Welcome

Thank you for selecting the Bush-Whacker RDF 48, 60, or 70 Finishing Mower. Your machine has been carefully inspected by both the factory and the dealership prior to being received by you to ensure that it is ready for operation.

This manual explains the proper operation of your machine. It is very important that you read and understand these instructions before operating or maintaining the machine. Failure to do so could result in personal injury or even death to you or passersby. Consult your Bush-Whacker dealership if you do not understand the instructions in this manual or need additional information.

Hall Manufacturing, Inc. reserves the right to make changes at any time without notice or obligation. Additional copies of the manuals are available from your local Bush-Whacker dealer.

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Mower Safety

DANGER!

There are obvious and hidden potential hazards in the operation of this mower. Remember, the blades of this mower can throw objects at very high speeds. Serious injury or death may occur unless care is taken to insure the safety of the operator, bystanders or passer by in the area. Equipment should only be operated by those who are responsible and have been instructed how to do so.

DANGER!

Never operate the tractor and mower until you have read and completely understand this manual, the tractor operatorôs manual and each of the safety messages found on the tractor and mower.

DANGER!

Read this manual carefully to acquaint yourself with the finishing mower. Working with unfamiliar equipment can lead to accidents. **Never allow children to operate or ride on tractor or mower.**

DANGER!

Finishing rotary mowers are capable under some conditions of throwing objects for great distances (100 yards or more) and can cause objects to inflict serious injury or death. Follow safety messages carefully. **Stop mowing if passersby are within 100 yards unless:**

-Mower is running close to and parallel to the ground without exposed blades.
-Passersby are outside the existing thrown-object zone.
-All areas have been thoroughly inspected and all foreign material such as rocks, cans, glass and other debris has been removed.

Note: Where there are grass and weeds tall enough to hide debris that could be struck by the blades, the area should be inspected and large debris removed before cutting. First mow at an intermediate height, inspect area closely and remove any remaining debris. Mow again at the desired final height. This method will reduce the likelihood of thrown objects, reduce the power required and wear on the mowerôs power train, spread the cut material better, and eliminate streaking.

WARNING!

The mower discharge deflectors, belt guards, driveline and gearbox shields should be used and maintained in good working conditions. They should be inspected carefully at least daily. Missing, broken or worn items must be replaced at once and before operating mower to reduce the possibility of injury from thrown objects or entanglement.

DANGER!

Extreme care should be taken when operating near loose objects such as gravel, rocks, wire and other debris. Foreign objects should be removed from the site or avoided to prevent damage to the mower and/or bodily injury or death.

WARNING!

Do not allow the blades to turn when the mower deck is raised for turning. This exposes the cutting blades which creates a potentially serious hazard and could cause serious injury or even death by objects thrown from the blades.

Mower Safety continued

WARNING! Do not modify or alter, or permit anyone to modify or alter, this equipment or any of its components or any equipment function without first consulting your equipment dealer.

WARNING! The operator and all support personnel should wear hard hats, safety shoes and safety glasses at all times for protection from injury and items thrown by the machine.

WARNING! Before leaving the tractor seat, always engage the brake and/or set the tractor transmission in parking gear. Disengage the PTO, stop the engine, remove the key and wait for all moving parts to stop. Place the tractor shift lever into a low range or parking gear to prevent the tractor from rolling. Never mount or dismount a moving tractor. Operate the tractor controls from the tractor seat only.

WARNING! Many other objects, such as wire, cable, rope or chains can become entangled in the operating parts of the mower. These items in turn could swing outside the deck at greater speeds than the blades. Such a situation is extremely hazardous. Inspect the cutting area and remove any such objects before mowing. Never allow the cutting blades to contact such items.

DANGER! Be particularly careful while transporting the mower. Turn curves or go up hills at a low speed and at a gradual steering angle. Make certain that at least 20% of the tractorâs weight is on the front wheels to maintain safe steerage. Slow down on rough or uneven surfaces.

WARNING! Be certain that the **"Slow Moving Vehicle"** (SMV) sign is installed in such a way as to be clearly visible and legible. Use flashing warning lights and follow all local traffic regulations.

WARNING! Periodically inspect all moving parts for wear and replace with authorized service parts if an excessive amount of wear is present.

WARNING! Look for loose fasteners, worn or broken parts, and leaky or loose fittings. Make sure all pins have cotter pins and washers. Serious injury may occur from not maintaining this machine in good working order.

DANGER! Do not mount or dismount the tractor while the tractor is mowing. Mount or dismount the tractor only when it is completely stopped.

Mower Safety continued

DANGER! Never leave the mower in the raised transport position. Mower could fall causing injury to anyone who might inadvertently be under mower.

DANGER! Never clean or adjust PTO driven equipment with the tractor engine running.

WARNING! Never allow riders on either tractor or mower. Falling off either one can cause injury or death. These are not toys. Do not carry children or play games with the mower or tractor.

DANGER! Operate the mower only with a tractor equipped with an approved ñ**roll-over-protective system"** (ROPS). Always wear seat belts. Serious injury or even death can occur from falling off the tractor, particularly during a turnover when the operator could be pinned under the ROPS of the tractor.

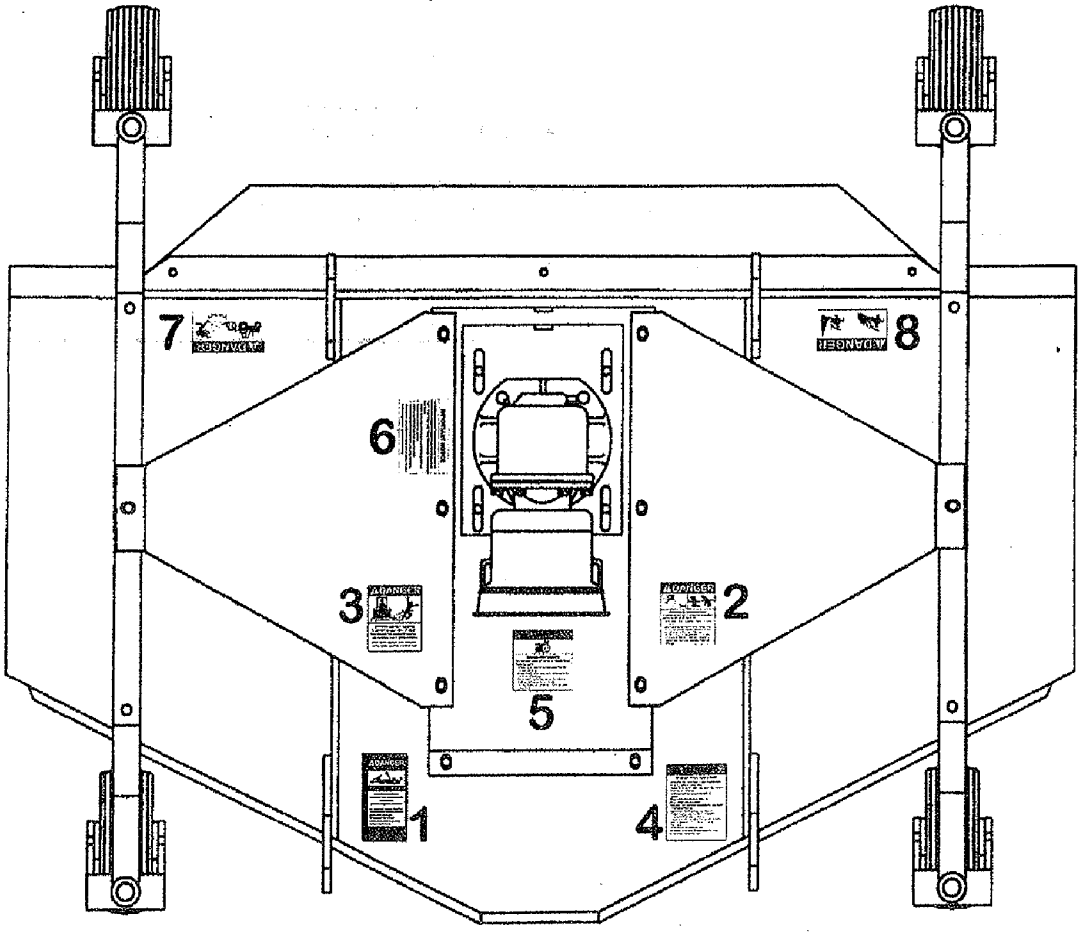
DANGER! **Never allow children to operate, ride or come close to the mower or tractor while in operation.** Usually children 15-16 years old who are mature and responsible can operate the mower with reasonable safety if they have read the operatorôs manual, if they have been trained in safe operation of the equipment and if they are physically large and sufficiently strong to reach and operate controls with ease.

