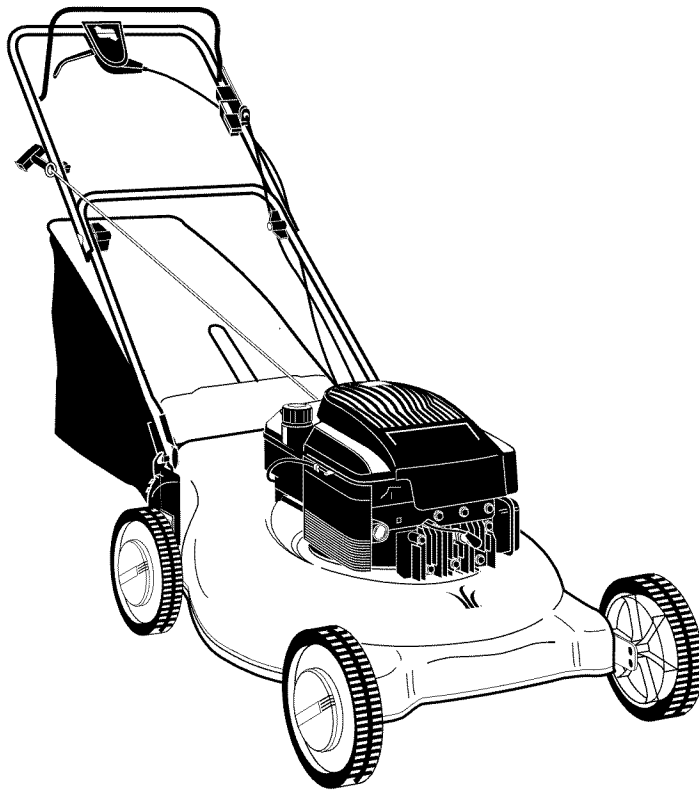


Operator's Manual



21" Self-Propelled Lawn Mower **Model 378Q**

IMPORTANT: Read safety rules and instructions carefully

Warning: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest authorized engine service dealer or contact the service department, P.O. Box 361131 Cleveland, Ohio 44136-0019.

MTD PRODUCTS LLC., P.O. Box 361131, Cleveland, Ohio 44136-0019

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TABLE OF CONTENTS

Content	Page	Content	Page
Important Safe Operation Practices	3	Making Adjustments	11
Slope Gauge	6	Maintaining Your Lawn Mower	12
Assembling Your Lawn Mower	7	Troubleshooting	14
Know Your Lawn Mower	8	Illustrated Parts List	15
Operating Your Lawn Mower	9	Warranty	20

FINDING MODEL NUMBER

This Operator's Manual is an important part of your new lawn mower. It will help you assemble, prepare and maintain the unit for best performance. Please read and understand what it says.



Before you start assembling your new equipment, please locate the model plate on the equipment and copy the information from it in the space provided below. A sample model plate is also given below. You can locate the model plate by standing at the operating position and looking down at the rear of the deck. This information will be necessary to use the manufacturer's web site and/or help from the Customer Support Department or an authorized service dealer.



Copy the model number here: _____

Copy the serial number here: _____

CUSTOMER SUPPORT

Please do NOT return the unit to the retailer from where it was purchased, without first contacting Customer Support.

If you have difficulty assembling this product or have any questions regarding the controls, operation or maintenance of this unit, you can seek help from the experts. Choose from the options below:

	<p>Visit mtdproducts.com for many useful suggestions. Click on Customer Support button and you will get the four options reproduced here. Click on the appropriate button and help is immediately available.</p> <div style="text-align: center; border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p>Find Answers Click here to search our knowledge base. Search by product, keyword, or phrase.</p> <p>My Stuff Login to check the status of your questions, modify your inquiries, or update your personal profile.</p> <p>Service Locator Need local assistance? Click here to find authorized service centers in your area.</p> <p>Manuals Online Need a manual and/or parts list? Download literature from recent model years.</p> </div> <p style="text-align: center;"><i>The answer you are looking for could be just a mouse click away!</i></p>	<p><i>The answer you are looking for could be just a mouse click away!</i></p>
	<p>To reach the Customer Support Department, please call 1-800-800-7310.</p>	
	<p>The engine manufacturer is responsible for all engine-related issues with regards to performance, power-rating, specifications, warranty and service. Please refer to the engine manufacturer's Owner's/Operator's Manual, packed separately with your unit, for more information.</p>	

SECTION 1: IMPORTANT SAFE OPERATION PRACTICES



WARNING: This symbol points out important safety instructions which, if not followed, could endanger the personal safety and/or property of yourself and others. Read and follow all instructions in this manual before attempting to operate this machine. Failure to comply with these instructions may result in personal injury. When you see this symbol—HEED ITS WARNING.

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

WARNING: This machine was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. This 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.

General Operation

1. Read this operator's manual carefully in its entirety before attempting to assemble this machine. Read, understand, and follow all instructions on the machine and in the manual(s) before operation. Be completely familiar with the controls and the proper use of this machine before operating it. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. This machine is a precision piece of power equipment, not a plaything. Therefore, exercise extreme caution at all times. Your unit has been designed to perform one job: to mow grass. Do not use it for any other purpose.
3. Never allow children under 14 years old to operate this machine. Children 14 years old and over should read and understand the operation instructions and safety rules in this manual and should be trained and supervised by a parent. Only responsible individuals who are familiar with these rules of safe operation should be allowed to use this machine.
4. Thoroughly inspect the area where the equipment is to be used. Remove all stones, sticks, wire, bones, toys and other foreign objects which could be tripped over or picked up and thrown by the blade. Thrown objects can cause serious personal injury. Plan your mowing pattern to avoid discharge of material toward roads, sidewalks, bystanders and the like. Also, avoid discharging material against a wall or obstruction which may cause discharged material to ricochet back toward the operator.
5. To help avoid blade contact or a thrown object injury, stay in the operator zone behind the handles and keep children, bystanders, helpers and pets at least 75 feet from the mower while it is in operation. Stop machine if anyone enters the area.
6. Always wear safety glasses or safety goggles during operation and while performing an adjustment or repair to protect your eyes. Thrown objects which ricochet can cause serious injury to the eyes.
7. Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts. Shirts and pants that cover the arms and legs and steel-toed shoes are recommended. Never operate this machine in bare feet, sandals, slippery or light weight (e.g. canvas) shoes.
8. Do not put hands or feet near rotating parts or under the cutting deck. Contact with the blade can amputate hands and feet.
9. A missing or damaged discharge cover can cause blade contact or thrown object injuries.
10. Many injuries occur as a result of the mower being pulled over the foot during a fall caused by slipping or tripping. Do not hold on to the mower if you are falling; release the handle immediately.
11. Never pull the mower back toward you while you are walking. If you must back the mower away from a wall or obstruction first look down and behind to avoid tripping and then follow these steps:
 - a. Step back from the mower to fully extend your arms.
 - b. Be sure you are well balanced with sure footing.
 - c. Pull the mower back slowly, no more than half way toward you.
 - d. Repeat these steps as needed.
5. Do not operate the mower while under the influence of alcohol or drugs.
6. Do not engage the self-propelled mechanism on units so equipped while starting engine.
7. The blade control handle is a safety device. Never attempt to bypass its operation. Doing so makes the safety device inoperative and may result in personal injury through contact with the rotating blade. The blade control handle must operate easily in both directions and automatically return to the disengaged position when released.
8. Never operate the mower in wet grass. Always be sure of your footing. A slip and fall can cause serious personal injury. If you feel you are losing your footing, release the blade control handle immediately and the blade will stop rotating within three seconds.
9. Mow only in daylight or in good artificial light. Walk, never run.
10. Stop the blade when crossing gravel drives, walks or roads.
11. If the equipment should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
12. Shut the engine off and wait until the blade comes to a complete stop before removing the grass catcher or

unclogging the chute. The cutting blade continues to rotate for a few seconds after the engine is shut off. Never place any part of the body in the blade area until you are sure the blade has stopped rotating.

13. Never operate mower without proper trail shield, discharge cover, grass catcher, blade control handle or other safety protective devices in place and working. Never operate mower with damaged safety devices. Failure to do so, can result in personal injury.
14. Muffler and engine become hot and can cause a burn. Do not touch.
15. Only use parts and accessories made for this machine by the manufacturer. Failure to do so, can result in personal injury.
16. If situations occur which are not covered in this manual, use care and good judgment. Contact your dealer for assistance. Telephone **1-800-800-7310** for the name of your nearest dealer.

Slope Operation

Slopes are a major factor related to slip and fall accidents which can result in severe injury. Operation on slopes requires extra caution. If you feel uneasy on a slope, do not mow it. For your safety, use the slope gauge included as part of this manual to measure slopes before operating this unit on a sloped or hilly area. If the slope is greater than 15 degrees, do not mow it.

