

12/30

HERITAGE TRACTOR
CODE143P

INSTRUCTION BOOK

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LIMITED WARRANTY

Hayter Limited warrants to the original user / purchaser that this unit shall be free from defects in material and workmanship under normal use and service for a period of two years from the date of purchase. To qualify for the full benefit of the warranty, the warranty registration card must be returned within 60 days of purchase. This warranty does not cover engines or wearing parts i.e. cutterbars, wheels and tyres. If you have any doubt, consult a **Hayter** authorised dealer for clarification. Subject to the conditions and exclusions noted in this limited warranty, we shall at our option, repair or replace any warranted part during the applicable period. Engine manufacturers furnish their own warranties and provide services through their authorised network. If you experience any difficulty, please contact a **Hayter** authorised dealer.

To qualify for the second twelve month period of the above two year limited warranty, the machine must be serviced by a **Hayter** authorised dealer. This chargeable service should be carried out within 14 months of purchase and be in accordance with the recommendations for service determined by **Hayter**.

This warranty does not apply to any unit that has been tampered with, altered, misused, abused or used for hire and will become invalid if non genuine **Hayter** parts are fitted. This warranty does not cover minor mechanical adjustments unless they are due to defective materials or workmanship. Consult the owners handbook or a **Hayter** authorised dealer for assistance when making these adjustments.

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

To make a warranty claim, return the unit to a **Hayter** authorised dealer along with proof of purchase indicating the machine serial number and purchase date. Subject to the conditions and exclusions in this limited warranty, the authorised dealer will, at our option, repair or replace any warranted part within the duration of the warranty period.

This limited warranty gives you specific legal rights and is in addition to any statutory rights to which you may be entitled and your statutory rights are not affected by this warranty. If you need additional information concerning this written warranty, or assistance in obtaining services, please write to:

HAYTER LIMITED, Service Department, Spellbrook, Bishop's Stortford, Herts. CM23 4BU.

Details of your local **Hayter** authorised dealer are contained in Yellow Pages or contact: Freephone 0800 616298.

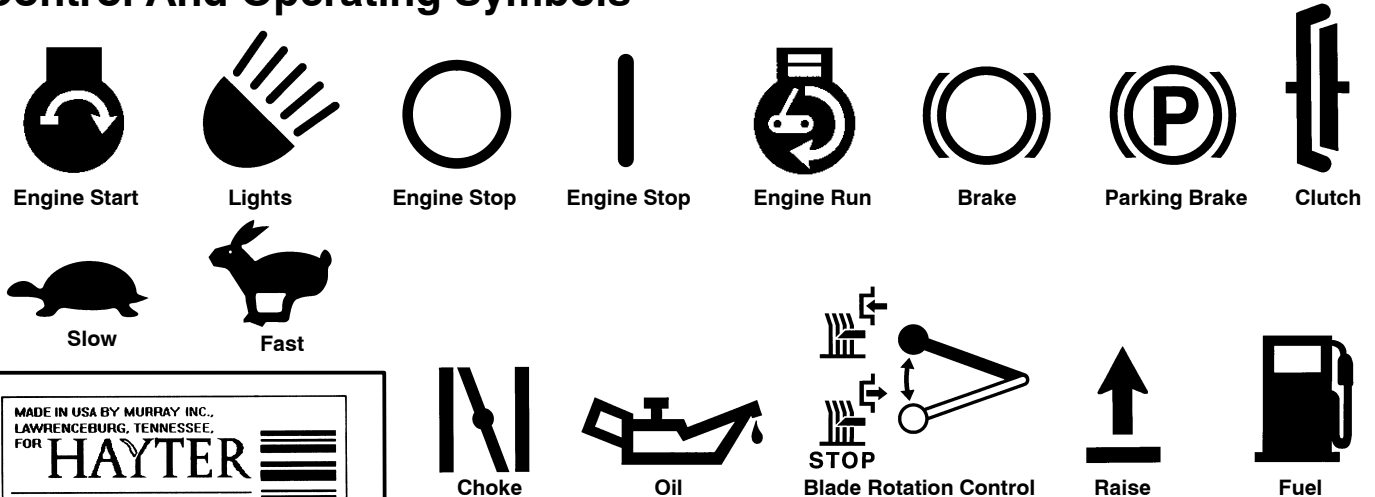
INTERNATIONAL SYMBOLS

IMPORTANT: The following symbols are located on your unit or on literature supplied with the product. Before you operate the unit, learn and understand the purpose for each symbol.

Safety Warning Symbols



Control And Operating Symbols



MADE IN USA BY MURRAY INC.,
LAWRENCEBURG, TENNESSEE,
FOR **HAYTER**

TYPE: **CODE143P**

MODEL: 12/30 TRACTOR
76CM DECK

kW	RPM 3000
kg 154	1997

CE

3 LWA
100

SERIAL NO: 143P999999

Declared vibration emission values in accordance with Directive 89/392/EEC.

Vibration Emission: Seat < 0.5 m/s², Steering Wheel 4.02 m/s²
Right Running Board 0.54 m/s², Left Running Board 0.68 m/s²

Values determined with operator in operating position when the machine was operated stationary on a grass covered surface at 3000 min⁻¹.

Declared airborne noise emissions are within the limits specified in Directive 84/538/EEC. Values indicated were measured according to Directive 81/1051/EEC.

Sound Power Level 100 dB(A)

Sound Pressure Levels

at operator ears 88.3 dB(A) left; 88.1 dB(A) right.

IMPORTANT

SAFE OPERATION PRACTICES FOR RIDE-ON (RIDING) ROTARY MOWER MACHINES

Training

1. Read the instructions carefully. Be familiar with the controls and the proper use of the equipment.
2. Never allow children or people unfamiliar with these instructions to use the mower. Local regulations may restrict the age of the operator.
3. Never mow while people, especially children, or pets are nearby.
4. Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.
5. Do not carry passengers.
6. All drivers should seek and obtain professional and practical instruction. Such instruction should emphasize:
 - a. the need for care and concentration when working with ride-on machines;
 - b. control of a ride-on machine sliding on a slope will not be regained by the application of the brake. The main reasons for loss of control are:
 - insufficient wheel grip;
 - being driven too fast;
 - inadequate braking
 - the type of machine is unsuitable for its task;
 - lack of awareness of the effect of ground conditions, especially slopes;
 - incorrect hitching and load distribution.
- b. engage clutch slowly, always keep machine in gear, especially when travelling downhill;
- c. machine speeds should be kept low on slopes and during tight turns;
- d. stay alert for humps and hollows and other hidden hazards;
- e. never mow across the face of the slope, unless the mower is designed for this purpose.
7. Use care when pulling loads or using heavy equipment.
 - a. Use only approved drawbar hitch points.
 - b. Limit loads to those you can safely control.
 - c. Do not turn sharply. Use care when reversing.
 - d. Use counterweight(s) or wheel weights when suggested in the Instruction Book.
8. Watch out for traffic when crossing or near roadways.
9. Stop the blades rotating before crossing surfaces other than grass.
10. When using any attachments, never direct discharge of material toward bystanders nor allow anyone near the machine while in operation.
11. Never operate the mower with defective guards or shields, or without safety protective devices in place.
12. Do not change the engine governor settings or overspeed the engine. Operating an engine at excessive speed may increase the hazard of personal injury.
13. Before leaving the operator's position
 - a. disengage the power take-off and lower the attachments;
 - b. change into neutral and set the parking brake;
 - c. stop the engine and remove the key.
14. Disengage drive to attachments, stop the engine, and disconnect the spark plug wire(s) or remove the ignition key
 - a. before cleaning blockages or unclogging chute;
 - b. before checking, cleaning or working on the mower;
 - c. after striking a foreign object. Inspect the mower for damage and make repairs before restarting and operating the equipment;
 - d. if the machine starts to vibrate abnormally (check immediately).
15. Disengage drive to attachments when transporting or not in use.
16. Stop the engine and disengage drive to attachment
 - a. before refuelling;
 - b. before removing the grass catcher;
 - c. before making height adjustment unless adjustment can be made from the operator's position.
17. Reduce the throttle setting during engine run-out and, if the engine is provided with a shut-off valve, turn the fuel off at the conclusion of mowing.

Preparation

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

Operation

1. Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.
2. Mow only in daylight or in good artificial light.
3. Before attempting to start the engine, disengage all blade attachment clutches and shift into neutral.
4. Do not use on slopes of more than 10 degrees.
5. Do not use on slopes of more than 10 degrees unless a roll over protective structure is fitted.
6. Remember there is no such thing as a "safe" slope. Travel on grass slopes requires particular care. To guard against over-turning:
 - a. do not stop or start suddenly when going up or downhill;

Maintenance and Storage

1. On multi-blade machines, take care as rotating one blade can cause other blades to rotate.
2. When machine is to be parked, stored or left unattended, lower the cutting means unless a positive mechanical lock is used.
3. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
4. Never store the equipment with petrol in the tank inside a building where fumes may reach an open flame or spark.
5. Allow the engine to cool before storing in any enclosure.
6. To reduce the fire hazard, keep the engine, silencer, battery compartment and petrol storage area free of grass, leaves, or excessive grease.
7. Check the grass catcher frequently for wear or deterioration.
8. Replace worn or damaged parts for safety.
9. If the fuel tank has to be drained, this should be done outdoors.

IMPORTANT

OWNER'S INFORMATION

This instruction book is for several different models. The instructions are written for a person with some mechanical ability. Like most service books, not all the steps are described. Steps on how to loosen or tighten fasteners are steps anyone can follow with some mechanical ability. Read and follow these instructions before you use the unit.

Know your product: If you understand the unit and how the unit operates, you will get the best performance. As you read this manual, compare the illustrations to the unit. Learn the location and the function of the controls. To help prevent an accident, follow the operating instructions and the safety rules. Keep this manual for future reference.

IMPORTANT: Many units are not assembled and are sold in cartons. It is the responsibility of the owner to make sure the assembly instructions in this manual are exactly followed. Other units are purchased in an assembled condition. On assembled units, it is the responsibility of the owner to make sure the unit is correctly assembled. The owner must carefully check the unit according to the instructions in this manual before it is first used.

RESPONSIBILITY OF THE OWNER

The responsibility of the owner is to follow the instructions below.

1. Carefully read and follow the rules for safe operation.
2. Follow all the assembly instructions.
3. Inspect the unit.
4. Make sure that the operator of the unit knows how to correctly use all standard and accessory equipment.
5. Operate the unit only with guards, shields, and other safety items in place and working correctly.
6. Correctly adjust the unit.
7. Service the unit only with authorized or approved replacement parts.
8. Complete all maintenance on the unit.

Environmental Awareness

- Do not fill the engine's fuel tank completely full.
- Drain fuel for off-season storage.
- Use only unleaded petrol.
- Service the air cleaner regularly.
- Change oil regularly. Use 30W oil in summer.
- Tune-up the engine regularly.
- Keep equipment in efficient operating condition.
- Dispose of used engine oil properly.

SAFETY RULES



WARNING: 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 to the operator or bystanders.

GENERAL OPERATION:

1. Read, understand and follow all instructions in the Instruction Book, on the machine, the engine and with any attachments before starting.
2. Only allow responsible adults familiar with the instructions to operate the machine.
3. Clear the area of objects such as stones, toys, wire, etc. which could be picked up and thrown by the blade.
4. Be sure the area is clear of other people before mowing. Stop the machine if anyone enters the area.
5. Never carry passengers.
6. Disengage power to the mower or any attachments before backing up. Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.
7. Be aware of the direction the mower discharges. Do not point discharge from the mower at anyone or at places where people may be. Do not operate the mower without either the entire grass bagger or the mower guard in place.
8. Slow down before turning.
9. Never leave a machine unattended with the engine running. Always disengage the blade(s), set the parking brake, stop the engine and remove the key before dismounting.
10. Disengage power to attachment(s) when transporting or not in use. Disengage the blade(s) when not mowing.
11. Stop the engine before removing the grass bagger or unclogging the chute.
12. Mow only in daylight or good artificial light.
13. Do not operate the machine while under the influence of alcohol or drugs or when very tired.
14. Watch for traffic when operating near or crossing roadways.
15. Use extra caution when loading or unloading the machine when using a trailer or truck for transporting.
16. Disengage all attachment clutches and shift into Neutral before attempting to start the engine.
17. Always wear safety glasses or an eye shield when you operate the unit to protect your eyes from foreign objects that can be thrown from the unit. Always wear eye protection when you make an adjustment or repair to the machine.
18. Use care when pulling loads or using heavy equipment.
 - a. Use only approved drawbar hitch points.
 - b. Limit loads to those you can safely control.
 - c. Do not turn sharply. Use care when backing.
 - d. Use counterweights or wheel weights when suggested in the Instruction Book.

IMPORTANT

19. Do not operate this machine if you are taking drugs or other medication which can cause drowsiness or affect your ability to operate this machine.
20. Do not use this machine if you are mentally or physically unable to operate this machine safely.

SLOPE OPERATION:

Slopes and rough terrain are major factors related to loss of control and tip over accidents which can result in severe injury or death. ALL slopes require extra caution. If you cannot back up the slope or if you feel uneasy on the slope, do not mow it. See the "Slope Guide" in the back of this book to check for safe operation.

DO

1. Mow up and down slopes, not across.
2. Remove obstacles such as stones, toys, wire, etc...
3. Watch for holes, ruts or bumps. Uneven terrain could overturn the machine. "Tall grass can hide obstacles."
4. Use slow speed. Choose a low enough gear so that you will not have to stop or shift while on the slope.
5. Follow the manufacturer's recommendations for wheel weights or counterweights to improve stability.
6. Use extra care with grass baggers or other attachments, they can change the stability of the machine.
7. Keep all movement on the slopes **slow and gradual**. Do not make sudden changes in speed or direction.
8. Avoid starting or stopping on a slope. If tyres lose traction, disengage the blades and proceed slowly **straight down** the slope.

DO NOT

1. **Do not** turn on slopes unless absolutely necessary, then only turn slowly and gradually downhill, if possible.
2. **Do not** mow near drop-offs, ditches or embankments. A wheel over the edge or an edge caving in could cause a sudden overturn and an injury or death.
3. **Do not** mow on wet grass. Reduced traction could cause sliding.
4. **Do not** try to stabilize the machine by putting your foot on the ground.
5. **Do not** use a grass bagger or other rear mounted accessories on steep slopes (greater than 10 degrees).

CHILDREN:

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.

1. Keep children out of the mowing area and in the watchful care of an adult other than the operator.
2. Be alert and turn the engine off if children enter the area.
3. Before and when backing, look **behind and down** for small children.
4. Never carry children or any passengers. They may fall off and be seriously injured or interfere with the safe operation of the machine.
5. Never allow children to operate the machine. Instruct children in the dangers of the machine.
6. Use extra care when approaching blind corners, shrubs, trees or other objects that may obscure vision.

SERVICE:

1. Use extra care when handling petrol and other fuels. Fuels are flammable and the vapors are explosive.
 - a. Use only an approved container.
 - b. Never remove the fuel cap or add fuel with the engine running. Allow the engine to cool for several minutes before refueling. Do not smoke.
 - c. Never refuel the machine indoors.
 - d. Never store the machine with fuel in the tank or fuel container inside where there is an open flame, such as a water heater.
2. Never start or run the engine inside a closed area.
3. Keep all nuts and bolts, especially the blade attachment nuts tight. Frequently check the blade(s) for wear or damage such as cracks and nicks. A blade that is bent or damaged must be immediately replaced with an original equipment blade from an authorized service dealer. For safety, replace the blade every two years. Keep the equipment in good condition.
4. Never tamper with the safety devices. Check their proper operation regularly.
5. To reduce fire hazards keep the machine free of grass, leaves or other debris build-up. Clean up oil or fuel spills. Allow the machine to cool before storing.
6. Stop and inspect the equipment if you strike an object. Repair, if necessary, before restarting.
7. Never make adjustments or repairs with the engine running. Do not change the engine governor settings or over-speed the engine.
8. Grass bagger components are subject to wear, damage and deterioration, which could expose moving parts or allow objects to be thrown. For storage, always make sure the grass bag is empty. Frequently check components and replace with manufacturer's recommended parts when necessary.
9. Mower blade(s) are sharp and can cut. Wrap the blade(s) or wear gloves and use extra caution when servicing them or the blade housing area.
10. Check the brake operation frequently. Adjust and service as required.
11. Wait for all movement to stop before servicing any part of the unit.

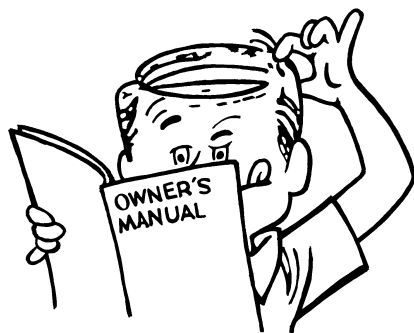


Look for this symbol to indicate important safety precautions. This symbol indicates: "Attention! Become Alert! Your Safety Is At Risk."

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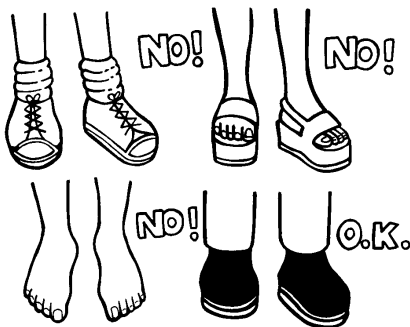
Each person that operates power equipment must learn to use correct and safe mowing procedures. **To help you learn, carefully read the following pages.** Most of the time the operator was not correctly shown or did not read the instructions on the unit or in the Instruction Book before using the unit. Also, some operators do not have enough experience. The result is unsafe use, endangering the operator, bystanders and the equipment. Another result can be a poor appearance of the area mowed.

Read this book. Read the instructions on the unit. Operate the mower according to the Safe Mowing Guide. Follow all safety rules, cautions or warnings in this book and on the unit. Make sure anyone that uses the unit reads the instructions and is told how to safely operate the mower.



The mower will give you good service and durability, if operated in normal conditions. If the mower is not correctly serviced or is used where the terrain is rough or unsuitable, product performance and safety will be decreased.

Correct clothing is an important part of safe mowing. Safety glasses will protect the eyes from objects discharged by the mower. Safety shoes with steel plates can protect a foot from injury by the blade. For protection from objects discharged from the mower, wear clothing that will cover the arms and legs.



Before you start cutting the grass, practice using the mower in a large open and level area. Learn the location of the controls on the mower. Know the purpose

of the controls and how they work. In an emergency, how fast you can stop the blade is important. Learn how to control the mower at all times.

Many engines are started by hand. When you use a pull start or rope start, place your feet apart and away from the blade(s). Hold the rope handle tight. Never wrap the rope around your arm or fingers for a "better grip". To start the engine, follow the instructions on the mower, in this book and in the engine operating instructions.

For electric start engines, sit in the seat to start the engine. The battery can be dangerous. Follow the instructions on the battery, the acid container, and in this book when working with the battery. Even small batteries have enough voltage to cause an injury. Always be careful.

The mower is designed to be operated by one person. Never let another person ride with you on the unit or on any accessories. A passenger will make the unit harder to control, block the visibility or distract the operator and is dangerous to the operator, the passenger and the equipment. Without a passenger seat, the passenger can fall from the mower or contact dangerous parts. A mower is not a toy for showing off or for giving rides.



Never cut a wet lawn. Wet grass can cause an accident, affect mower performance and can cause problems with future lawn growth and appearance. Wet grass is slippery and can cause the mower to slip. Someone can get injured by touching the blade(s). Wet grass tends to clog the mower, causing poor discharge. Cut wet grass will collect on the lawn, retarding the growth of the grass. Also, getting the mower wet will cause parts to rust and decrease the life of the unit.

When you look over the lawn, remember obstacles that cannot be removed, like pipes, stumps or stones. Keep away from these obstacles that can cause damage to the mower or injury to the operator or a person near the mower. Clear the area of stones, toys, wire or other loose objects.



These items can damage the mower or can be discharged by the mower blade. The blade of a power mower rotates very fast. It can discharge stones and other objects over a long distance which can be dangerous. The force of the objects can break windows, cause injuries or even put an eye out. Most of the time the injury is to a person, like a child. Keep every person completely away from the area to be mowed. Make sure the grass is not discharged toward anyone. Planning your mowing pattern has a double advantage. It can decrease the possibility of an injury and make the clean up after mowing easier.



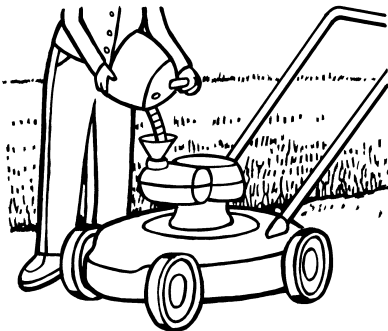
Check the terrain of the area to be mowed. Mow in a pattern that will keep you away from dangerous areas. Check the distance you need to stop and the distance available to turn. Slopes and rough terrain must be mowed carefully and some areas must not be mowed at all. With riding mowers, mow up and down the hill. When you must mow rough terrain or on slopes, never change directions or change gears and stop in these areas only in an emergency. Before you ride up or down a slope, try to back straight up the slope. Do not ride up or down a slope that is too steep to back straight up. See the "Guide" in the back of this Instruction Book to check any slopes.



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Before you start cutting, make sure the mower was completely assembled according to the Instruction Book. If the mower was completely assembled by the retailer, you must still check the mower according to the assembly instructions. Make sure the mower is correctly assembled and that all fasteners are tight. Make sure the engine has the correct amount of oil. Check these items often during the life of the mower.