DANGER! Never work under the mower deck, the framework or any lifted component unless the mower is securely supported or blocked up to prevent sudden or inadvertent falling which can cause serious injury or death.

WARNING! Always maintain the safety decals in good readable condition. If a decal becomes torn, painted over or otherwise illegible, order replacement decals immediately.

DANGER! Make sure the PTO shield is installed when using PTO driven equipment and always replace the PTO shields and safety decals if damaged.

SAFETY SIGN LOCATIONS



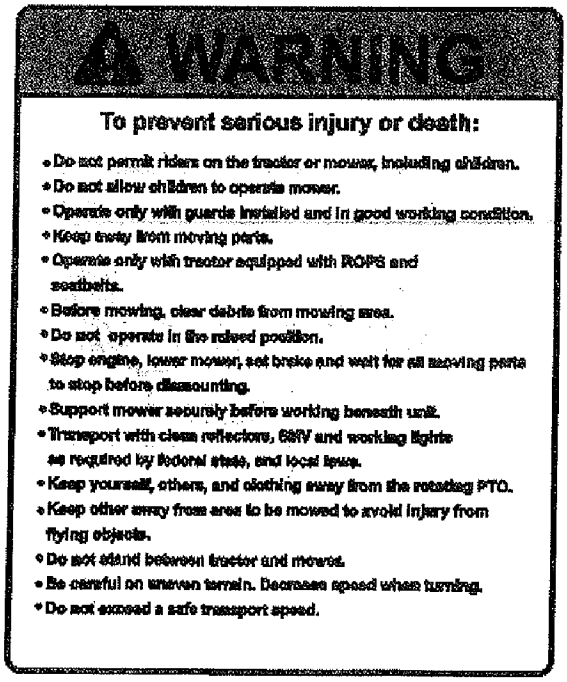
ITEM	PART NO.	QTY.	DESCRIPTION
1		1	DANGERð Rotating driveline
2		1	DANGERð Rotating blades
3		1	DANGERð Thrown object hazard
4		1	WARNINGð To prevent serious injury
5		1	WARNINGð Moving part hazard
6		1	IMPORTANT NOTICE
7		1	DANGERð Stay away minimum 160 ft
8		1	DANGERð Hand and foot injury
9		1	BUSHð WHACKER label

Safety Decals

1

2

3



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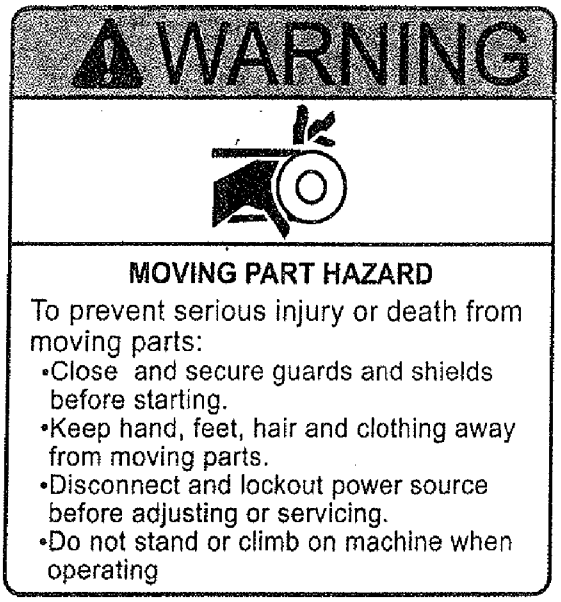
Safety Decals



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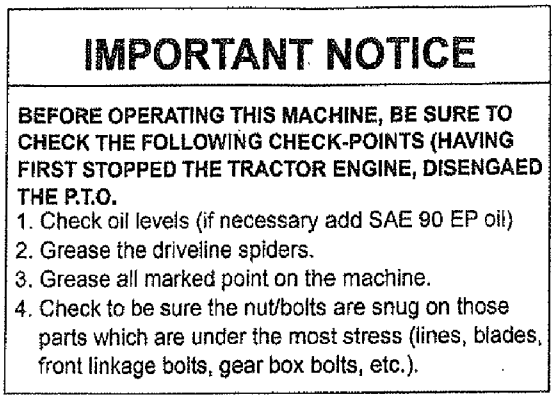

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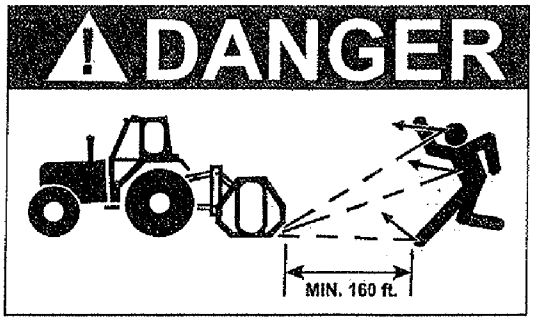

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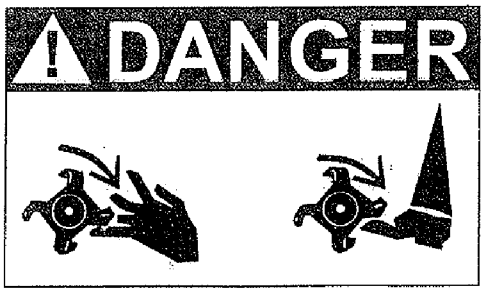

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Mower Introduction

The purpose of this manual is to familiarize and instruct the operator for the correct operating procedures and safe procedures of the **BUSHWHACKER** finishing mowers. The assembly chapter instructs the owner/operator in the correct assembly of the mower using standard and optional equipment. The parts listing section is designed to familiarize the owner/operator with replaceable parts on the mower. This chapter provides exploded assembly drawings of each mower component illustrating each piece and the corresponding part number.

Safety is of primary importance to the owner/operator and to the manufacturer. The first chapter of this manual includes a list of safety messages, that, if followed, will help protect the operator and bystanders from injury or death. Many of the safety messages shown in chapter one, will be repeated throughout this manual. The owner/operator should know these safety messages before assembly and be aware of the hazards associated with operating this mower during assembly, use and maintenance. The safety alert symbol combined with a signal word, as shown below, is intended to warn the owner/ operator of impending hazards and the degree of possible injury faced when operating this mower.

CAUTION! The lowest level of **safety message**. It warns the owner/operator of possible minor injury. Decals located on the mower with this signal word are **black and yellow.`**

WARNING! Serious injury or possible death! These decals are **black and orange.**

DANGER! This message indicates imminent death or critical injury. Decals are **red and white.**

Your **BUSHWHACKER** finishing mower has been designed for light-duty cutting such as lawn maintenance and weed and grass control. With reasonable preventive maintenance your mower will provide years of dependable service.

DANGER! Never allow children to operate, ride or come close to the mower or tractor. Usually, 15-16 year old children who are mature and responsible can operate the mower wih reasonable safety if they have read the operatorôs manual, been trained in safe operation of the machine and are physically large and strong enough to reach and operate the controls easily.

DANGER! At least 20% of tractorôs weight must be on the front tires when the mower is lifted, in order to provide adequate traction for safe steering under ideal conditions. Slow down on hills, rough terrain and curves.

Introduction continued

DANGER! For non-agricultural applications, OSHA, ASAE SAE and ANSI standards require the use of chain guards, deflectors or solid skirts at all times. The mower manufacturer strongly recommends the use of chain guards or solid skirts for agricultural applications as well, to reduce the risk of property damage, serious bodily injury or even death from objects thrown or from contact with the cutting blades.

Front, rear, left and right are determined by the normal direction of travel, the same as when driving an automobile.

Mower Operation

The safe operation of this mower is the responsibility of the operator. The operator should be familiar with the machine, tractor and all safety practices before starting operation. This mower is designed for lawn and grass mowing. It is not designed for rough conditions or heavy weed mowing. The mower is equipped with suction type blades, which are best suited for lawn mowing.

Always operate tractor at 540RPM.

This chapter provides information for attaching mower to tractor and preparing it for field operation. Review this data prior to tractor hookup and operation.