Do:

1. Mow across face of slopes; never up and down. Exercise extreme caution when changing direction on slopes.
2. Watch for holes, ruts, rocks, hidden objects, or bumps which can cause you to slip or trip. Tall grass can hide obstacles.
3. Always be sure of your footing. A slip and fall can cause serious personal injury. If you feel you are losing your balance, release the blade control handle immediately, and the blade will stop rotating within 3 seconds.

Do Not:

1. Do not mow near drop-offs, ditches or embankments, you could lose your footing or balance.
2. Do not mow slopes greater than 15 degrees as shown on the slope gauge.
3. Do not mow on wet grass.

Children

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

1. Keep children out of the mowing area and under the watchful care of a responsible adult other than the operator.
2. Be alert and turn mower off if a child enters the area.
3. Before and while moving backwards, look behind and down for small children.
4. Use extreme care when approaching blind corners, or other objects that may obscure your vision of a child who may run into the mower.

5. Keep children away from hot or running engines. They can suffer burns from a hot muffler.
6. Never allow children under 14 years old to operate a power mower. Children 14 years old and over should read and understand the operation instructions and safety rules in this manual and should be trained and supervised by a parent.

Service

Safe Handling Of Gasoline:

1. To avoid personal injury or property damage use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Serious personal injury can occur when gasoline is spilled on yourself or your clothes which can ignite.
2. Wash your skin and change clothes immediately.
3. Use only an approved gasoline container.
4. Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before filling.
5. When practical, remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.
6. Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
7. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
8. Never fuel machine indoors because flammable vapors will accumulate in the area.
9. Never remove gas cap or add fuel while the engine is hot or running. Allow engine to cool at least two minutes before refueling.
10. Never over fill fuel tank. Fill tank to no more than ½ inch below bottom of filler neck to provide space for fuel expansion.
11. Replace gasoline cap and tighten securely.
12. If gasoline is spilled, wipe it off the engine and equipment. Move unit to another area. Wait 5 minutes before starting the engine.
13. Never store the machine or fuel container inside where there is an open flame, spark or pilot light as on a water heater, space heater, furnace, clothes dryer or other gas appliances.
14. To reduce fire hazard, keep mower free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage and remove any fuel soaked debris.
15. Allow a mower to cool at least 5 minutes before storing.

General Service:

1. Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
2. Before cleaning, repairing, or inspecting, make certain the blade and all moving parts have stopped. Disconnect the spark plug wire and ground against the engine to prevent unintended starting.

3. Check the blade and engine mounting bolts at frequent intervals for proper tightness. Also, visually inspect blade for damage (e.g., bent, cracked, worn) Replace blade with the original equipment manufacturer's (O.E.M.) blade only, listed in this manual. "Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!"
4. Mower blades are sharp and can cut. Wrap the blade or wear gloves, and use extra caution when servicing them.
5. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
6. Never tamper with safety devices. Check their proper operation regularly.
7. After striking a foreign object, stop the engine, disconnect the spark plug wire and ground against the engine. Thoroughly inspect the mower for any damage. Repair the damage before starting and operating the mower.
8. Never attempt to make a wheel or cutting height adjustment while the engine is running.
9. Grass catcher components, discharge cover, and trail shield are subject to wear and damage which could expose moving parts or allow objects to be thrown. For safety protection, frequently check components and

replace immediately with original equipment manufacturer's (O.E.M.) parts only, listed in this manual. "Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!"

10. Do not change the engine governor setting or overspeed the engine. The governor controls the maximum safe operating speed of the engine.
11. Maintain or replace safety and instruction labels, as necessary.
12. Observe proper disposal laws and regulations. Improper disposal of fluids and materials can harm the environment.

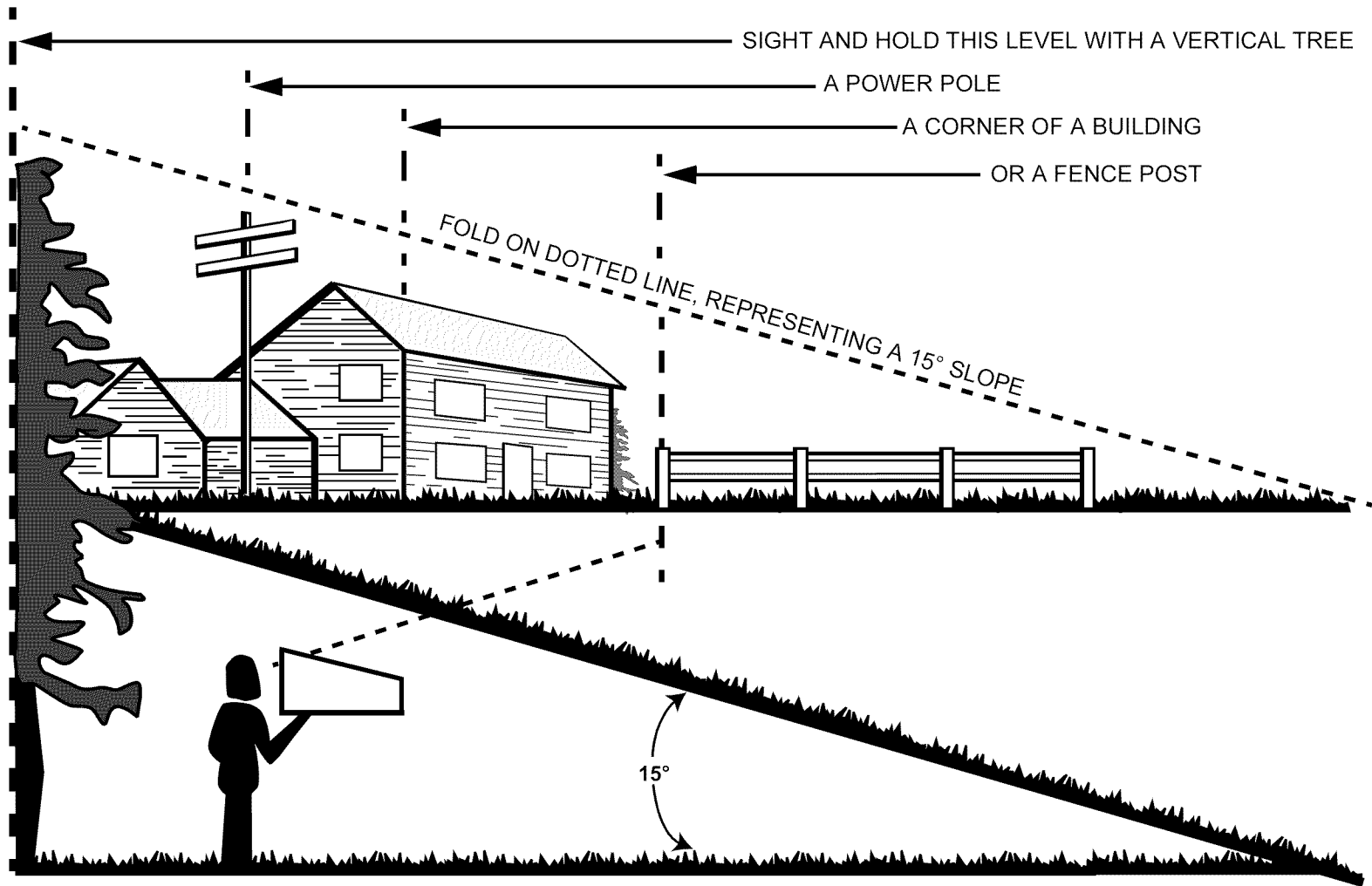
Your Responsibility

Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine. Some of the safety labels, placed on the mower, are also displayed here for your study.



SECTION 2: SLOPE GAUGE

Use this page as a guide to determine slopes where you may not operate safely. **Do not operate** your lawn mower on such slopes.



WARNING

Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). A riding mower could overturn and cause serious injury. If operating a walk-behind mower on such a slope, it is extremely difficult to maintain your footing and you could slip, resulting in serious injury.

Operate RIDING mowers up and down slopes, never across the face of slopes.

Operate WALK-BEHIND mowers across the face of slopes, never up and down slopes.

SECTION 3: ASSEMBLING YOUR LAWN MOWER

Removing Unit From Carton

- Remove staples, break glue on top flaps, or cut tape at carton end and peel along top flap to open.
- Remove loose parts if included with unit (i.e., operator's manual, grass bag etc.)
- Cut along corners, lay carton down flat, and remove packing material and bottle of oil, if any.
- Roll or slide unit out of carton and check carton thoroughly for loose parts.

Before Assembly

- Before setting up your lawn mower, disconnect the spark plug wire from the spark plug and ground against the engine. See Figure 1.

