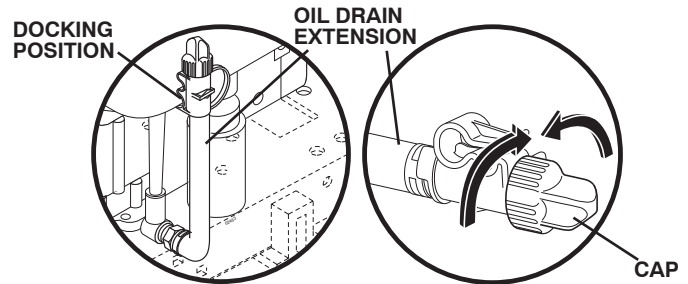


Fig. 25

3. To open, twist cap counter-clockwise
4. After oil is drained completely, replace cap and twist clockwise until it stops.
5. Re-attach oil drain extension to engine blower housing.
6. Refill engine with oil through oil fill dipstick tube. Pour slowly. Do not overfill. For approximate capacity see "PRODUCT SPECIFICATIONS" section of this manual.
7. Use gauge on oil fill cap/dipstick for checking level. For accurate reading, tighten dipstick cap securely onto the tube before removing dipstick. Keep oil at "FULL" line on dipstick. Tighten cap onto the tube securely when finished.

ENGINE OIL FILTER

Replace the engine oil filter every season or every other oil change if the tractor is used more than 100 hours in one year.

NOTE: If needed, remove lower dash covers using steps from "Lower dash cover removal" section of this manual.

MAINTENANCE

AIR FILTER

Your engine will not run properly using a dirty air filter. Service air cleaner more often under dusty conditions.

CLEAN AIR SCREEN

The air screen is over the air intake blower located on top of engine. The air screen must be kept free of dirt and chaff to prevent engine damage from overheating. Clean with a wire brush or compressed air to remove dirt and stubborn dried gum fibers.

ENGINE COOLING SYSTEM

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

Every 100 hours of operation (more often under extremely dusty, dirty conditions), remove the blower housing and other cooling shrouds. Clean cooling fins and external surfaces as necessary. Ensure the cooling shrouds are reinstalled.

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

MUFFLER

Inspect and replace corroded muffler and spark arrester (if equipped) as it could create a fire hazard and/or damage.

SPARK PLUGS

Replace spark plugs at the beginning of each mowing season or after every 100 hours of operation, whichever occurs first. Spark plug type and gap setting are shown in "PRODUCT SPECIFICATIONS" section of this manual.

IN-LINE FUEL FILTER (See Fig. 26)

The fuel filter should be replaced once each season. If fuel filter becomes clogged, obstructing fuel flow to carburetor, replacement is required.

- With engine cool, remove filter and plug fuel line sections.
- Place new fuel filter in position in fuel line with arrow pointing towards carburetor.
- Ensure there are no fuel line leaks and clamps are properly positioned.
- Immediately wipe up any spilled gasoline.

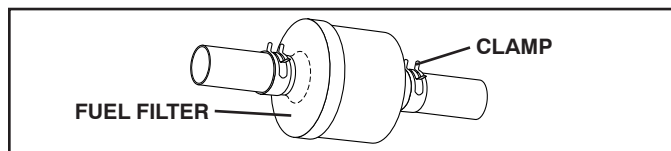


Fig. 26

CLEANING

- Clean engine, battery, seat, finish, etc. of all foreign matter.
- Clean debris from steering plate. Debris can restrict clutch/brake pedal shaft movement, causing belt slip and loss of drive.

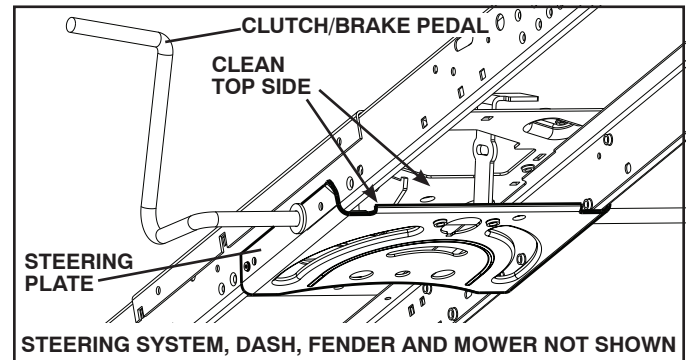


Fig. 27

- Keep finished surfaces and wheels free of all gasoline, oil, etc.
- Protect painted surfaces with automotive type wax.

We do not recommend using a garden hose or pressure washer to clean the outside of your tractor unless the engine and transmission are covered to keep water out. Water in engine or transmission will shorten the useful life of your tractor. Use compressed air or a leaf blower to remove grass, leaves and trash from outside tractor and mower.

MAINTENANCE

DECK WASHOUT PORT (See Fig. 28)

Your tractor's deck is equipped with a washout port as part of its deck wash system. It should be utilized after each use.

1. Drive the tractor to a level, clear spot on your lawn, near enough to a water spigot for your garden hose to reach.

IMPORTANT: Ensure the tractor's discharge chute is directed AWAY from your house, garage, parked cars, etc. Remove bagger chute or mulch cover if attached.

2. Ensure the attachment clutch control is in the "DISENGAGED" position, set the parking brake, and stop the engine.
3. Thread the nozzle adapter (packaged with your tractor's Operator's Manual) onto the end of your garden hose.
4. Pull back the lock collar of the nozzle adapter and push the adapter onto the deck washout port at the left end of the mower deck. Release the lock collar to lock the adapter on the nozzle.

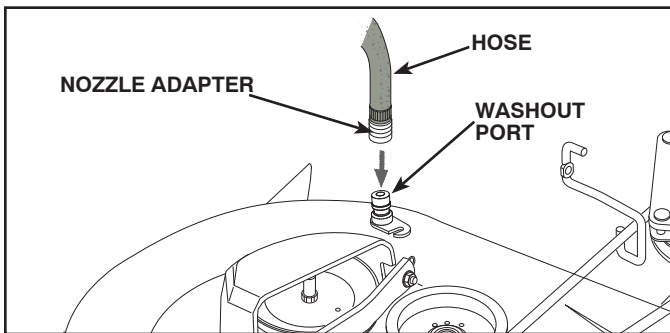


Fig. 28

IMPORTANT: Tug hose ensuring connection is secure.

5. Turn the water on.
6. While sitting in the operator's position on the tractor, re-start the engine and place the throttle lever in the Fast "👉" position.

IMPORTANT: Recheck the area to ensure the area is clear. Ensure no children are in the area while cleaning the deck.

7. Move attachment clutch control to the "ENGAGED" position. Remain in the operator's position with the cutting deck engaged until the deck is cleaned.
8. Ensure attachment clutch control is in the "DISENGAGED" position. Shut engine off. Turn the water off.
9. Pull back the lock collar of the nozzle adapter to disconnect the adapter from the nozzle washout port.
10. Move the tractor to a dry area, preferably a concrete or paved area. Place the attachment clutch control in the "ENGAGED" position to remove excess water and to help dry before putting the tractor away.



WARNING: A broken or missing washout fitting could expose you or others to thrown objects from contact with the blade.

- Replace broken or missing washout fitting immediately, prior to using mower again.
- Plug any holes in mower with bolts and locknuts.

SERVICE AND ADJUSTMENTS



WARNING: TO AVOID SERIOUS INJURY, BEFORE PERFORMING ANY SERVICE OR ADJUSTMENTS:

- Depress brake pedal fully and set parking brake.
- Place attachment clutch in "DISENGAGED" position.
- Shut engine off and lock the Smart Switch Ignition.
- Ensure the blades and all moving parts have completely stopped.

TO REMOVE MOWER (See Fig. 29)

- Place attachment clutch in "DISENGAGED" position.
- Lower attachment lift lever to its lowest position.
- Remove mower belt from electric clutch pulley (M). See Mower Drive Belt Removal in "TO REPLACE MOWER BLADE DRIVE BELT" in this section.
- Disconnect front link (E) from mower - remove retainer spring and washer.
- Go to either side of mower and disconnect mower suspension arm (A) from chassis and rear lift link (C) from rear mower bracket (D) - remove retainer springs and washers.
- Go to other side of mower and disconnect the suspension arm and rear lift link.



CAUTION: After rear lift links are disconnected, the attachment lift lever will be spring loaded. Have a tight grip on lift lever when changing position of the lever.

- Slide mower out from under right side of tractor.

TO INSTALL MOWER (See Fig. 29 - 35)

Ensure tractor is on level surface and engage parking brake.

- Lower attachment lift lever to its lowest position.



CAUTION: Lift lever is spring loaded. Have a tight grip on lift lever, lower it slowly and engage in lowest position.

NOTE: Ensure mower side suspension arms (A) are pointing forward before sliding mower under tractor.

- Slide mower under tractor until it is centered under tractor.