Tractor preparation

Do not install mower on a tractor over 40 horsepower.

WARNING! Do not operate tractor with less than 20% of its gross unballasted mass on the front wheels with the mower in the transport position.

Wheel treads

Tractor wheel tread spacing should be increased when working on inclines or rough ground to reduce the possibility of tipping.

Stabilizer bars and sway blocks

Use stabilizer bars or sway blocks to prevent side sway of the mower.

Drawbar

Shorten or remove the tractor drawbar so it will not interfere with the up and down movement of the mower.

WARNING! Do not get between tractor and mower when the engine is running.

Attaching the mower to tractor (lift type only)

This mower is designed for tractors with 540 RPM and category I hitch. Back the tractor up to the mower so that the lower draft arms are in alignment with the mower lift pins. Stop the engine, lock the brakes or place the tractor in park. Connect the tractor and stabilizer bars to the lower lift pins. Adjust

Mower operation continued

the top link so it will pin to the hole in the A-Frame floating top link.

DANGER! Never allow children to operate, ride or come close to the mower or tractor. Usually, 15-16 year old children who are mature and responsible can operate the mower with reasonable safety if they have read the operatorôs manual, been trained in safe operation of the machine, and are physically large and strong enough to reach and operate the controls easily.

Driveline attachment to tractor

1 Grab and turn the black twist collar on the end of the attaching yoke.
2 Slide yoke with the collar turned onto the tractor PTO shaft.
3 Move yoke back and forth until its locking balls have engaged on the PTO shaft groove.

WARNING! When attaching the driveline yoke to the tractor PTO shaft, it is important that the spring activated locking collar turns freely and that it seats properly in the tractor PTO shaft groove.

Cutting height adjustment

WARNING! Avoid personal injury! Be sure tractor engine is off, that key is removed from ignition and allow blades to completely stop turning before dismounting to make adjustments.

Important: Avoid very low cutting heights. Striking the ground with the blades gives the most damaging shock loads a mower can encounter and will cause damage to it and the driveline.
1 Using the tractor, raise the mower off the ground and place supports underneath of it, so that it will not drift downwards while making adjustments or maintenance.
2 While supporting the wheel and yoke assembly off the ground, remove the snapper pin from the top of the gauge wheel spindle. Position the supplied spacers as required for achieving the desired cutting height.

Starting and stopping the mower

The power required for operating the mower is supplied via the tractor PTO. Refer to your tractorôs manual for instructions on engaging and disengaging the PTO.
1 Always engage the PTO at low engine RPM.
2 Operate the mower at 540 RPM PTO speed. **Do not exceed 540 RPM PTO speed.**
3 In case of emergency, you must learn how to stop the tractor and mower quickly.

Important: Stop cutter and tractor immediately upon striking an obstruction. Inspect the mower and repair any damage before resuming operation. **Do not disengage PTO when the engine is at full PTO RPM. Always bring the tractor engine to idle speed before disengaging the PTO.**

WARNING! Avoid personal injury !. When attempting to stop a tractor which does not have a live PTO, the momentum created by the blades of a mower can cause the tractor to be pushed forward. **Do not operate this mower unless the tractor has a live or independent PTO.**

Mower operation continued

To start operation, reduce engine speed and engage the tractor PTO. Before starting to cut, gradually increase the engine speed to develop full PTO speed.

Enter the area to be cut with the cutter operating at PTO speed and, if it becomes necessary to temporarily regulate engine speed during operation, increase or decrease the speed gradually.

To transport the mower, disengage the PTO and raise to full transport height.

Cutting speed

Proper ground speed for cutting will depend upon the height, type, and density of the grass to be cut. Normally, ground speed will range from 1.5 to 3 MPH. Tall dense grass should be cut at low speeds, while thin medium height grass can be cut at faster ground speeds.

Cutting tips

Always operate the PTO at the recommended RPM when cutting. This is necessary for correct blade speed, which creates a clean and even grass cut.

Under certain conditions the tractor tires may roll some grass blades down and prevent them from being cut at the same height as the surrounding area. If this occurs, reduce the tractor ground speed, but maintain 540 RPM PTO speed. The lower ground speed will allow grasses to be at least partially rebound and cut. Taking a partial cut and /or reversing the direction of travel may also produce a cleaner cut.

When people are passing by the area you are cutting, stop the cutting until the area has been cleared. Although the mower is shielded to prevent objects from being thrown by the blades, no shielding device is 100% effective. The mower operator has greater knowledge of the hazards created by the machine than people on the street. Therefore, he must take every precaution possible when other people are around.

WARNING! Avoid personal injury ! Pick up all rocks and other debris before cutting. Enter new cutting areas carefully. Cut material higher the first time to allow the mower to clear unseen or hidden objects. Never assume that a cutting area is clear. Always check carefully before entering it.

Extremely tall grass should be cut in two stages. First, raise the mower above the desired cutting height and cut the grass in one direction. Second, adjust the mower to the desired cutting height and cut in a perpendicular (90 degree) direction from the first cut.

Remember, sharp blades produce cleaner cuts and require less power.

Before cutting analyze the area to determine the best cutting procedure. One must consider the grass height, its type and the terrain relief.

Grass is best cut when it is dry. Mowing wet grass can cause plugging, which results in grass clumps behind the mower.

Mower operation continued

Detaching and storing

Lower the mower to the ground. Park the tractor with transmission in the correct gear (Automatic transmissions should be set on **Park;** Standard transmissions should be set on **Neutral).** Set the parking brake, turn off the engine and remove the keys from the ignition. Wait until the PTO stops rotating completely before dismounting the tractor.

Disconnect the driveline from the tractor PTO and store it to prevent contact from the ground and away from excessive moisture.

Always reinstall or lower into position the tractor PTO master shield. This shield should always remain in place except when connecting or disconnecting the driveline.

Before operating or transporting the mower

Always display the **SMV** (slow moving vehicle) symbol on the rear of the tractor that transports the mower. The **SMV** symbol should be clearly visible to vehicles overtaking the tractor transporting the mower. Prominent display of this symbol will help the operator avoid accidents which could cause injury or possibly death. See figure 4.

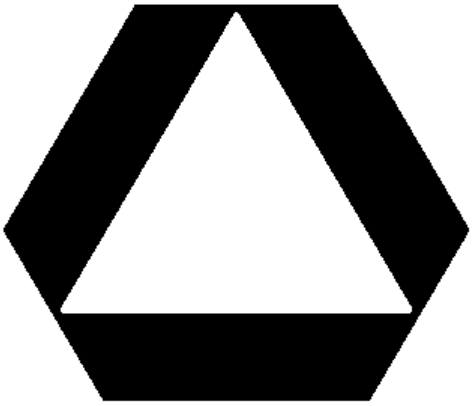


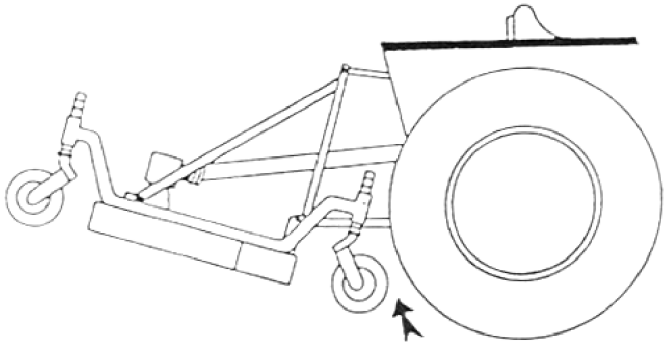
Figure 4

Mower operation continued

Front gauge wheel interference check.

Do not operate the mower until this interference check has been performed. If you use the mower with a different tractor, you must perform the check for that particular mounting again.

1. Raise the mower with the tractor hydraulic system to the maximum height of lift.
2. Pivot both of the mower front gauge wheels forward and check that there is clearance between the gauge wheels and the tractor's rear tires.
3. If there is interference, lower the mower to the ground and move hitch to the extended position (see assembly chapter).
4. Move the tractor tires inward to obtain clearance or lower the mower until clearance exists.
5. Set the 3-point quadrant stop so the mower cannot be raised beyond the set point. See figure 5.



Front Gauge Wheel Clearance

Figure 5

Driveline length check procedure

WARNING! A loose shaft could slip off and result in personal injury or damage to the mower. When attaching the driveline yoke to the tractor PTO shaft, it is important that the spring activated twist collar turns freely and that the locking balls are seated on the PTO shaft groove.