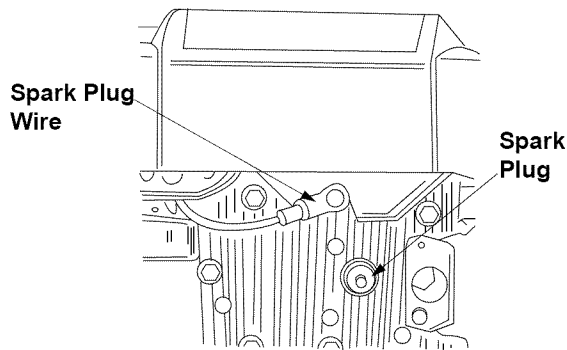


Figure 1

NOTE: Reference to right or left side of the mower is observed from the operating position. Any exceptions will be stated accordingly.

Setting Up Lawn Mower

- Lift the upper handle and align it with the lower handle. See Figure 2.

Lift Upper Handle up

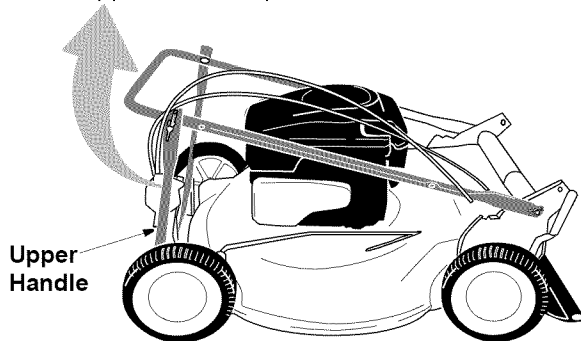


Figure 2

- Tighten the wing nuts, shown in Figure 3, and raise the handle assembly until it clicks into place. Make sure not to kink the control cables.

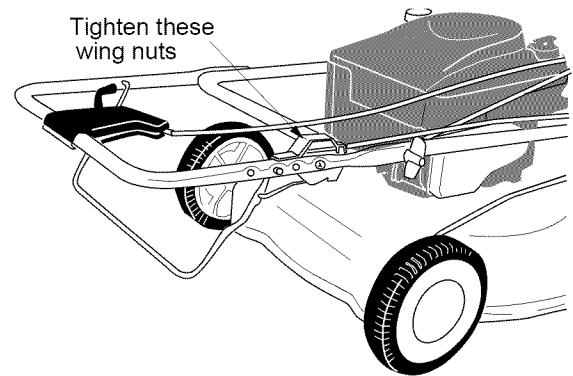


Figure 3

- Pinch the lower handle against the handle mounting bracket using pliers. See Figure 4.
- Move the hairpin clip from the outer to the inner hole of the weld pin on the handle mounting bracket. See Figure 4.

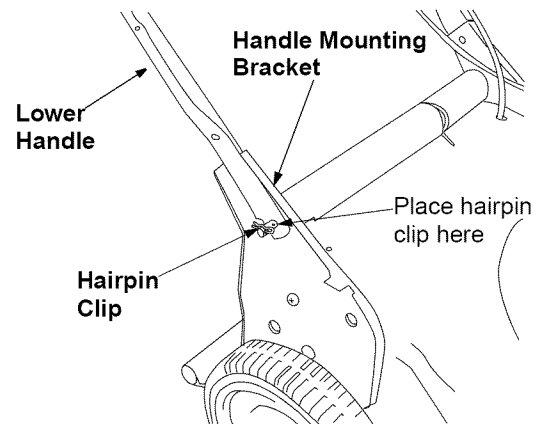


Figure 4

- Fasten the cables to the lower handle with the two cable ties found on the lower handle. Be sure to insert the post on the cable ties into the holes provided on the lower handle. These holes may be found on either the inside or outside of the handles. Pull the cable ties tight and trim off the excess. See Figure 5.

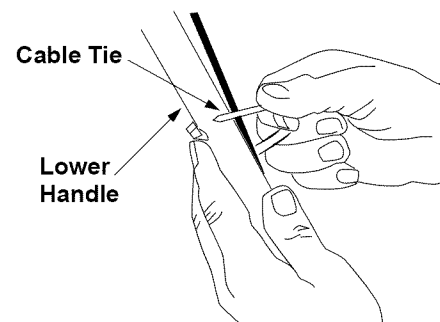


Figure 5

- Loosen the wing nut holding the rope guide to the upper handle. See Figure 6.
- Squeeze the blade control handle against the upper handle and pull starter rope out slowly.
- Thread the recoil starter rope into the rope guide and tighten the wing nut.

IMPORTANT: This unit is shipped without gasoline or oil in the engine. Service engine with gasoline and oil as instructed in the engine manufacturer's owner's/operator's manual before you start the mower for the first time, and also for successive uses. The engine manual is packed separately in the carton.

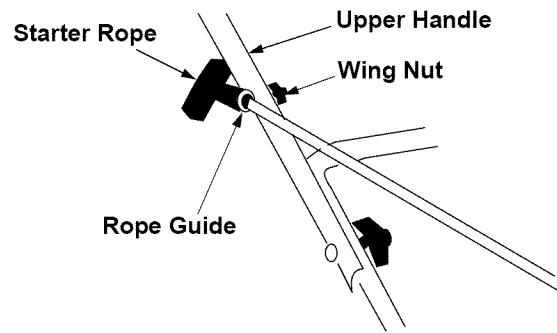


Figure 6

SECTION 4: KNOW YOUR LAWN MOWER

Read this operator's manual and safety rules before operating your lawn mower. Compare the illustrations in Figure 7 with your lawn mower to familiarize yourself with the location of various controls and adjustments. Save this manual for future reference.

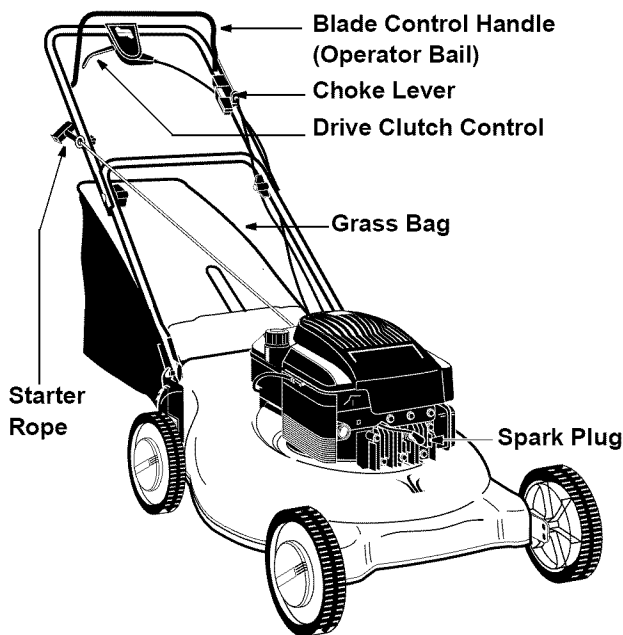


Figure 7

Drive Clutch Control

The drive clutch control is located on the upper handle. Squeeze the drive control to engage the drive system. Release the clutch control to disengage the drive system. Release the clutch control to slow down when approaching an obstacle, making a turn, or stopping.

Blade Control Handle (Operator Bail)

The blade control handle is located on the upper handle of the mower and must be depressed in order to operate the unit. Release blade control handle to stop engine and blade.



WARNING: This blade control mechanism is a safety device. Never attempt to bypass its operations.

Grass Bag

The grass bag, located at the rear of the mower, is used to bag the grass clippings for disposal at another site. Once the bag is full, it has to be removed from the mower and emptied before any further mowing.

Cutting Height Adjustment Lever

The cutting height adjustment lever is located above the left rear wheel. To adjust the cutting height, refer to the Adjustment Section on page 11.

Mulching Plug

The mulching plug is used only for mulching purposes. Instead of collecting grass clippings in a grass catcher, this mower has the option of recirculating the clippings back to the lawn. Refer to Figure 9.

Engine Controls

See the engine manual for the location and function of the controls on the engine.



WARNING: Keep hands and feet away from chute area on the cutting deck. The operation of any lawn mower can result in foreign objects being thrown into the eyes, which can result in severe eye damage. Always wear safety glasses or eye shields while working on the lawn mower.

SECTION 5: OPERATING YOUR LAWN MOWER

NOTE: For shipping purposes your mower is set with the wheels in a low cutting height position. For best results raise the cutting position until it is determined which height is best for your lawn. See the adjustment section for details.

Gas and Oil Fill-Up

Service the engine with gasoline and oil as instructed in the engine manual. Read instructions carefully.



WARNING: Never fill fuel tank indoors with engine running or until the engine has been allowed to cool for at least two minutes after running.

Before Starting Your Mower

- Attach spark plug wire to spark plug. Make certain the metal cap on the end of the spark plug wire is fastened securely over the metal tip on the spark plug.
- Check for proper drive clutch operation using the neutral adjustment test described below:

Neutral Adjustment Test

To perform the neutral adjustment test answer the following questions:

- With the drive clutch control released, push mower forward and pull it backward. Does it move freely?
- Squeeze the drive clutch control and pull the mower backward. Do the rear wheels lock?
- Is the drive clutch control cable free of kinks or sharp bends?
- If you answered “yes” to all three questions, your mower passed the test and you can start it.
- If you answered “no” to any of the three questions, you will have to adjust the drive clutch control as instructed in the adjustment section.