Your mower has a petrol engine. Petrol is a dangerous fuel. Keep petrol only in an approved safety petrol container. Do not keep large amounts of petrol. When you add petrol to the fuel tank, do not smoke. Store the petrol container and the mower in an area that has good ventilation. Also, keep the petrol away from any flames like the pilot light of a furnace or any other source of ignition. If the mower is to be stored for more than a few weeks, remove the petrol from the fuel tank. When inside an enclosure, do not add petrol to the fuel tank. Before you add petrol, move the mower outside and add petrol carefully. Before you start the engine, remove any petrol from the outside of the fuel tank or from the mower. Warm petrol will expand. Leave some space in the fuel tank for the petrol to expand. Also, the fuel cap has a vent hole for fuel vapors. Always use the correct fuel cap. Failure to follow safety rules about petrol will cause fires and explosions, injury to you and damage to the equipment and other property.



If you add petrol to an engine that is running or hot, the result can be an explosion. Before you add petrol, stop the engine and let the engine cool for several seconds. Remove dry grass and other debris from the mower. Keep the mower clean to improve the performance, help the engine and transmission run cooler, extend the life of moving parts, and decrease the danger of a fire.

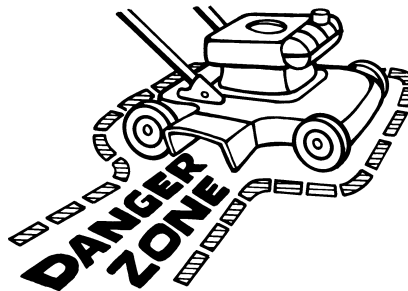
Fires and explosions are not the only dangers when working around a mower. The engine, transmission, and the muffler will get hot in several minutes when the

engine is running. Do not touch these parts of the mower. Stop the engine. Let the engine and transmission cool before servicing the mower. Remember, exhaust fumes are dangerous. Never operate the engine inside a building.

When you get a new mower, it can be a new experience for the family. Tell each person how a mower can be dangerous. Remember, a mower is not a toy. A mower is not to be used by children or anyone not old enough, strong enough or that does not have experience.

If the mower is not correctly assembled, not operated correctly, or not regularly serviced, the mower can be dangerous. The most important rule to follow is always use good judgement and common sense. Mow safely and carefully.

Your mower will easily cut thick grass. Fingers, feet and other parts can also be cut by the blade. Injuries occur when the operator does not think and reaches into the chute opening. Always operate the mower as if the blade is rotating. Do not service or make an adjustment, except to the carburettor, while the engine is running.



Use only accessories that are factory approved for your mower. The wrong accessory can decrease the safety of the mower and can even damage the unit. Read and follow the instructions included with the accessory and the mower.

Use only original equipment or replacement parts that are factory approved for service. If you need service, select an Authorized Service Center for your mower. If you do the work on the unit, follow the instructions in the Instruction Book.

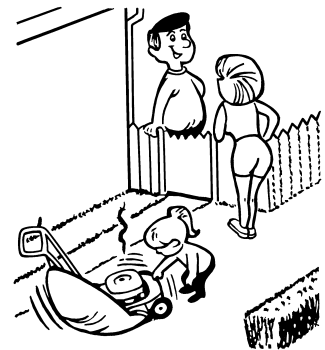
When you mow, remember that children are attracted to the mower. Always use caution when mowing around obstacles like trees or shrubs or when moving backward. Only mow in a forward direction if possible. Your visibility is decreased when you mow backward. Also, the blades are made to cut while the



unit is moving forward. If you mow backward, the cutting performance decreases.



Before you leave the mower, stop the engine. Remove the key. Disengage and lower any attachment. Set the parking brake. Never mount or dismount from the seat while the engine is running. An accident can occur if you touch the brake, shift lever, throttle, clutch or blade control while the engine is running. Mount and dismount from the seat on the side of the unit that is marked ENTER-EXIT.



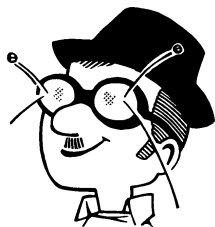
Make sure you are in good condition when you mow. When you mow for several hours your reflexes will decrease and your mind will not be as alert. Take a short break or an accident can occur. If the temperature is hot, use caution to prevent dehydration. If you are tired, angry or not completely alert, do not operate the mower. If you use alcohol, medication or drugs, do not use the mower or any type of power equipment. Engine speed is a key to safe mowing and to a good looking lawn. The maximum speed of the engine was set at the factory. Do not change the setting of the engine governor.

Select the maximum engine and ground speed that is right for the terrain and the height of the grass. The blade cuts best when the engine is operating at maximum

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speed. The engine and transmission will also run cooler at maximum engine speed. Also, the grass bagger will function better when the engine is operating at maximum speed. On slopes, decrease the ground speed and use care making sure the mower feels safe to operate.

If the weather conditions are bad, do not mow. If weather conditions become bad, stop cutting and finish later. It is dangerous to cut grass in the rain. Always find protection in an electrical storm. If the weather conditions are extra dry, protect your eyes with safety glasses from the dust and from the objects discharged by the mower. Also, a dust or a pollen mask can help.

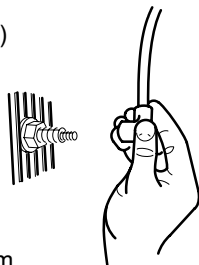


Your mower is equipped with a number of safety devices which are important to the safety of the operator and bystanders and must never be changed or removed from the mower. If a safety device is lost, damaged or no longer functions, repair or replace the device before you operate the mower.

It is best to mow during the day. If you must mow at night, make sure there is enough light for safe operation.

Your mower will require regular maintenance and service. The maintenance schedule depends on the hours of use. Also, mowing conditions can change the schedule. Check the Instruction Book for more information. Correct maintenance will help the mower function safely.

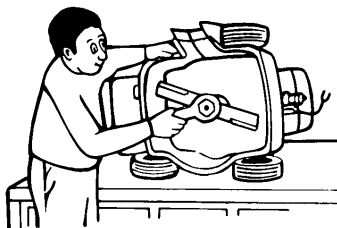
Do not service the mower (except for the carburettor adjustment) while the engine is running. Before you service the unit, even with the engine stopped, always disconnect the wire from the spark plug to prevent the engine from starting.



If you hit a large object during operation, stop the engine. Remove the wire from the spark plug. Carefully inspect the

mower for damage. Before you start the engine again, make the necessary repairs. If you feel new or excessive vibration, immediately stop the engine and check for the problem. Vibration can be a warning of a problem. Keep all nuts, bolts and screws tight.

The blade is the most dangerous part of the mower. Frequently check the blade and the blade mounting fasteners. Keep the fasteners tight. If the blade hits a solid object, stop the engine. Remove the wire from the spark plug. Check for a blade that is bent, cracked or for other damages. Before you start the engine, replace a damaged blade(s). For safety, replace the blade every two years.



A sharp blade decreases the workload on the engine and more evenly cuts grass. Frequently sharpen the blade for a better looking cut. Use the left side of the mower housing to trim near an object.

A grass bagger is a good accessory for your mower. For best performance and safety, make sure the grass bagger is approved for use with your mower. Follow the assembly and operation instructions included with the grass bagger.

Some grass baggers require a special blade for best performance. Before you attach, check, or empty the grass bagger, always stop the engine. Before each use of the grass bagger, check for cracks, wear or deterioration. Before you use the grass bagger, replace a damaged part with a replacement part approved by the factory.



For you to have a good green lawn, follow the mowing procedures below. Do not cut the grass too short. If you cut the grass too short you can cause the grass to become yellow or make the lawn look brown. Use a lower height of cut in cool months when the grass is thicker. Raise the height of cut in hot dry periods. If you

cut the grass with a blade that is not sharp or at a slow engine speed you can damage the grass. Move the throttle control to the FAST position when mowing and using the grass bagger. Also, use a slower ground speed when using the grass bagger.

If you change the direction or pattern of cut slightly every time you mow will make the grass grow stronger and thicker. Do not add oil or petrol to the mower while on the lawn. Spilled oil or petrol can kill the grass. In high or thick grass, do not try to cut all the grass the first time. Raise the height of cut on the first cutting and lower the height for the next cutting. Another way is to cut only part of the width of the mower and decrease your ground speed (not the engine) to move more slowly so that the mower can discharge the grass as it moves forward.

Understand the controls and how they work. Learn the ground speed(s) of your mower. Check the stopping distance required at different travel speeds. Check the turning radius of the mower. The controls on your riding mower are different from an automobile. The throttle is operated by hand and holds the engine speed constant until it is changed. The location of the shift lever and the shift pattern is different from that of an automobile. Also, the brake and clutch systems are different. Remember the procedures to follow in an emergency. Remember, turning off the engine ignition switch will stop the blade and the drive mechanism. If the traction of the wheels is lost or does not feel safe, disengage all systems and stop the engine. Dismount from the mower. Push the unit to a safe place before you begin mowing again.

Your unit has an electrical system that includes an operator presence switch in the seat. The operator presence switch detects if the operator is sitting on the seat. The engine will stop if the operator leaves the seat when the blade engagement control is engaged. This operator presence switch is a safety device only. It must not regularly be used to stop the engine or the blade. There are other control systems on the mower for this purpose. Always keep the operator presence switch and other safety devices and controls in place and operating for your protection.

Remember, your mower is a tool that can be dangerous if it is not correctly used. Follow the instructions in this Instruction Book. Safe and careful use of the mower will give you many safe hours of problem free use.

STEPS TO FOLLOW

BEFORE MOWING

- Be sure to dress correctly. Wear hard shoes, not sandals or tennis shoes.
- Examine the blade. A blade that is bent, cracked, or damaged must be replaced with a factory replacement blade.
- Fill the fuel tank outside. Clean off spilled fuel.
- Read and follow the Owner's Manual, the instructions with the engine, and the instructions with any attachments. Owner's Manual instructions are for your safety and the safety of others.
- Exhaust fumes are dangerous. Start the engine outside.
- Make sure all safety devices are in place and working correctly.
- Operation of the mower is only for a person that has experience.
- Wet grass can be dangerous. Let the grass dry.
- Instruct children and others to keep away from the work area.
- Never cut the grass without good light.
- Pick up loose objects. Remove them from the mowing area.
-

WHILE MOWING

- Watch for fixed objects and avoid them. They can damage the mower or cause injury.
- A hot engine, muffler, and transmission will cause a burn. Do not touch.
- Inclines and slopes must be carefully mowed. See the "Guide" in the back of this book to check a slope.
- Lack of daylight or good artificial light is cause to stop mowing.
- Examine the mower, the blade, and other parts for damage after hitting a foreign object or if the unit vibrates excessively.
- Do not make adjustments or repairs without stopping the engine. Disconnect the spark plug wire.
- On or near roads, watch out for traffic. Direct discharge away from roads.
- When mowing, avoid areas where traction is unsure. Look back before changing direction of travel.
- In heavy grass, raise the cutting height. Cut slower. Stop the engine to remove clogged grass from the mower.
- Never remove any safety related parts.
- Do not pour petrol into a engine that is hot or running.

AFTER MOWING

- Always let the mower cool before storing in an enclosed area.
- Foreign material on the mower is dangerous. Clean off grass, leaves, grease and oil before storing.
- Tighten all loose nuts, bolts and screws before you use the unit.
- Empty and clean any grass catcher or other accessory.
- Remove the key or disconnect the spark plug wire to prevent unauthorized use.
- Make sure the mower is not kept near a source of ignition. Gas fumes can cause an explosion.
- Only original parts or factory approved substitutes can be used to service the mower.
- When storing the mower for an extended period, remove the fuel from the fuel tank.
- Instruct children to leave the mower alone. It is not a toy.
- Never keep petrol near a source of ignition. Always use an approved container. Keep petrol away from children.
- Lubricate according to the Instruction Book. See "Lubrication".

IMPORTANT--Read the Instruction Book. Keep this book for future use and reference.



WARNING: Look for this symbol to point out important safety precautions. It means: "Attention! Become Alert! Your Safety Is Involved."

ASSEMBLY

ASSEMBLY

Read and follow the assembly and adjustment instructions for your mower. All fasteners are in the parts bag. Do not discard any parts or material until the unit is assembled.



WARNING: Before doing any assembly or maintenance to the mower, remove the wire from the spark plug.

NOTE: In this instruction book, left and right describe the location of a part with the operator on the seat.

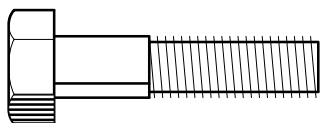
NOTE: Torque is measured in foot pounds (metric N.m). This measurement describes how tight a nut or bolt must be. The torque is measured with a torque wrench.

TOOLS REQUIRED

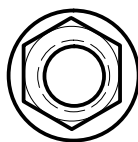
Pliers (1)
Adjustable open end wrenches (2)
Blade type screwdriver (1)
Phillips screwdriver (1)

PARTS BAG – CONTENTS

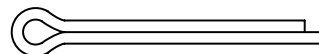
The fasteners and other loose parts are shown below. The fasteners are shown full size. The quantity is shown in brackets ().



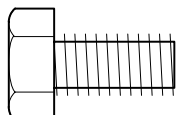
1x66
(1) Hex Bolt



15x118
(1) Flange Nut



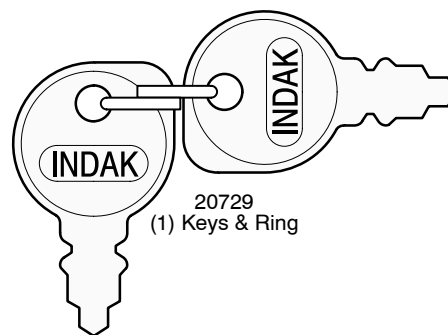
30x49
Hair Pin



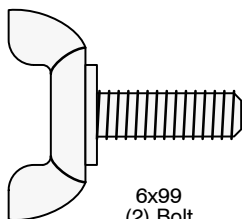
1x45
(2) Hex Bolt



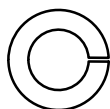
14x79
(2) Wingnut



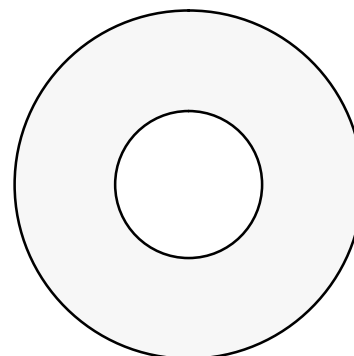
20729
(1) Keys & Ring



6x99
(2) Bolt



18x16
(2) Lockwasher

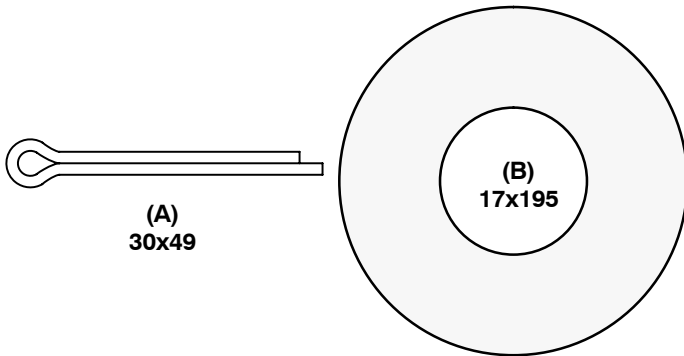


17x195
Washer

ASSEMBLY

HOW TO INSTALL THE FRONT WHEELS

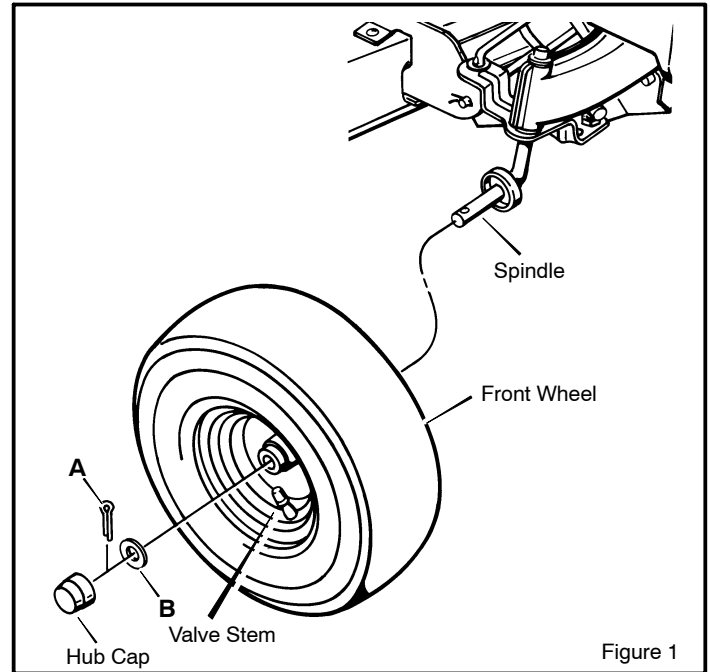
Use a knife and cut the four sides of the container. Install the **front wheels** in the container. Use the fasteners shown below to install the **front wheels**. The fasteners are shown at full size.



NOTE: Use a piece of wood about 4 feet (1.25 meters) long to raise the front of the tractor. If a piece of wood cannot be found, get another person to help lift the tractor. Be careful, do not let the tractor fall.

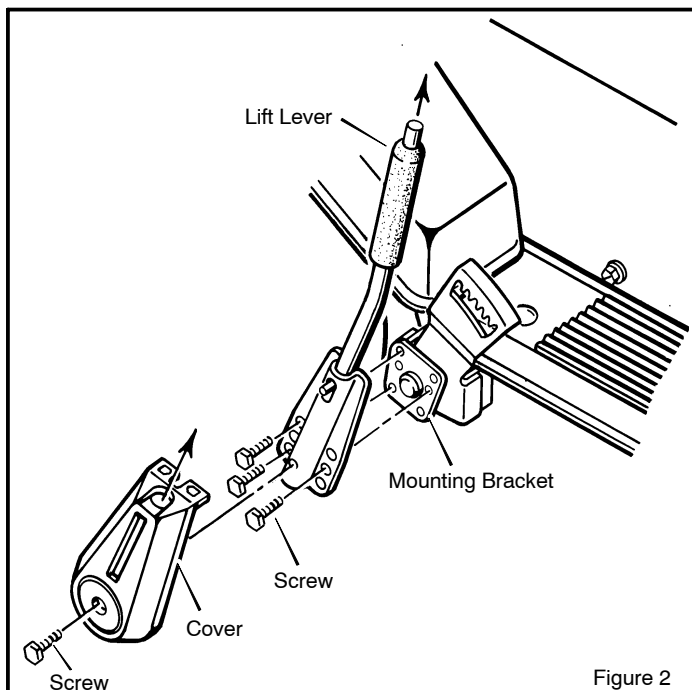
1. Raise the front of the tractor. Set a support (block of wood) under the tractor.
2. Make sure the **valve stem** is to the outside of the tractor. Slide the **front wheel** on the **spindle**.
3. Fasten each **front wheel** with the fasteners (Figure 1). Bend the ends of the cotter pin apart to keep the **front wheel** on the **spindle**.

4. After the **front wheels** are installed, lift the tractor from the support. Roll the tractor off of the container.
5. If your tractor has hub caps, install the hub caps. Make sure the washers hold the hub caps in place.

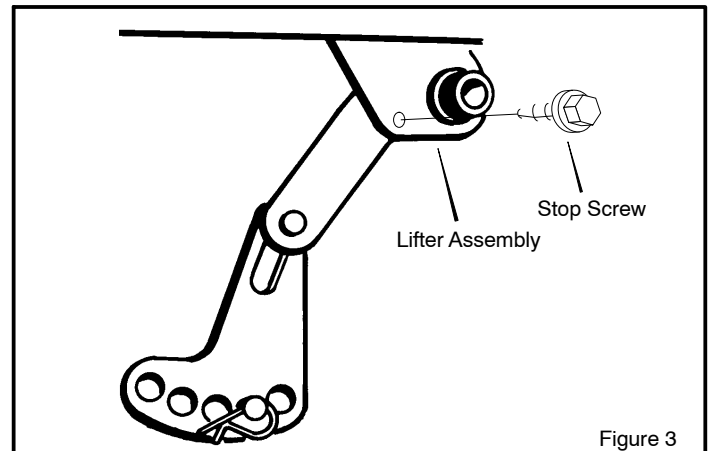


HOW TO ASSEMBLE THE LIFT LEVER

1. If the **lift lever** has the **cover** (Figure 2), remove the **screw** from the **cover**. Slide the **cover** up the **lift lever**.



2. Remove the three **screws** from the **mounting bracket**.
3. Align the holes in the **lift lever** with the same holes the **screws** were removed from in the **mounting bracket**.
4. Fasten the **lift lever** with the three **screws**.
5. Assemble the **cover** to the **lift lever**.
6. For shipment, some models have a stop screw in the lifter assembly (Figure 3). The stop screw stops the mower housing from moving to the lowest position. For a low cut, remove and discard the stop screw.