WARNING! Before operating the mower check to make sure the driveline will not bottom out or become disengaged. See figure 6.

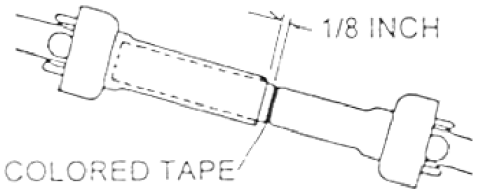


Figure 6

Driveline in maximum compressed position

Mower operation continued

Adjusting driveline length

1. Slide the driveline together until it ñbottoms outò
2. Apply colored tape to the inner plastic shield tube 1/8òfrom the end of the outer shield tube.
3. Reconnect the driveline to the tractor PTO shaft.
4. Raise the mower to full transport position or until the driveline just touches the deck at front.
5. If the distance between colored tape and outer shield tube is 1-9/16òor less, the metal drive tubes should be shortened per figure A.
6. Shorten the male and female plastic shield tubes equally. See figure B.
7. The metal drive tubes also have to be shortened in the same length as the plastic shield tubes. See figure C.
8. Round off all sharp edges and remove burrs. See figure D.
9. Apply grease to the metal drive tubes.
10. There should always be a minimum of 1-9/16òclearance between the male and female drive and shield tubes when the driveline is operated in its shortest working position.
11. Lower the mower to the lowest position possible and check the distance of the colored tape to the end of the outer shield tube.
12. Driveline tube engagement or overlapping must always exceed 12ò
13. If tubes do not overlap by 12òor more, consult with your dealer to obtain a longer driveline.

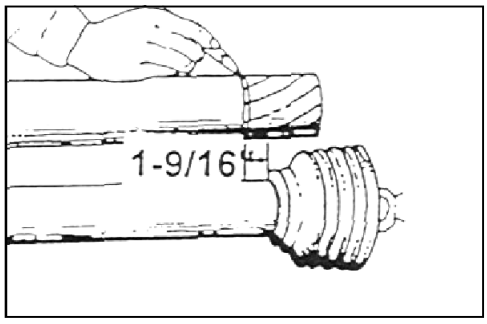


Figure A

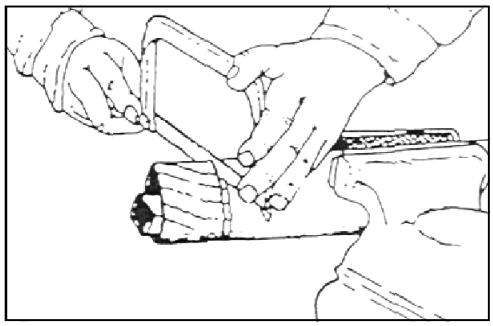


Figure B

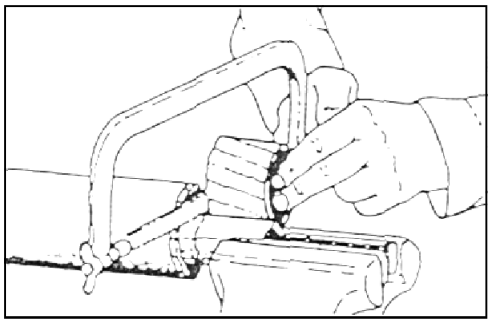


Figure C

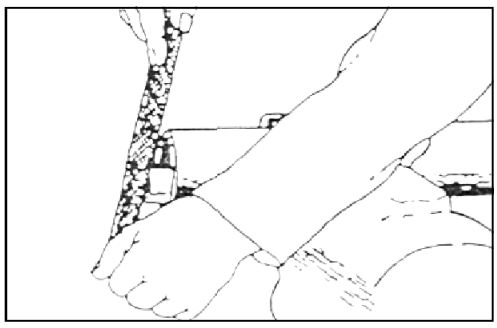


Figure D

Troubleshooting

Problem	Possible cause	Solution
Streaking	Slow blade tip speed	Operate PTO at 540 RPM
	Worn blade tips	Replace with genuine **BUSHWHACKER** blades
	Dull blades	Sharpen blades uniformly
	Blades unable to cut that part of grass pressed down by tractorôs tire path or mowerôs casters	Slow tractorôs ground speed but maintain 540 RPM PTO speed
	Mowing too fast	Slow down until cured
	Drive belt loose	Tighten per instructions on maintenance chapter
	Belt glazed/slipping	Apply belt dressing or replace it with a genuine **BUSHWHACKER** belt
	Blade loose on spindle	Tighten blade bolt securely **(Note: these are left-hand threads, tighten to 85 ft.lb. torque)**
	Conditions too wet for mowing	Allow grass to dry before mowing
Grass discharges from mower unevenly or bunches along a swath	Grass is too high and too coarse	Slow tractorôs ground speed but maintain 540 RPM PTO speed. Raise the mower for the first pass and lower to the desired cutting height for the second, and cut at 90 degrees to the first pass. Raise the rear of mower high enough to allow the grass to discharge, but not too high for streaking to occur
	Belt slipping	Tighten belt or replace with a genuine **BUSHWHACKER** belt.
	Grass is wet	Allow grass to dry before mowing
		Slow tractorôs ground speed but maintain 540RPM PTO speed
		Cut grass at a lower height
Heavy vibration	Blade speed is too fast	Do not exceed 540 RPM PTO speed
	Broken/bent blade	Replace with genuine **BUSHWHACKER** blade
	Worn/unbalanced blade	Grind blade uniformly or replace
	bent/broken sheave	Replace with genuine **BUSHWHACKER** part
	Debris caught on blade	Clean off blade
Belt slipping	Belt loose	Tighten or replace with genuine **BUSHWHACKER** belt
	Belt glazed	Use belt dressing or replace it
	Oil on belt	Clean or replace

Troubleshooting continued

Problem	Possible cause	Solution
Belt slippage	Mower is overloading, grass is too tall or heavy	Slow tractorõs ground speed but maintain 540 RPM PTO speed. Cut grass twice. Raise the mower for the first pass and lower to the desired cutting height for the second and cut at 90 degrees to the first pass. Cut a partial swath only.
	Oil on belt from over lubrication	Clean lubricant from belt and sheaves with a clean rag. Replace oil soaked belts. Be sure to follow operatorõs manual recommendations.
	Belt hung or rubbing	Check belt for free travel in sheaves. Check under mower deck and spindles for debris or other foreign material and remove if any is present.
Belt rollover	Sheave misalignment	Consult with **BUSHWHACKER** authorized dealer.
	Damaged belt	Replace it with genuine **BUSHWHACKER** belt*.
	Foreign object in sheave groove	Inspect all sheave grooves for rust, paint or other foreign material. Remove these if present.
	Worn sheave groove	Replace with genuine **BUSHWHACKER** sheave.
Damaged belt	Rollover, high shock loads or installation damage	Replace it with genuine **BUSHWHACKER** belt*.
Belt breakage	High shock loads	Avoid abusive mowing. Avoid hitting ground with the mower and large obstructions.
	Belt came off sheave	Check sheave for proper alignment and foreign material. Ensure proper belt tension. Avoid hitting the ground with mower and large obstructions.

***** Check damaged belt for cause of damage by laying it flat on the floor. If the belt does not lie flat (check for humps, kinks, twists or other damage), this is an indication that it has broken or stretched cords. Do not re-install this belt, replace it with a genuine **BUSHWHACKER** part.

Mower maintenance

Before operating the mower, make sure that it is properly lubricated and thoroughly inspected. Only a minimum of time and effort is required to regularly lubricate and maintain it. Following a regular program will provide long life and trouble free operation.

WARNING! Always disengage the tractor PTO before raising the mower for transport or making adjustments.

Lubrication

Do not let excess grease collect on or around parts, particularly when operating in sandy areas. The illustration below and on the next pages, show the location of all the lubrication fittings.

Use an SAE multi-purpose, lithium type grease for all the locations shown on figure **7.** Be sure to clean the grease fittings before applying any grease. Daily lubrication of the driveline U-joints is necessary. Failure to maintain proper lubrication will result in premature wear and damage to the U-joints, gearbox and/or driveline.