INSTALL ANTI-SWAY BAR (S) (IF EQUIPPED)

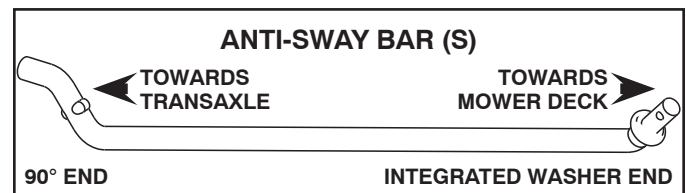


Fig. 26

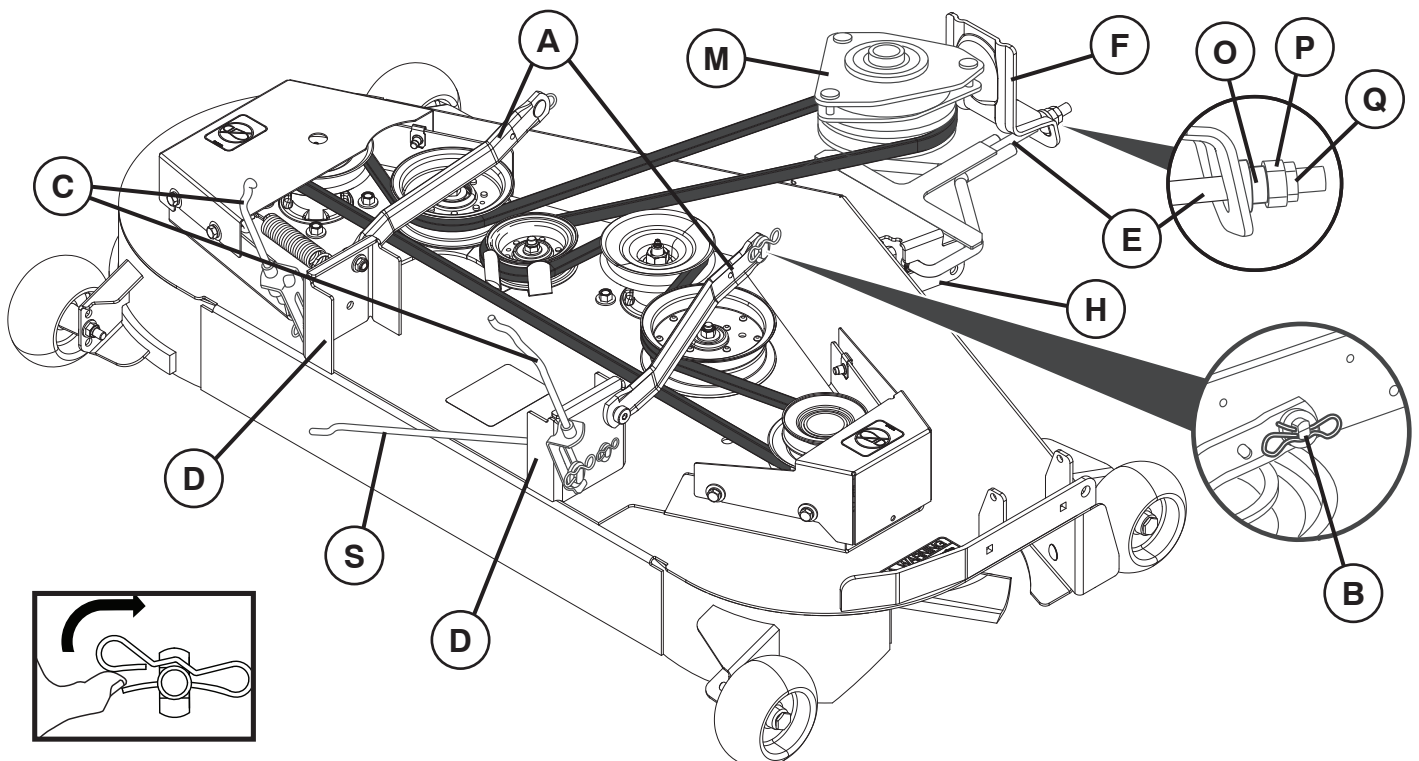


Fig. 29

SERVICE AND ADJUSTMENTS

- From right side of mower, first insert 90° end of anti-sway bar (S) into hole in transaxle bracket (T), located near left rear tire in front of transaxle.

NOTE: Flashlight may be helpful.

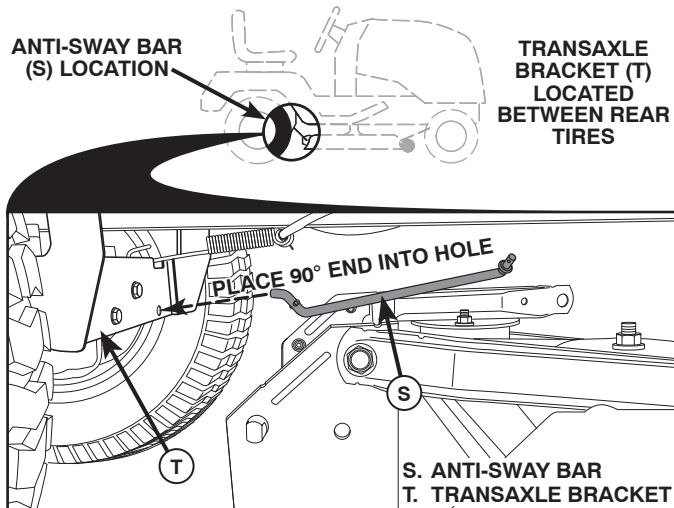


Fig. 30

NOTE: Depending on model, bracket (T) may be different than shown but hole for anti-sway bar will be in same position/location.

- Pivot the integrated washer end of anti-sway bar (S) towards mower deck bracket on right side of mower. Insert integrated washer end of bar into hole in rear mower bracket (D). Move mower as needed to insert integrated washer end of bar into rear mower bracket (D).
- Secure with small washer and small retainer spring as shown.

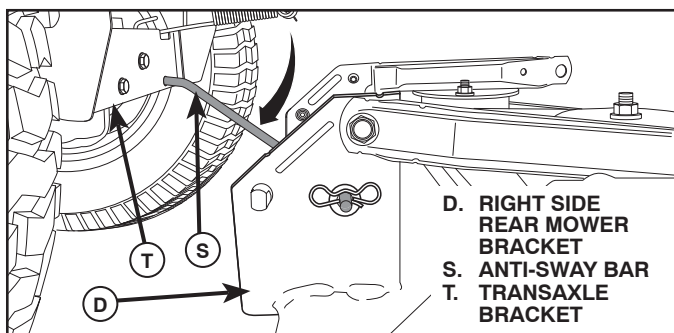


Fig. 31

- ATTACH MOWER SIDE SUSPENSION ARMS (A) TO CHASSIS - Position hole in arm over pin (B) on outside of tractor chassis and secure with retainer spring.
- Repeat on opposite side of tractor.

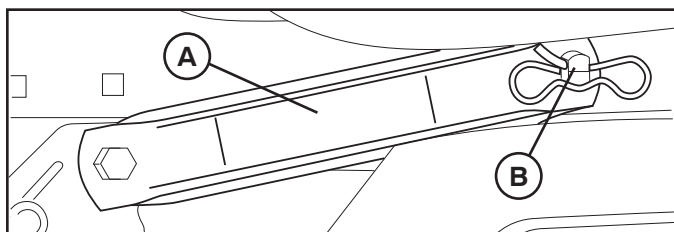


Fig. 32

- ATTACH REAR LIFT LINKS (C) - Lift rear corner of mower and position slot in link assembly over pin on rear mower bracket (D) and secure with washer and retainer spring.
- Repeat on opposite side of tractor.

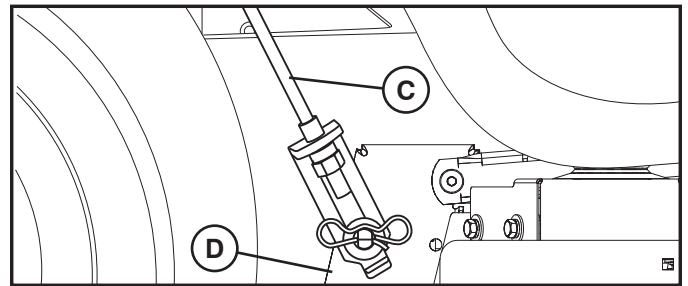


Fig. 33

- ATTACH FRONT LINK (E) - Work from left side of tractor. Insert threaded rod end of link assembly through front hole in tractor suspension bracket (F).
- Install bushing (O) and loosely install nut (P) and jam nut (Q).
- Insert flared ends of link (E) into slots in front mower bracket (H).
- Check Front-To-Back Adjustment in "TO LEVEL MOWER" in this section.

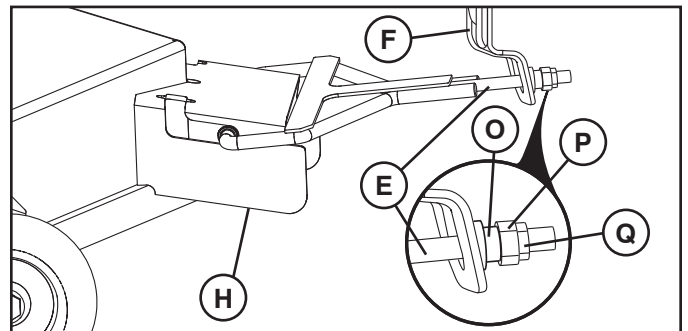


Fig. 34

- Install belt onto electric clutch pulley (M).

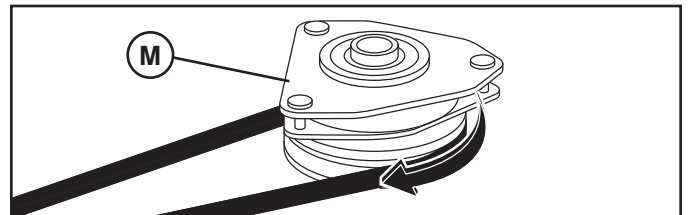


Fig. 35

IMPORTANT: CHECK BELT FOR PROPER ROUTING IN ALL MOWER PULLEY GROOVES.