ASSEMBLY

MAINTENANCE FREE BATTERY

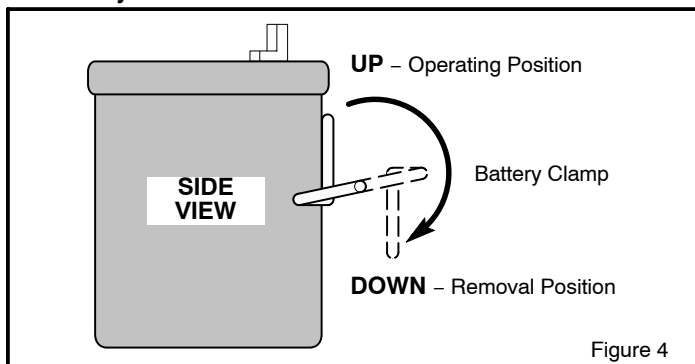
IMPORTANT: Before you attach the battery cables to the battery, check the battery date. The battery date tells if the battery must be charged.

1. Check the **battery date** on top of the **battery** (Figure 5).
2. If the **battery** is put into service *before* the **battery date**, the **battery** cables can be attached without charging the **battery**. See "How To Install The Battery Cables".
3. If the **battery** is put into service *after* the **battery date**, the **battery** must be charged. See "How To Charge The Maintenance Free Battery".

HOW TO REMOVE THE BATTERY

1. Rotate the battery clamp to the DOWN position (Figure 4 and Figure 5).
2. To remove the battery, tilt the battery forward and then lift the battery.

CAUTION: Do not tilt the battery more than 45 degrees. If the battery tilts more than 45 degrees, battery acid can leak from the battery.



HOW TO INSTALL THE BATTERY

1. Install the **battery tray** (Figure 6). Make sure the **drain** on the bottom of the **battery tray** goes through the hole in the frame as shown in Figure 6.
2. Turn the **battery** so that the **positive (+) terminal** is on the right side of the unit. Set the **battery** in the **battery tray**.
IMPORTANT: Make sure the battery fits under the tabs at the back of the unit.
3. Rotate the battery clamp to the **UP** position (Figure 4 and Figure 6).

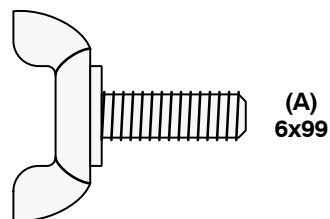
HOW TO INSTALL THE BATTERY CABLES



WARNING: To prevent sparks, fasten the red cable to the positive (+) terminal before you connect the black cable.

NOTE: Before you attach the battery cables, make sure the battery is fully charged. This will extend the life of the battery and provide the necessary power to start the engine.

Use the fasteners shown below to install the **battery cables**. The fasteners are shown at full size.



(A)
6x99



(B)
14x79

1. Remove the protective caps from the **battery terminals**.

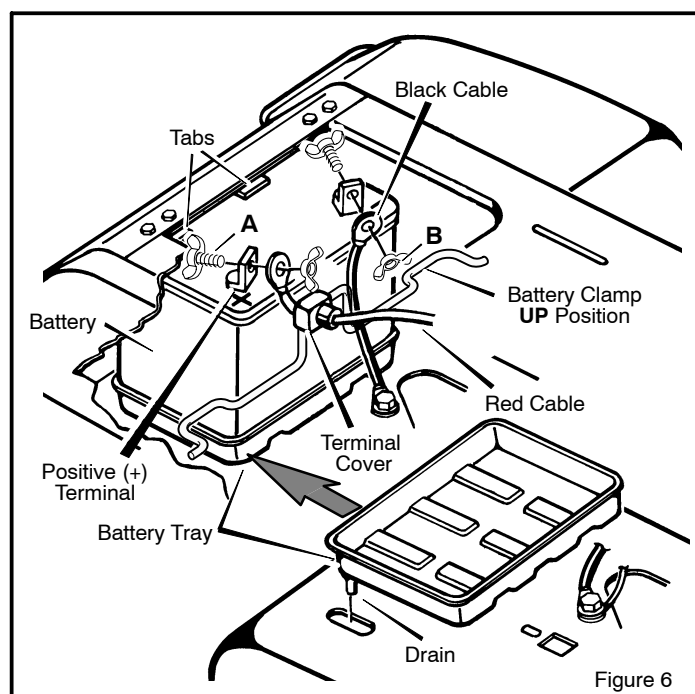
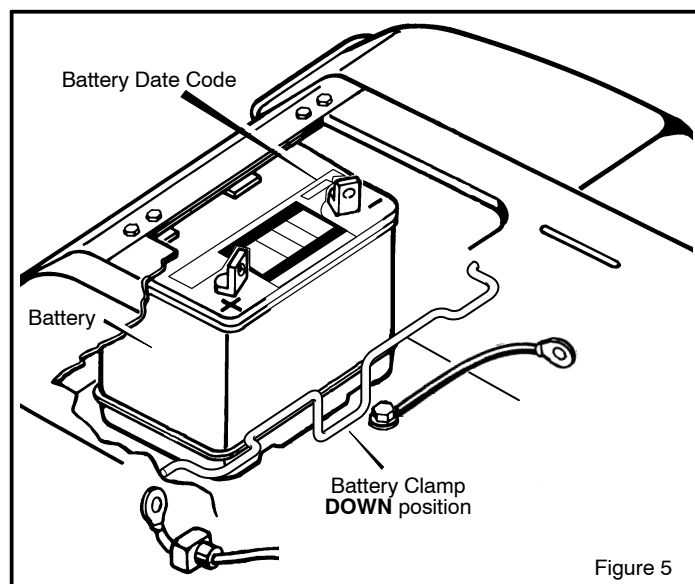
F-98857

HOW TO CHARGE THE MAINTENANCE FREE BATTERY



WARNING: When you charge the battery, do not smoke. Keep the battery away from any sparks. The fumes from the battery acid can cause an explosion.

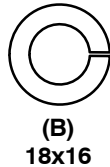
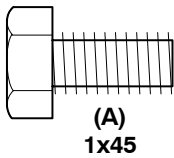
1. Remove the **battery**. See "How To Remove The Battery".
 2. Remove the protective caps from the **battery terminals**.
 3. Use a 12 volt battery charger to charge the **battery**. Charge at a rate of 6 amperes for one hour. If you do not have a battery charger, have an authorized service center charge the battery.
 4. Install the **battery**. See "How To Install The Battery".
2. If equipped, slide the **terminal cover** onto the **red cable** (Figure 6). Fasten the **red cable** to the **positive (+) terminal** with the fasteners as shown. Push the **terminal cover** onto the battery terminal.
 3. Fasten the **black cable** to the negative (-) terminal with the fasteners as shown.



ASSEMBLY

HOW TO INSTALL THE SEAT

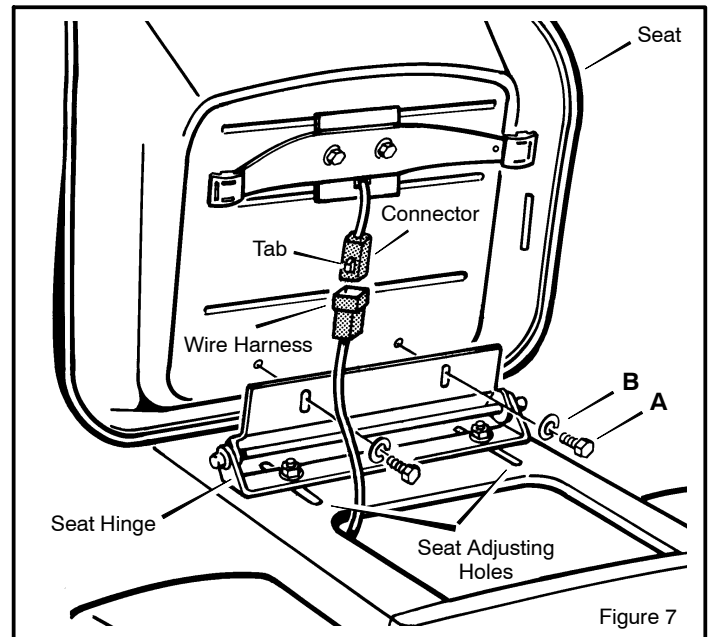
Use the fasteners shown below to install the **seat**. The fasteners are shown at full size.



1. Carefully remove the protective sleeve and the plastic bag from the **seat**. Do not damage the **wire** attached to the bottom of the **seat**.
2. Align the holes in the **seat hinge** to the holes in the **seat** (Figure 7). Fasten the **seat** to the **seat hinge** with the fasteners as shown. Tighten the fasteners.
3. Check the operating position of the **seat**. If the **seat** needs to be adjusted, loosen the **hex nuts** on the **seat hinge**. Slide the **seat** forward or backward along the **seat adjusting holes** as shown. To keep the **seat** straight, align the rear edge of the **seat hinge** with the marks on the top of the console. Tighten the **hex nuts**.
4. Fasten the **connector** to the **wire harness**. Make sure the **tab** on the connector locks into the **wire harness**.

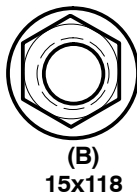
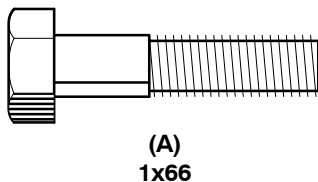


WARNING: For correct and safe operation of the unit, fasten the connector to the wire harness. If the connector is not attached, the engine will not start.



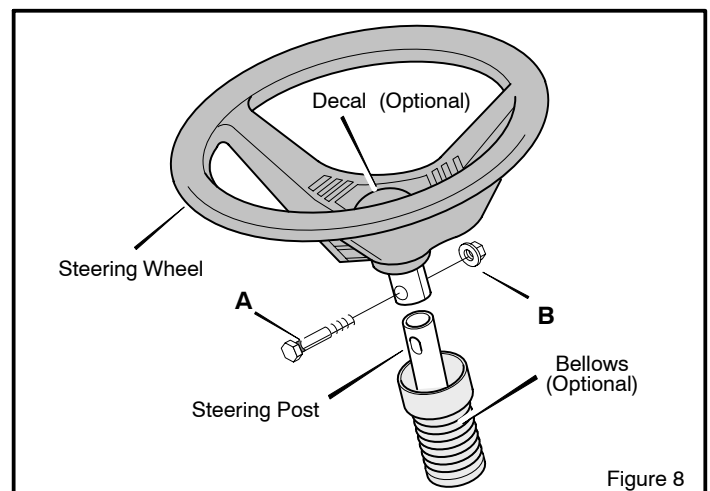
HOW TO ASSEMBLE THE STEERING WHEEL

Use the fasteners shown below to install the **steering wheel**. The fasteners are shown at full size.



1. Make sure the front wheels point forward.
2. Some models have an *optional bellows*. Slide the **bellows** over the **steering post**. Make sure the **collar** of the **bellows** is on top (Figure 8).
3. Attach the **steering wheel** to the **steering post** with the fasteners. Tighten the fasteners.

4. Some models have an *optional decal* in the parts bag. Attach the **decal** to the center of the **steering wheel** as shown.



ASSEMBLY

HOW TO PREPARE THE ENGINE

NOTE: The engine was shipped from the factory filled with oil. Check the level of the oil. Add oil as needed.

See the engine manufacturer's instructions for the type of fuel and oil to use. Before you use the unit, read the information on safety, operation, maintenance, and storage.



WARNING: Follow the engine manufacturer's instructions for the type of fuel and oil to use. Always use a safety petrol container. Do not smoke when adding petrol to the engine. When inside an enclosure, do not fill with petrol. Before you add petrol, stop the engine. Let the engine cool for several minutes.

IMPORTANT: This unit is equipped with an internal combustion engine and must 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 laws (if any). If a spark arrester is used, it must be maintained in effective working order by the operator.

CHECK THE TYRES

Check the air pressure in the tyres. Tyres with too much air pressure will cause the unit to ride rough. Also, the wrong air pressure will keep the mower housing from cutting level. The correct air pressure (PSI) is 14 PSI (1 BAR). The tyres were over inflated for shipment.

CHECK THE LEVEL OF THE MOWER HOUSING

Make sure the level of cut is still correct. After you mow a short distance, look at the area that was cut. If the mower housing does not cut level, see the instructions on "How To Level The Mower Housing" in the Maintenance section of this instruction book.

IMPORTANT! BEFORE YOU START MOWING

1. Check the engine oil.
2. Fill the fuel tank with petrol.
3. Check the level of the mower housing.
4. Check the air pressure of the tyres.
5. Attach the battery cables.

OPERATION

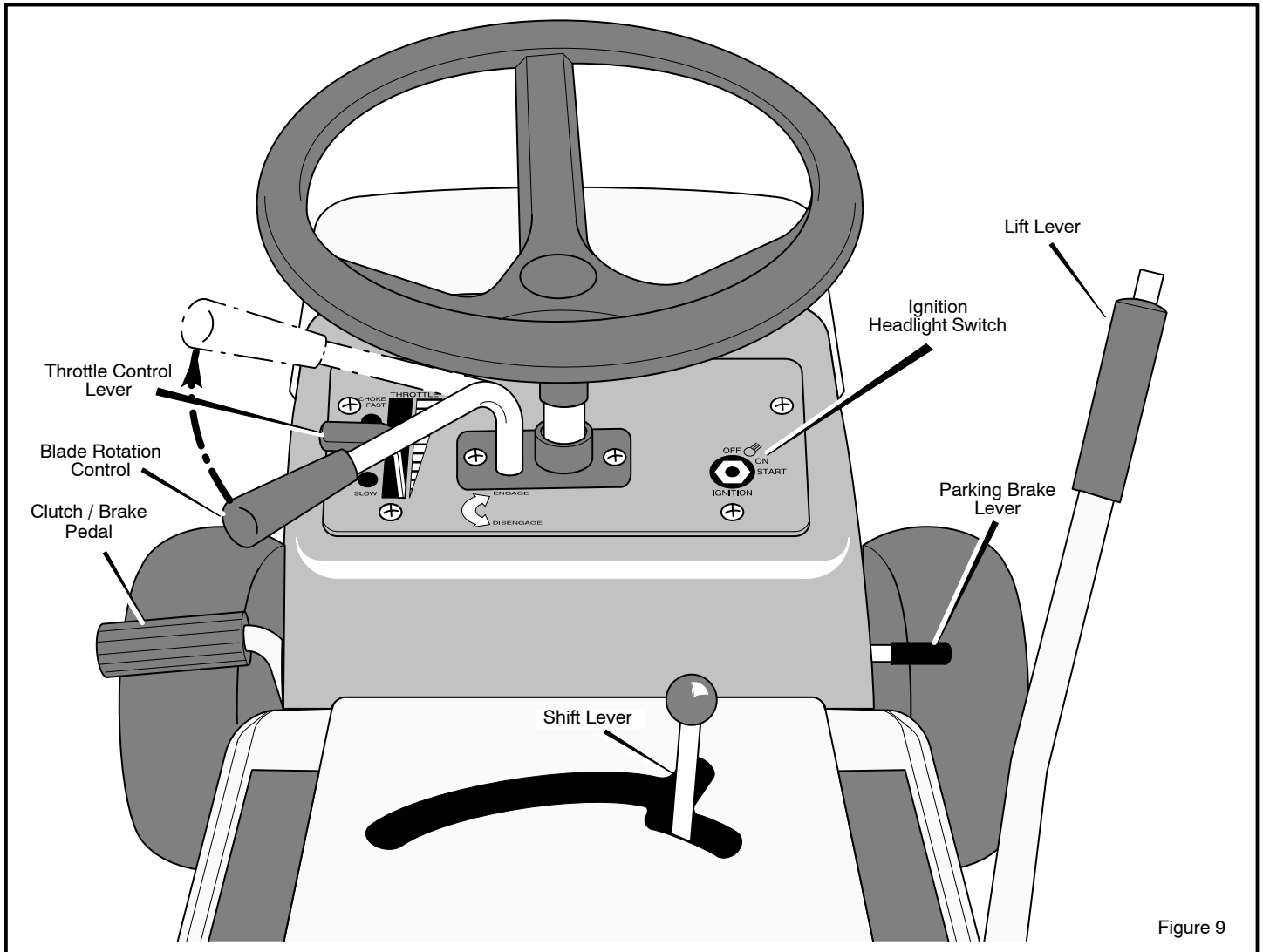


Figure 9

LOCATION OF CONTROLS

BLADE ROTATION CONTROL: Use the blade rotation control to start and stop the rotation of the blade.

CLUTCH / BRAKE PEDAL: The pedal has two functions. The first function is a clutch. The second function is a brake.

HEADLIGHT SWITCH: The headlight switch is the first part of the ignition switch. To use the lights with the engine running, turn the key to the position for the lights.

IGNITION SWITCH: Use the ignition switch to start and stop the engine.

SHIFT LEVER: Use the shift lever to change the speed of the unit.

LIFT LEVER: Use the lift lever to change the height of cut.

PARKING BRAKE LEVER: Use the parking brake lever to engage the brake when you leave the unit.

THROTTLE CONTROL LEVER: Use the throttle control lever to increase or decrease the speed of the engine.

OPERATION

ATTACHMENTS

This unit can use many different attachments. See the attachment page in this book. This unit can pull attachments like a lawn sweeper, a lawn aerator, or a hopper spreader. This unit can not use attachments that engage the ground like a plow, a disk harrow, or a cultivator.

HOW TO USE THE THROTTLE CONTROL

Use the **throttle control** to increase or decrease the speed of the engine (Figure 10).

1. The FAST position is marked with a detent. For normal operation and when using a grass bagger, move the **throttle control** to the FAST position. For maximum charging of the battery and for a cooler running engine, operate the engine in the FAST position.
2. For transport and to tow pull behind attachments, move the **throttle control** to the SLOW position.
3. The engine governor is set at the factory for maximum performance. Do not adjust the governor to increase the speed of the engine.

HOW TO USE THE BLADE ROTATION CONTROL

The **blade rotation control** is next to the steering wheel (Figure 10). Use the **blade rotation control** to engage the blade(s) or to operate a snow thrower attachment.

1. Before you start the engine, make sure the **blade rotation control** is in the **DISENGAGE** position.
2. Move the **blade rotation control** to the **ENGAGE** position to rotate the blade(s).
3. Move the **blade rotation control** to the **DISENGAGE** position to stop the blade(s). Before you leave the operator's position, make sure the blade(s) has stopped rotating.
4. Before you ride the unit across a sidewalk or a road, move the **blade rotation control** to the **DISENGAGE** position.



WARNING: Always keep your hands and feet away from the blade, deflector opening, and the mower housing when the engine runs.

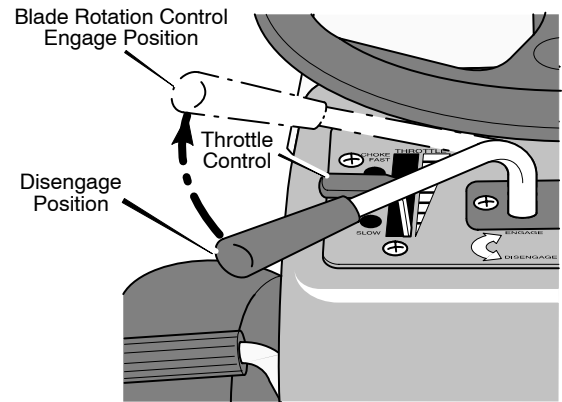


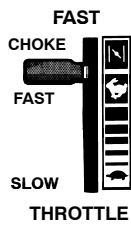
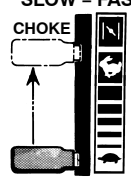
Figure 10

HOW TO USE THE SHIFT LEVER

To change the forward speed or the direction of the unit, follow the steps below.

CAUTION: Before you move the shift lever, completely push the clutch/brake pedal forward to stop the unit. If the unit is not stopped, the gearbox can be damaged.

1. Completely push the clutch/brake pedal forward to stop the unit. Keep your foot on the pedal.
2. Move the throttle control lever to the SLOW position.
3. To go forward, move the shift lever to a forward speed setting. To go backward, move the shift lever to reverse.
4. Slowly release the clutch/brake pedal. Do not keep your foot on the pedal.
5. Move the throttle control to the FAST position.

FUNCTION	SHIFT LEVER 5 Speeds	THROTTLE
Trimming Snow Thrower	1	
Bagging Grass	1 or 2	
Mulching Grass	1 or 2	
Normal Mowing	2 or 3	
Easy Mowing Snow Blade	3 or 4	
Transport	5	
Pull Behind Attachments	1 or 2	

OPERATION

HOW TO SET THE PARKING BRAKE

1. Completely push the clutch/brake pedal forward.
2. Lift the **parking brake lever** (Figure 11).
3. Remove your foot from the clutch/brake pedal and then release the **parking brake lever**. Make sure the parking brake will hold the unit.
4. To release the parking brake, completely push the clutch/brake pedal forward. The parking brake will automatically release.

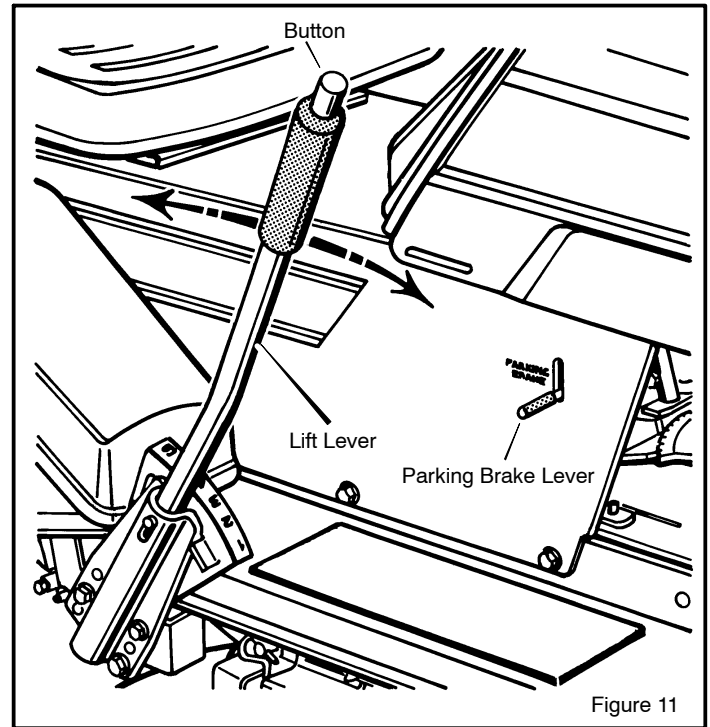


WARNING: Before you leave the operator's position, move the shift lever to the neutral (N) position. Set the parking brake. Move the blade rotation control to the DISENGAGE position. Stop the engine and remove the ignition key.