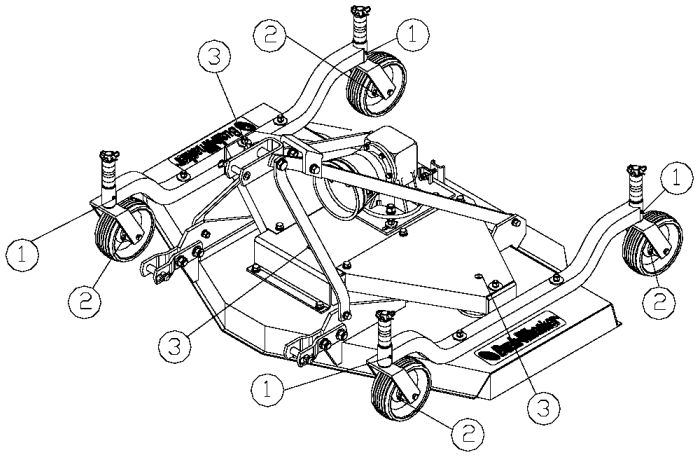


Figure 7
Lubrication fitting location

Item	Description	Frequency*
1	Gauge wheel pivots	Every 8 hours or daily
2	Wheel hubs	Every 8 hours or daily
3	Blade spindle	Every 8 hours or daily
4	U-joints	Every 8 hours or daily

***** Lubrication intervals shown are for mowers operating under normal conditions. Severe or unusual conditions may require more frequent lubrication.

Mower maintenance continued

Gearbox lubrication

The gearbox must be filled with COTTON PICKER SPINDLE GREASE oil before operating.

To fill gearbox to the correct operating level:
Place the mower on an even and leveled surface.
Remove filler and test level plug (see figure **8** for location of plugs).
Add oil through the filler plug until it starts running out of the test plug. (Pour oil slowly to make sure that the lower portion of the gearbox housing has been filled)
Screw the test and filler plugs back in their corresponding places.

It is recommended that the oil level plug be removed after every 8-10 hours of operation and oil added until it runs out of the test plug hole. The filler plug hole and test plug hole are both located on the back of side of the gearbox.

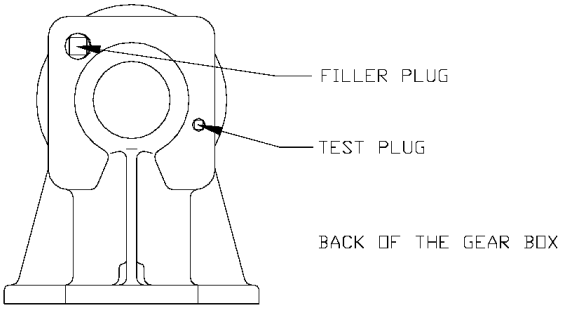


Figure 8

Note:

It is recommended that the test plug be removed after every 8-10 hours of operation, and oil added to the proper fill level if required.
Do not overfill the gearbox with oil. This will result in pressure build up inside the unit, which can cause the oil seals to leak.
If the gearbox suddenly starts making an unusual noise, stop at once, check for oil leaks and refill it as required.

Gauge wheel assemblies

The gauge wheels are equipped with bearings which require grease regularly. Grease fittings are provided in the wheel hub and gauge wheel pivot. It is recommended that these be lubricated after every 8 hours of operation.
See figure **9.**

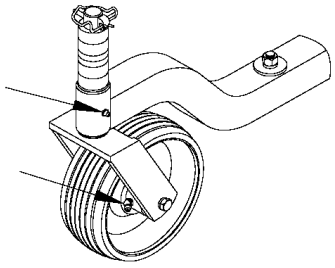


Figure 9

Mower maintenance continued

Driveline lubrication

Grease fittings are located on the cross and bearing kit assemblies of both U-joints. U-joints should be greased after every 8 hours of operation. See figure 10 for the location of the grease fittings. Do not force grease through the needle bearing cup assemblies.

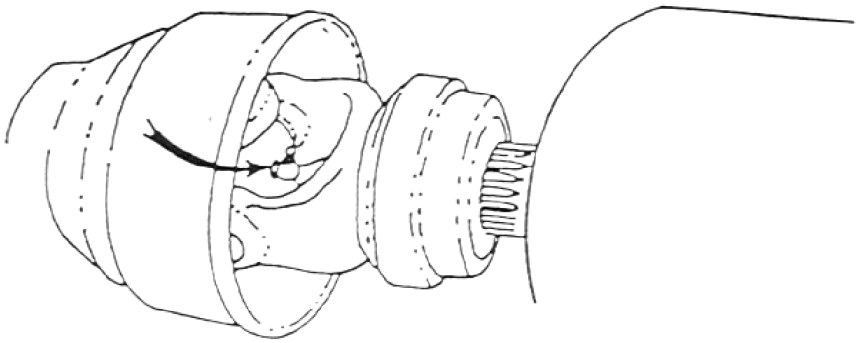


Figure 10

The metal telescoping drive tubes inside the plastic shield tubes must be lubricated before each use. See figure 11.

Disconnect the driveline from the tractor and pull halves apart (do not disconnect the driveline that is attached to the mower gearbox). Insert grease into drive tube and spread it evenly. Re-connect the two driveline halves together. Reconnect the driveline to the tractor PTO, raise and lower the mower several times so that the grease just applied spreads over the entire working area of the drive tubes.

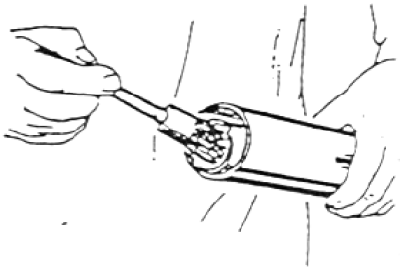


Figure 11

WARNING! When attaching the driveline yoke to the tractor PTO shaft, it is important that the spring activated locking collar turns freely and that the locking balls are seated on the PTO shaft groove. A loose yoke could slip off and result in personal injury or damage to the mower.

Blade spindle lubrication

Blade spindles must be lubricated after every 8 hours of operation. Access the lubrication fittings through the holes in the belt guards. Each spindle is supplied with a grease fitting on top, and it must be lubricated sufficiently so that a small amount of grease escapes through the bleed hole on their underside. Do not force large amounts of grease on the spindles, as it may get on the drive belts.

Blade servicing

Inspect blades before each use to determine that they are properly installed and in good condition.

Mower maintenance continued

Use only genuine **BUSHWHACKER** blades on your mower. They are manufactured of special heat-treated alloy steel. Substitute blades may not meet specifications and may fail in a hazardous manner, which could cause injury.

Blade sharpening

To maintain a proper blade balance, always sharpen both ends of the blade equally. Follow the sharpening pattern as shown on figure **12.** Do not sharpen the blades to a razor edge, but leave a 1/32ò blunt edge. Never sharpen the back side of the blades.

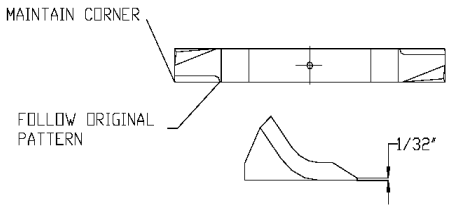


Figure 12

WARNING! Avoid personal injury! Always support or block the mower when servicing the blades, carrier or any other component on the underside of the deck.

Blade removal

Hold the end of the blade using heavy leather gloves and remove the Nut # 1.

Blade Installation

Install Blade #3, Washer #2 on the Spindle shaft # 4. Tighten Nut # 1.
Note: Always wear heavy leather gloves while tightening blade nuts. The Nut # 1 must be tightened to 85 ft. lb. torque. See figure **13**.