- Raise attachment lift lever to highest position.
- If necessary, adjust gauge wheels before operating mower as shown in the Operation section of this manual.

See Mower Drive Belt Installation in "TO REPLACE MOWER BLADE DRIVE BELT" in this section of the manual.

SERVICE AND ADJUSTMENTS

TO LEVEL MOWER

Make sure tires are properly inflated to the PSI shown on tires. If tires are over or under inflated, it may affect the appearance of your lawn and lead you to think the mower is not adjusted properly.

VISUAL SIDE-TO-SIDE ADJUSTMENT (See Fig. 36)

- With all tires properly inflated and if your lawn appears unevenly cut, determine which side of mower is cutting lower.

NOTE: As desired, you can raise the low side of mower or lower the high side.

- Go to side of mower you wish to adjust.
- With a 3/4" or adjustable wrench, turn lift link adjustment nut (A) to the left to lower the mower, or, to the right to raise the mower.

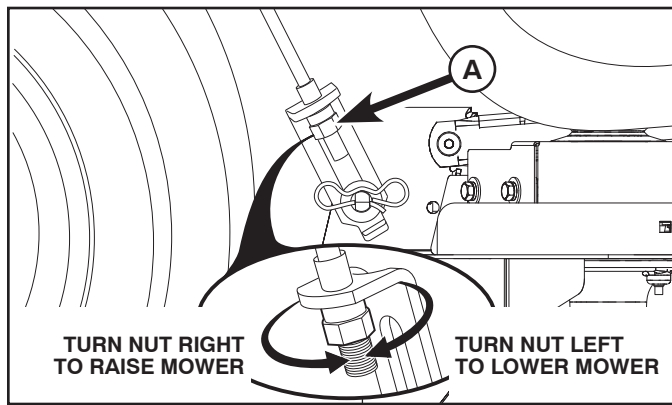


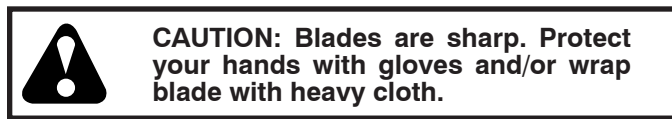
Fig. 36

NOTE: Each full turn of adjustment nut will change mower height about 3/16".

- Test your adjustment by mowing some uncut grass and visually checking the appearance. Readjust, if necessary, until you are satisfied with the results.

PRECISION SIDE-TO-SIDE ADJUSTMENT (See Fig. 37)

- With all tires properly inflated, park tractor on level ground or driveway.



- Raise mower to its highest position.
- At both sides of mower, position blade at side and measure the distance (A) from bottom edge of blade to the ground. The distance should be the same on both sides.

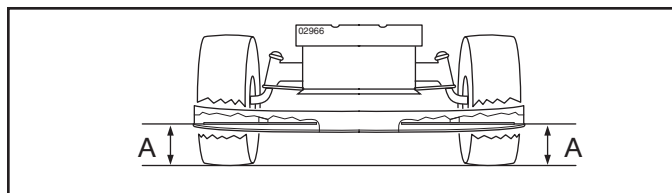


Fig. 37

- If adjustment is necessary, see steps in Visual Adjustment instructions above.
- Recheck measurements, adjust if necessary until both sides are equal.

FRONT-TO-BACK ADJUSTMENT (See Figs. 38 and 39)

IMPORTANT: Deck must be level side-to-side.

To obtain the best cutting results, the mower blades should be adjusted so the front tip is 1/8" to 1/2" lower than the rear tip when the mower is in its highest position.



- Raise mower to highest position.
- Position any blade so the tip is pointing straight forward. Measure distance (B) to the ground at front and rear tip of the blade.

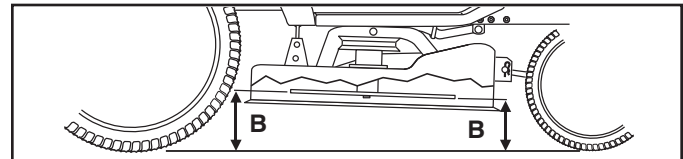


Fig. 38

- If front tip of blade is not 1/8" to 1/2" lower than the rear tip, go to the front of tractor.
- With an 11/16" or adjustable wrench, loosen jam nut A several turns to clear adjustment nut B.
- With a 3/4" or adjustable wrench, turn front link adjustment nut (B) clockwise (↻) (tighten) to raise the front of mower, or, counterclockwise (↺) (loosen) to lower the front mower.

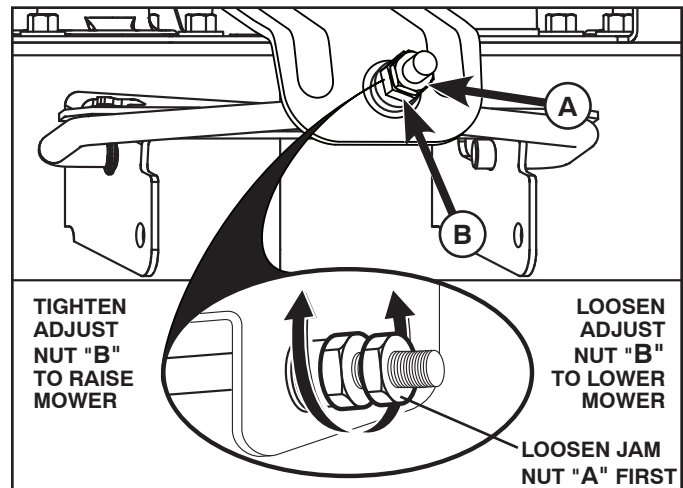


Fig. 39

NOTE: Each full turn of the adjustment nut will change mower height about 1/8".

- Recheck measurements, adjust if necessary until front tip of blade is 1/8" to 1/2" lower than the rear tip.
- Hold adjustment nut in position with wrench and tighten jam nut securely against adjustment nut.

SERVICE AND ADJUSTMENTS

TO REPLACE MOWER BLADE DRIVE BELT

MOWER DRIVE BELT REMOVAL (See Fig. 40)

- Park tractor on a level surface. Engage parking brake.
- Lower attachment lift lever to its lowest position.
- Remove mandrel covers.
- Remove any dirt or grass clippings which may have accumulated around mandrels and entire upper deck surface.
- With a 3/8" breaker bar and using the square opening in the idler arm, shift the arm counterclockwise (↶) to relieve the tension on the belt.
- Carefully roll the belt over the top of the cutter housing pulleys.

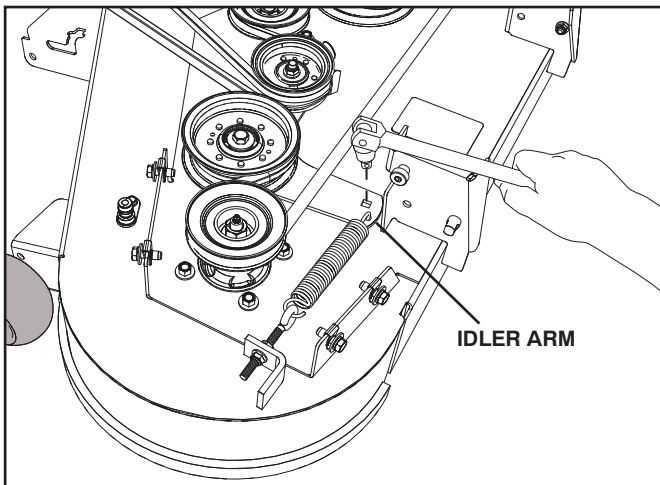


Fig. 40

- Remove the belt from around the electric clutch on the engine shaft.

MOWER DRIVE BELT INSTALLATION (See Fig. 41 and 42)

NOTE: For ease in installing the deck belt, refer to the routing decal on the cutting deck.

- Place the belt around all the pulleys except the center spindle pulley.
- With a 3/8" breaker bar, shift the idler arm counterclockwise. When there is enough slack, slip the belt onto the center spindle pulley.

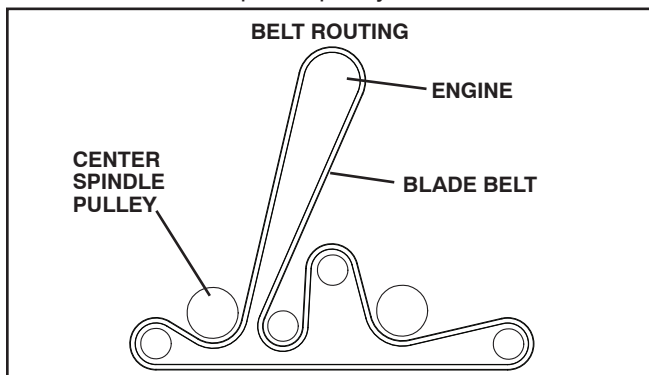


Fig. 41

- Double check belt routing to make sure it matches the routing decal, and that the belt does not have any twist. Correct if needed.
- Adjust belt tension by turning the eyebolt until spring is extended to a length of 5.1".
- Belt tension should be set to 30 Ft. Lbs/40 Nm.
- Replace mandrel covers on both mandrel housings and secure with fasteners.