Starting Engine

- Make sure the fuel valve lever found on the left side of the engine is in the ON position. See Figure 8.

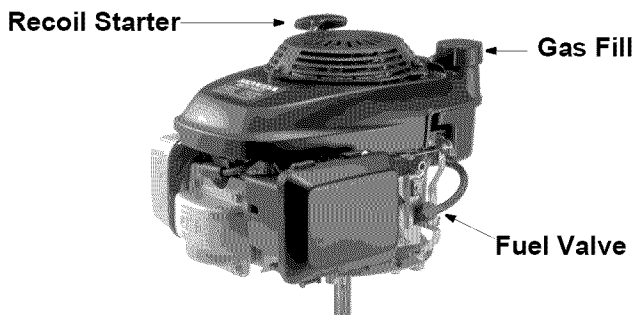


Figure 8



WARNING: Be sure no one other than the operator is standing near the lawn mower while starting engine or operating mower.

WARNING: Never run engine indoors or in enclosed, poorly ventilated areas. Engine exhaust contains carbon monoxide, an odorless and deadly gas.

WARNING: Keep hands, feet, hair and loose clothing away from any moving parts on engine and lawn mower.

WARNING: When starting the unit for the first time, face the mower against a wall or a fence. Start the unit and if it shows any signs of motion while the drive clutch control is still disengaged, shut engine off immediately.

- Move the choke lever to the ON position. Refer to the engine manual for further details. Your lawn mower is equipped with a constant speed throttle, which is set at full throttle for best performance.
- Stand behind the mower and squeeze the blade control handle against the upper handle.
- Grasp recoil starter handle and pull rope out slowly until engine reaches the start of compression cycle (rope will pull slightly harder at this point). Let the rope rewind slowly. Pull the rope with a rapid, continuous, full arm stroke. Holding the starter handle firmly, let the rope return to starter slowly.

Stopping Engine

- Release the blade control handle to stop engine and blade. Wait till the blade stops completely.
- Disconnect spark plug wire and move away from spark plug to prevent accidental starting

Using Your Lawn Mower

- Be sure that the lawn is clear of stones, sticks, wire, or other objects which could damage the lawn mower or the engine.



WARNING: Such objects could be accidentally thrown by the mower in any direction and cause serious personal injury to the operator and others.

- For best results, do not cut wet grass because it tends to stick to the underside of the mower, preventing proper discharge of grass clippings, and could cause you to slip and fall. New grass, thick grass, or wet grass may require a narrower cut.

- For a healthier lawn, never cut off more than one-third of the total length of the grass. Your lawn should be cut in the fall as long as there is growth. This mower is designed to be operated at full throttle to give you the best cut and do the most effective job of mowing or mulching.



WARNING: If the mower strikes a foreign object, stop the engine. Remove wire from the spark plug, thoroughly inspect the mower for any damage, and repair the damage before restarting and operating the mower.

Mulching

For effective mulching, do not cut wet grass because it tends to stick to the underside of the deck, preventing proper mulching of grass clippings. New or thick grass may require a narrower cut. The ground speed should be adjusted to the condition of the lawn. If mowing has been delayed and the grass has been allowed to grow in excess of 4", mulching is not recommended. Mow using the grass bag to reduce the grass height to 3 1/4" maximum before mulching.

Attaching Mulching Plug

- For the correct orientation of the mulch plug when installing it, see Figure 9 inset.
- Lift the rear discharge door and remove the grass bag, if installed. Insert the mulching plug as shown below in Figure 9.

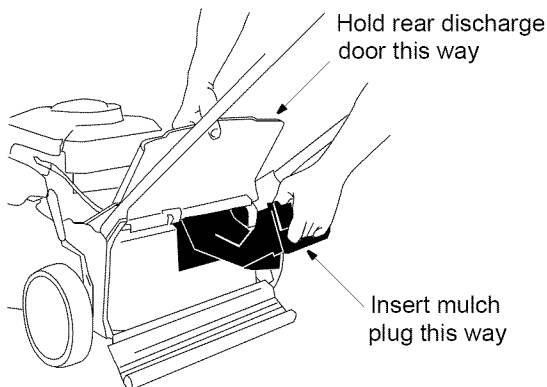
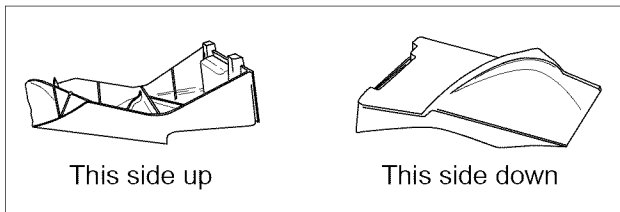


Figure 9

Attaching Grass Bag

- Lift the rear discharge door and remove the mulching plug, if installed.
- Lift the rear discharge door and hang the grass bag on the mower. See Figure 10.

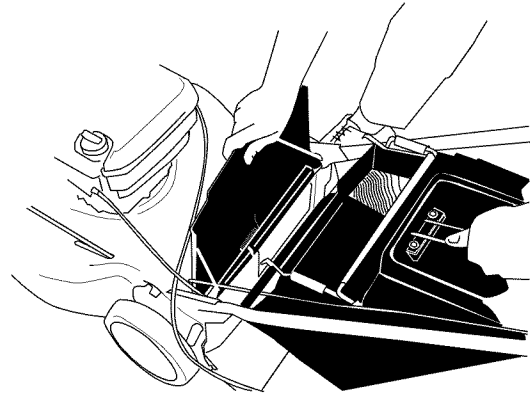


Figure 10

Emptying Grass Bag

- Release the blade control handle to shut off engine.
- Lift the rear discharge door and pull the bag away from the mower.
- Lift the grass bag up and away from the mower. See Figure 11. Dump the grass clippings at the appropriate disposal site.

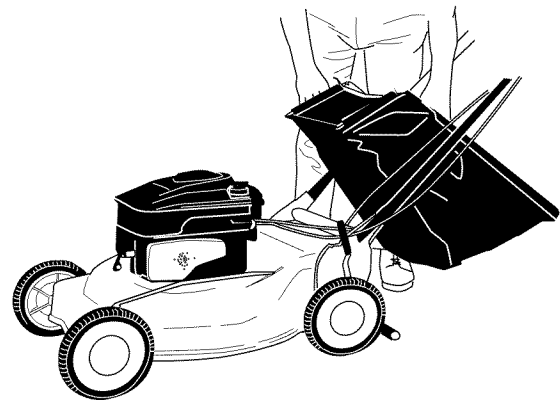


Figure 11

SECTION 6: MAKING ADJUSTMENTS



WARNING: Do not at any time make any adjustments without first stopping engine and disconnecting spark plug wire.

Cutting Height

- The cutting height adjustment lever is located above the left rear wheel. Pull the lever out and away from the mower and then move it forward or back for a new cutting height. See Figure 12.

NOTE: For rough or uneven lawns, move the height adjustment lever to a higher position. This will help prevent scalping of grass.

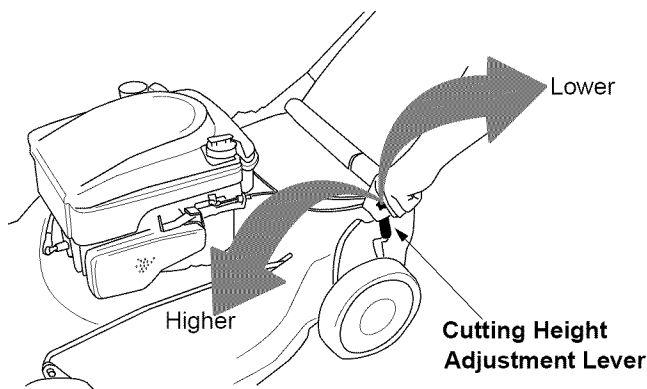


Figure 12

Handle Height

Your mower is shipped with the handle in the higher height position. To lower the handle height, follow the steps below:

- Remove the starter rope from the rope guide.
- Remove the upper handle by removing the wing nuts and carriage bolts. Lay the upper handle out of the way, being careful not to bend or kink the cables.
- Remove the hairpin clips from the weld pins on the handle brackets and remove the wing nuts and carriage bolts from the upper hole on the handle mounting bracket. Press out on the legs of the lower handle and remove lower handle from the mower.
- Turn lower handle around so the notch on the bottom of the lower handle is facing forward. See Figure 13.
- Reassemble, placing the bottom holes in the handle over the weld pins in the handle mounting bracket.
- Place the hairpin clips in the inner holes in the weld pins and insert the carriage bolts the upper hole on the handle mounting bracket and secure with plastic wing nuts.

- Reassemble the upper handle to the lower handle.
- Attach the starter rope as instructed in the Assembly Section.