HOW TO CHANGE THE CUTTING HEIGHT

To change the cutting height, raise or lower the **lift lever** as follows.

1. To release the **lift lever**, push the **button** on top of the **lift lever** (Figure 11).
2. Move the **lift lever** forward to lower the mower housing and back to raise the mower housing.
3. When you ride on a sidewalk or road, move the **lift lever** to the highest position and move the blade rotation control to the DISENGAGE position.



HOW TO STOP THE UNIT

1. Completely push the **clutch/brake pedal** forward to stop the unit. Keep your foot on the pedal.
2. Move the blade rotation control to the DISENGAGE position.
3. Move the shift lever to the NEUTRAL position.
4. Set the parking brake.



WARNING: Make sure the parking brake will hold the unit.

5. Move the throttle control to the SLOW position.
6. To stop the engine, turn the ignition key to the OFF position. Remove the key.

HOW TO TRANSPORT THE UNIT

To transport the unit, follow the steps below.

1. Move the blade rotation control to the DISENGAGE position
2. Raise the lift lever to the highest position.
3. Move the throttle control to a position between SLOW and FAST.
4. To go faster, move the shift lever to a faster speed.

OPERATION

HOW TO OPERATE WITH THE MOWER HOUSING



WARNING: The deflector is a safety device. Do not remove the deflector. The deflector forces the discharged material toward the ground. Always keep the deflector in the down position. If the deflector is damaged, replace the deflector with an original equipment part from an authorized service center.

1. Start the engine.
2. Move the lift lever to a height of cut position. In high or thick grass, cut the grass in the highest position first and then lower the mower housing to a lower position.
3. Move the throttle control to the SLOW position.
4. Move the blade rotation control to the ENGAGE position.
5. Push the clutch/brake pedal completely forward.

6. Move the shift lever to one of the speed settings.

NOTE: When you mow in heavy grass or mow with a bagger, put the shift lever in the slowest speed.

7. Slowly release the clutch/brake pedal.
8. Move the throttle control to the FAST position. If you need to go faster or slower, stop the unit and move the shift lever to another speed setting.
9. Make sure the level of cut is still correct. After you mow a short distance, look at the area that was cut. If the mower housing does not cut level, see the instructions on "How To Level The Mower Housing" in the Maintenance section.



WARNING: For better control of the unit, always select a safe speed.

HOW TO OPERATE THE UNIT ON HILLS



WARNING: Do not ride up or down slopes that are too steep to back straight up. Never ride the unit across a slope. See the "Slope Guide" in the back of this book for information on how to check slopes.

1. Before you ride up or down a hill, move the shift lever to the slowest speed.
2. Do not stop or change speed settings on a hill. If you must stop, quickly push the clutch/brake pedal forward and set the parking brake.
3. To start again, make sure the shift lever is in the slowest speed. Move the throttle control to the SLOW position. Slowly release the pedal.
4. If you must stop or start on a hill, always have enough space for the unit to roll when you release the brake and engage the clutch.
5. Be very careful when you change directions on a hill. When on a slope or in a turn on a hill, move the throttle control to the SLOW position to help prevent an accident.

OPERATION

BEFORE STARTING THE ENGINE

CHECK THE OIL

NOTE: The engine was shipped from the factory filled with SAE 30 weight oil. Check the level of the oil. Add oil as needed.

1. Make sure the unit is level.

NOTE: Do not check the level of the oil while the engine runs.

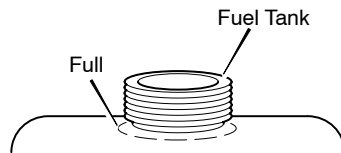
2. Clean the area around the dipstick. Remove the dipstick. Wipe the oil from the dipstick.
3. Insert the dipstick into the oil fill tube. Turn the dipstick clockwise until it is tight. Remove the dipstick. Check the oil level on the dipstick. The oil level must reach the FULL mark on the dipstick.
4. If necessary, add oil until the oil reaches the FULL mark on the dipstick. The quantity of oil needed from ADD to FULL is shown on the dipstick. Do not add too much oil.

ADD FUEL



WARNING: Always use a safety petrol container. Do not smoke when adding petrol to the fuel tank. Do not add petrol when you are inside an enclosure. Before you add petrol, stop the engine and let the engine cool for several minutes.

Fill the fuel tank with regular unleaded petrol. Do not use premium unleaded petrol. Make sure the petrol is fresh and clean. Leaded petrol will increase deposits and shorten the life of the valves.



HOW TO START THE ENGINE



WARNING: The electrical system has an operator presence system that includes a sensor switch mounted in the seat. These components tell the electrical system if the operator is sitting on the seat. This system will stop the engine when the operator leaves the seat. For your protection, always make sure this system operates correctly.

NOTE: The engine will not start unless you depress the clutch/brake pedal, move the shift lever to the neutral (N) position, and move the blade rotation control to the DISENGAGE position.

1. Sit in the middle of the seat. Push the clutch/brake pedal completely forward. Keep your foot on the pedal.
2. Move the shift lever to the neutral (N) position.

HOW TO START WITH A WEAK BATTERY

If the battery is too weak to start the engine, the battery needs to be charged. If "Jumper Cables" are used to start the engine in an emergency, follow the procedure below.

NOTE: The unit is equipped with a 12 volt negative to ground system. Also, the other vehicle must have a 12 volt negative to ground system.



WARNING: Do not smoke. The fumes from the battery acid can cause an explosion. Keep the battery away from any flames or sparks. To prevent sparks, fasten the red "Jumper cable" to the positive (+) terminal before connecting the black "Jumper cable".

CAUTION: A mixture of alcohol (ethanol or methanol) and petrol (called gasohol), will attract moisture and cause acid deposits during storage. While the unit is in storage, the acids in the fuel can damage the fuel system.

To prevent engine problems with the fuel system, empty the fuel system before storage of 30 days or longer as follows.

1. Drain the fuel tank.
2. Start the engine. Let the engine run until the fuel lines and the carburettor are empty.
3. After storage, make sure you use fresh fuel. See the storage instructions for additional information.
4. Never use engine cleaner or carburettor cleaner in the fuel tank or permanent damage can occur.

CARBURETTOR

The factory settings for the carburettor are for most conditions. If the engine is operated under the following conditions, you can adjust the carburettor mixture. To adjust the carburettor, see the engine manufacturer's instructions.

1. The engine has a loss of power or does not run smooth.
2. A change from summer to winter operation.
3. A 40 degree change in the operation temperature. The carburettor was adjusted at 80 degrees at the factory.
4. The engine is operated above 4,000 feet.

3. Make sure the blade rotation control is in the DISENGAGE position.
4. Move the throttle control completely forward to the CHOKE or FAST position. Some models have a separate choke knob. Pull the choke knob to the full CHOKE position.
5. Turn the ignition key to the START position. Release the key when the engine starts.

NOTE: If the engine does not start after four or five tries, move the throttle control to the FAST position. Again try to start the engine. If the engine will not start, see the TROUBLE SHOOTING CHART.

6. Slowly move the throttle control to the SLOW position.
7. Let a cold engine run for several minutes. Begin work when the engine is warm. To start a hot engine, move the throttle control to a position between FAST and SLOW.

NOTE: If the seat is raised when starting the engine, move the blade rotation control to the DISENGAGED position and engage the parking brake.

1. Put a wet cloth over the vent caps of each battery.
2. Connect each end of the RED "Jumper Cable" to the positive (+) terminals of each battery. Make sure you do not touch the chassis with the cables.
3. Connect one end of the BLACK "Jumper Cable" to the negative (-) terminal of the charged battery.
4. Connect the other end of the BLACK "Jumper Cable" to the mower's engine block.
5. Start the engine that has the weak battery last. Allow the engine to run.
6. To disconnect the "Jumper Cables", reverse the above steps.

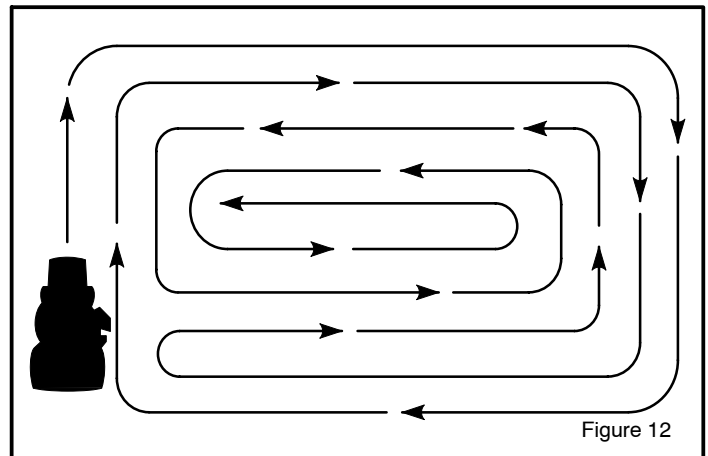
OPERATION

OPERATING TIPS

1. Check the blade rotation control for correct adjustment. For the blade(s) to disengage correctly, the adjustment must be correct.
2. Before you use the unit, check the oil in the engine and add oil if necessary.
3. If the engine will not start, first make sure the wire is attached to the spark plug.
4. Make sure all the belts are inside all the belt guides. See the instructions on how to remove and install the motion drive and mower drive belts.
5. Before you make an inspection, adjustment (except for the carburettor) or repair, make sure the wire from the spark plug is disconnected.
6. Make sure the seat switch wire is connected. If the wire is not connected, the engine will not start.
7. For longer life of the battery on electric start models, charge the battery every three months.
8. Use the shift lever to change the ground speed, not the throttle control.
9. Belt noise can occur when the blade or clutch is engaged. This noise is normal and does not affect the operation of the unit.

MOWING AND BAGGING TIPS

1. For a lawn to look better, check the cutting level of the mower housing. See "How To Level The Mower Housing" in the Maintenance section.
2. For the mower housing to cut level, make sure the tyres have the correct amount of air pressure (PSI).
3. Every time you use the unit, check the blade. If the blade is bent or damaged, immediately replace the blade. Also, make sure the nut for the blade is tight.
4. Keep the blade(s) sharpened. Worn blades will cause the ends of the grass to turn brown.
5. Do not cut or bag grass that is wet. Wet grass will not discharge correctly. Let the grass dry before cutting.
6. Use the left side of the mower housing to trim near an object.
7. Discharge the cut grass onto the mowed area. The result is a more even discharge of cut grass.
8. When you mow large areas, start by turning to the right so that the cut grass will discharge away from shrubs, fences, driveways, etc. After one or two rounds, mow in the opposite direction making left turns until finished (Figure 12).
9. If the grass is very high, cut two times to decrease the load on the engine. First cut with the mower housing in the highest position and then lower the mower housing for the second cut.
10. For better engine performance and an even discharge of the cut grass, always operate the engine with the throttle in FAST position.
11. When you use a bagger, operate the engine with the throttle in FAST position and the shift lever in first or second gear.
12. For better cutting performance and a quality cut, mow with the shift lever in one of the slower speeds.
13. After each use, clean the bottom and top of the mower housing for better performance. Also, a clean mower housing will help prevent a fire.



MAINTENANCE

MAINTENANCE CHART							
PROCEDURE		EACH USE	FIRST 2 HOURS	EVERY 25 HOURS	EVERY 50 HOURS	EVERY 100 HOURS	BEFORE STORAGE
M O W E R	Blade, Inspect and Sharpen			√			
	Blade Rotation Control, Check			√			
	Brake, Check			√			
	Clutch, Check			√			
	Tyres, Check			√			√
	Battery, Check and Charge			√			√
	Battery, Clean				√		√
	Lubrication				√		√

GENERAL RECOMMENDATIONS

1. The owner's responsibility is to maintain this product. This will extend the life of the product and is also necessary to maintain warranty coverage.
2. Check the spark plug, drive brake, lubricate the unit, and clean the air filter once a year.
3. Check the fasteners. Make sure all fasteners are tight.
4. Follow the Maintenance section to keep the unit in good operating condition.



WARNING: Before you make an inspection, adjustment, or repair to the unit, disconnect the wire to the spark plug. Remove the wire from the spark plug to prevent the engine from starting by accident.

NOTE: Torque is measured in foot pounds (metric Nm). This measurement describes how tight a nut or bolt must be. The torque is measured with a torque wrench.

HOW TO CHECK THE MUFFLER

Check the muffler every 50 hours. Make sure the muffler is correctly mounted and is not loose. If the muffler is worn or burnt, replace with a new muffler. A worn muffler is a fire hazard and can also damage the engine.

If you mount a spark arrester to the muffler, also check the spark arrester when you check the muffler. If the spark arrester is worn or damaged, replace it with a new spark arrester. See your nearest authorized service center for a spark arrester.

MAINTENANCE

INSPECT BLADE



WARNING: Before you inspect or remove the blade, disconnect the wire to the spark plug. If the blade hits an object, stop the engine. Check the unit for damage. The blade has sharp edges. When you hold the blade, use gloves or cloth material to protect your hands.

If you keep the blade sharp and inspect the blade for damage, the blade will cut better and be more safe to operate. Frequently check the blade for excessive wear, cracks, or other damage. Frequently check the nut that holds the blade. Keep the nut tight. If the blade hits an object, stop the engine. Disconnect the wire to the spark plug. See if the blade is bent or damaged. Check the blade adapter for damage. Before you operate the unit, replace damaged parts with original equipment parts. See the authorized service center in your area. Every three years, have an authorized service person inspect the blade or replace the old blade with an original equipment part.

HOW TO REMOVE AND INSTALL THE BLADE

1. Remove the mower housing. See the instructions on "How To Remove The Mower Housing".
2. Use a piece of wood to keep the blade from rotating.
3. Remove the **nut** that holds the blade (Figure 13).

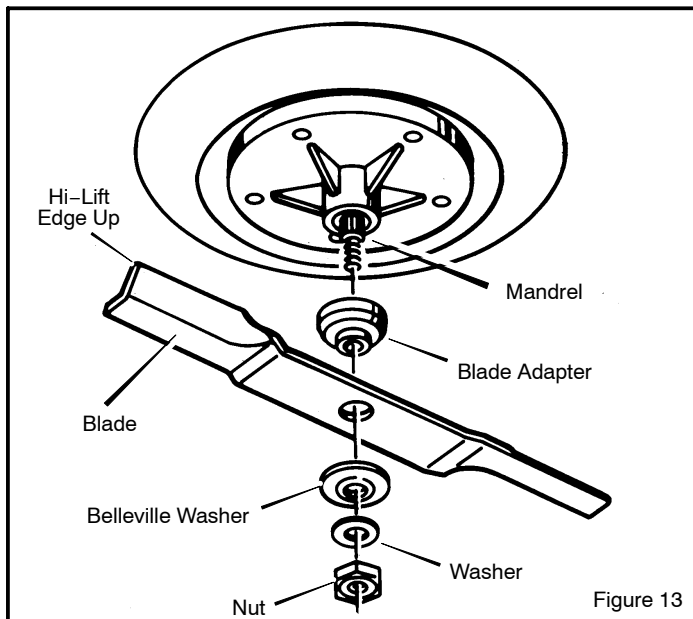


Figure 13

4. Check the **blade** and the **blade adapter** according to the instructions for "Inspect Blade". Replace a badly worn or damaged **blade** with an original equipment blade. See an authorized service center in your area.
5. Clean the top and bottom of the mower housing. Remove all the grass and debris.
6. Mount the **blade** and **blade adapter** on the **mandrel** (Figure 13).
7. Mount the **blade** so that the **hi-lift edges** are up. If the **blade** is upside down, the **blade** will not cut correctly and can cause an accident.
8. Fasten the **blade** with the original washers and **nut**. Make sure the outside rim of the **Belleville washer** is against the **blade** (Figure 14).



WARNING: Always keep the nut tight that holds the blade. A loose nut or blade can cause an accident.

9. Tighten the **nut** that holds the **blade** to a torque of 30 foot pounds (41,5 N-m).
10. Install the mower housing. See "How To Install The Mower Housing".

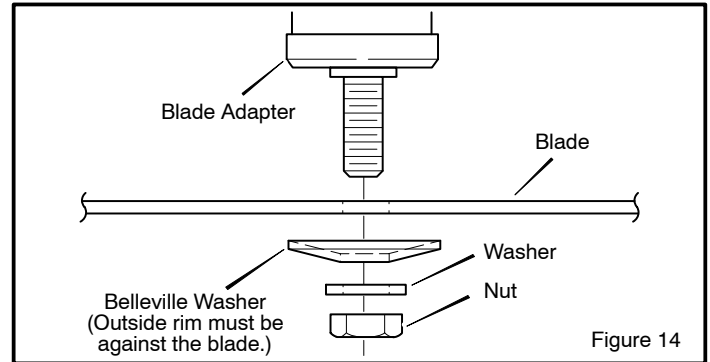


Figure 14

HOW TO SHARPEN THE BLADE



WARNING: Vibration can be caused if the blade is not correctly balanced or if the blade is damaged. A blade that is damaged with cracks can break and cause an accident.

Keep a sharp edge on the **blade**. A **blade** that is not sharp will cause the tips of the grass to become brown.

1. Sharpen the **blade** two times a year or every 25 hours.
2. Remove the **blade** according to the instructions in "How To Remove And Install The Blade".
3. Clean the **blade** with a brush, soap and water. Check the **blade**. Look for cracks, nicks, or other damage. Replace a badly worn or damaged blade with an original equipment blade. See an authorized service center in your area.
4. Sharpen the **blade** with a **file** (Figure 15). Make sure you keep the original bevel angle.
5. Make sure the **blade** is balanced. Use a **screwdriver** and hold the **blade** parallel to the **ground** (Figure 15). A **blade** that is balanced will stay parallel to the **ground**. If the **blade** is not balanced, the heavy end will rotate toward the **ground**. Sharpen the heavy end until the **blade** is balanced.
6. A new blade will cut better than a badly worn blade. Every three years, have an authorized service person inspect the blade or replace the old blade with an original equipment blade.
7. Assemble the **blade** according to the instructions "How To Remove And Install The Blade".

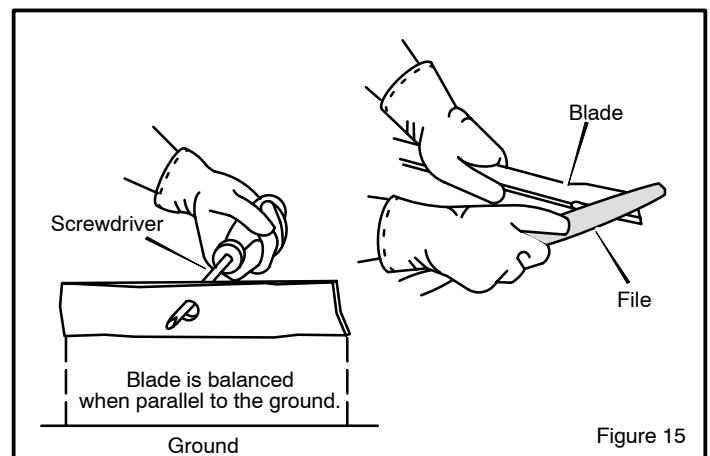


Figure 15

MAINTENANCE

HOW TO ADJUST THE BLADE ROTATION CONTROL



WARNING: To prevent an injury, the blade rotation control must operate correctly.

1. Stop the engine. Disconnect the wire from the spark plug.
2. Before you adjust the **blade rotation control**, check and level the mower housing. See "How To Level The Mower Housing." Make sure the mower housing is level before go to the next step.
3. Set the height of the mower housing in the lowest position.
4. Move the **blade rotation control** to the **ENGAGE** position (Figure 16). Check the **plastic indicator** inside the **blade drive spring** (Figure 17). The end of the **plastic indicator** must be aligned (+ or - 1/8 inch / 3 mm) with the last coil of the **blade drive spring**.
5. If the **plastic indicator** is more than 1/8 inch (3 mm) from the last spring coil, an adjustment is needed. Move the **blade rotation control** to the **DISENGAGE** position. Disconnect the **adjustable nut** on the **blade control rod** from the **blade rotation control**. Turn the **adjustable nut** clockwise to increase the length of the coils. Turn the **adjustable nut** counterclockwise to decrease the length of the coils.
6. Connect the **adjustable nut** to the **blade rotation control**. Move the **blade rotation control** to the **ENGAGE** position. Check the adjustment of the **blade drive spring**.
7. Move the **blade rotation control** to the **DISENGAGE** position. Check the operation of the blade brake. Rotate the pulley with your hand. Make sure the pads for the blade brake are pressed tightly against the pulleys.

IMPORTANT: Check the operation of the blade brake by repeating step 7. If the brake pads do not press tightly against the pulleys, replace the mower drive belt and repeat steps 1-7. Then, complete the remaining steps. Correct replacement parts and assistance are available from an authorized service center.