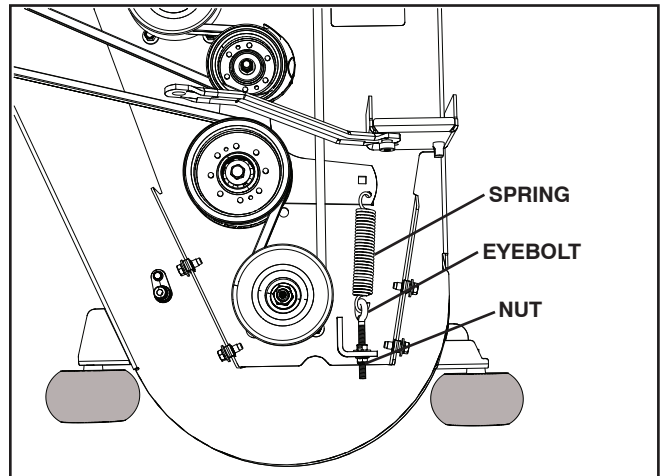


Fig. 42

TO CHECK BRAKE

If tractor requires more than five (5) feet to stop at highest speed in highest gear on a level, dry concrete or paved surface, then brake must be serviced.

You may also check brake by:

- Park tractor on a level, dry concrete or paved surface, depress brake pedal all the way down and engage parking brake.
- Disengage transmission by placing freewheel control in "transmission disengaged" position. Pull freewheel control out and into the slot and release so it is held in the disengaged position.

The rear wheels must lock and skid when you try to manually push the tractor forward. If the rear wheels rotate, then the brake needs to be serviced. Contact a qualified service center.

FRONT WHEEL TOE-IN/CAMBER

Your new tractor front wheel toe-in and camber is set at the factory and is normal. The front wheel toe-in and camber are not adjustable. If damage has occurred to affect the factory set front wheel toe-in or camber, contact a qualified service center.

SERVICE AND ADJUSTMENTS

TO REPLACE MOTION DRIVE BELT (See Fig. 43)

Park the tractor on level surface. Engage parking brake. For assistance, there is a belt installation guide decal on bottom side of left footrest.

BELT REMOVAL -

1. Remove mower (See "TO REMOVE MOWER" section in this manual).

NOTE: Observe entire motion drive belt and position of all belt guides and keepers.

2. Disconnect clutch wire harness (A).
3. Remove anti-rotation link (B) on right side of tractor.
4. Remove belt from stationary idler (C) and clutching idler (D).
5. Pull belt slack toward rear of tractor. Carefully remove belt upwards from transmission input pulley and over cooling fan blades (F).
6. Remove belt downward from engine pulley and around electric clutch (G).
7. Slide belt toward rear of tractor, off the steering plate (H) and remove from tractor.

BELT INSTALLATION -

1. Install new belt from tractor rear to front, over the steering plate (H) and above clutch brake pedal shaft (J).
2. Pull belt toward front of tractor and roll belt around electric clutch and onto engine pulley (G).
3. Pull belt toward rear of tractor. Carefully work belt down around transmission cooling fan and onto the input pulley (F). Ensure belt is inside the belt keeper.
4. Install belt through stationary idler (C) and clutching idler (D).
5. Reinstall anti-rotation link (B) on right side of tractor. Tighten securely.
6. Reconnect clutch harness (A).
7. Make sure belt is in all pulley grooves and inside all belt guides and keepers.
8. Install mower (See "TO INSTALL MOWER" section in this manual).

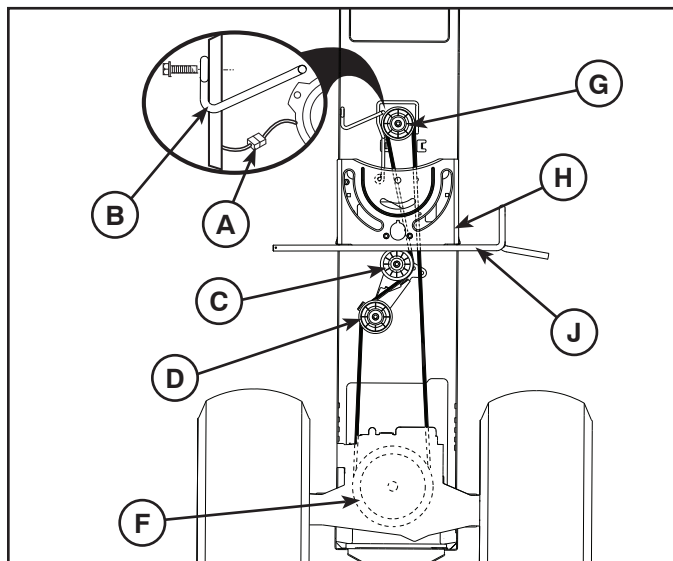


Fig. 43

TO REMOVE WHEEL (See Fig. 44)

- Block up axle securely.
- Remove axle cover, retaining ring and washers to allow wheel removal (rear wheel contains a square key - Do not lose).
- Repair tire and reassemble.
- On rear wheels only: align grooves in rear wheel hub and axle. Insert square key.
- Replace washers and snap retaining ring securely in axle groove.
- Replace axle cover.

NOTE: To seal tire punctures and prevent flat tires due to slow leaks, tire sealant may be purchased from your local parts dealer. Tire sealant also prevents tire dry rot and corrosion.

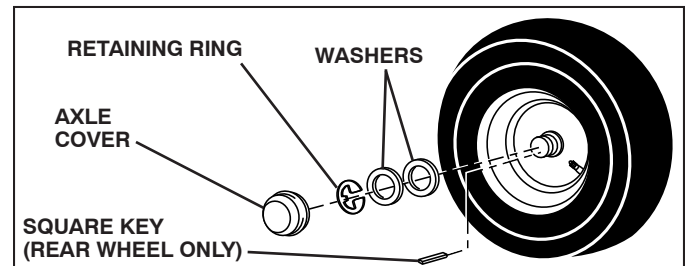


Fig. 44

SERVICE AND ADJUSTMENTS

TO START ENGINE WITH A WEAK BATTERY (See Fig. 45)



WARNING: Lead-acid batteries generate explosive gases. Keep sparks, flame and smoking materials away from batteries. Always wear eye protection when around batteries.

If your battery is too weak to start the engine, it should be recharged. (See "BATTERY" in the MAINTENANCE section of this manual).

If "jumper cables" are used for emergency starting, follow this procedure:

IMPORTANT: YOUR TRACTOR IS EQUIPPED WITH A 12 VOLT SYSTEM. THE OTHER VEHICLE MUST ALSO BE A 12 VOLT SYSTEM. DO NOT USE YOUR TRACTOR BATTERY TO START OTHER VEHICLES.

TO ATTACH JUMPER CABLES -

- Connect one end of the RED cable to the POSITIVE (+) terminal of each battery(A-B), taking care not to short against tractor chassis.
- Connect one end of the BLACK cable to the NEGATIVE (-) terminal (C) of fully charged battery.
- Connect the other end of the BLACK cable (D) to good chassis ground, away from fuel tank and battery.

TO REMOVE CABLES, REVERSE ORDER -

- BLACK cable first from chassis and then from the fully charged battery.
- RED cable last from both batteries.

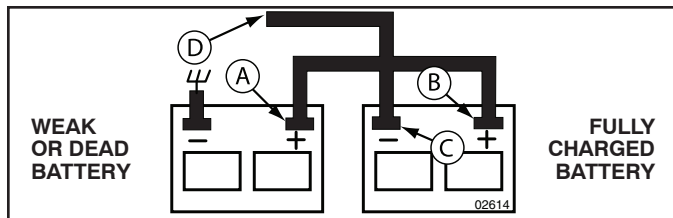


Fig. 45

REPLACING BATTERY (See Fig. 46)



WARNING: Do not short battery terminals by allowing a wrench or any other object to contact both terminals at the same time. Before connecting battery, remove metal bracelets, wristwatch bands, rings, etc. Positive terminal must be connected first to prevent sparking from accidental grounding.

- Lift hood to raised position.
- Remove terminal cover.
- Disconnect BLACK battery cable then RED battery cable and carefully remove battery from tractor.
- Install new battery with terminals in same position as old battery.
- Reinstall terminal cover.
- First connect RED battery cable to positive (+) battery terminal with bolt and nut as shown. Tighten securely.
- Connect BLACK grounding cable to negative (-) battery terminal with remaining bolt and nut. Tighten securely
- Close hood.

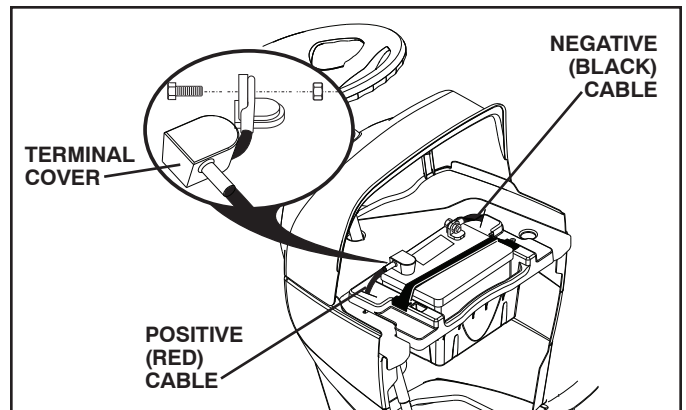


Fig. 46

SERVICE AND ADJUSTMENTS

TO REPLACE HEADLIGHT BULB

- Raise hood.
- Pull bulb holder out of the hole in the backside of the grill.
- Replace bulb in holder and push bulb holder securely back into the hole in the backside of the grill.
- Close hood.