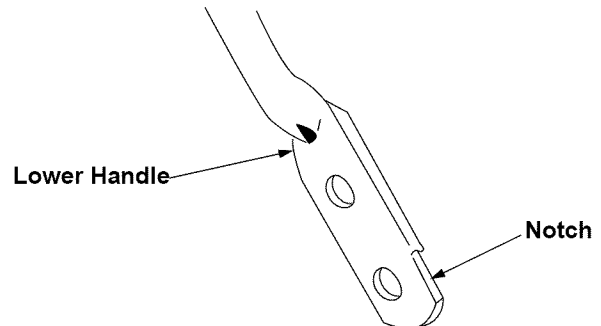


Figure 13

Drive Clutch Control

The adjustment wheel is located in the drive clutch control handle housing and is used to tighten or loosen the drive belt. You will have to adjust the drive clutch control if any of the following happens:

- The mower does not propel itself with the drive clutch engaged;
- The mower's drive wheels hesitate with the drive clutch engaged.

To resolve the above problems, rotate the adjustment wheel clockwise to tighten the cable and counter-clockwise to loosen the cable. See Figure 14.

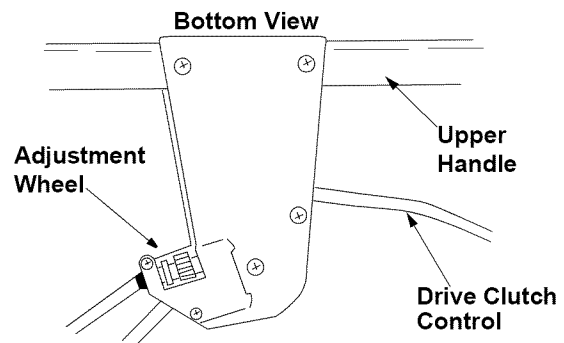


Figure 14

NOTE: For some people the drive clutch control may not be in a comfortable position. You can adjust the handle by tightening the adjustment wheel.

Engine Adjustments

See the engine manual for adjustments to the engine.

SECTION 7: MAINTAINING YOUR LAWN MOWER

General Recommendations

- Always observe safety rules when performing any maintenance.
- The warranty on this lawn mower does not cover items that have been subjected to operator abuse or negligence. To receive full value from the warranty, the operator must maintain the lawn mower as instructed in this manual.
- Some adjustments will have to be made periodically to maintain your unit properly. Refer to the earlier section for details.
- Periodically check all fasteners and make sure these are tight.



WARNING: Always stop engine and disconnect spark plug wire before cleaning, lubricating, or doing any kind of service work on the lawn mower.

Lubrication

Blade Control Handle: Lubricate the pivot points on the blade control handle and the drive clutch control at least once a season with light oil. These handles must operate freely in both directions.

Wheels: Lubricate the wheels at least once a season with light oil (or motor oil). If the wheels are removed for any reason, lubricate the surface of the axle bolt and inner surface of the wheel with light oil.

Rear Discharge Door: Lubricate the torsion spring and pivot point periodically with light oil to prevent any rust or binding.

Engine: Follow the engine manual for instructions.

Engine

Refer to the engine manual for all engine maintenance instructions.

- Maintain engine oil as instructed in the engine manual. Fill up with correct grade and amount of oil.
- Service air cleaner every 25 hours under normal conditions. Poor engine performance and flooding usually indicate that the air cleaner should be serviced. For details, refer to the engine manual.
- The spark plug should be cleaned and the gap reset once a season. Spark plug replacement is recommended at the start of each mowing season.
- Clean the engine regularly with a cloth or brush. Keep the cooling system (blower housing area) clean to permit proper air circulation which is essential to engine performance and life. Be certain to remove all grass, dirt, and combustible debris from muffler area.

Cleaning the Deck

IMPORTANT: We do not recommend the use of a pressure washer or garden hose to clean your unit.

- Clean the underside of the mower deck after each use to prevent a build-up of grass clippings, leaves, dirt etc. If this debris is allowed to accumulate, it will invite rust and corrosion, and may affect the mower's performance. Tilt the equipment and scrape it clean with a suitable tool.

NOTE: When tipping the unit, empty the fuel tank and keep the air cleaner side of engine up. Never tip the mower more than 90 degrees and do not leave the mower tipped for any length of time. Oil can drain into the upper part of the engine causing a starting problem.

Servicing the Blade

- Periodically inspect the blade adapter for cracks, especially if you strike a foreign object. Replace when necessary.



WARNING: When handling the blade, protect your hands with a pair of heavy gloves or use a heavy rag.

- Remove the bolt and the blade bell support which hold the blade and the blade adapter to the engine crankshaft. See Figure 15.

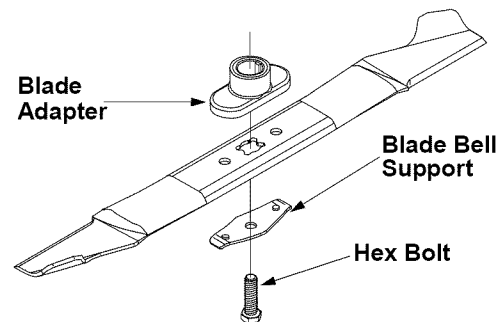


Figure 15

- Remove blade and adapter from the crankshaft.
- When sharpening the blade, follow the original angle of grind as a guide. It is extremely important that each cutting edge receives an equal amount of grinding to prevent an unbalanced blade.

NOTE: An unbalanced blade will cause excessive vibration when rotating at high speeds. It may cause damage to the mower, and could break, causing personal injury.

- Test the blade by balancing it on a round shaft screwdriver. Remove metal from the heavy side until it balances evenly. It is recommended that the blade always be removed from the adapter when testing for balance.
- Before reinstalling the blade and the blade adapter to the unit, lubricate the engine crankshaft and the inner surface of the blade adapter with light oil.
- Be sure to install the blade with the side marked “bottom” (or with part number) facing the ground when the mower is in the operating position.
- Slide the blade adapter onto the engine crankshaft.
- Place the blade on the adapter. Align the blade so that it is seated on the blade adapter flanges.
- Place blade bell support on blade. Make sure the notches on the blade bell support are aligned with small holes in the blade.
- Replace hex bolt and tighten to torque: 450 in. lbs. min., 600 in. lbs. max.

NOTE: To ensure safe operation of your mower, the blade bolt must be checked periodically for correct torque.

Drive Belt Replacement

If you need to replace a worn or broken drive belt, follow steps below:

- Disconnect the spark plug wire and ground it against the engine.
- Drain the fuel tank or place a piece of plastic beneath the cap to prevent gasoline leakage.
- Remove the rear hub caps, rear wheels and eight screws shown in Figure 16.

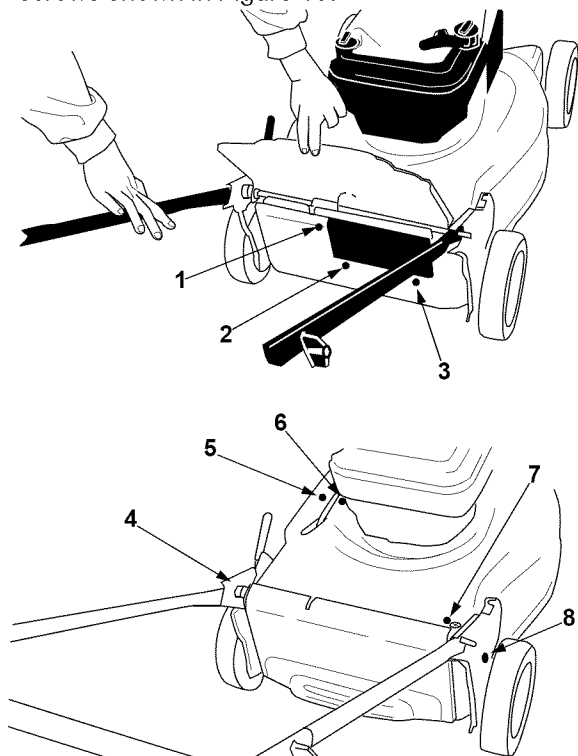


Figure 16

- Tip the mower back on its handle and block securely.
- Remove the blade, blade adapter and related hardware. See Figure 17.
- Remove the three hex head screws holding the small baffle and remove the small baffle. Remove the large baffle as well. See Figure 17.

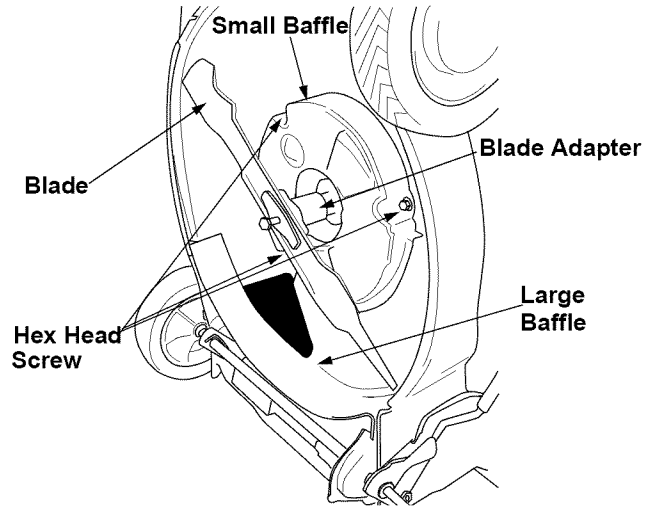


Figure 17

- Loosen the hex lock nut holding the idler bearing. Push back and rotate the belt keeper as shown in Figure 18.