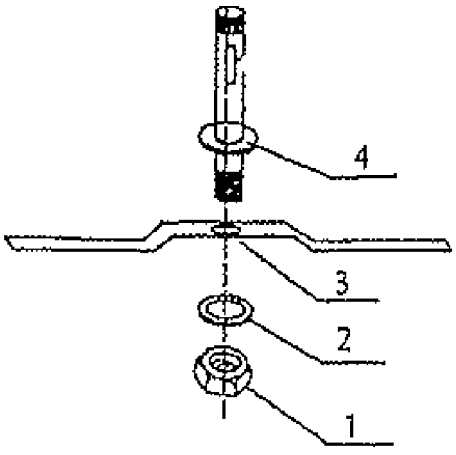


Figure 13

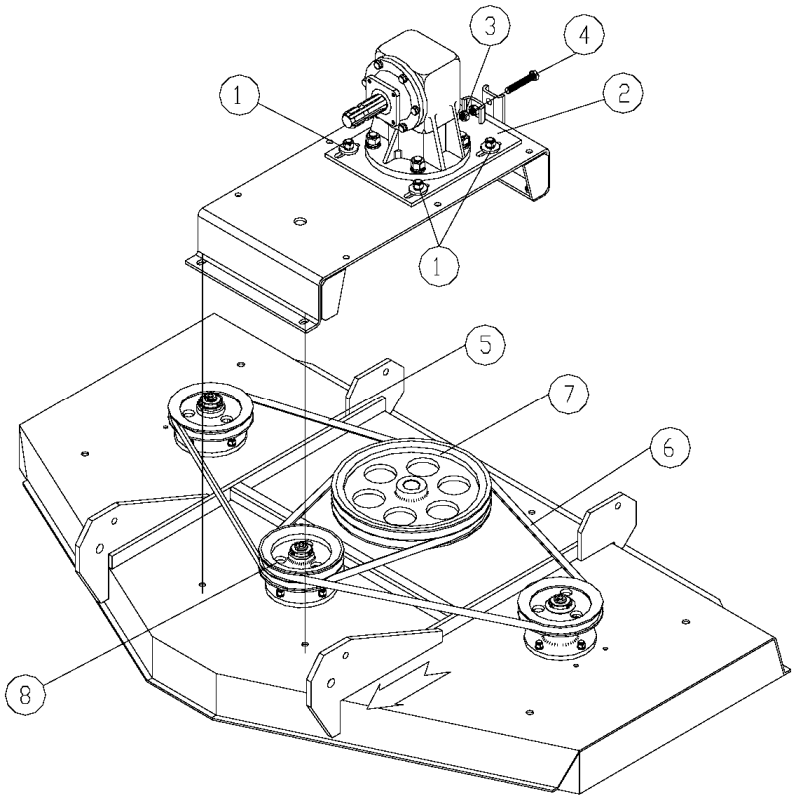
TIGHTEN NUT # 1 TO A TORQUE OF 85 FT./LBS.

Mower maintenance continued

Drive belt adjustment

Shut off mower and tractor.
Remove drive belt shield fasteners and belt shields.
Loosen all four nuts (item 1) on the gearbox slide plate (item 2). See figure **14**.
Loosen jam nut (Item 3) on the tension adjustment bolt (Item 4)
Tighten adjustment bolt (Item 4) until the belt deflection along the front side of the belts (Items 5&6) is 3/4òwhen approximately 10 pounds of pressure is applied to the center of the belt length.
Do not overtighten belts!
Tighten jam nut (Item 3) and nuts (Item 1) on gearbox slide plate.
Reinstall belt shields and shield fasteners.

Figure 14



Drive belt removal and installation

Shut off mower and tractor.
Remove drive belt shield fasteners and belt shields.
Loosen gearbox slide plate bolts and gearbox adjustment bolt. See figure **14**.
Slide gearbox to its forward most position
Slide belts under the gearbox sheave (Item 7) and over the center spindle sheave (Item 8).
Make sure that right hand belt (Item 5) is in the lower groove of the gearbox sheave and that the left hand belt (Item 6) is in the upper groove.
Slide the gearbox back to the full rear position and adjust according to the belt adjustment procedure described above.
Reinstall belt shields and shield fasteners.

Mower maintenance continued

Storage

Your mower represents an investment from which you should get the greatest possible benefit and use. Therefore, when the cutting season is over, the mower should be thoroughly checked and prepared for storage so that a minimum amount of work will be required to put it back into operation for the next season.

We suggest the following storage procedures

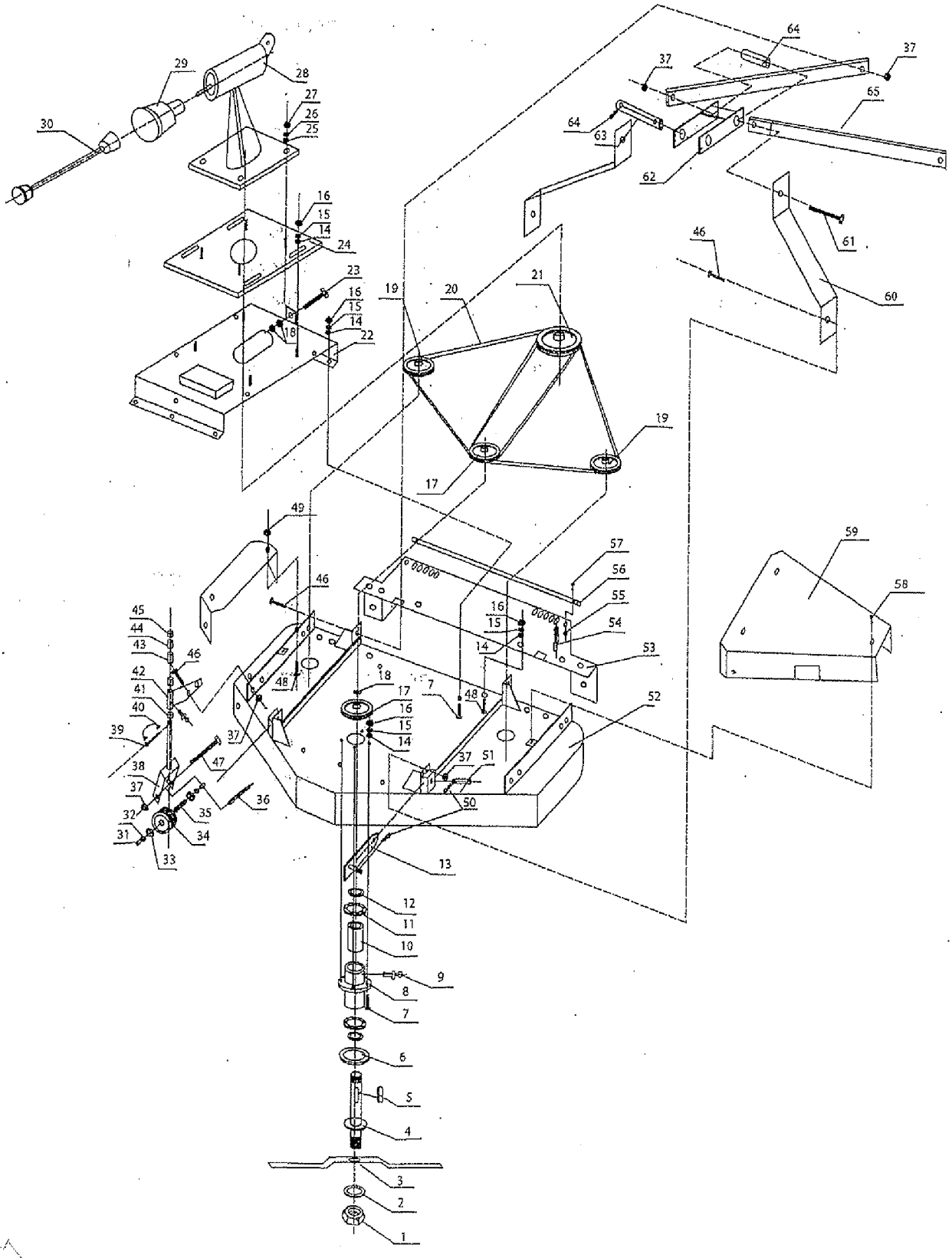
1 Thoroughly clean the mower
2 Lubricate the mower as recommended in the maintenance section of this manual.
3 Tighten all bolts and pins to the recommended torque.
4 Check the mower for worn or damaged parts and replace any that shows wear or damage.
5 Store the mower in a clean, dry place with the deck resting on blocks.
6 Use spray touch up enamel where necessary to prevent rust and maintain its appearance.

Replacement Parts

For maximum safety and reliability, always use genuine BUSHWHACKER replacement parts. The use of inferior replacement parts may cause premature or catastrophic failure which could result in serious injury or death. For questions regarding parts please contact BUSHWHACKER North Little Rock, Arkansas. tel. 1-501-945-7550.
BUSHWHACKER reserves the right to substitute parts where applicable.

Note: Please make sure that your mower always has clearly legible safety decals as described in the mower safety chapter. When ordering replacement decals refer to the safety decals part numbers described on page 7.