INTERLOCKS AND RELAYS

Loose or damaged wiring may cause your tractor to run poorly, stop running, or prevent it from starting.

- Check wiring.

TO REPLACE FUSE (See Fig. 47)

Unit has two automotive type fuses. Replace primary operation fuse with a 20 amp and the differential lock actuator fuse with a 10 amp. The fuse holders are located behind the dash.

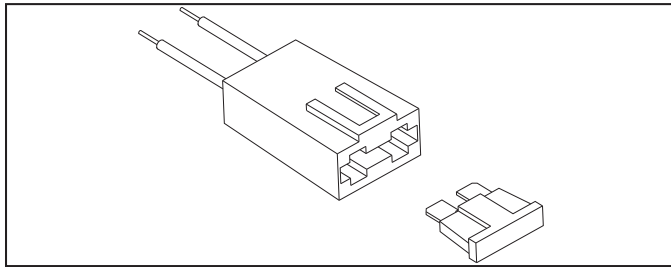


Fig. 47

SMART SWITCH SYSTEM LIGHTS (See Fig. 48)

The Smart Switch System is equipped with courtesy lights that are used to indicate system functions or faults.

FUNCTIONS

- The Smart Switch Ignition (SSI) Button (F) will blink blue while waiting for the correct passcode to be entered. The SSI button will blink green when tractor is ready to start and remain solid green while running.
- The park brake symbol will be lit if the parking brake has not been engaged.
- The blade switch symbol will be lit if the attachment clutch control is not in the "DISENGAGED" position.
- The Mow-In-Reverse (MIR) button (G) will be lit when Reverse Operation System is in use.
- The Headlight button (H) will remain lit while headlights are in use.
- During normal operation, the Battery Indicator button (I) will not be lit.

FAULTS

- The SSI Button will blink red for two seconds if the wrong passcode has been entered.
- The Mow-In-Reverse (MIR) button will blink when there is a fault with the Reverse Operation System. See "Reverse Operation System" in the Operations section of the manual.
- After the first unsuccessful start attempt, the battery indicator button (I) will blink for two (2) seconds and then stay lit. This indicates that the battery voltage is below normal operating level. While engine is in operation, this light may also indicate a charging system failure.
- The headlight button will blink when one or both of the headlight bulbs fail.
- All indicator lights will blink in the event the engine shuts off for unknown reasons; for example, if the engine has run out of fuel.

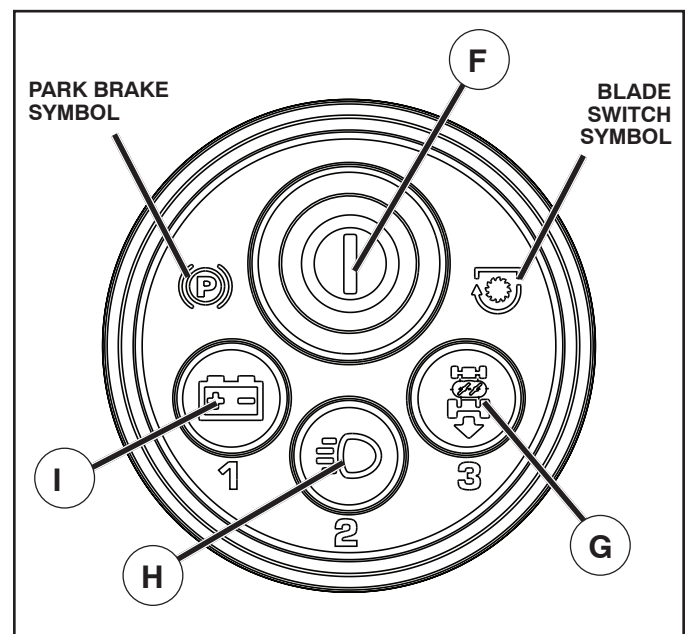


Fig. 48

SERVICE AND ADJUSTMENTS

TO REMOVE HOOD AND GRILL ASSEMBLY (See Fig. 49)

- Raise hood.
- Unsnap headlight wire connector.
- Stand in front of tractor. Grasp hood at sides, tilt toward engine and lift off of tractor.
- To replace, reverse above procedure.

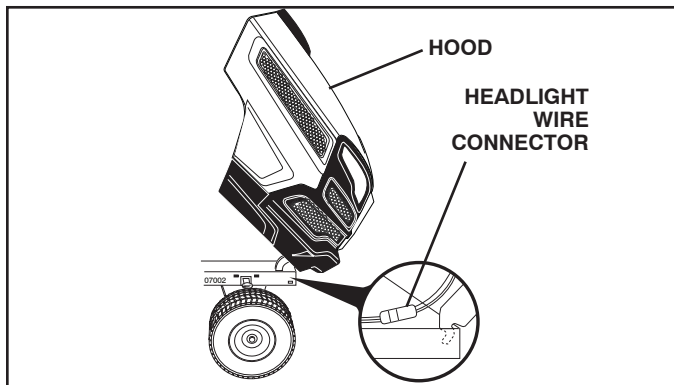


Fig. 49

TRANSMISSION

REMOVAL/REPLACEMENT

Should your transmission require removal for service or replacement, it should be purged after reinstallation and before operating the tractor. See "PURGE TRANSMISSION" in the Operation section of this manual.

ENGINE

TO ADJUST THROTTLE CONTROL CABLE

The throttle control has been preset at the factory and adjustment should not be necessary. If adjustment is necessary, see engine manual.

TO ADJUST CARBURETOR

Your carburetor is not adjustable. If your engine does not operate properly due to suspected carburetor problems, take your tractor to an authorized service center for repair and/or adjustment.

STORAGE

Immediately prepare your tractor for storage at the end of the season or if the tractor will not be used for 30 days or more.



WARNING: Never store the tractor with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.

TRACTOR

Remove mower from tractor for winter storage. When mower is to be stored for a period of time, clean it thoroughly, remove all dirt, grease, leaves, etc. Store in a clean, dry area.

- Clean entire tractor (See “CLEANING” in the Maintenance section of this manual).
- Inspect and replace belts, if necessary (See belt replacement instructions in the Service and Adjustments section of this manual).
- Lubricate as shown in the Maintenance section of this manual.
- Ensure that all nuts, bolts and screws are securely fastened. Inspect moving parts for damage, breakage and wear. Replace if necessary.
- Touch up all rusted or chipped paint surfaces; sand lightly before painting.

BATTERY

- Fully charge the battery for storage.
- After a period of time in storage, battery may require recharging.
- To help prevent corrosion and power leakage during long periods of storage, battery cables should be disconnected and battery cleaned thoroughly (see “TO CLEAN BATTERY AND TERMINALS” in the Maintenance section of this manual).
- After cleaning, leave cables disconnected and place cables where they cannot come in contact with battery terminals.
- If battery is removed from tractor for storage, do not store battery directly on concrete or damp surfaces.

ENGINE

FUEL SYSTEM

IMPORTANT: IT IS IMPORTANT TO PREVENT GUM DEPOSITS FROM FORMING IN ESSENTIAL FUEL SYSTEM PARTS SUCH AS CARBURETOR, FUEL FILTER, FUEL HOSE, OR TANK DURING STORAGE. ALSO, EXPERIENCE INDICATES THAT ALCOHOL BLENDED FUELS (CALLED GASOHOL OR USING ETHANOL OR METHANOL) CAN ATTRACT MOISTURE WHICH LEADS TO SEPARATION AND FORMATION OF ACIDS DURING STORAGE. ACIDIC GAS CAN DAMAGE THE FUEL SYSTEM OF AN ENGINE WHILE IN STORAGE.

- Empty the fuel tank by starting the engine and let it run until the fuel lines and carburetor are empty.
- Never use engine or carburetor cleaner products in the fuel tank or permanent damage may occur.
- Use fresh fuel next season.

NOTE: Fuel stabilizer is an acceptable alternative in minimizing the formation of fuel gum deposits during storage. Add stabilizer to gasoline in fuel tank or storage container. Always follow the mix ratio found on stabilizer container. Run engine at least 10 minutes after adding stabilizer to allow the stabilizer to reach the carburetor. Do not empty the gas tank and carburetor if using fuel stabilizer.

ENGINE OIL

Drain oil (with engine warm) and replace with clean engine oil. (See “ENGINE” in the Maintenance section of this manual).

CYLINDER(S)

- Remove spark plug(s).
- Pour one ounce of oil through spark plug hole(s) into cylinder(s).
- Distribute oil by setting parking brake, disengaging attachment clutch and pressing the Smart Switch Ignition (SSI) button once. Crank for approximately five (5) seconds, then press SSI button once again to stop.
- Replace with new spark plug(s).

OTHER


- Do not store gasoline from one season to another.
- Replace your gasoline can if your can starts to rust. Rust and/or dirt in your gasoline will cause problems.
- If possible, store your tractor indoors and cover it to give protection from dust and dirt.
- Cover your tractor with a suitable protective cover that does not retain moisture. Do not use plastic. Plastic cannot breathe which allows condensation to form and will cause your tractor to rust.

IMPORTANT: NEVER COVER TRACTOR WHILE ENGINE AND EXHAUST ARE STILL WARM.

TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Will not start	<ol style="list-style-type: none"> 1. Out of fuel. 2. Engine flooded. 3. Bad spark plug. 4. Dirty air filter. 5. Dirty fuel filter. 6. Water in fuel. 7. Loose or damaged wiring. 8. Engine valves out of adjustment. 	<ol style="list-style-type: none"> 1. Fill fuel tank. 2. Wait several minutes before attempting to start. 3. Replace spark plug. 4. Clean/replace air filter. 5. Replace fuel filter. 6. Empty fuel tank and carburetor, refill tank with fresh gasoline and replace fuel filter. 7. Check all wiring. 8. Contact an authorized service center/department.
Hard to start	<ol style="list-style-type: none"> 1. Dirty air filter. 2. Bad spark plug. 3. Weak or dead battery. 4. Dirty fuel filter. 5. Stale or dirty fuel. 6. Loose or damaged wiring. 7. Engine valves out of adjustment. 	<ol style="list-style-type: none"> 1. Clean/replace air filter. 2. Replace spark plug. 3. Recharge or replace battery. 4. Replace fuel filter. 5. Empty fuel tank and refill tank with fresh, clean gas. 6. Check all wiring. 7. Contact an authorized service center/department.
Engine will not turn over	<ol style="list-style-type: none"> 1. Brake pedal not depressed. 2. Attachment clutch is engaged. 3. Weak or dead battery. 4. Blown fuse. 5. Corroded battery terminals. 6. Loose or damaged wiring. 7. Faulty ignition switch. 8. Faulty solenoid or starter. 9. Faulty operator presence switch(es). 	<ol style="list-style-type: none"> 1. Depress brake pedal. 2. Disengage attachment clutch. 3. Recharge or replace battery. 4. Replace fuse. 5. Clean battery terminals. 6. Check all wiring. 7. Check/replace ignition switch. 8. Check/replace solenoid or starter. 9. Contact an authorized service center/department.
Engine clicks but will not start	<ol style="list-style-type: none"> 1. Weak or dead battery. 2. Corroded battery terminals. 3. Loose or damaged wiring. 4. Faulty solenoid or starter. 	<ol style="list-style-type: none"> 1. Recharge or replace battery. 2. Clean battery terminals. 3. Check all wiring. 4. Check/replace solenoid or starter.
Loss of power	<ol style="list-style-type: none"> 1. Cutting too much grass/too fast. 2. Build-up of grass, leaves, trash under mower. 3. Dirty air filter. 4. Low oil level/dirty oil. 5. Faulty spark plug. 6. Dirty fuel filter. 7. Stale or dirty fuel. 8. Water in fuel. 9. Spark plug wire loose. 10. Dirty engine air screen/fins. 11. Dirty/clogged muffler. 12. Loose or damaged wiring. 13. Engine valves out of adjustment. 	<ol style="list-style-type: none"> 1. Raise cutting height/reduce speed. 2. Clean underside of mower housing. 3. Clean/replace air filter. 4. Check oil level/change oil. 5. Clean and regap or change spark plug. 6. Replace fuel filter. 7. Empty fuel tank and refill tank with fresh, clean gas. 8. Empty fuel tank and carburetor, refill tank with fresh gasoline and replace fuel filter. 9. Connect and tighten spark plug wire. 10. Clean engine air screen/fins. 11. Clean/replace muffler. 12. Check all wiring. 13. Contact an authorized service center/department.
Excessive vibration	<ol style="list-style-type: none"> 1. Worn, bent or loose blade. 2. Bent blade mandrel. 3. Loose/damaged part(s). 	<ol style="list-style-type: none"> 1. Replace blade. Tighten blade bolt. 2. Replace blade mandrel. 3. Tighten loose part(s). Replace damaged parts.

TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Engine continues to run when operator leaves seat with attachment clutch engaged	<ol style="list-style-type: none"> 1. Faulty operator-safety presence control system. 	<ol style="list-style-type: none"> 1. Check wiring, switches and connections. If not corrected, contact an authorized service center/department. <p> CAUTION: DO NOT operate machine until problem is corrected.</p>
Poor cut - uneven	<ol style="list-style-type: none"> 1. Worn, bent or loose blade. 2. Mower deck not level. 3. Buildup of grass, leaves, trash under mower. 4. Bent blade mandrel. 5. Clogged mower deck vent holes from buildup of grass, leaves, and trash around mandrels. 	<ol style="list-style-type: none"> 1. Replace blade. Tighten blade bolt. 2. Level mower deck. 3. Clean underside of mower housing. 4. Replace blade mandrel. 5. Clean around mandrels to open vent holes.
Mower blades will not rotate	<ol style="list-style-type: none"> 1. Obstruction in clutch mechanism. 2. Worn/damaged mower drive belt. 3. Frozen idler pulley. 4. Frozen blade mandrel. 	<ol style="list-style-type: none"> 1. Remove obstruction. 2. Replace mower drive belt. 3. Replace idler pulley. 4. Replace blade mandrel.
Poor grass discharge	<ol style="list-style-type: none"> 1. Engine speed too slow. 2. Travel speed too fast. 3. Wet grass. 4. Mower deck not level. 5. Low/uneven tire air pressure. 6. Worn, bent or loose blade. 7. Buildup of grass, leaves, trash under mower. 8. Mower drive belt worn. 9. Blades improperly installed. 10. Improper blades used. 11. Clogged mower deck vent holes from buildup of grass, leaves, trash around mandrels. 	<ol style="list-style-type: none"> 1. Place throttle control in "FAST" position. 2. Shift to slower speed. 3. Allow grass to dry before mowing. 4. Level mower deck. 5. Check tires for proper air pressure. 6. Replace blade. Tighten blade bolt. 7. Clean underside of mower housing. 8. Replace mower drive belt. 9. Reinstall blades sharp edge down. 10. Replace with blades listed in parts manual. 11. Clean around mandrels to open vent holes.
Headlight(s) not working (if so equipped)	<ol style="list-style-type: none"> 1. Switch is "OFF". 2. Bulb(s) or lamp(s) burned out. 3. Faulty light switch. 4. Loose or damaged wiring. 5. Blown fuse. 	<ol style="list-style-type: none"> 1. Turn switch "ON". 2. Replace bulb(s) or lamp(s). 3. Check/replace Smart Switch Ignition switch. 4. Check wiring and connections. 5. Replace fuse.
Battery will not charge	<ol style="list-style-type: none"> 1. Bad battery cell(s). 2. Poor cable connections. 3. Faulty regulator (if so equipped). 4. Faulty alternator. 	<ol style="list-style-type: none"> 1. Replace battery. 2. Check/clean all connections. 3. Replace regulator. 4. Replace alternator.
Loss of drive	<ol style="list-style-type: none"> 1. Freewheel control in "disengaged" position. 2. Debris on steering plate (if equipped). 3. Motion drive belt worn, damaged, or broken. 4. Air trapped in transmission during shipment or servicing. 5. Axle key missing. 	<ol style="list-style-type: none"> 1. Place freewheel control in "engaged" position. 2. See "CLEANING" in the maintenance section. 3. Replace motion drive belt. 4. Purge transmission. 5. Install axle key at rear wheel. See "TO REMOVE WHEEL" in the Service and Adjustments section.
Engine "back-fires" when turning engine "OFF"	<ol style="list-style-type: none"> 1. Engine throttle control not set between half and full speed (fast) position before stopping engine. 	<ol style="list-style-type: none"> 1. Move throttle control between half and full speed (fast) position before stopping engine.



Consumer Wheeled Products - Limited Warranty

Husqvarna warrants to the original retail purchaser that this Husqvarna® product is **free from defects in material or workmanship** under normal use and maintenance from the date of retail purchase for the applicable Warranty Period shown on Exhibit A. This Limited Warranty may not be transferred to any subsequent purchaser of this Husqvarna® product. Certain components (e.g., engines and transmissions) are excluded from coverage, and other limitations apply, as described in this document. Husqvarna will repair or replace at its discretion, any defective product or part covered by the Limited Warranty, free of charge at any authorized Husqvarna Servicing Dealer/Center using original OEM Husqvarna replacement parts, subject to the limitations and exclusions described below. Husqvarna does not offer an over-the-counter exchange program.

DISCLAIMERS, LIMITATIONS AND EXCLUSIONS

1. WARRANTY DISCLAIMER. THIS LIMITED WARRANTY IS THE SOLE EXPRESS WARRANTY PROVIDED BY HUSQVARNA AND THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, EXCEPT AS MAY BE PROVIDED BY LAW. THIS WARRANTY IS GIVEN **ONLY** BY HUSQVARNA, AND MAY BE MODIFIED ONLY BY HUSQVARNA. THIS LIMITED WARRANTY IS THE FINAL EXPRESSION OF OUR AGREEMENT, AND IS A COMPLETE AND EXCLUSIVE STATEMENT OF THE TERMS OF THAT AGREEMENT. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY BASED ON LOCALITY

2. LIMITED DURATION. ANY WARRANTY THAT MAY BE IMPLIED BY LAW (INCLUDING ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE AND IMPLIED WARRANTY OF MERCHANTABILITY) IS LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD UNDER THIS LIMITED WARRANTY. SOME LOCALITIES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

3. EXCLUSIVE REMEDIES. SOME LOCALITIES, INCLUDING THE PROVINCE OF QUEBEC, DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR INJURY TO PERSON OR FOR DAMAGES RESULTING FROM THE FAULT OF THE MANUFACTURER AND/OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES. AS SUCH, SOME OF THE FOLLOWING LIMITATIONS MAY NOT APPLY TO YOU. THE ABOVE REMEDIES ARE THE EXCLUSIVE REMEDIES FOR ANY BREACH OF THIS LIMITED WARRANTY. NO OTHER REMEDY, INCLUDING, BUT NOT LIMITED TO ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES, FOR LOST PROFITS, LOST SALES, INJURY TO PERSON OR PROPERTY, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS SHALL BE AVAILABLE, AND ALL SUCH DAMAGES ARE HEREBY DISCLAIMED.