8. Move the **blade rotation control** to the **ENGAGE** position. Check the pads for the blade brake. If the pads are excessively

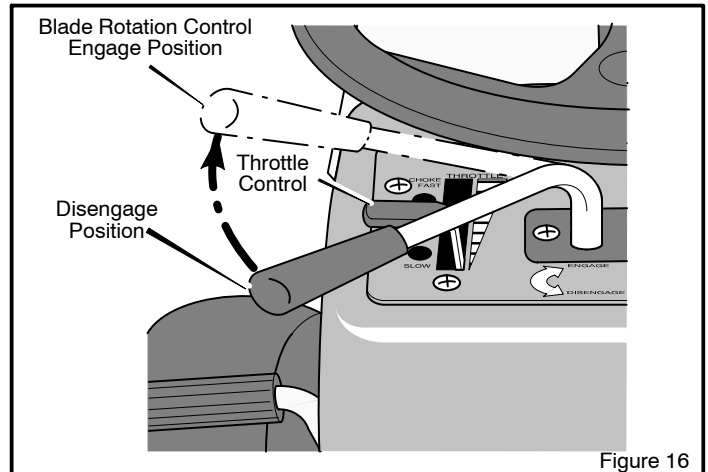


Figure 16

worn or damaged, the **brake pad** assemblies must be replaced. Correct replacement parts and assistance are available from an authorized service center.

9. Attach the wire to the spark plug. Mow for a short distance and again check the operation of the **blade rotation control**.
10. When you move the **blade rotation control** to the **DISENGAGE** position, all movement will stop within five seconds if the adjustment is correct. If there is movement of the belt or the blades continue to rotate, engage and disengage the **blade rotation control** five times to remove any excess rubber from a new **mower drive belt**. If there is still blade rotation from the **DISENGAGED** position, adjust the **blade drive spring** until more of the **plastic indicator** extends beyond the end of the last coil. This adjustment will decrease the spring tension. If you need assistance, take the unit to an authorized service center.
11. After you operate with a new **mower drive belt** for several hours, check the tension of the **blade drive spring**.
12. If you replace the **mower drive belt**, adjust the **blade rotation control**.

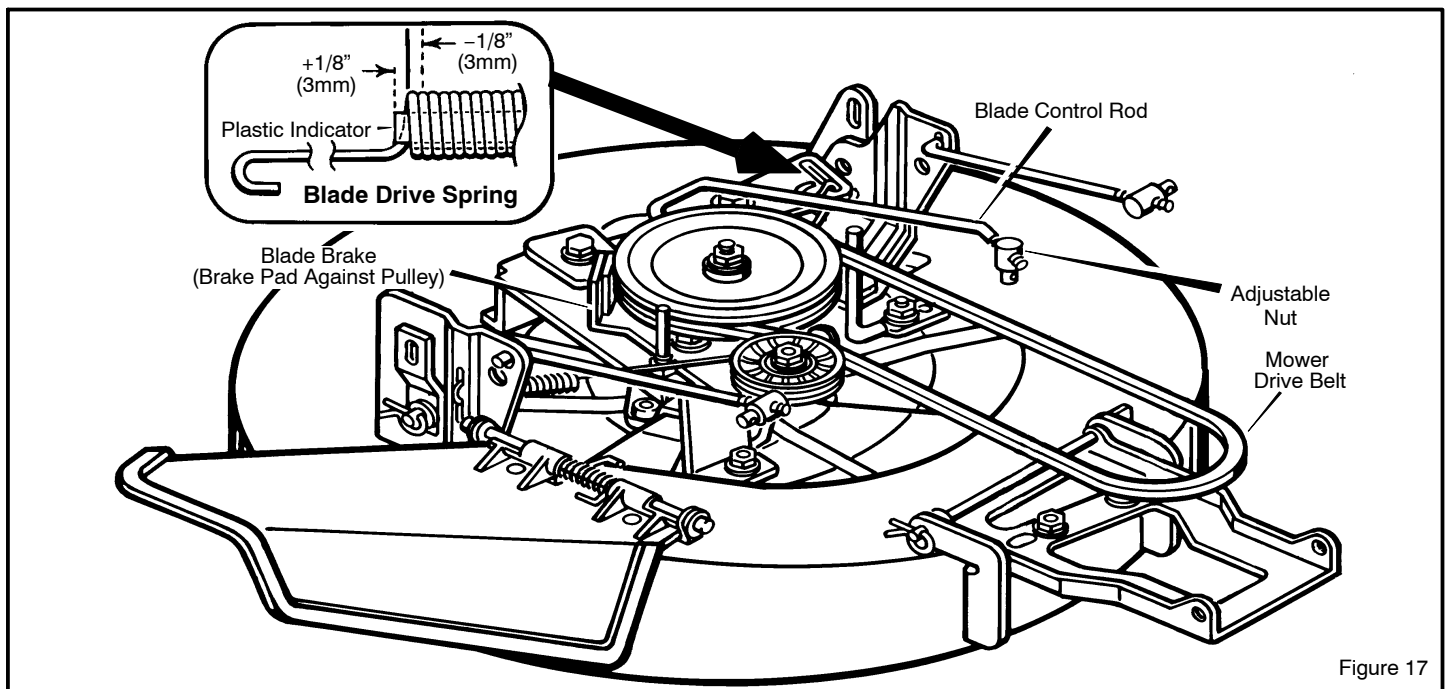


Figure 17

MAINTENANCE

HOW TO CHECK AND ADJUST THE DRIVE BRAKE

Completely push the clutch/brake pedal forward. Set the parking brake. Move the shift lever to the neutral (N) position. Push the unit. If the rear wheels rotate, adjust or replace the brake pads. Adjust the **drive brake** as follows.

1. The location of the **drive brake** is on the right side of the **gearbox** (Figure 18).
2. Make sure the parking brake is set and the shift lever is in neutral (N). Turn the **hex nut** in a clockwise direction until the rear wheels do not turn when the unit is pushed forward.
3. Release the parking brake and push the unit. If the unit does not roll, turn the **hex nut** in a counterclockwise direction until the unit rolls.
4. Set the parking brake. Push the unit. If the rear wheels do not turn, the **drive brake** is correctly adjusted. Release the parking brake.



WARNING: If you cannot correctly adjust the drive brake, replace the brake pads. Correct replacement parts and assistance are available from an authorized service center.

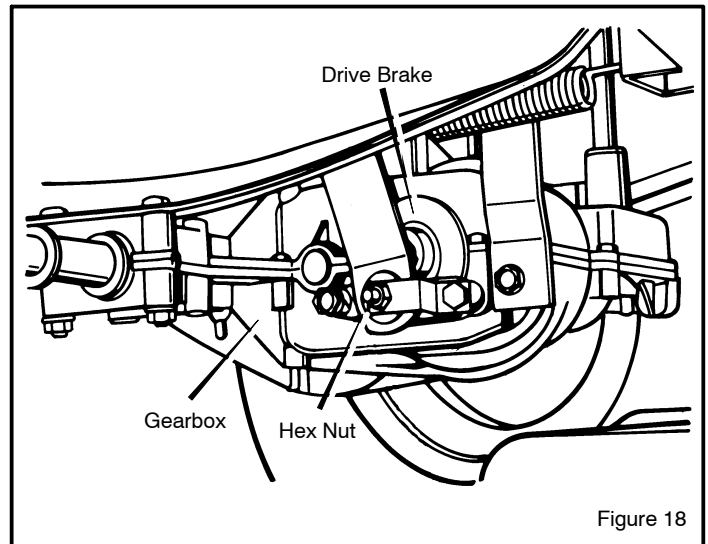


Figure 18

HOW TO CHECK AND ADJUST THE CLUTCH

If the motion drive belt is loose, the clutch will slip when; (1) going up a hill, (2) pulling a heavy load, or (3) the unit will not move forward. Check the clearance at the rear of the **pedal** (Figure 19). If the motion drive belt is loose, the clearance will be less than **3/16 inch** and the clutch will slip. Adjust the clutch as follows.



WARNING: Before you make an inspection, adjustment, or repair to the unit, disconnect the wire to the spark plug. Remove the wire from the spark plug to prevent the engine from starting by accident.

1. Check the routing of the motion drive belt. Make sure the belt is installed correctly and is inside all the belt guides.
2. Disconnect the **adjustable nut** from the **lever assembly** (Figure 19).
3. Turn the **adjustable nut** counterclockwise to increase the length of the clutch rod. This adjustment will increase the clearance at the pedal and tighten the motion drive belt.
4. Assemble the **adjustable nut** to the **lever assembly**. Check the clearance at the **pedal**.
5. If the **pedal** cannot be set to **3/16 inch clearance**, the motion drive belt has stretched and must be replaced. See "How To Replace The Motion Drive Belt".
6. If the clutch still slips after the clutch has been adjusted, then the motion drive belt is damaged and must be replaced. See "How To Replace The Motion Drive Belt".
7. After making an adjustment to the **pedal**, check the drive brake. See "How To Check And Adjust The Drive Brake".

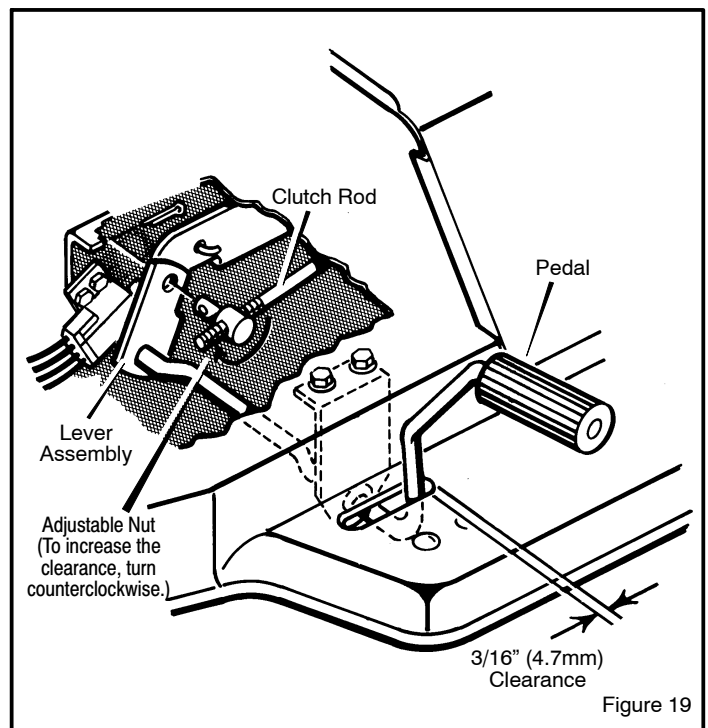


Figure 19

MAINTENANCE

MAINTENANCE FREE BATTERY

HOW TO REMOVE THE BATTERY

To charge or clean the **battery**, remove the **battery** from the unit as follows.



WARNING: To prevent sparks, disconnect the black battery cable from the negative (-) terminal before you disconnect the red cable.

WARNING: The battery contains sulphuric acid which is harmful to the skin, eyes and clothing. If the acid gets on the body or clothing, wash with water.

1. Remove the **black cable** from the negative (-) terminal (Figure 20).
2. Remove the **red cable** from the **positive (+) terminal**.
3. Rotate the battery clamp to the DOWN position.
4. To remove the battery, tilt the battery forward and then lift the battery.

CAUTION: Do not tilt the battery more than 45 degrees. If the battery tilts more than 45 degrees, battery acid can leak from the battery.

HOW TO CLEAN THE BATTERY

1. Remove the **battery**.
2. Wash the **battery** with a solution of one gallon of water and four tablespoons of baking soda (sodium bicarbonate). Make sure the solution does not get into the battery cells.
3. Clean the **terminals** and the ends of the **cables** with a wire brush.
4. Install the **battery**. See "How To Install The Battery" in the Assembly section.
5. To prevent corrosion, apply grease to the **battery terminals**.

HOW TO CHARGE THE BATTERY



WARNING: When you charge the battery, do not smoke. Keep the battery away from any sparks. The fumes from the battery acid can cause an explosion.

1. Before you charge the **battery**, remove the **battery**.
2. To charge the **battery**, use a 12 volt battery charger. Charge at a rate of 6 amperes for 1 hour.
3. Install the **battery**. See "How To Install The Battery" in the Assembly section.

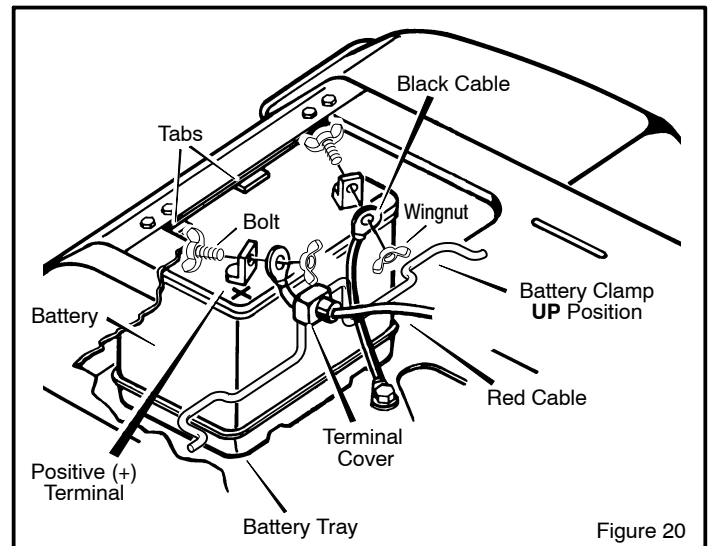


Figure 20

MAINTENANCE

WHERE TO LUBRICATE



Lubricate the areas shown with engine oil.



Apply grease with a brush to the areas shown.

NOTE: Apply grease to the steering gear assembly.

CAUTION: If the unit is operated in dry areas that have sand, use a dry graphite spray to lubricate the unit. Do not lubricate the nylon bearings for the front wheels. Oil or grease will damage the bearings.

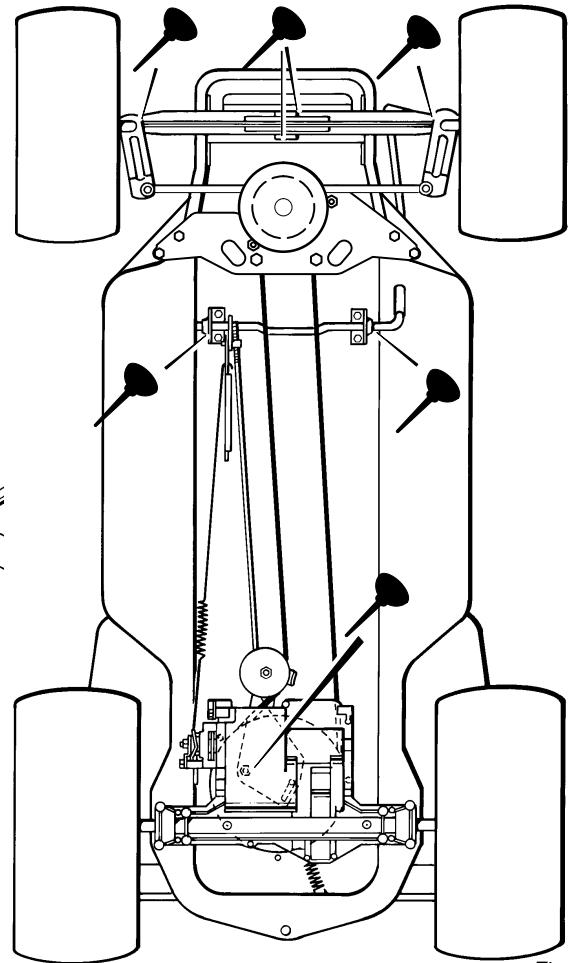
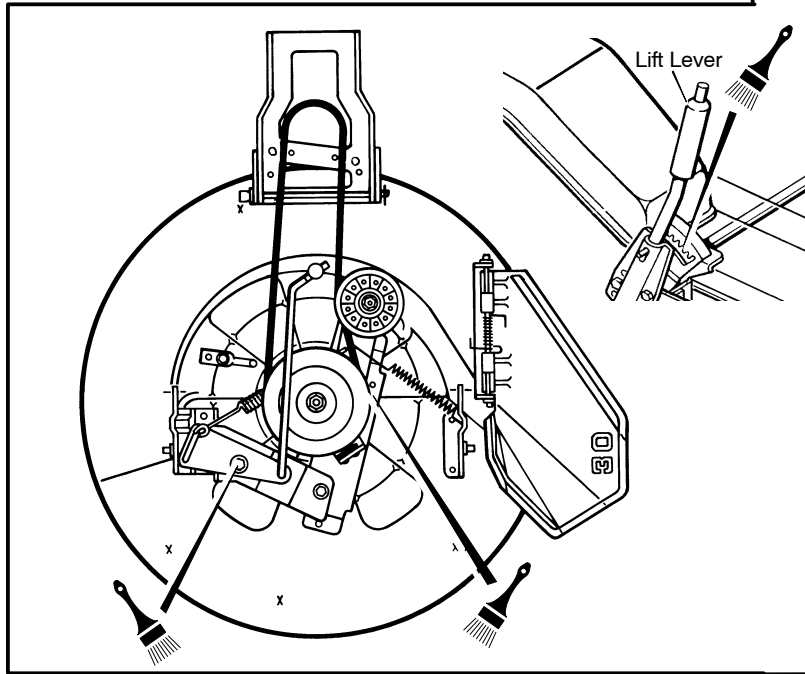


Figure 21

HOW TO CHECK THE FUEL FILTER

NOTE: Before you replace the fuel filter or the fuel line, the fuel tank must be empty.

If the **fuel filter** is dirty, the engine will run rough and have less performance. Remove the old filter (Figure 22). Replace the old filter with a new filter. Use an original equipment part. See an authorized service dealer in your area.

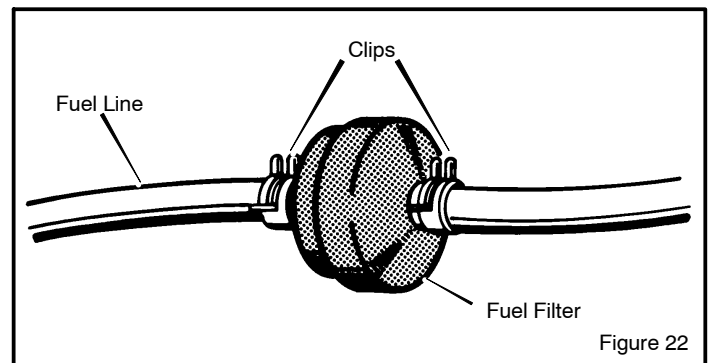


Figure 22

CHECK THE TYRES

Check the air pressure in the tyres. Tyres with too much air pressure will cause the unit to ride rough. Also, the wrong air pressure will keep the mower housing from cutting level. The correct air pressure (PSI) is 14 PSI (1 BAR).

MAINTENANCE

HOW TO REMOVE THE MOWER HOUSING

1. Move the **lift lever** to the lowest position.
2. Move the **blade rotation control** to the DISENGAGE position.
3. Remove the hair pins and the washers from the adjusting rods (Figure 23). See illustrations "C" and "D".
4. Remove the hair pins and the washers from the suspension link and the adjuster plate. See illustrations "A" and "B".
5. Remove the adjuster nut from the **blade rotation control**. See illustration "E".
6. Disconnect the **front hanger** from the axle support. See illustration "F".
7. If necessary, loosen the two **belt guides** at the **stack pulley**. See illustration "G". Remove the **mower drive belt** from the **stack pulley**.
8. Pull the mower housing away from the right side of the unit.

HOW TO INSTALL THE MOWER HOUSING

1. Push the mower housing under the right side of the unit.
2. Put the **mower drive belt** around the **stack pulley**. Make sure the "V" side of the **mower drive belt** is against the **stack pulley**. Also, make sure the **mower drive belt** is not twisted.
3. Attach the **front hanger** to the axle support with the **hanger rod**. Fasten with the fasteners as shown. See illustration "F".
4. Make sure the **mower drive belt** is between the **stack pulley** and the two **belt guides**. Tighten the two **belt guides**. See illustration "G".
5. Fasten the adjuster nut to the **blade rotation control** with the hair pin. See illustration "E".
6. Attach the suspension link and the adjuster plate to the **lifter assembly**. Fasten with the washers and hair pins. See illustrations "A" and "B".
7. Attach the right and the left adjusting rods to the suspension brackets. Fasten with the washers and hair pins. See illustrations "C" and "D".
8. Move the **blade rotation control** to the ENGAGE position. Make sure the **mower drive belt** is inside all the **belt guides**.
9. Make sure the mower housing is level. See the instructions on "How To Level The Mower Housing".
10. Check the operation of the **blade rotation control**. See the instructions on "How To Adjust The Blade Rotation Control".