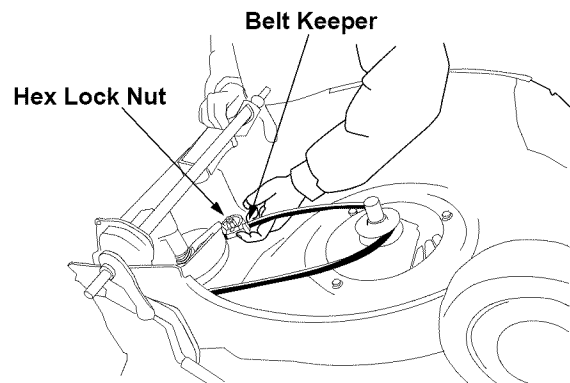


Figure 18

NOTE: Mower is shown tipped on engine in this figure for clarity. Remember, only tip mower back on its handle with the spark plug facing up. Otherwise, oil will spill if turned upside down.

- Remove and replace the belt.
- Replace the belt keeper to its original position and tighten the hex lock nut.
- Replace the large baffle. Refer to Figure 17.
- Replace small baffle and three hex head screws holding it in place.
- Replace the blade adapter and blade. See earlier instructions for proper assembly.
- Replace the eight phillips head screws that hold the large baffle in place. Refer to Figure 16.
- Replace the rear wheels, rear wheel gears, and hub caps. The gear needs to be put on in the right

way for the self propelled mechanism to work. Check the installation of the gear by spinning the wheel. It should spin freely in one direction but not the other. If the wheel spins freely in both directions, flip the gear over.

- Tip the mower back onto its wheels and perform the neutral adjustment test described on page 9.

Storing your Lawn Mower

If the lawn mower is not going to be used for 30 days or more, prepare your lawn mower for storage.

- Clean and lubricate mower thoroughly as described in the lubrication instructions.
- Follow the engine manual for engine storage.
- Coat mower's cutting blade with chassis grease to prevent rusting.

NOTE: When storing any type of power equipment in a poorly ventilated or metal storage shed, care should be taken to rust-proof the equipment. Using a light oil or silicone, coat the equipment, especially cables and all moving parts.

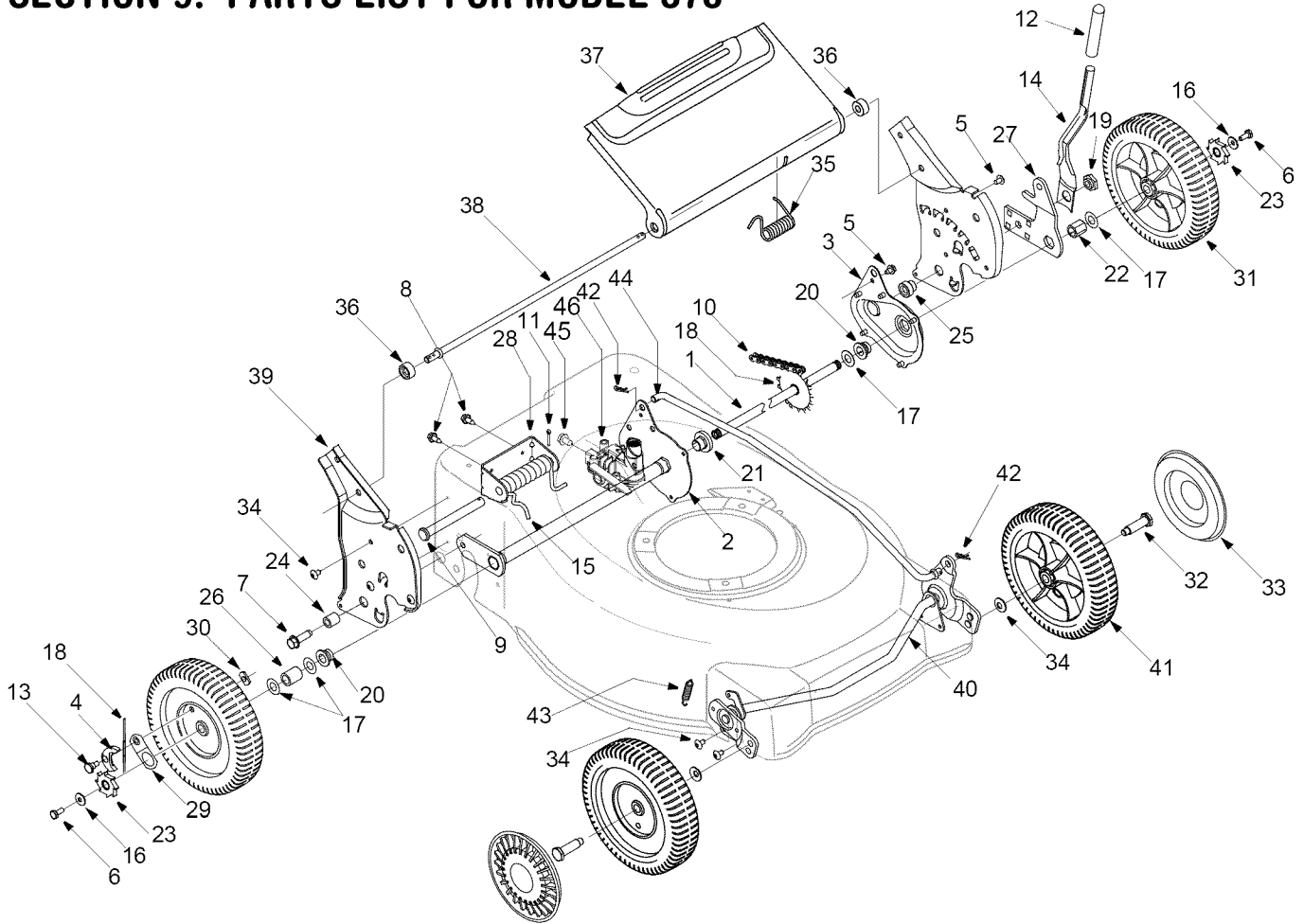
- Store mower in a dry, clean area, but not near corrosive materials such as fertilizer.

SECTION 8: TROUBLE SHOOTING GUIDE

Problem	Cause	Remedy
Engine fails to start	<ol style="list-style-type: none"> 1. Blade control handle disengaged. 2. Spark plug wire disconnected. 3. Fuel tank empty or stale fuel. 4. Fuel line blocked or fuel valve in the OFF position. 5. Choke not activated. 6. Faulty spark plug. 7. Engine flooded. 	<ol style="list-style-type: none"> 1. Engage blade control handle. 2. Connect wire to spark plug. 3. Fill tank with clean, fresh gasoline. 4. Clean fuel line or place fuel valve in the ON position. 5. Move choke lever backward into the CHOKE position. 6. Clean, adjust gap, or replace. 7. Wait a few minutes to start engine.
Engine runs erratic	<ol style="list-style-type: none"> 1. Spark plug wire loose. 2. Blocked fuel line or stale fuel. 3. Vent in gas plugged. 4. Water or dirt in fuel system. 5. Dirty air cleaner. 6. Carburetor out of adjustment. 	<ol style="list-style-type: none"> 1. Connect and tighten spark plug wire. 2. Clean fuel line; fill tank with clean, fresh gasoline. 3. Clear vent. 4. Drain fuel tank. Refill with fresh fuel. 5. Clean air cleaner. 6. Adjust carburetor.
Engine overheats	<ol style="list-style-type: none"> 1. Engine oil level low. 2. Air flow restricted. 3. Carburetor not adjusted properly. 	<ol style="list-style-type: none"> 1. Fill crankcase with proper oil. 2. Remove blower housing and clean. 3. Adjust carburetor.
Occasional skip (hesitates) at high speed	<ol style="list-style-type: none"> 1. Spark plug gap too close. 	<ol style="list-style-type: none"> 1. Adjust gap to .030".
Idles poorly	<ol style="list-style-type: none"> 1. Spark plug fouled, faulty or gap too wide. 2. Carburetor improperly adjusted. 3. Dirty air cleaner. 	<ol style="list-style-type: none"> 1. Reset gap to .030" or replace spark plug. 2. Adjust carburetor. 3. Clean air cleaner.
Excessive vibration	<ol style="list-style-type: none"> 1. Cutting blade loose or unbalanced. 2. Bent cutting blade. 	<ol style="list-style-type: none"> 1. Tighten blade and adapter. Balance blade. 2. Replace blade.
Mower will not mulch grass	<ol style="list-style-type: none"> 1. Wet grass. 2. Excessively high grass. 3. Dull blade. 	<ol style="list-style-type: none"> 1. Do not mow when grass is wet; wait until later to cut. 2. Mow once at a high cutting height, then mow again at desired height or make a narrower cutting path. 3. Sharpen or replace blade.
Uneven cut	<ol style="list-style-type: none"> 1. Wheels not positioned correctly. 2. Dull blade. 	<ol style="list-style-type: none"> 1. Place all four wheels in same height position. 2. Sharpen or replace blade.
Wheels will not propel	<ol style="list-style-type: none"> 1. Belt not installed properly. 2. Debris clogging drive operation. 	<ol style="list-style-type: none"> 1. Check belt for proper pulley installation and movement. 2. Clean out debris with engine off.