4. Engines, Transmissions and certain other components are NOT covered. This Limited Warranty does not cover any of the following:

(a) *Engines and Attachments.* Except where otherwise indicated on Exhibit A, all Engines and Attachments are not covered by this Limited Warranty. In most cases, these items are NOT manufactured by Husqvarna in which case they may be covered separately by their respective manufacturer's warranties if one is provided and included with the product at the time of purchase. All such claims must be submitted and sent to the appropriate manufacturer or as otherwise directed in those separate warranties. Husqvarna is not authorized to handle warranty adjustments or repairs on engines manufactured by Briggs & Stratton, Honda, Kawasaki, or Kohler (Husqvarna does handle warranty issues on engines manufactured by Liquid Combustion Technologies (LCT)). Husqvarna does not assume any warranty obligation of the other manufacturers' engines under this Limited Warranty.

(b) *Transmissions.* Except where otherwise indicated on Exhibit A, Transmission / Transaxle (including Drive Systems) are not covered by this Limited Warranty. In most cases, these items are NOT manufactured by Husqvarna in which case they may be covered separately by their respective manufacturer's warranties if one is provided and included with the product at the time of purchase. The following transmission / transaxle manufacturers, Dana, Hydro-Gear, Tuff-Torq provide a warranty for the transmission / transaxle to the ultimate purchaser or to Husqvarna. Husqvarna will assign the transmission / transaxle manufacturer's warranty or any rights thereof to the original purchaser of the unit. To obtain transmission / transaxle warranty service, first contact the retailer who you purchased the unit from. Should you require assistance or have any questions concerning transmission / transaxle warranty coverage, contact Husqvarna directly at our website www.husqvarna.com or call 800-487-5951 (US) or 800-805-5523 (Canada) for an authorized Husqvarna service provider. All such claims must be submitted and sent to the appropriate manufacturer or as otherwise directed in those separate warranties. Husqvarna is not authorized to handle warranty adjustments or repairs on transmissions or transaxles. Husqvarna does not assume any obligations under this Limited Warranty for the above listed manufacturers (for exceptions - see Exhibit A).

(c) *Expendable Parts.* This Limited Warranty does not cover general maintenance parts and items ("Expendable Parts"), including without limitation spark plugs, bulbs, filters, lubricants, starter cords, belts, blades, and blade adapters.

(d) *Emissions Control Components.* This Limited Warranty does not cover Emissions control equipment and components to the extent regulated by the U.S. Environmental Protection Agency or similar state, provincial or federal agencies. Such equipment and components are covered by a separate emission control warranty statement supplied with your new product. Please consult this separate warranty statement for details.

5. Any COMMERCIAL, INSTITUTIONAL, AGRICULTURAL, INDUSTRIAL, INCOME PRODUCING, or RENTAL use will result in either No Warranty or a Shortened Warranty Period. Depending on the product, there is either NO WARRANTY (whether statutory, contractual or otherwise) or a reduced warranty if the product is used for commercial, institutional, agricultural, industrial, income producing, or rental purposes and, in such circumstances, this Limited Warranty is offered instead of and replaces any warranty regime provided for by law. Please refer to Exhibit A.

6. Reconditioned or Refurbished Products have a 30 Day Limited Warranty. Under this Limited Warranty, Certified Factory Reconditioned or Refurbished products have a 30 Day Limited Warranty for parts and labor for Non-Commercial Use. Products are only reconditioned at the Husqvarna Factory.

7. Owner's (Your) Responsibilities. To preserve your rights under this Limited Warranty, you must exercise reasonable care and use of the product, including, following the preventative maintenance, storage, fuel and oil usages as prescribed in the enclosed operator's manual. For example, the following items are the Owner's responsibility and are **not** covered by this Limited Warranty:

- a. Set-up and pre-delivery service, and engine tune-ups;
- b. Adjustments after the first (30) thirty days of purchase and beyond, such as throttle cable, belt guides adjustments; and
- c. Preventative maintenance as outlined in the operator's manual.

In addition, you must cease using the product immediately upon any failure or damage. The product should be taken to an authorized Husqvarna servicing dealer prior to any further use.

8. Damages resulting from normal aging, wear and tear or neglect are NOT covered. The Limited Warranty does not cover damage other than that resulting from defects in material or workmanship. The following are NOT considered defects in material or workmanship, and therefore are NOT covered.

- (a) Abrasion to mower decks;
- (b) Tires damaged by external punctures;
- (c) Natural discoloration of materials due to ultraviolet light;
- (d) Damage to cutting equipment by way of contact with, rocks, or other non-approved materials and/or structures;

In addition, this Limited Warranty does not cover damages, malfunctions or failures resulting from abuse or neglect of the product related to or including any of the following:

- (e) Failure to provide or perform required maintenance services as prescribed in the operator's manual;
- (f) Abuse, misuse, neglect, modifications, alterations, normal wear, improper servicing, use of unauthorized attachments, Lack of lubrication or engine failure, due to the use of oils that do not meet Engine manufacturer's specifications;
- (g) Use of gasohol (fuel containing ethanol), containing methanol (fuel containing wood alcohol). Ethanol fuel E15 or E85 is **NOT** approved for use in Husqvarna products. Using E15 or E85 fuel will cause major engine damage which **is NOT** covered by this Husqvarna warranty. NOTE: Gasohol (fuel containing ethanol), which contains a maximum 10% ethanol (grain alcohol) is approved. The prescribed mixing ratio of gasoline to oil is 50:1 and is listed in the Husqvarna oil label and covered in your operator's manual.
- (h) Use of ether or any starting fluids;
- (i) Pressure cleaning or steam cleaning the product;
- (j) Use of spark plugs other than those meeting emission performance requirements listed in the operator's manual;
- (k) Tampering with engine speed governor or emission components, or running engines above specified and recommended engine speeds as listed in your operator's manual;
- (l) Operation of the unit with improperly installed/removed or modified cutting shields, guards, or safety devices;
- (m) Any removed/damaged air filter, excessive dirt, abrasives, salt water, moisture, corrosion, rust, varnish, stale fuel, or any adverse reaction due to incorrect storage procedures;
- (n) Failures due to improper set up, pre-delivery service or repair service by anyone other than an authorized Husqvarna servicing dealer during the warranty period;
- (o) Dirt contaminated grease or oil, use of incorrect type of greases or oils, failure to comply with recommended greasing intervals, water or moisture damage, and/or improper storage;
- (p) Sprayers pumping or spraying caustic or flammable materials, lack of or broken strainers; or
- (q) Continued use of product, after initial operational problem or failure occurs.

9. Reinforced Stamped (Armor Protected) 10 Year Limited & Fabricated Limited Lifetime, Deck Warranties. These Limited Warranties are for the deck shell only – mechanical components/parts such as belts, pulleys, spindle housings, bearings, blades, rods, height adjusters, caster/anti scalp wheels etc... are NOT covered. The Limited Lifetime Warranty does not cover damage other than that resulting from defects in material or workmanship. The following are NOT considered defects in material or workmanship, and therefore are NOT covered:

- (a) Abrasion to mower decks, including sand wear;
- (b) Damage to cutting equipment by way of contact with, rocks, or other non-approved materials and/or structures;
- (c) Rust and corrosion; and
- (d) Natural discoloration of paint or other materials due to ultraviolet light.

HOW TO OBTAIN SERVICE

10. Authorized Husqvarna Servicing Dealer/Center. In order to obtain warranty coverage it is your responsibility (at your expense) to deliver or ship your Husqvarna unit to an authorized Husqvarna Servicing Dealer/Center and arrange for pick-up or return of your unit after the repairs have been made. If you do not know the location of your nearest authorized Husqvarna Servicing Dealer, call Husqvarna, at 1-800-487-5951 during the hours of 8:00 AM to 8:00 PM Eastern Standard Time, or visit www.husqvarna.com. Should you require assistance or have questions concerning this Limited Warranty, you may contact us at 800-487-5951 (US) or 800-805-5523 (Canada) during the hours of 8:00 AM to 8:00 PM Eastern Standard Time or contact us through the web at www.husqvarna.com.

11. Documentation Required. You must maintain and present Proof of purchase (including date, product model and, if applicable, engine serial number) to an authorized Husqvarna Servicing Dealer for warranty service under this Limited Warranty. Proof of purchase rests solely with you. Husqvarna encourages you to register your product online at www.usa.husqvarna.com (US & Canada) to help ensure, among other things, that you can be notified of important product information. However, registering your product is not a condition of warranty service.