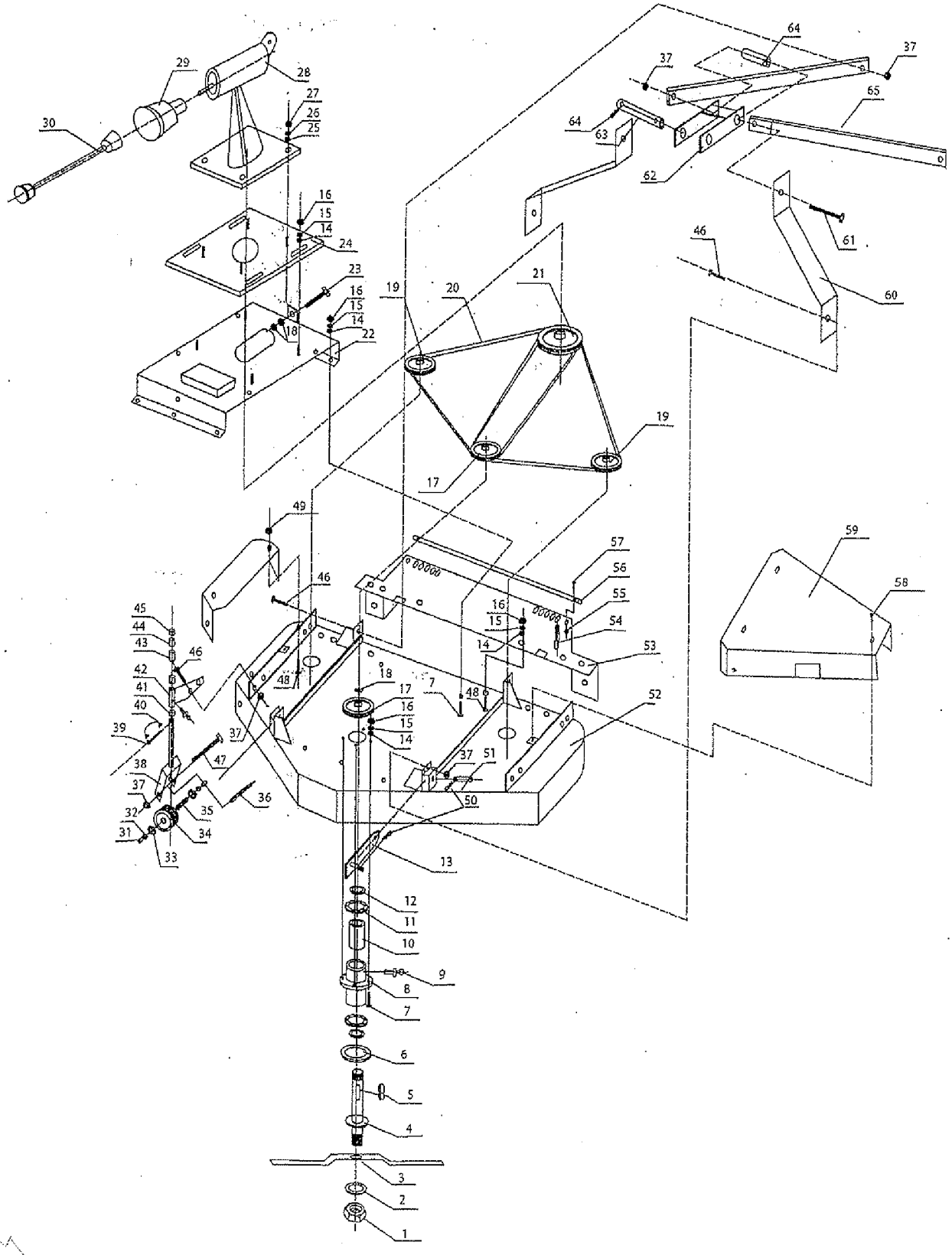
RDF 60- General mower assembly



RDF 60 General mower assembly - Parts list

ITEM	PART #	QTY	DESCRIPTION	ITEM	PART #	QTY	DESCRIPTION
1	5267	3	LOCK NUT	33	5287	8	PLASTIC SPACER
2	5268	3	WASHER	34	5288	4	WHEEL
3	5321	3	BLADE	35	5289	4	SLEEVE
4 -12	5257	3	ROTOR ASSEMBLY	36	5290	4	SPACER
4	5284	3	SPINDLE SHAFT	37	5291	13	LOCK NUT
5	5259	3	KEY	38	5292	4	FORK
6	5260	3	DUST CAP	39	5263	4	GREASE ZERK
7	5261	17	BOLT	40	5293	4	LOCK PIN
8	5262	3	ROTOR HOUSING	41	5294	4	SPACER
9	5263	7	GREASE ZERK	42	5325	4	ARM ASSEMBLY
10	5264	3	SLEEVE	43	5296	4	SPACER
11	5265	6	BEARING	44	5297	4	SPACER
12	5266	9	SPACER	45	5298	4	SPACER
13	5269	2	JOINT PLATE	46	5299	12	BOLT
14	5255	26	FLAT WASHER	47	5300	4	BOLT
15	5244	26	LOCK WASHER	48	2693	11	BOLT
16	5270	26	NUT	49	5301	3	LOCK NUT
17	5322	1	DOUBLE PULLEY	50	5302	6	COTTER PIN
18	5272	3	LOCK NUT	51	5303	3	PIN
19	5323	2	SINGLE PULLEY	52	5304	1	MAIN DECK
20	5324	2	V-BELT	53	5327	1	BACK PLATE
21	5275	1	PULLEY	54	5306	24	CHAIN
22	5276	1	SUPPORT	55	5307	2	LOCK NUT
23	5277	1	BOLT	56	5328	1	CHAIN SHAFT
24	5278	1	SLIDING PLATE	57	5309	2	BOLT
25	5279	4	FLAT WASHER	58	5310	6	BOLT
26	5280	4	LOCK WASHER	59	5311	2	PULLEY COVER
27	5281	4	NUT	60	5312	2	ROD
28	5282	1	GEAR BOX	61	5313	1	BOLT
29	5283	1	SHAFT CAP	62	5314	1	HITCH
30	5258	1	DRIVE SHAFT	63	5315	1	PIN
31	5285	8	WHEEL SPACER	64	5316	1	SLEEVE
32	5286	8	BEARING	65	5329	2	REAR LINK

RDF 72— General mower assembly



RDF 72 General mower assembly - Parts list

ITEM	PART #	QTY	DESCRIPTION	ITEM	PART #	QTY	DESCRIPTION
1	5267	3	LOCK NUT	33	5287	8	PLASTIC SPACER
2	5268	3	WASHER	34	5288	4	WHEEL
3	5256	3	BLADE	35	5289	4	SLEEVE
4 -12	5257	3	ROTOR ASSEMBLY	36	5290	4	SPACER
4	5284	3	SPINDLE SHAFT	37	5291	13	LOCK NUT
5	5259	3	KEY	38	5292	4	FORK
6	5260	3	DUST CAP	39	5263	4	GREASE ZERK
7	5261	17	BOLT	40	5293	4	LOCK PIN
8	5262	3	ROTOR HOUSING	41	5294	4	SPACER
9	5263	7	GREASE ZERK	42	5295	4	ARM ASSEMBLY
10	5264	3	SLEEVE	43	5296	4	SPACER
11	5265	6	BEARING	44	5297	4	SPACER
12	5266	9	SPACER	45	5298	4	SPACER
13	5269	2	JOINT PLATE	46	5299	12	BOLT
14	5255	26	FLAT WASHER	47	5300	4	BOLT
15	5244	26	LOCK WASHER	48	2693	11	BOLT
16	5270	26	NUT	49	5301	3	LOCK NUT
17	5271	1	DOUBLE PULLEY	50	5302	6	COTTER PIN
18	5272	3	LOCK NUT	51	5303	3	PIN
19	5273	2	SINGLE PULLEY	52	5304	1	MAIN DECK
20	5274	2	V-BELT	53	5305	1	BACK PLATE
21	5275	1	PULLEY	54	5306	35	CHAIN
22	5276	1	SUPPORT	55	5307	2	LOCK NUT
23	5277	1	BOLT	56	5308	1	CHAIN SHAFT
24	5278	1	SLIDING PLATE	57	5309	2	BOLT
25	5279	4	FLAT WASHER	58	5310	6	BOLT
26	5280	4	LOCK WASHER	59	5311	2	PULLEY COVER
27	5281	4	NUT	60	5312	2	ROD
28	5282	1	GEAR BOX	61	5313	1	BOLT
29	5283	1	SHAFT CAP	62	5314	1	HITCH
30	5258	1	DRIVE SHAFT	63	5315	1	PIN
31	5285	8	WHEEL SPACER	64	5316	1	SLEEVE
32	5286	8	BEARING	65	5317	2	REAR LINK