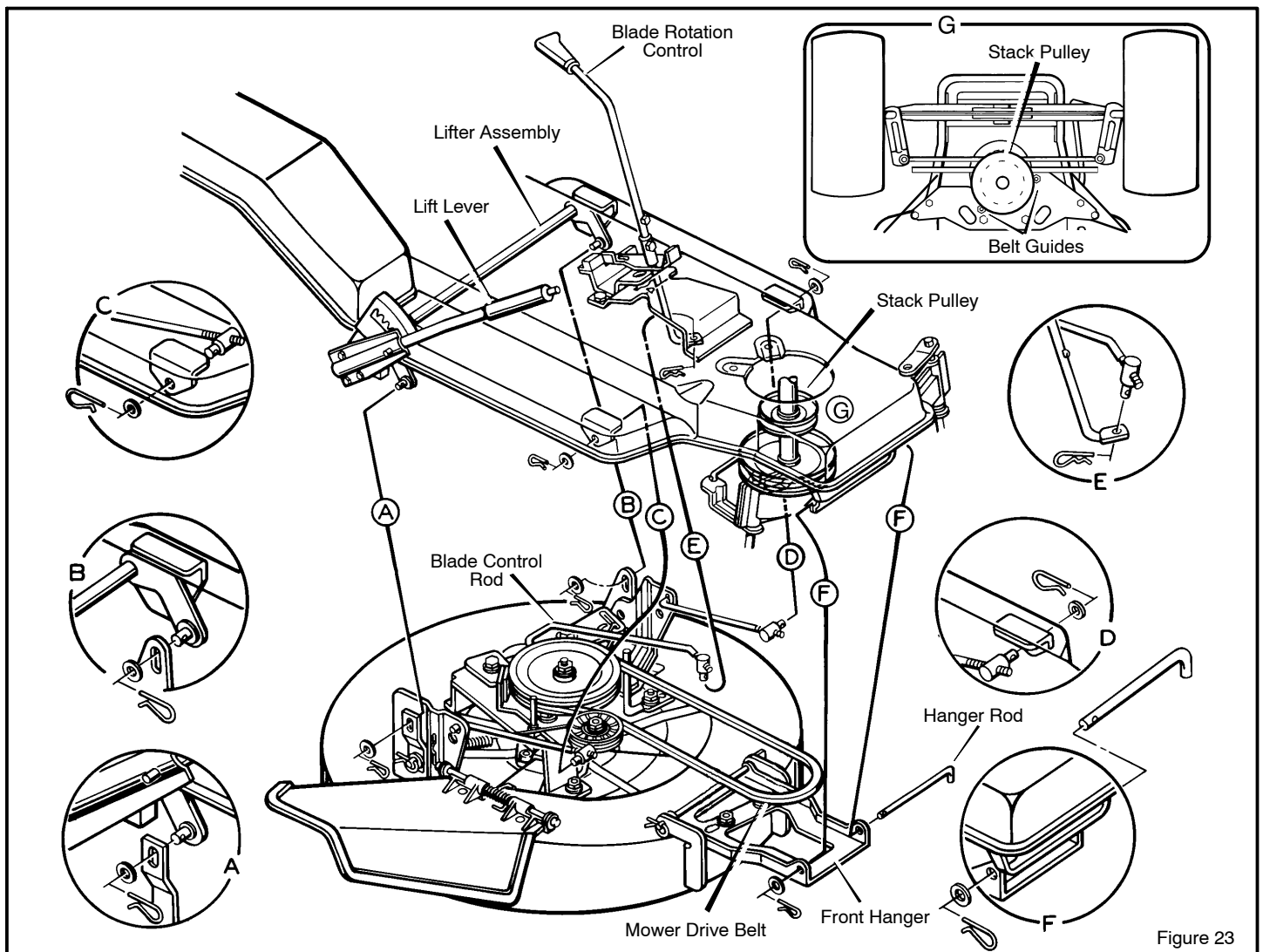


Figure 23

MAINTENANCE

HOW TO LEVEL THE MOWER HOUSING

If the mower housing is level, the blade will cut easier and the lawn will look better.



WARNING: Before you make an inspection, adjustment, or repair to the unit, disconnect the wire to the spark plug. Remove the spark plug wire to prevent the engine from starting by accident.

1. Make sure the unit is on a hard level surface.
2. Check the air pressure in the tyres. If the air pressure is incorrect, the mower housing will not cut level. Make sure the tyres are inflated to 14 PSI. (1 BAR).
3. Move the lever for the blade rotation control to the DISENGAGE position. Move the lift lever to the number "4" cutting height position.
4. There are two adjustment procedures below that will level the mower housing.

THE FRONT TO BACK ADJUSTMENT

Before the height of the mower housing is measured, understand that the position of the blades in the mower housing are not the same in the front as they are in the back.

There are measuring points on the mower housing indicated by small round dimples (or X marks) on the front and rear, left and right sides of the mower housing (Figure 24). To determine if an adjustment is needed, use a ruler and measure the distance from the level surface to the bottom of the mower housing. In correct adjustment, the front of the mower housing at point **B** will be from 0" to 1/2" (0 mm to 12 mm) lower than the back of the mower housing at point **D**.

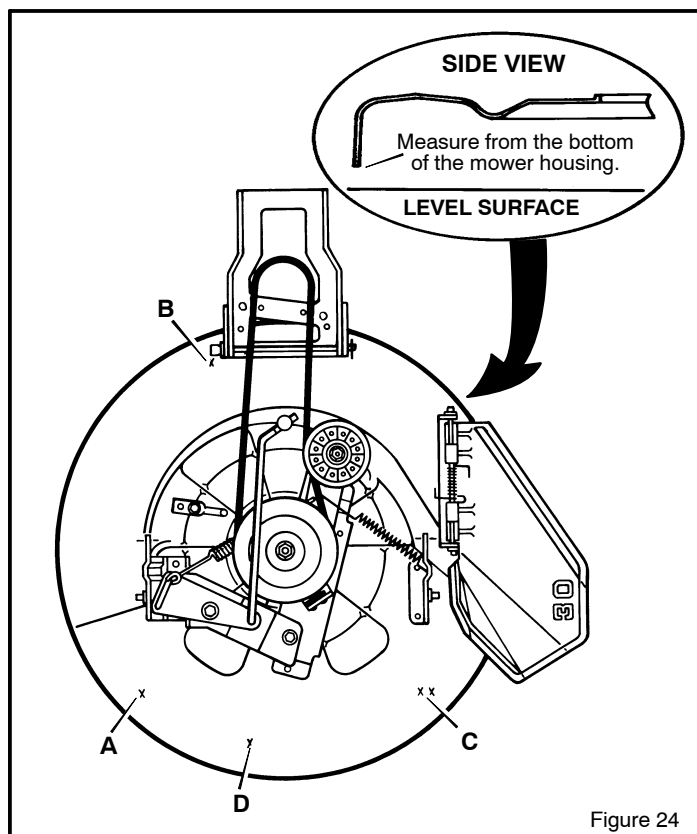


Figure 24

1. Disconnect both **adjuster rods** from the **adjuster rod brackets** (Figure 25).
2. Turn the adjustable nut clockwise to lower the front or counter-clockwise to raise the front of the mower housing.
3. Connect the left **adjuster rod** to the **adjuster rod bracket**. Check the housing for the correct adjustment. Fasten the adjustable nut with the washer and hair pin.
4. On the right side, turn the adjustable nut until the adjustable nut is aligned with the hole in the **adjuster rod bracket**. Fasten the adjustable nut with the washer and hair pin.

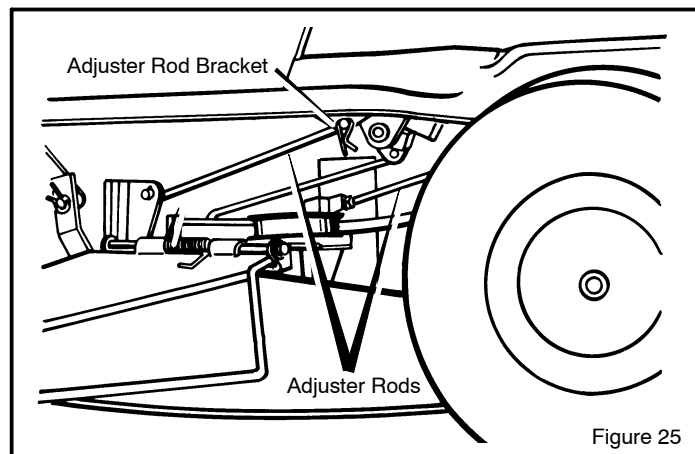


Figure 25

THE SIDE TO SIDE ADJUSTMENT

Use a ruler and measure the distance from the level surface to the bottom of the mower housing. Measure from the locations indicated by the small round dimples (or X marks) at points **A** and **C**. In correct adjustment, the mower housing at points **A** and **C** must be within 1/4" (6 mm) of the same height. If the difference in the measurement is more than 1/4" (6 mm), adjust as follows.

1. Disconnect the **adjuster plate** from the mower housing (Figure 26).
2. Move the **adjuster plate** to the front to raise or to the back to lower the side of the mower housing. On some **adjuster plates** the holes have numbers. To raise the mower housing, move to a higher number.
3. Connect the **adjuster plate**.
4. Check the housing for the correct adjustment. If necessary, repeat the adjustment.

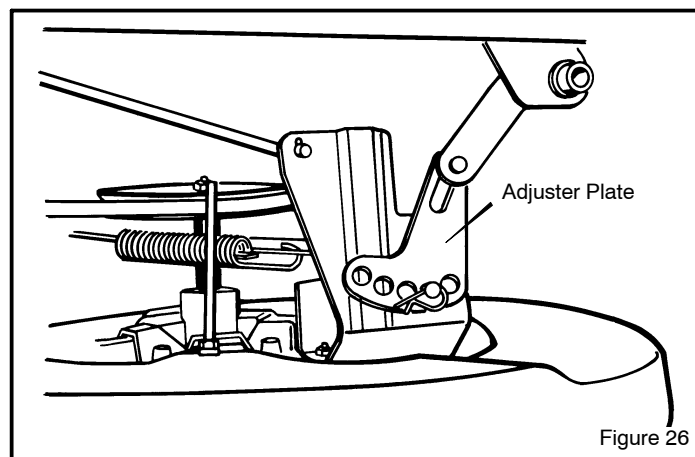


Figure 26

MAINTENANCE

HOW TO REPLACE THE MOTION DRIVE BELT

REMOVAL

1. Remove the mower housing. See the instructions on “How To Remove The Mower Housing”.
2. Completely push the pedal forward and engage the parking brake.
3. Remove the **idler pulley** (Figure 27).
4. Loosen the belt guides that are around the **drive pulley**.
5. Remove the **motion drive belt** from the **drive pulley**.
6. To remove the **motion drive belt** from the **stack pulley**, pull the front end of the belt under the **stack pulley** and then back between the stack pulley and the **belt guide plate** (Figure 28).
7. Put the end of the **motion drive belt** from the drive pulley through the hole for the **shift lever** (Figure 29). Move the **shift lever** and push the belt under the **shift lever**.
8. Remove the **motion drive belt**. A correct replacement part or assistance is available from an Authorized Service Center in your area.

INSTALLATION

1. Slide the **motion drive belt** between the **stack pulley** and the **belt guide plate** (Figure 28). Install the **motion drive belt** on the top pulley of the **stack pulley**. Make sure the “V” side of the belt is against the pulley.
2. Push the **motion drive belt** through the hole in the frame for the **shift lever** (Figure 29). Lift the end of the belt over the **shift lever** and back down through the hole in the frame.
3. Install the end of the **motion drive belt** around the **drive pulley** (Figure 27).
4. Tighten the **belt guides** that are around the **drive pulley**.
5. Put the belt around the **idler pulley**. Assemble the **idler pulley**. Fasten the **idler pulley** with the hex nut. Make sure the flat side of the belt is against the **idler pulley** as shown. Also, make sure the belt is not twisted.
6. Make sure the **motion drive belt** is inside all the **belt guides** (Figure 27 and Figure 28).
7. Before you use the unit, check the adjustment of the clutch. See the instructions “How To Check And Adjust The Clutch”.
8. Install the mower housing. See the instructions “How To Install The Mower Housing”.

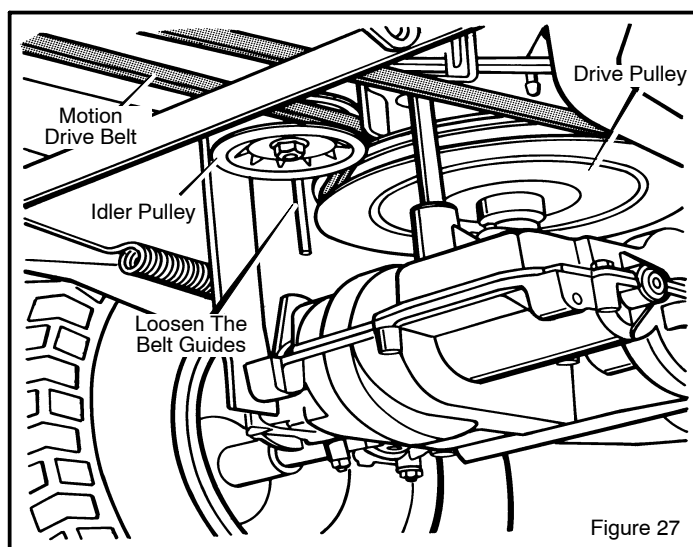


Figure 27

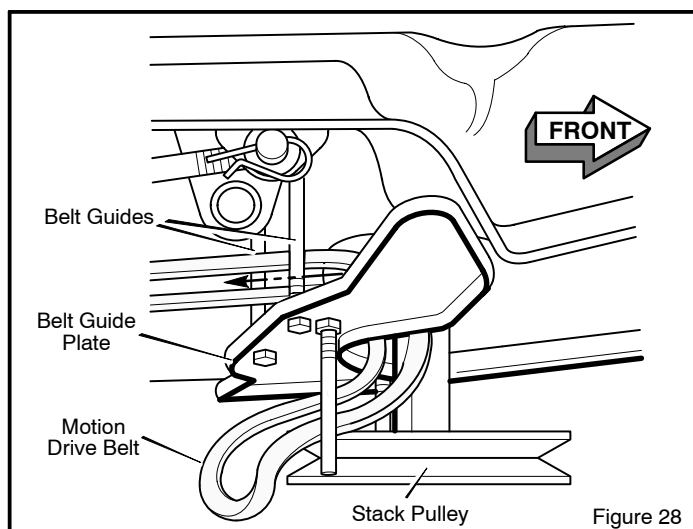


Figure 28

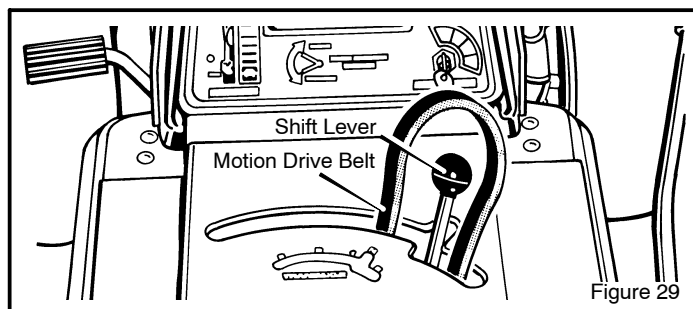


Figure 29

MAINTENANCE

HOW TO REPLACE THE MOWER DRIVE BELT

1. Remove the mower housing. See the instructions on "How To Remove The Mower Housing".
2. Pull the **belt retainer** away from the **idler pulley** and remove the **mower drive belt** (Figure 30).
3. Pull the **brake arm** away from the **mandrel pulley** and remove the **mower drive belt**.
NOTE: Replace the mower drive belt with an original equipment belt from an authorized service center.
4. Install the new **mower drive belt**. Pull the **brake arm** away from the **mandrel pulley**. Put the belt around the **mandrel pulley**.
5. Make sure the "V" side of the **mower drive belt** is against the **mandrel pulley** as shown.
6. Pull the **belt retainer** away from the **idler pulley**. Put the flat side of the **mower drive belt** around the **idler pulley**.
7. Make sure the **mower drive belt** is inside all the **belt guides**.
8. Install the mower housing. See the instructions on "How To Install The Mower Housing".
9. Before you mow, check the blade rotation control. See the instructions on "How To Adjust The Blade Rotation Control".

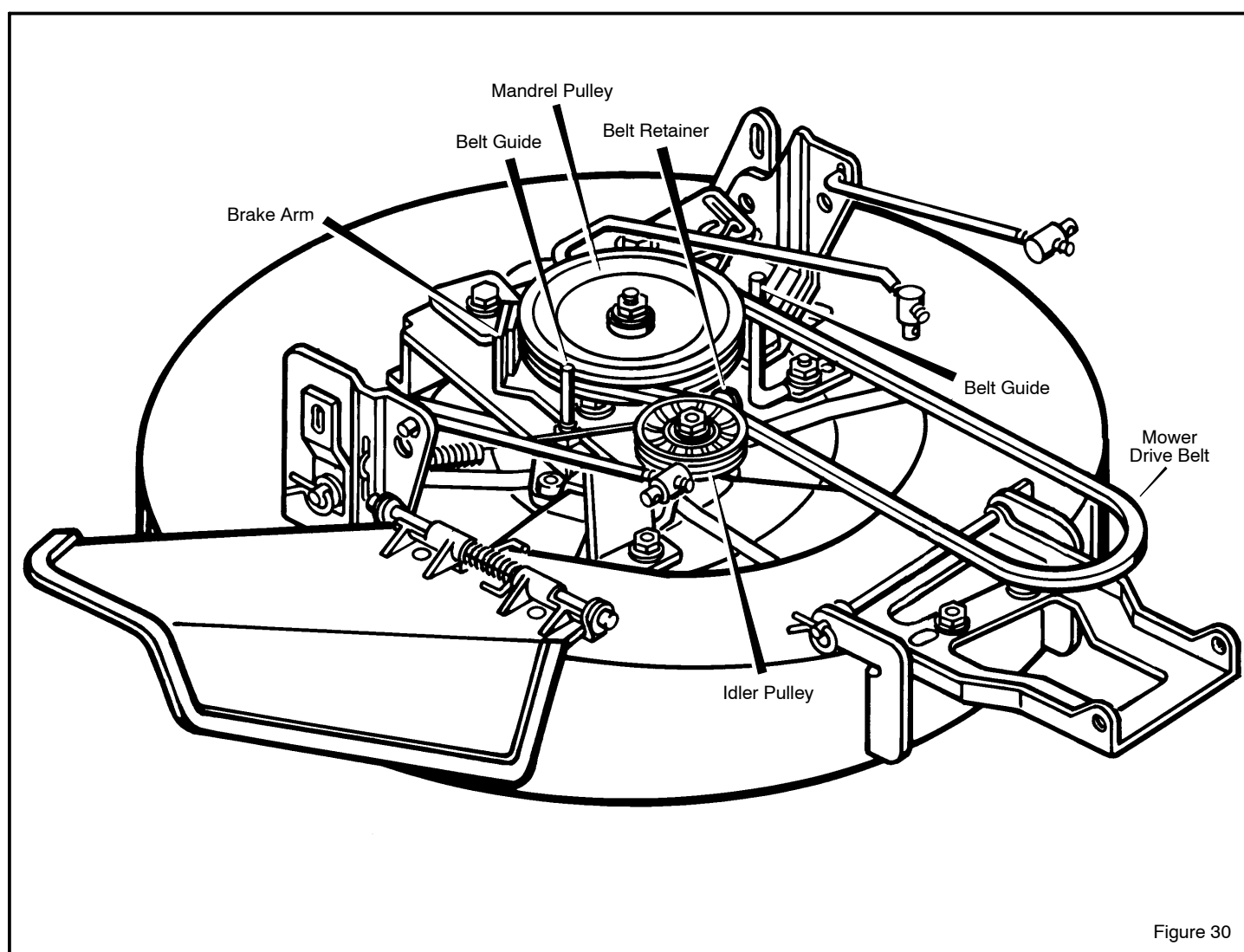
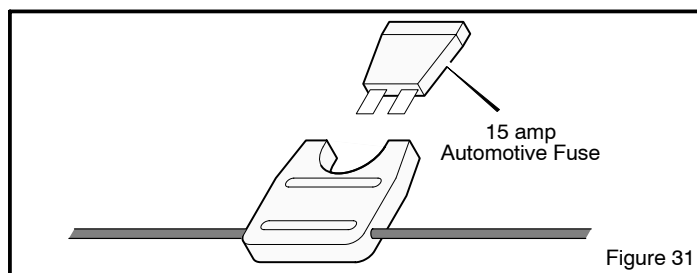


Figure 30

MAINTENANCE

HOW TO REPLACE THE FUSE

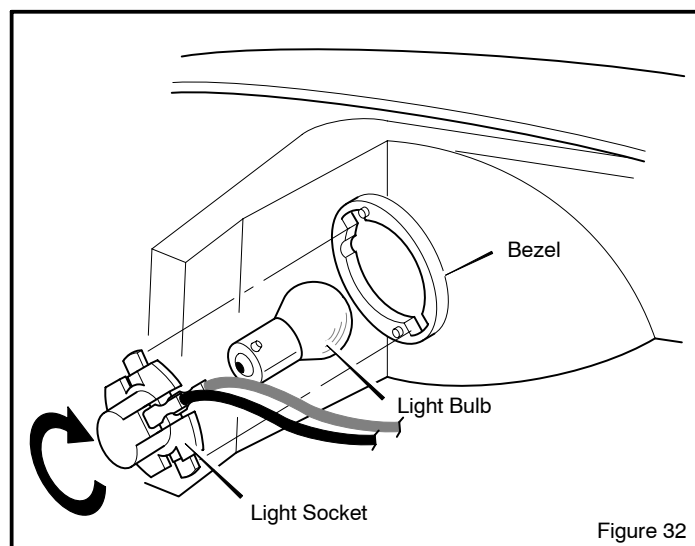
If the fuse is blown, the engine will not start. The location of the fuse is next to the battery. Remove the fuse and replace with a 15 amp automotive fuse (Figure 31).