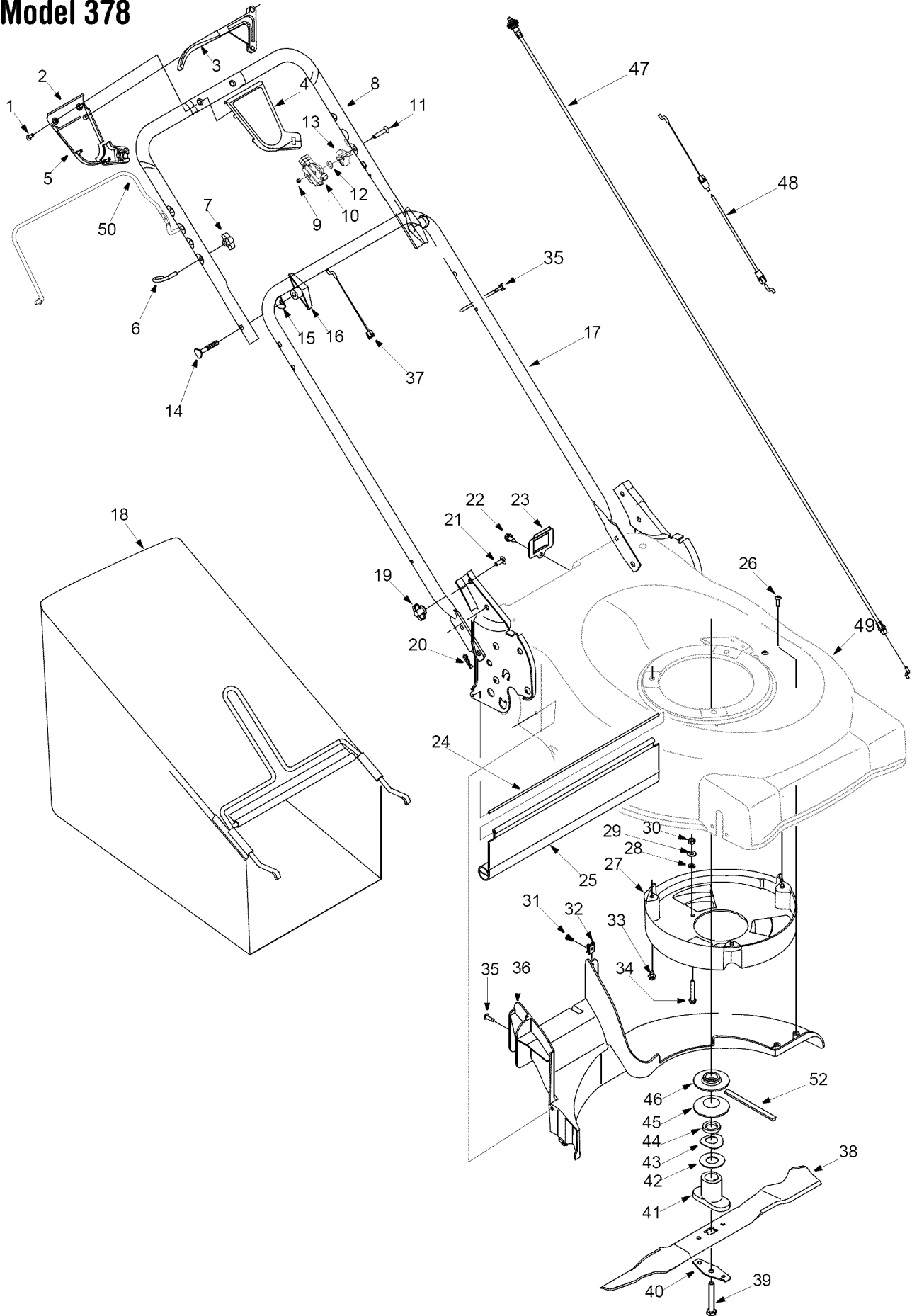
NOTE: For repairs beyond the minor adjustments listed above, contact your local authorized service dealer.

SECTION 9: PARTS LIST FOR MODEL 378



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1.	638-0005	Rear Axle Assembly	24.	750-0807	Spacer
2.	682-7518	Trans axle Assembly	25.	750-1056	Shoulder Spacer
3.	682-7524	Chain Cover Assembly	26.	750-1075	Slev Spacer
4.	748-0381	Pawl RH	27.	782-0566B	Pivot Arm
	748-0188B	Pawl LH	28.	782-0568	Lift Assist Bracket
5.	710-0653	TT Screw 1/4-20 x 0.375"	29.	16855	Pawl Plate: Ratchet
6.	710-0751	Hex Bolt 1/4-20 x 0.620"	30.	712-0414	Top Lock Weld Nut
7.	710-1315	TT Screw 3/8-16 x 1.25"	31.	634-0020	Wheel
8.	710-1652	TT Screw 1/4-20 x 0.625"	32.	738-0102	Shoulder Screw
9.	711-0835	Clevis Pin	33.	731-0981A	Hubcap
10.	713-0421	Chain	34.	710-1348	AB Screw 1/4-14 x 0.5"
11.	714-0474	Cotter Pin	35.	732-04074	Torsion Spring LH
12.	720-0230	Foam Grip	36.	750-1068	Shoulder Spacer
13.	738-0137A	Shoulder Screw	37.	782-7599B	Grass Bag Door
14.	732-0803A	Height Adjustment Lever	38.	747-0922	Pivot Rod
15.	732-0818	Torsion Spring RH	39.	782-3030	Handle Bracket RH
16.	736-0270	Bell Washer		782-3029	Handle Bracket LH
17.	736-0369	Flat Washer	40.	611-0060	Front Axle
18.	10622B	Ratchet Spring	41.	736-0105	Bell Washer
19.	738-0529	Shoulder Nut	42.	714-0104	Cotter Pin
20.	741-0324A	Hex Flange Bearing	43.	732-0820	Extension Spring
21.	741-0522	Hex Flange Bearing	44.	747-0920A	Adjustment Rod
22.	741-0978	Hex Slev Bearing	45.	710-0604A	Screw
23.	748-0318	Ratchet Wheel	46.	618-0263A	Transmission (Breakdown on page 18)