Notes

HALL MANUFACTURING WARRANTY POLICY FOR BUSH-WHACKER FINISHING MOWERS

NEW EQUIPMENT WARRANTY

Subject to limitations and exclusions set forth herein, Hall Manufacturing Inc. warrants that if any component or part of a machine manufactured by Hall Manufacturing, excluding any mechanical gearbox or mechanical gearbox component used by Hall Manufacturing, proves to be defective in material or workmanship within one (1) year from the delivery date of the original sale to the end user, Hall Manufacturing will, at its option, either repair or replace the defective part without charge. In addition, Hall Manufacturing warrants that if any mechanical gearbox or mechanical gearbox component used by Hall Manufacturing on any Bush-Whacker rotary mower proves to be defective in material or workmanship within three (3) years from the delivery date of the original sale, Hall Manufacturing will, at its option, either repair or replace the defective mechanical gearbox or gearbox part without charge, except for rotary mowers sold directly to a state or related governmental agencies for which the mechanical gearbox or mechanical gearbox component warranty period is limited to one (1) year from the delivery date of the original sale. No payment will be made in lieu of repair of the machine.

LIMITATIONS AND EXCLUSIONS

If the equipment is used for rental the warranty period is ninety (90) days from the date of sale to the renter. This includes all mechanical gearboxes and their components.

This limited warranty covers defects in materials and workmanship in the parts manufactured or used by Hall Manufacturing excluding:

Damage resulting from accident, abuse, misuse, neglect or other than normal and ordinary use of the equipment.

Damage resulting from failure to use the product in accordance with the manufacturer's instructions. Refer to the appropriate owner's manual for the Bush-Whacker mower model you purchased.

Hall Manufacturing shall be released from all obligations and liabilities under this warranty if:

The equipment had been operated with any accessory, equipment, component or part not manufactured by Hall Manufacturing or approved for use by Hall Manufacturing.

The equipment has been repaired, altered or modified without Hall Manufacturing's approval or if the equipment shall have been operated subsequent to its involvement in an accident or breakdown unless the Owner furnishes reasonable evidence that such repair, alteration, modification or operation subsequent to its involvement in an accident or breakdown was not a cause of the defect.

The Owner does not return, at Owner expense, the defective accessory, equipment component or machine to, or notify, an authorized Bush-Whacker dealer. The Owner shall be responsible for submission of reasonable evidence of proof of Date Discovery of said defect.

REPLACEMENT PARTS WARRANTY AND PARTS REPLACED BY WARRANTY

Hall Manufacturing further warrants that if any genuine Bush-Whacker part or component utilized by an authorized Bush-Whacker dealer proves to be defective in material or workmanship, within thirty (30) days of such utilization, Hall Manufacturing will, at its option, repair or replace the defective part without charge. Owner shall be responsible for all freight charges including labor to and from the place where the warranty work is performed.

WHAT YOU MUST DO TO ENFORCE THIS WARRANTY

Warranty services must be performed or approved by an authorized Bush-Whacker Dealer. The Owner must, at the Owner's expense, deliver, mail or ship the defective product together with the original Bill of Sale to any Authorized Dealer in the Owner's area.

Owner must pay any postage, shipping charges, insurance costs, freight and other expenses to and from the place where the warranty work is performed. If required to return equipment or any component or part to an authorized Bush-Whacker Dealer, Owner shall be obligated to pay any premium payable for overtime labor if overtime is incurred as a result or a request by the Owner.

UNAPPROVED SERVICE OR MODIFICATION

All obligations of Hall Manufacturing under this warranty shall be terminated if:

Service is performed by someone other than a Dealer authorized by Hall Manufacturing

Equipment is modified or altered in ways not approved by Hall Manufacturing.

ACCIDENTS AND NORMAL MAINTENANCE

This warranty covers only defective materials and workmanship. It does not cover depreciation or damage caused by normal wear, accident, improper maintenance, improper protection in storage or improper use. The cost of normal maintenance and replacement of service items such as: cutting parts, drive line cross kits and clutch pads, skid shoes, gearbox and drive line shields, tires, bearings, seals, chains, etc. shall be paid for by the Owner.

HALL MANUFACTURING WARRANTY POLICY FOR BUSH-WHACKER ROTARY MOWERS

DISCLAIMER OF IMPLIED WARRANTIES & CONSEQUENTIAL DAMAGES

Hall Manufacturing's obligation under this limited warranty, to the extent allowed by law, is in lieu of all warranties, Implied or expressed, **INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE** and any liability for incidental and consequential damages with respect to the sale or use of the equipment warranted. Such incidental and consequential damages shall include but not limited to: transportation charges loss of income; rental of substitute equipment, and expenses due to loss, damage, detention or delay in the delivery of equipment or parts resulting from acts beyond the control of Hall Manufacturing.

IMPROVEMENTS OR CHANGES

Hall Manufacturing reserves the right to make improvements of changes in design and specification at any time without incurring any obligation to owners of units previously sold.

WARRANTY CLAIMS PROCEDURE

Warranty claims must be delivered to Hall Manufacturing within thirty (30) days after the warranty service work was performed.

Hall Manufacturing will approved or deny claim within thirty (30) days of receiving a claim.

Hall Manufacturing will issue credit for all genuine Bush-Whacker parts or components as well as all approved Dealership employee labor time at a rate of $30.00 per hour within thirty (30) days of the claim approval.

Defective parts must be held for inspection for ninety (90) days after the work is performed. Hall Manufacturing may request that parts be returned to the Hall Manufacturing factory for inspection.

ACKNOWLEDGEMENT REQUIRED

Hall Manufacturing shall have no obligation under this warranty unless the Owner Registration Card, included with your Operators Manual, is signed by Owner and Dealer or Dealer's Agent and is delivered along with a copy of the original Bill of Sale from the Dealer to Hall Manufacturing within sixty (60) days from the date of sale.

COMPLETE THE WARRANTY REGISTRATION CARD

(ON THE FOLLOWING PAGE)

PLACE IN AN ENVELOPE ALONG WITH THE ORIGINAL BILL OF SALE

MAIL TO:

HALL MANUFACTURING, INC.
P. O. BOX 5638
NORTH LITTLE ROCK, AR 72119

WARRANTY REGISTRATION

** Return to Hall Manufacturing within sixty (60) days of purchase

Date of Purchase _____ Purchaser _____

Address _____ City_____ State _____

Product _____ Model#_____ Serial#_____

Dealer_____
Address_____
City_____ State_____

_____ _____
Signature of Original Buyer Signature of Dealer or Dealer's Agent

* Please include a copy of the original bill of sale

TO THE OWNER AND OPERATOR

To keep your mower running efficiently and safely, read your manual thoroughly and follow the instructions and safety messages in this manual. The table of contents clearly identifies each chapter where you can easily find the information you need.

The Occupational Safety and Health Act (1928.51 Subpart C) makes these minimum safety requirements of tractor operators:

Required of the owner:

1 Provide a Roll-Over-Protective structure that meets the requirements of this standard.
2 Provide seatbelt that meet the requirements of this paragraph of this standard and SAE J4C.
3 Ensure that each employee uses such seatbelt while the tractor is moving
4 Ensure that each employee tightens the seatbelt sufficiently to confine the employee to the protected area provided by the ROPS.

Required of the operator:

1 Securely fasten seatbelt if the tractor has a ROPS.
2 Where possible, avoid operating the tractor near ditches, embankments and holes.
3 Reduce the tractorôs ground speed when turning, crossing slopes and on rough, slick or muddy surfaces.
4 Stay off slopes that are too steep for safe operation.
5 Watch where you are going, specially at row end, on roads and around trees.
6 Do not permit others to ride on tractor or mower.
7 Operate the tractor smoothly. Avoid jerky turns, starts and stops.
8 Hitch only to the drawbar and hitch points recommended by the tractor manufacturer.
9 When the tractor is stopped, set the brakes securely and use parking lock, if available.

Keep children away from danger all day, every day!

Equip tractor with rollover protection (ROPS) and keep all machinery guards in place.

Please work, drive, play and live each day with care and concern for your safety and that of your family and others.