HOW TO REPLACE THE LIGHT BULB

1. Raise the tractor hood.
2. Turn the **light socket** until the tabs on the socket align with the notches in the **bezel** (Figure 32). Remove the **light socket**. Turn the **light bulb** and remove the bulb.

3. Install a new **light bulb**. Align the **light socket** with the notches in the **bezel** and turn the **light socket** to lock in position.



HOW TO CLEAN THE MOWER HOUSING



WARNING: Before you clean the mower housing, stop the engine and disconnect the wire to the spark plug.

Grass and other debris on top of the mower housing can keep the belt from working correctly. For safety and correct operation, frequently clean the top of the mower housing. Remove grass and debris from around the pulleys and other moving parts.

1. Move the lever for the blade rotation control to the ENGAGE position.
2. Clean the top of the mower housing.
3. Move the lever for the blade rotation control to the DISENGAGE position.
4. Again clean the top of the mower housing.
5. After you cut the grass, clean the bottom of the mower housing.

STORAGE (over 30 days)

At the end of each year, prepare the unit for storage as follows.

THE ENGINE

For storage information, see the the engine manufacturer's instructions.

THE BATTERY

1. Remove the battery.
2. Clean the battery terminals of any deposits.
3. Charge the battery. See the instructions on "How To Prepare And Charge The Battery".
4. Store the battery in a cool, dry place.

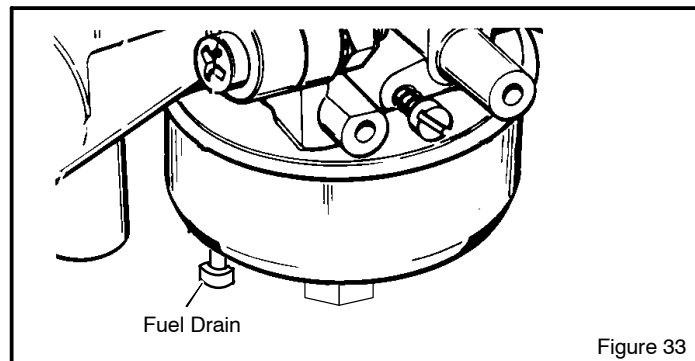
NOTE: After a long time in storage, charge the battery.

THE FUEL SYSTEM



WARNING: Do not drain the fuel inside a building or near a fire. Do not smoke because the fumes from the fuel can cause an explosion.

1. Start the engine.
2. Run the engine until the fuel tank and the carburettor are out of fuel and the engine stops.
3. Do not leave fuel in the fuel tank or the carburettor. The fuel can damage the function of the fuel system. Some models have a **fuel drain** (Figure 33). Hold a cloth under the **fuel drain**. Push the **fuel drain** until the carburettor is empty.
4. After storage, make sure you use fresh fuel.



CLEAN THE UNIT

1. Clean the dirt and grass from the engine.
2. Clean the mower housing.

LUBRICATE THE UNIT

See the "Lubrication" instructions in this book.

TROUBLE SHOOTING CHART

PROBLEM: The engine will not start.

1. Follow the steps, "How To Start The Engine" in this book.
2. Electric-Start Models: Clean the battery terminals. Tighten the cables.
3. Drain the fuel tank. Clean the fuel line. Replace the fuel filter.
4. Remove the spark plug(s). Move the throttle to the SLOW position. Turn the ignition key to the ON position. Try to start the engine several times. Install the spark plug.
5. Replace the spark plug.
6. Adjust the carburettor.

PROBLEM: The engine will not turn over.

1. Follow the steps, "How To Start The Engine" in this book.
2. Electric-Start Models: Check the level of the acid in the battery. If needed, add water. Charge the battery.
3. Replace the fuse.
4. Check the wiring harness for damage or a loose connection. Repair the damaged wire.
5. Electric-Start Models: replace the solenoid. Recoil-Start Models: replace the module.

PROBLEM: The engine is difficult to start.

1. Adjust the carburettor.
2. Replace the spark plug.
3. Replace the fuel filter.

PROBLEM: The engine does not run smooth or has a loss of power.

1. Check the oil.
2. Clean the air filter.
3. Clean the air screen.
4. Replace the spark plug.
5. The engine is working too hard. Use a lower gear.
6. Adjust the carburettor.
7. Replace the fuel filter.

PROBLEM: The engine does not run smooth at fast speed.

1. Replace the spark plug.
2. Adjust the throttle control.
3. Clean the air filter.
4. Replace the fuel filter.

PROBLEM: The engine stops when the blades are engaged.

1. To activate the seat sensor, always sit in the middle of the seat.
2. Check the wiring harness for damage or a loose connection. Repair the damaged wire.

PROBLEM: On slopes, the engine stops.

1. Mow up and down slopes. Never mow across a slope.
2. To activate the seat sensor, always sit in the middle of the seat.

PROBLEM: The engine will not idle.

1. Replace the spark plug.
2. Clean the air filter.
3. Adjust the carburettor.
4. Adjust the throttle control.
5. Drain the fuel tank. Clean the fuel line. Replace the fuel filter.

PROBLEM: A hot engine causes a decrease in power.

1. Clean the air screen.
2. Check the oil.
3. Adjust the carburettor.
4. Replace the fuel filter.

PROBLEM: Excessive vibration.

1. Replace the blade.
2. Check for loose engine bolts.
3. Decrease the air pressure in the tyres.
4. Adjust the carburettor.
5. Check for a damaged belt or damaged pulley. Replace the damaged parts.

PROBLEM: The grass does not discharge correctly.

1. Stop the engine. Clean the mower housing.
2. Raise the height of cut.
3. Replace or sharpen the blade(s).
4. Move the shift lever to a slower speed.
5. Move the throttle control to the FAST position.
6. Replace the spring for the blade idler.

PROBLEM: The mower housing does not cut level.

1. Check the air pressure in the tyres.
2. Adjust the level of the mower housing.
3. Check the front axle. If the front axle does not freely pivot, loosen the axle bolt(s).

PROBLEM: The mower blades will not rotate.

1. Check the mower drive belt. Make sure the belt is installed correctly.
2. Replace the mower drive belt.

PROBLEM: The unit will not move when the clutch is engaged.

1. Check the motion drive belt. Make sure the belt is installed correctly.
2. Adjust the clutch.
3. Replace the motion drive belt.

PROBLEM: The unit moves slower or stops when the clutch is engaged.

1. Adjust the clutch.
2. Replace the motion drive belt.

PROBLEM: When the clutch/brake pedal is released, belt noise can be heard.

1. Temporary belt noise does not change the operation of the unit. If belt noise is continuous, check the routing of the belt. Make sure the belt is inside all belt guides.
2. If the noise is continuous, adjust the clutch.

PROBLEM: The rear wheels spin over uneven terrain.

1. Check the front axle. If the front axle does not freely pivot, loosen the axle bolt(s).

PROBLEM: The transaxle is difficult to shift between gears with the engine running and the clutch depressed.

1. Check the clutch adjustment to make sure the belt stops when the clutch pedal is depressed with the transaxle in (N) neutral.
2. Check the belt guides around the transaxle drive pulley. Make sure the belt guides do not touch the pulley.

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SLOPE GUIDE

SIGHT AND HOLD THIS GUIDE LEVEL WITH A VERTICAL TREE, A CORNER OF A STRUCTURE, A POWER LINE POLE, OR A FENCE.

10 DEGREES

FOLD ALONG DOTTED LINE

Operate a walk-behind mower across the face of slopes, never up or down slopes.

Operate a riding mower up or down slopes, never across the face of slopes.

10 DEGREES

riding mower to determine if a slope is safe to mow: (1) disengage the blade(s), (2) put the unit in reverse, and (3) try to back straight up the slope. If you can back up the slope, it is generally safe to mow. However, if you do not feel safe, or if you are not completely sure, use this guide to not mow a slope that is greater than 10 degrees. If the riding mower is used with a pull-behind or rear mounted attachment, do not operate the unit on a slope that is greater than 10 degrees.

degree slope is a hill that increases in height at approximately 1.7 feet in 10 feet.



Use extreme care at all times, and avoid sudden turns or maneuvers. Follow other instructions in this manual for safety in mowing on slopes. Operate a riding mower up or down slopes, never across the face of slopes. Operate a walk-behind mower across the face of slopes, never up or down slopes. Use extra care when operating on or near slopes and obstructions.

..... CUT HERE TO USE SLOPE GUIDE

NOTES

12/30

HERITAGE TRACTOR CODE143P

REPAIR PARTS

Use only manufacturer's authorized or approved replacement parts. The letter placed on the end of the part number denotes the type of finish for the part, C for chrome, Z for zinc, a PA for purchased assembly. It is important that you include this when ordering a part. Do not use attachments or accessories not specifically recommended for this unit. In order to obtain proper replacement parts you must supply the model number of your mower (see nameplate).

Replacement parts are available from your local **Hayter** authorised dealer.

When ordering the following information is required:

- (1) **The Model Number**
- (2) **Serial Number**
- (3) **Part Number**
- (4) **Description**
- (5) **Quantity**

FROM SERIAL NO:143P001001

MANUAL PART NO: 143002(REV.0.)

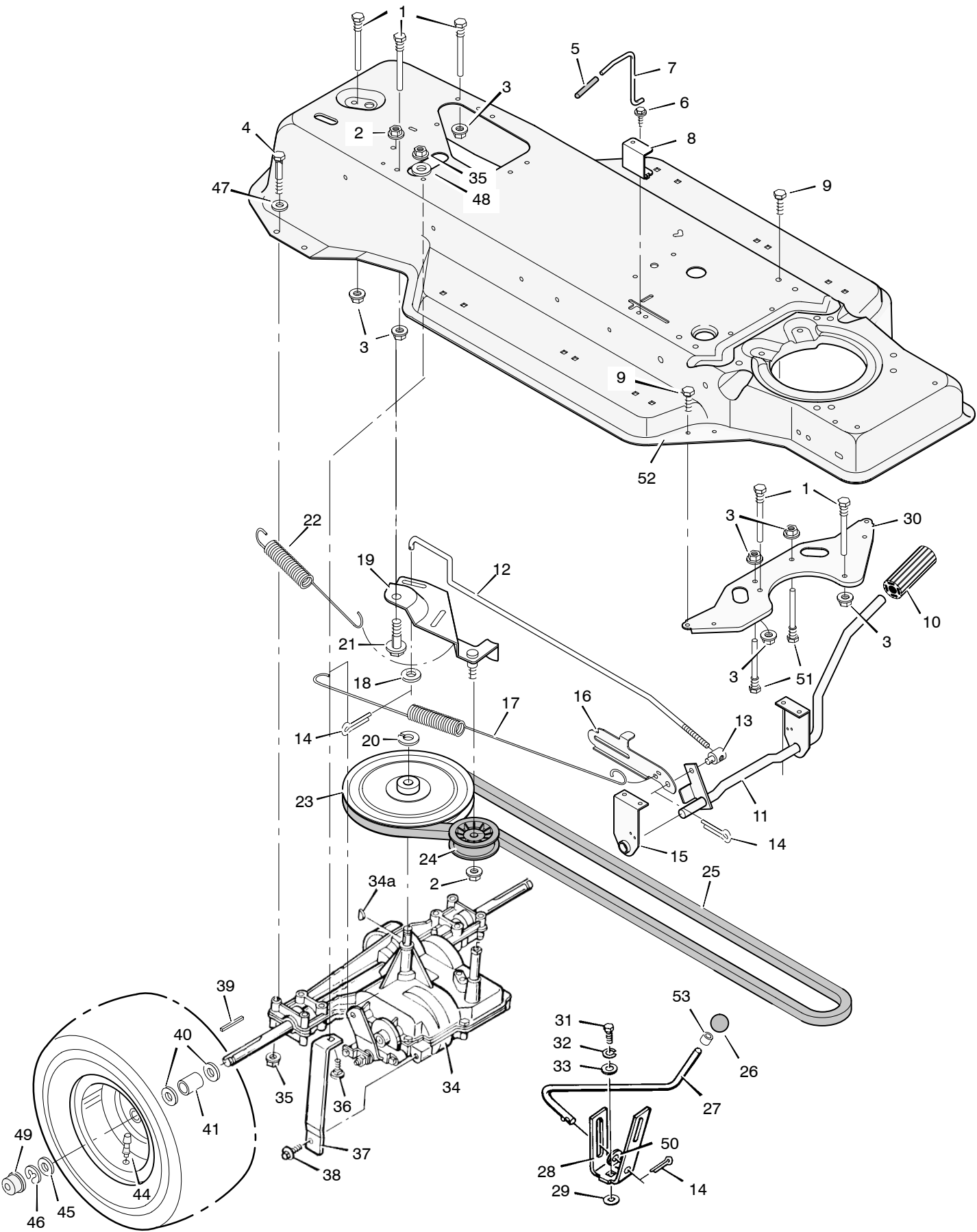
REPAIR PARTS CHASSIS & HOOD



MODEL CODE143P

REPAIR PARTS CHASSIS & HOOD

Key No.	Description	Part No.	Key No.	Description	Part No.
1	Seat	91965	25	Screw	26x239
2	Plate Assembly, Switch	91963Z	26	Screw	26x270
3	Spring, Compression	164x26	27	Support, Dash	92331E700
4	Spring, Seat	91964	29	Frame Assembly	92515E541
5	Glide, Spring	91822	30	Bracket, Left Grille	92347E700
6	Bolt, Shoulder	9x38	31	Rod, Pivot	92332Z
7	Support, Seat	92334E700	32	Bearing	92398
8	Lockwasher	18x16	33	Pin, Hair	31x4
9	Bolt, Hex	1x45	34	Bracket, Right Grille	92346E700
10	Locknut, Flange	15x88	35	Screw	26x249
11	Bracket, Pivot	91729E700	36	Mat	91900
12	Rod, Pivot	91730E700	37	Tray, Battery	91895
13	Cap, Push On	28x23	38	Cap, Console	92443E541
15	Fender, Apron	91724E541	39	Bolt	2x64
16	Hood	92333E541	40	Channel Assembly	91857E541
17	Grille Assembly (includes Lens)	92350	41	Clamp, Battery	92725Z
18	Lens	92344	44	Brace, Grille	92448Z
19	Screw	9x47	57	Pan, Seat (with foam)	92357
20	Fender	91715E541	--	Book, Instruction	F-98857
21	Console Assembly	92727E541	--	Decal, Left Hood	44x3043
22	Screw	26x263	--	Decal, Right Hood	44x3042
23	Dash Panel	92605E700	--	Decal, Console	44x3302
24	Bearing, Steering	92399	--	Decal, Shift Pattern	44x1459



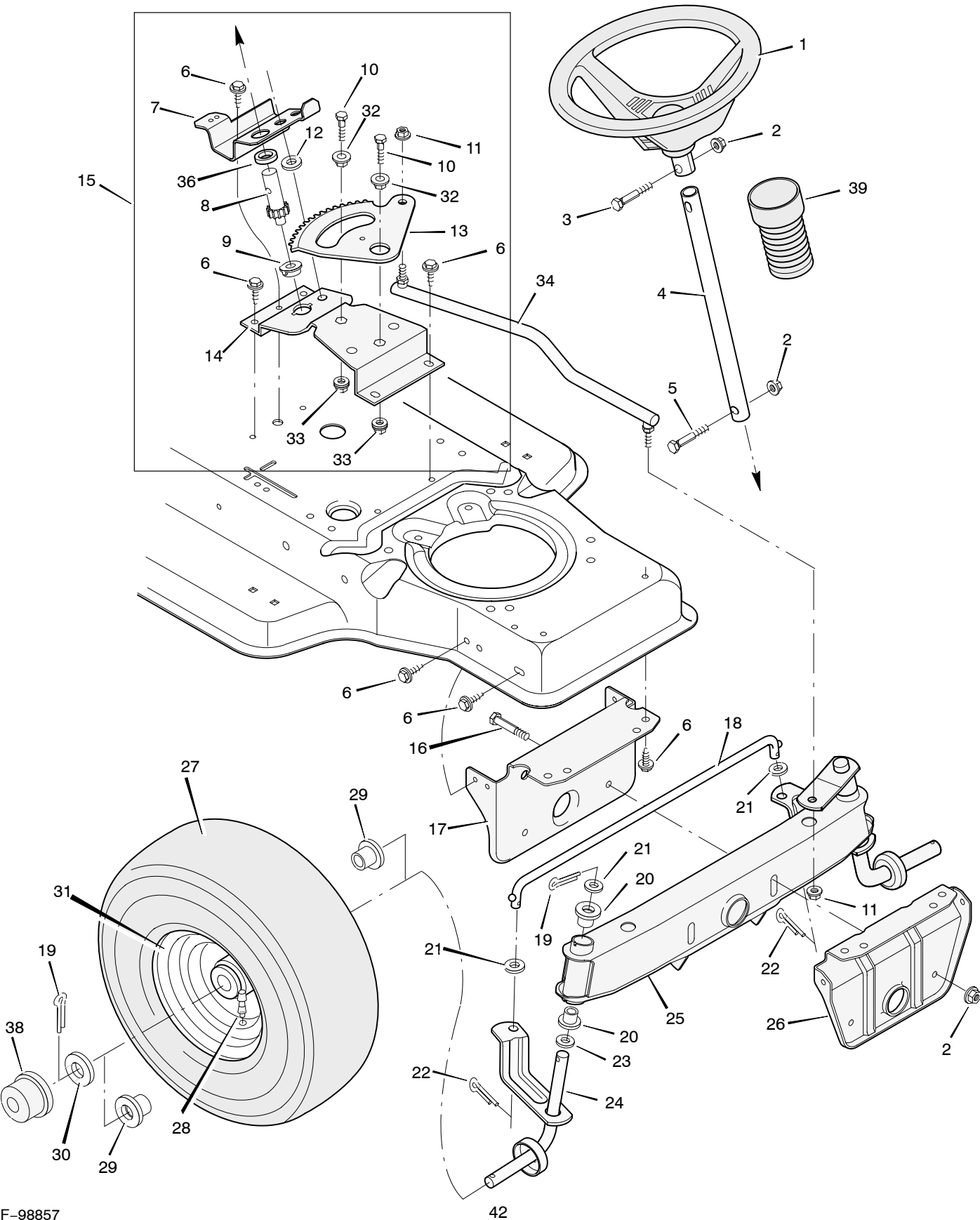
MODEL CODE143P

REPAIR PARTS MOTION DRIVE

Key No.	Description	Part No.	Key No.	Description	Part No.
1	Guide, Belt	91754Z	29	Washer	17x148
2	Locknut, Flange	15x84	30	Plate, Belt Guide	92694E700
3	Nut, Flange	15x79Z	31	Bolt, Hex	1x145
4	Bolt, Hex	1x124	32	Lockwasher	18x32
5	Grip	92724	33	Washer	17x180
6	Screw	26x214	34	Transaxle – Peerless **	----
7	Rod, Control	91727E700	34a	Woodruff Key No. 9	20697
8	Guide, Bracket	91825E700	35	Nut, Flange	15x88
9	Screw	26x249	36	Bolt, Carriage	2x64
10	Clutch and Brake Pedal	21544	37	Support, Transaxle	91804E700
11	Lever Assembly	91862E700	38	Screw	26x216
12	Rod, Clutch	91808Z	39	Key, Square	21553
13	Nut, Adjustable	21920	40	Washer	17x160
14	Pin, Cotter	30x20	41	Spacer, Transaxle	87x100Z
15	Bracket, Support	91713E700	42	Tyre*	91923
16	Latch, Park Brake	91712Z	--	Tube	407049
17	Spring, Brake Extension	165x82	43	Wheel & Tyre Assembly	92288–601
18	Washer	17x47Z	44	Stem, Valve	24373
19	Bracket Assembly, Idler	92737Z	45	Washer	17x195
20	Ring, Retainer	11x7	46	E–Ring	11x3
21	Bolt, Shoulder	9x39	47	Washer	17x146Z
22	Spring, Drive Extension	165x76	48	Washer	17x45
23	Pulley, Motion Drive	91807	49	Hub Cap (Optional)	94618
24	Pulley, Backside Idler	91179	50	Washer	17x102
25	Belt, Motion Drive	37x61	51	Guide, Belt	20619
26	Knob, Shift Lever	91995	52	Frame Assembly	92515E541
27	Lever, Shift	91805Z	53	Ring, Tolerance	92008
28	Yoke, Shift	91806Z			

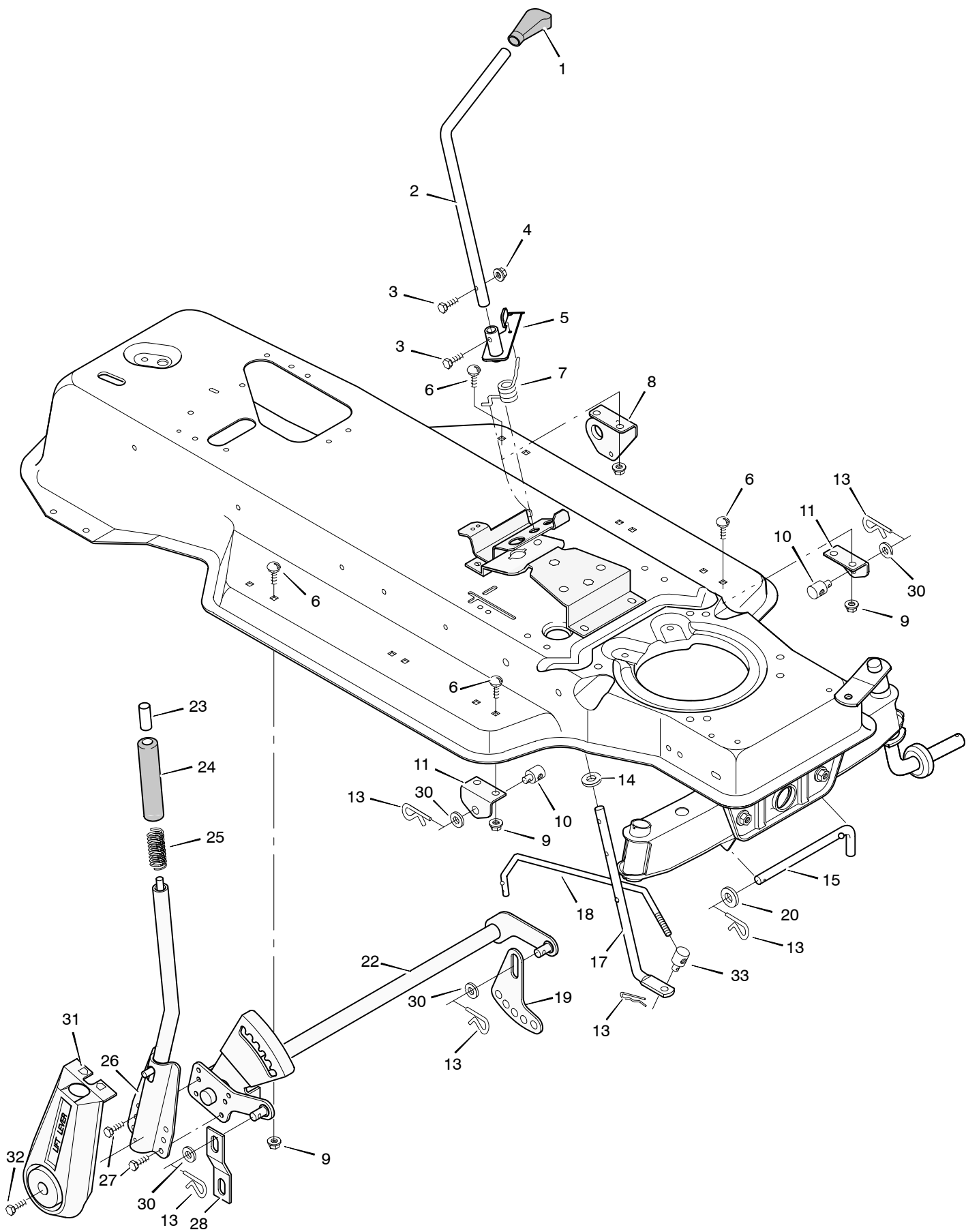
* When you order a tire, make sure to give the brand name of the tire so that the tread pattern on the tire will match.