Consumer Wheeled Limited Warranty Chart 2012

Exhibit A

Product/Component	Consumer (personal, household use only)	Commercial (any commercial, professional, institutional, agricultural, or income producing use, other than Rental Use)	Rental (any rental usage)
Riding Lawn Tractors:			
Frame, Chassis, Front Axle	5 Years	No Warranty	No Warranty
Engine*	*	*	*
Transmission (if made by Husqvarna/Peerless)	3 Years	No Warranty	No Warranty
Transmission (if third party)**	**	**	**
XLS Models only - stamped deck shell. Armor Protected Limited Warranty	10 Years	No Warranty	No Warranty
Fabricated Deck shell. Limited Lifetime Warranty	***	No Warranty	No Warranty
Battery	1 Year Pro-rated	No Warranty	No Warranty
Other Non-Expendable Components	3 Years	No Warranty	No Warranty
Residential Zero Turn Mowers (RZ Only)			
Engine*	*	*	*
Transmission **	**	No Warranty	No Warranty
RZ4623 (967009801 & 967009802) RZ5426 (967003601 & 967003602) - stamped deck shell. Armor Protected Limited Warranty	10 Years	No Warranty	No Warranty
Fabricated Deck shell. Limited Lifetime Warranty	***	No Warranty	No Warranty
Battery	1 Year Pro-rated	No Warranty	No Warranty
Other Non-Expendable Components	3 Years	No Warranty	No Warranty
Residential Zero Turn Mowers (MZ & EZ)			
Engine*	*	*	*
Transmission **	**	**	**
MZ5424S & MZ5425S (967003901 & 25021) - stamped deck shell. Armor Protected Limited Warranty	10 Years	No Warranty	No Warranty
Fabricated Deck shell. Limited Lifetime Warranty	***	No Warranty	No Warranty
Battery	1 Year Pro-rated	No Warranty	No Warranty
Other Non-Expendable Components	3 Years	1 Year	No Warranty
LE475 Edger, Tillers, Snow Throwers			
Engine*	*	*	*
Other Non-Expendable Components	2 Years	90 days	90 days
Tiller Tines	***	No Warranty	No Warranty
Walk Behind Mowers, High Wheel Trimmer			
Engine*	*	*	*
Battery	1 Year Pro-rated	No Warranty	No Warranty
Other Non-Expendable Components	3 Years	No Warranty	No Warranty
Hovering Trimmers			
Engine*	*	*	*
Other Non-Expendable Components	2 Years	1 Year	90 days
Front Mounted Deck Riders			
Engine*	*	*	*
Transmission	2 Years	No Warranty	No Warranty
Other Non-Expendable Components	2 Years	No Warranty	No Warranty
Cultivators			
Battery	1 Year Pro-rated	No Warranty	No Warranty
Other Non-Expendable Components	2 Years	No Warranty	No Warranty
Pressure Washers			
Model 5525PW:			
Engine*	*	*	*
Pump	2 Years	No Warranty	No Warranty
Other Non-Expendable Components	2 Years	No Warranty	No Warranty
All other Pressure Washers (6027PW, 9032PW, 1340PW)			
Engine*	*	*	*
Pump	2 Years	2 Years	No Warranty
Other Non-Expendable Components	2 Years	2 Years	No Warranty
Generators			
Engine*	*	*	*
Other Non-Expendable Components*	*2 Years (2nd Year Parts Only)	*2 Years-1365GN (2nd Year Parts Only)	No Warranty
Spreaders			

Consumer Wheeled Limited Warranty Chart 2012

Exhibit A

Product/Component	Consumer (personal, household use only)	Commercial (any commercial, professional, institutional, agricultural, or income producing use, other than Rental Use)	Rental (any rental usage)
Spreader	1 Year	1 Year	1 Year
Robotic Mowers			
Robotic Mower	2 Years	90 days	90 days
Battery	1 Year	1 Year	1 Year
Parts & Accessories (if purchased)			
Accessories (e.g., grass catcher, bumper guard accessories, etc.)	1 Year	No Warranty	No Warranty
Parts (e.g., belts, blades, etc.)	30 days	No Warranty	No Warranty
Parts & Accessories (if replaced in Warranty Service)			
Replacement parts and/or accessories provided under this Limited Warranty are warranted only for the BALANCE of the warranty period applicable to the part or accessory that was replaced.	See to left	See to left	See to left
	Consumer	Commercial	Rental

* See Separate Engine Manufacturer's or Manufacturer's warranty. LCT Engines on specific Snow Throwers & Tillers, warranty through Husqvarna.

** See reference 1 (b) of the warranty statement.

RZ - Two (2) Year Consumer warranty, parts & labor, with Hydro-Gear Distributor network.

EZ - One (1) Year Commercial warranty, parts & labor, with Husqvarna.

Two (2) Year Consumer warranty, parts & labor, with Hydro-Gear Distributor network.

MZ - Two (2) Year Commercial warranty, parts & labor, with Hydro-Gear Distributor network.

*** "Limited Lifetime Warranty" on Tiller tines and Fabricated Deck shell is for the life of the product or 7 (seven) years after the last date of the complete unit's final production, whichever comes first. Deck Shell replacement will be limited to a maximum of two (2) decks within the Limited Lifetime Warranty.

Armor Protected Stamped Deck Shell Example Below



Armor Protected Stamped Deck Shell Reinforced area

Fabricated Deck Shell Example Below



Stamped Deck Shell below, NOT reinforced



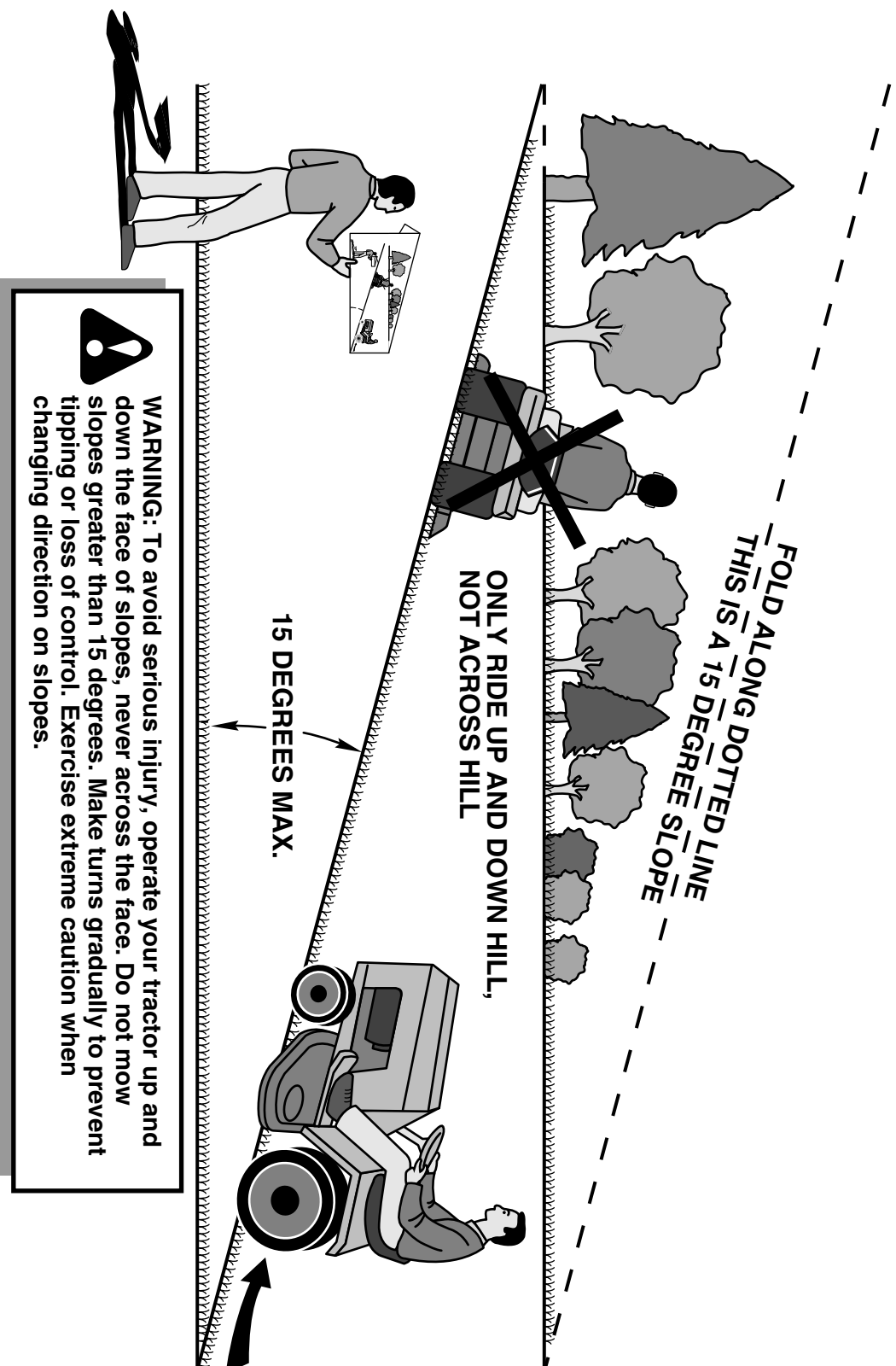
No reinforced area

SERVICE NOTES

SERVICE NOTES

SERVICE NOTES

SUGGESTED GUIDE FOR SIGHTING SLOPES FOR SAFE OPERATION



1. Fold this page along dotted line indicated above.
2. Hold page before you so that its left edge is vertically parallel to a tree trunk or other upright structure.
3. Sight across the fold in the direction of hill slope you want to measure.
4. Compare the angle of the fold with the slope of the hill.

11/21/2012 CL