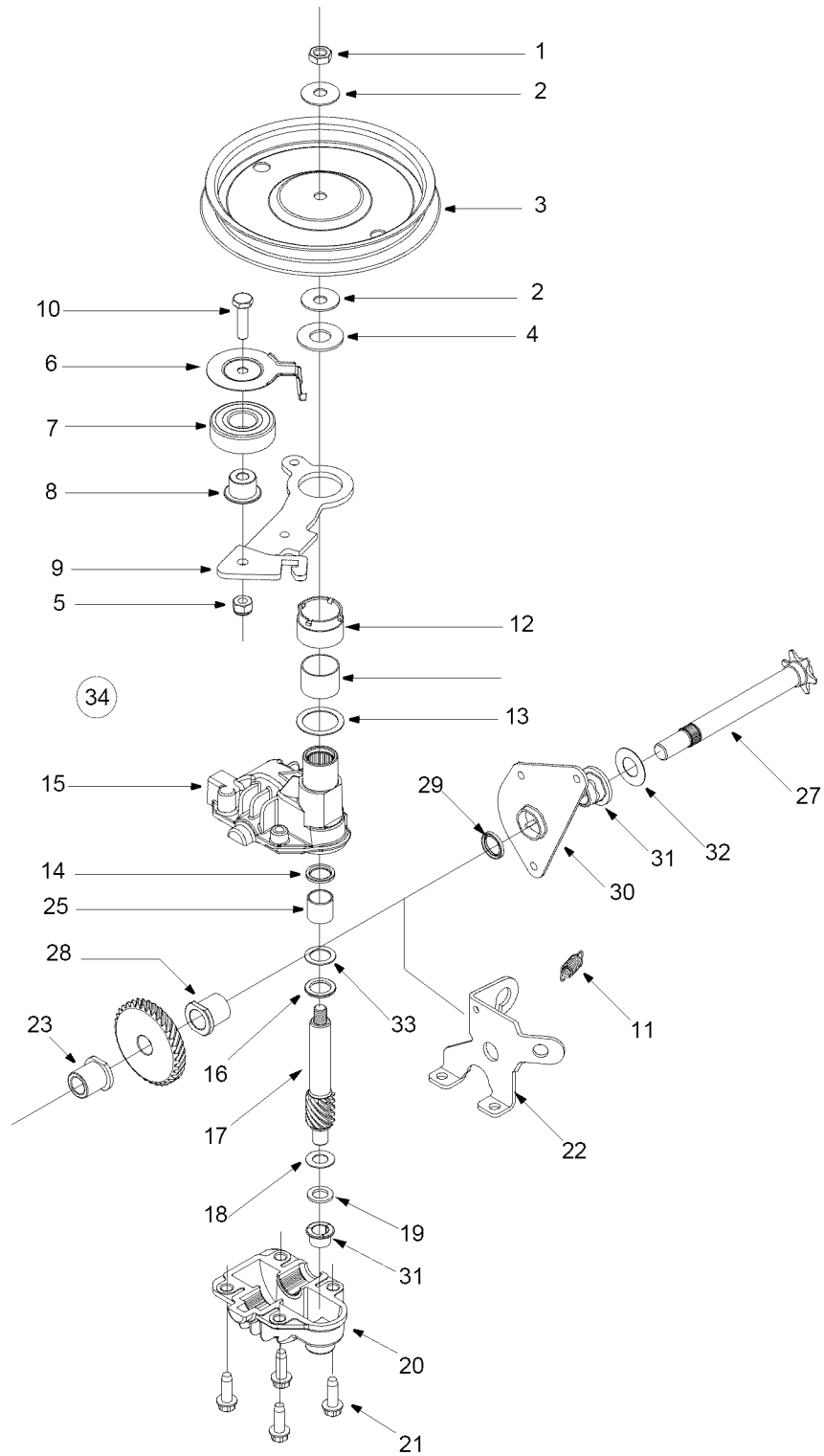
Model 378



Model 378Q

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1.	710-1667	Hi-Lo Screw	27.	731-1714A	Belt Cover
2.	731-1058	Control Housing: Lower	28.	736-3020	Flat Washer
3.	731-0620	Drive Control Lever	29.	736-0329	Lock Washer
4.	731-1057	Control Housing: Upper	30.	712-0287	Hex Nut 1/4-20
5.	731-1059	Mounting Cap: SP Cable	31.	710-0351	B Screw #10-16 x 0.5"
6.	710-1205	Eye Bolt	32.	712-0400	U Nut
7.	720-0279	Handle Knob	33.	710-0653	TT Screw 1/4-20 x 0.375"
8.	749-0439B	Upper Handle	34.	710-1026	TT Screw 1/4-20 x 1.75"
9.	712-0324	Hex Lock Nut 1/4-20	35.	726-0240	Cable Tie
10.	746-0875	Throttle Housing	36.	731-1639	Rear Baffle
11.	710-0605	Machine Screw 1/4-20 x 1.825"	37.	746-0713A	S.P. Cable
12.	736-0501	Spring Washer	38.	742-0741	Mulching Blade
13.	746-0876	Throttle Lever	39.	710-1257	Hex Bolt 3/8-24 x 2.5"
14.	710-1174	Carriage Bolt 5/16-18 x 2.0"	40.	736-0524B	Blade Bell Support
15.	736-0451	Saddle Washer	41.	748-0377C	Blade Adapter
16.	720-0284	Knob Assembly	42.	736-0514	Flat Washer
17.	749-0907B	Lower Handle	43.	736-0513	Spring Washer
18.	664-0080	Grasscatcher Assembly	44.	748-0358	Engine Spacer
19.	712-0397	Wing Nut	45.	756-0979	Pulley Half
20.	714-0104	Hairpin Clip	46.	756-0962	Pulley Half: Upper
21.	710-0703	Hex Bolt	47.	746-04131	Choke Cable
22.	710-1652	TT Screw 1/4-20 x 0.625"	48.	746-0557	Control Cable
23.	782-7018	Pulley Cover	49.	782-0075A	Cutting Deck Assembly
24.	732-0700	Trailshield Wire	50.	757-0824	Blade Control Bail
25.	731-1236A	Trailshield	51.	782-5014	Front Baffle (not shown)
26.	710-1220	Hi-Lo Screw #12-14 x 0.750"	52.	754-0271	Belt 3/8 x 39"

Model 378



Model 378

Ref. No.	Part No.	Description
1.	712-3025	Hex Jam Nut 5/16-24
2.	736-0425	Bell Washer
3.	756-0656	Pulley
4.	736-3084	Flat washer
5.	712-0896	Hex Jam Nut
6.	782-7598	Belt Keeper
7.	741-0124	Bearing
8.	7501050	Flange Spacer
9.	682-0027A	Idler Bracket Assembly
10.	710-0299	Hex Cap Screw
11.	732-0849A	Torsion Spring
12.	741-0682A	Bearing Sleeve
13.	736-0570	Flat Washer
14.	721-0329	Oil Seal
15.	618-0253	Upper Housing Assembly
16.	736-0616	Flat Washer717-1487
17.	714-1487	Pinion Shaft 10 T.
18.	736-0314	Thr. Washer
19.	736-0569	Thr. Washer
20.	618-0252	Lower Housing Assembly
21.	710-0642	Hex Screw 1/2-20 x 0.75"
22.	782-7601A	Cable Bracket
23.	741-0674	Bearing
24.	611-0066	Shaft Assembly
25.	741-0678	Bearing Sleeve
26.	717-1469	Gear 34 T.
27.	711-1168	Output SHft 6 T.
28.	741-0673	Flange Bearing
29.	721-0329	Oil Seal
30.	782-7595	Pivot Bracket
31.	741-0324A	Flange Bearing
32.	736-0369	Flat Washer
33.	741-0690	Thrust Bearing
34.	618-0263A	Transmission Assembly Complete

MANUFACTURER'S LIMITED WARRANTY FOR:



The limited warranty set forth below is given by MTD LLC with respect to new merchandise purchased and used in the United States, its possessions and territories.

“MTD” warrants this product against defects in material and workmanship for a period of two (2) years commencing on the date of original purchase and will, at its option, repair or replace, free of charge, any part found to be defective in materials or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator’s Manual furnished with the product, and has not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water, or damage because of other peril or natural disaster. Damage resulting from the installation or use of any part, accessory or attachment not approved by MTD for use with the product(s) covered by this manual will void your warranty as to any resulting damage.

Normal wear parts are warranted to be free from defects in material and workmanship for a period of thirty (30) days from the date of purchase. Normal wear parts include, but are not limited to items such as: batteries, belts, blades, blade adapters, grass bags, rider deck wheels, seats, snow thrower skid shoes, shave plates, auger spiral rubber and tires.

HOW TO OBTAIN SERVICE: Warranty service is available, WITH PROOF OF PURCHASE, through your local authorized service dealer. To locate the dealer in your area, check your Yellow Pages, or contact MTD LLC at P.O. Box 361131, Cleveland, Ohio 44136-0019, or call 1-800-800-7310 or 1-330-220-4683 or log on to our Web site at www.mtdproducts.com.

This limited warranty does **not** provide coverage in the following cases:

- a. The engine or component parts thereof. These items may carry a separate manufacturer’s warranty. Refer to applicable manufacturer’s warranty for terms and conditions.
- b. Log splitter pumps, valves, and cylinders have a separate one year warranty.
- c. Routine maintenance items such as lubricants, filters, blade sharpening, tune-ups, brake adjustments, clutch adjustments, deck adjustments, and normal deterioration of the exterior finish due to use or exposure.
- d. Service completed by someone other than an authorized service dealer.

- e. MTD does not extend any warranty for products sold or exported outside of the United States, its possessions and territories, except those sold through MTD’s authorized channels of export distribution.
- f. Replacement parts that are not genuine MTD parts.
- g. Transportation charges and service calls.

No implied warranty, including any implied warranty of merchantability of fitness for a particular purpose, applies after the applicable period of express written warranty above as to the parts as identified. No other express warranty, whether written or oral, except as mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product, shall bind MTD. During the period of the warranty, the exclusive remedy is repair or replacement of the product as set forth above.

The provisions as set forth in this warranty provide the sole and exclusive remedy arising from the sale. MTD shall not be liable for incidental or consequential loss or damage including, without limitation, expenses incurred for substitute or replacement lawn care services or for rental expenses to temporarily replace a warranted product.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. **Alteration of safety features of the product shall void this warranty.** You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser or to the person for whom it was purchased as a gift.

HOW STATE LAW RELATES TO THIS WARRANTY: This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

IMPORTANT: Owner must present Original Proof of Purchase to obtain warranty coverage.

MTD LLC, P.O. BOX 361131 CLEVELAND, OHIO 44136-0019; Phone: 1-800-800-7310, 1-330-220-4683