** For information on Replacement Parts see the Central Parts Distributor in your area.



Key No.	Description	Part No.
1	Wheel, Steering	92078
2	Nut, Hex	15x118
3	Bolt, Hex	1x66
4	Post, Steering	91714Z
5	Bolt, Hex	1x74
6	Screw	26x249
7	Bracket, Sector	91716E700
8	Gear, Pinion	92715
9	Bearing	92716
10	Bolt, Hex	1x84
11	Locknut, Flange	15x87
12	Spacer	92564
13	Gear, Sector	92316
14	Bracket, Sector	91708E700
15	Kit, Steering Gear	402075
16	Bolt, Hex	1x146
17	Support, Rear Axle	92529E700
18	Rod, Tie	90038E700
19	Pin, Cotter	30x49
20	Bearing	92527
21	Washer	17x57
22	Pin, Cotter	30x20
23	Washer	17x113
24	Spindle Assembly, Right	91828E541
25	Spindle Assembly, Axle & Left	92519E541
26	Support, Front Axle	92528E700
27	Tyre*	91912
--	Tube	407047
28	Stem, Valve	24373
29	Bearing, Wheel	91334
30	Washer	17x195
31	Wheel & Tyre Assembly	94578-601
32	Bearing	92097
33	Locknut, Flange	15x113
34	Link, Drag	91749E700
36	Spacer, Pinion Gear	92280
38	Hub Cap (Optional)	94618
39	Bellows	54789

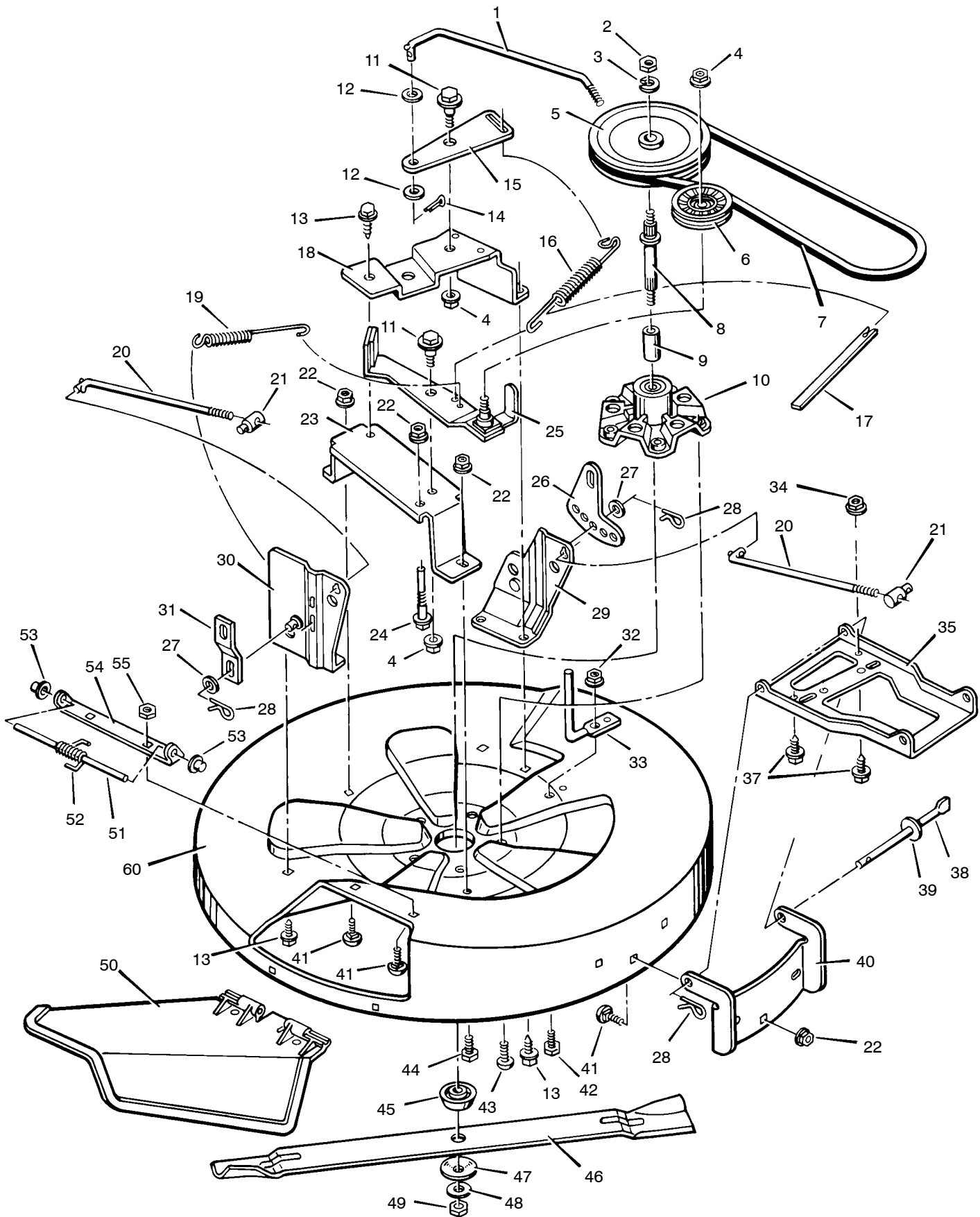
* When you order a tire, make sure to give the brand name of the tire so that the tread pattern on the tire will match.



Key No.	Description	Part No.
1	Grip	92698
2	Control, Blade Rotation	91781Z
3	Bolt, Hex	25x3
4	Locknut, Hex	15x67
5	Lever Assembly, Switch	91917E700
6	Bolt, Carriage	2x53
7	Spring, Torsion	166x32
8	Bracket, Rear Hanger	92066E700
9	Nut, Flange	15x79
10	Nut, Adjusting	92131
10	Nut, Adjusting	92132
11	Bracket, Adjuster Rod	92133E700
12	Washer	17x124
13	Pin, Hair	31x4
14	Washer	17x122
15	Pin, Pull	90827Z
17	Lever, Lower Blade Control	91787E700
18	Rod, Blade Control	92283Z
19	Plate, Adjuster	91741E700
20	Washer	17x103
22	Lifter Assembly	92705E700
23	Button, Push	92572
24	Grip	92783
25	Spring, Compression	164x21
26	Handle Assembly	91823E700
27	Screw	26x49
28	Link, Suspension	92064E700
30	Washer	17x91Z
31	Cover, Lift Lever (Optional)	92157
32	Screw	26x263
33	Nut, Adjusting	21920

MODEL CODE143P

REPAIR PARTS MOWER HOUSING



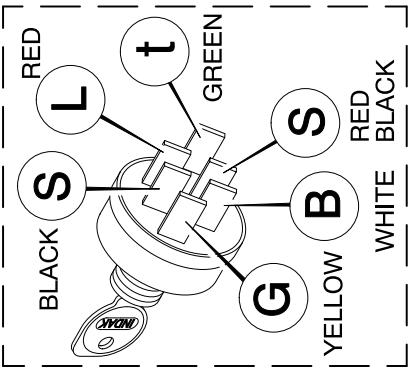
MODEL CODE143P

REPAIR PARTS MOWER HOUSING

Key No.	Description	Part No.	Key No.	Description	Part No.
1	Rod, PTO	92283Z	30	Bracket Assembly, Right Lifter	92205E700
2	Locknut	15x100	31	Link	92064E700
3	Lockwasher	18x33	32	Nut, Flange	15x68
4	Locknut, Flange	15x84	33	Guide, Belt	91797E700
5	Pulley, Splined	91951	34	Nut, Hex	15x82
6	Pulley, Idler	91801	35	Hanger, Front	92202E700
7	Belt, Mower Drive	37x74	37	Screw	25x4
8	Mandrel	91922	38	Rod, Hanger	92273Z
9	Spacer	91903	39	Washer	17x57
10	Housing, Mandrel	55962	40	Bracket, Front Hanger	92203E700
11	Bolt, Shoulder	9x39	41	Bolt, Carriage	2x53
12	Washer	17x46Z	42	Bolt	1x85
13	Screw	26x249	43	Screw	26x216
14	Pin, Cotter	30x20	44	Bolt	1x45
15	Bracket, Pivot	92209E700	45	Adapter, Blade	92466
16	Spring, Extension	165x91	46	Blade	55793E701
17	Indicator, Plastic	92163	47	Washer, Belleville	17x166
18	Support, Pivot Bracket	92208E700	48	Washer	17x165
19	Spring, Extension	165x90	49	Nut, Hex	15x100
20	Rod, Adjusting	91748Z	50	Deflector, Chute	55971
21	Nut, Adjustable	92131	51	Rod, Deflector	21197Z
22	Nut, Flange	15x79	52	Spring, Torsional	166x4
23	Support, Idler Arm	92211E700	53	Cap, Push On	28x23
24	Guide, Belt	20619	54	Hinge, Deflector	56213E700
25	Arm Assembly, Idler	92221	55	Locknut	15x43
26	Plate, Adjusting	91741E700	57	Bolt, Carriage	2x64
27	Washer	17x103Z	58	Wingnut	14x83
28	Pin, Hair	31x4	1-60	Mower Housing, Complete	403344
29	Bracket Assembly, Left Lifter	92207E700			

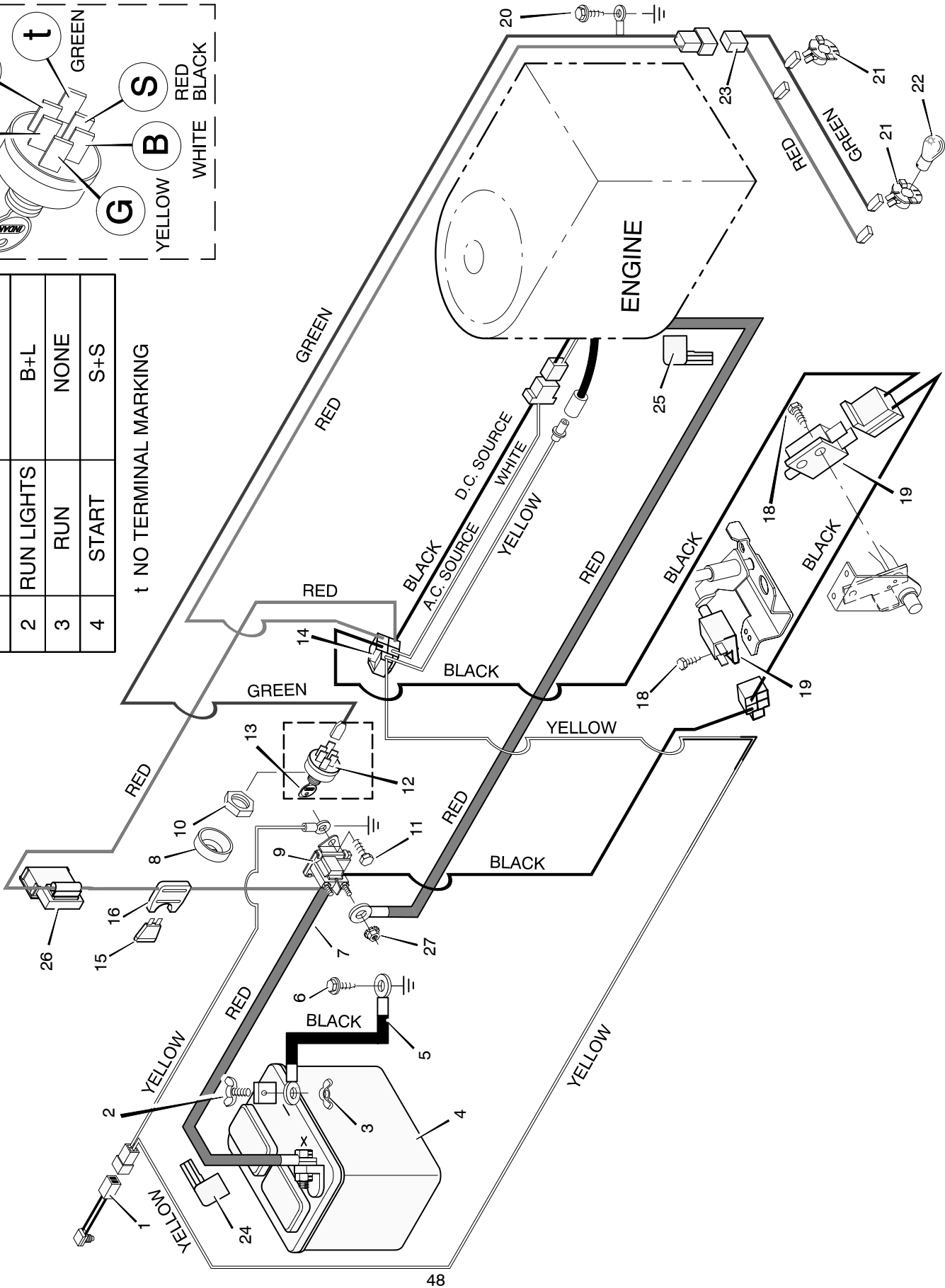
MODEL CODE143P

REPAIR PARTS
ELECTRICAL SYSTEM



POS.	FUNCTION	CIRCUIT (MAKE)
1	OFF	G+t
2	RUN LIGHTS	B+L
3	RUN	NONE
4	START	S+S

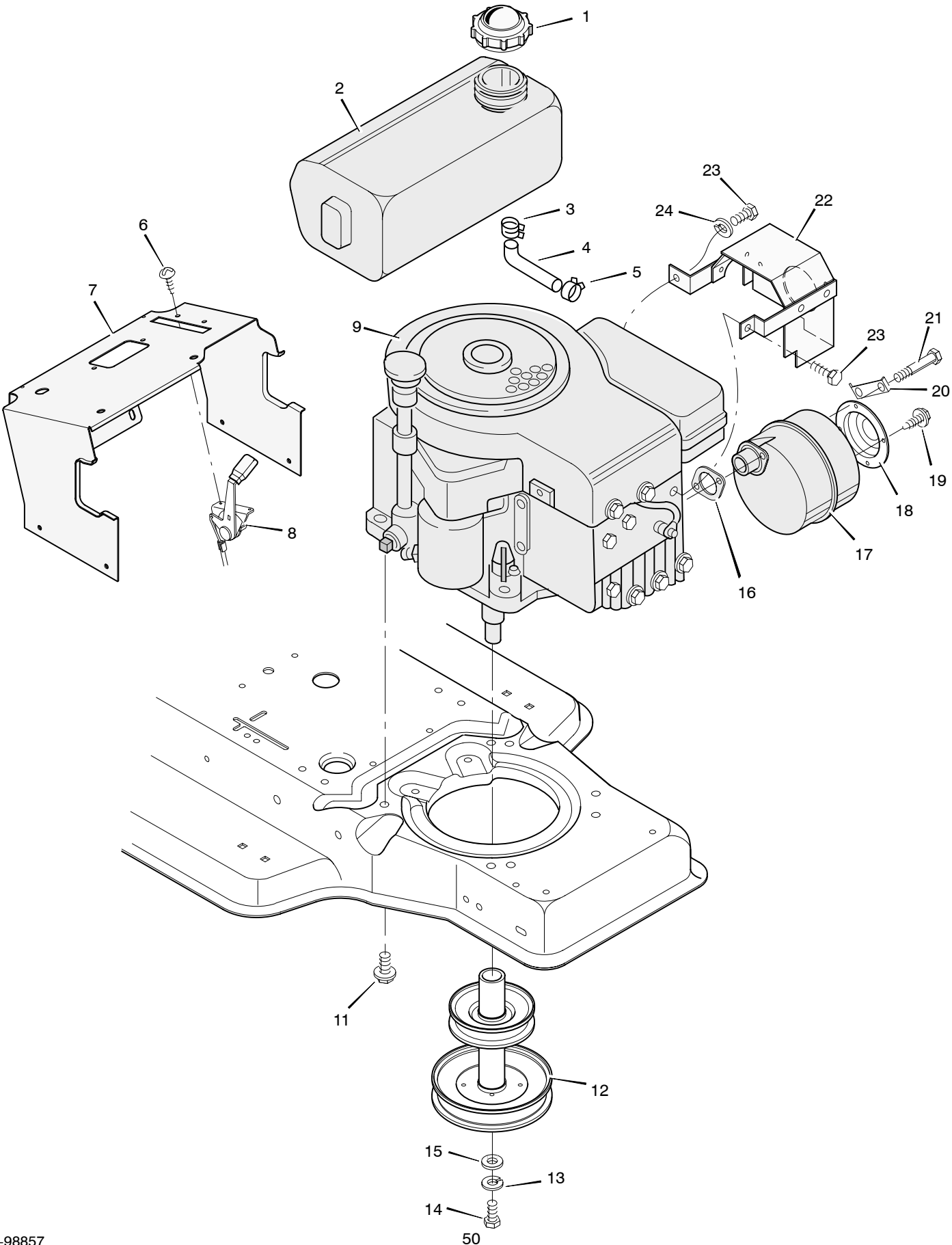
t NO TERMINAL MARKING



Key No.	Description	Part No.
1	Switch, Seat Sensor	91031
2	Bolt	6x99
3	Wingnut	14x79
4	Battery	91414
--	Acid, Battery (Electrolyte)	55702
5	Cable, Battery Ground	24x9
6	Screw	26x249
7	Cable, Red Battery	24x29
8	Cap, Ignition	91488
9	Solenoid	24285
10	Nut	91489
11	Screw	26x214
12	Switch, Ignition	92377
13	Key, Ignition	20729
14	Harness, Chassis Wire	250x50
15	Fuse	54212
16	Holder, Fuse	407078
18	Screw	26x233
19	Switch, Clutch	24273
20	Screw	25x2
21	Socket, Light	92372
22	Bulb, Light	90084
23	Harness, Light Wire	250x40
24	Cover, Terminal	54148
25	Cover, (Optional)	24196
26	Ammeter	93156
27	Locknut	15x116

MODEL CODE143P

REPAIR PARTS ENGINE MOUNT



Key No.	Description	Part No.
1	Fuel Cap	92317
2	Fuel Tank	92342
3	Hose Clamp	95197
4	Fuel Line	23717
5	Hose Clamp	95197
6	Screw	26x201
7	Support, Dash	92331E700
8	Throttle Control	92371
9	Engine*	-----
11	Bolt, Engine Mount	25x7
12	Stack Pulley Assembly	92318 Z
13	Lockwasher	19x35
14	Bolt, Hex	1x140
15	Washer	17x170
16	Gasket	91309
17	Muffler	91271
18	Deflector, Muffler	23740Z
19	Screw	26x208
20	Lock, Screw	92378
21	Bolt	1x134
22	Shield, Heat	92381 SE
23	Bolt	25x2
24	Washer	18x32

* Parts are available from an Authorized Service Center. See "Engines, Gasoline" or "Gasoline Engines" in the yellow pages of the telephone directory.

NOTES
