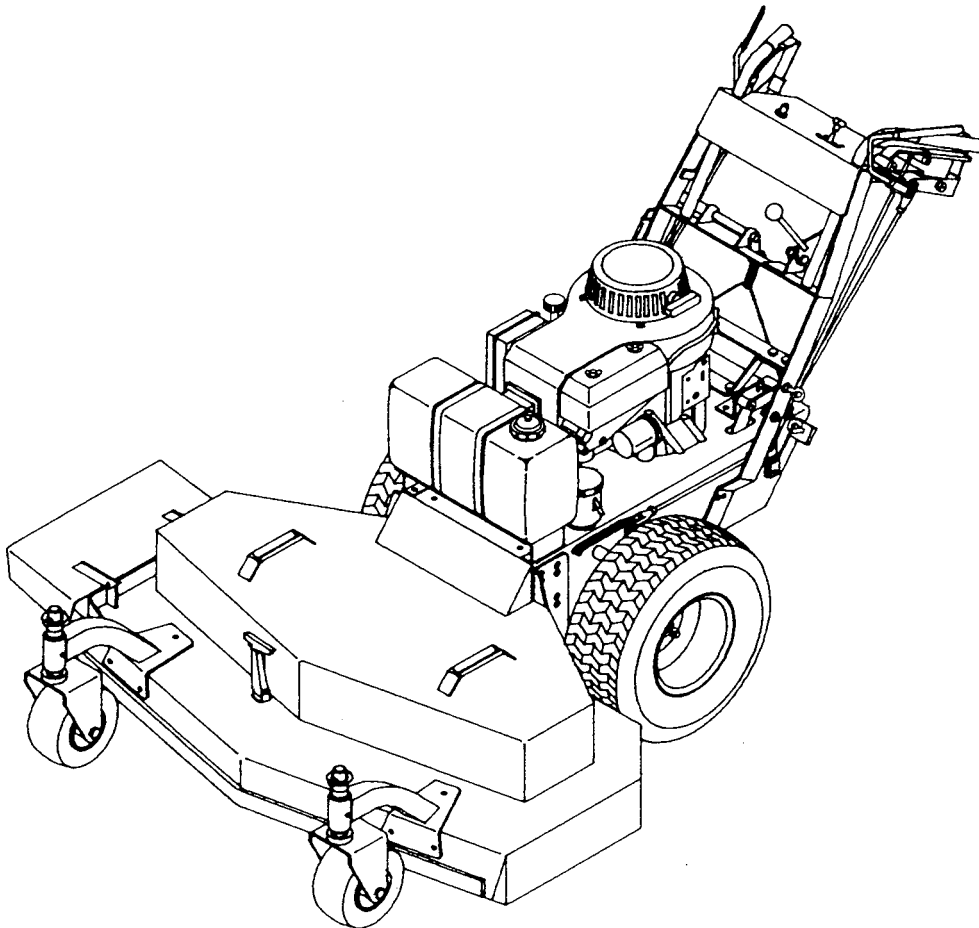


PRICE \$3.00

FERRIS

OWNER/OPERATOR MANUAL

HydroWalk Commercial Mowers



MODELS:

HW32KA, HW32KAR
HW36KA, HW36KAR
HW36K
HW36B
HW48KA, HW48KAR
HW48K
HW48B

*Ferris Industries, Inc.
5375 N. Main Street
Munnsville, NY 13409*

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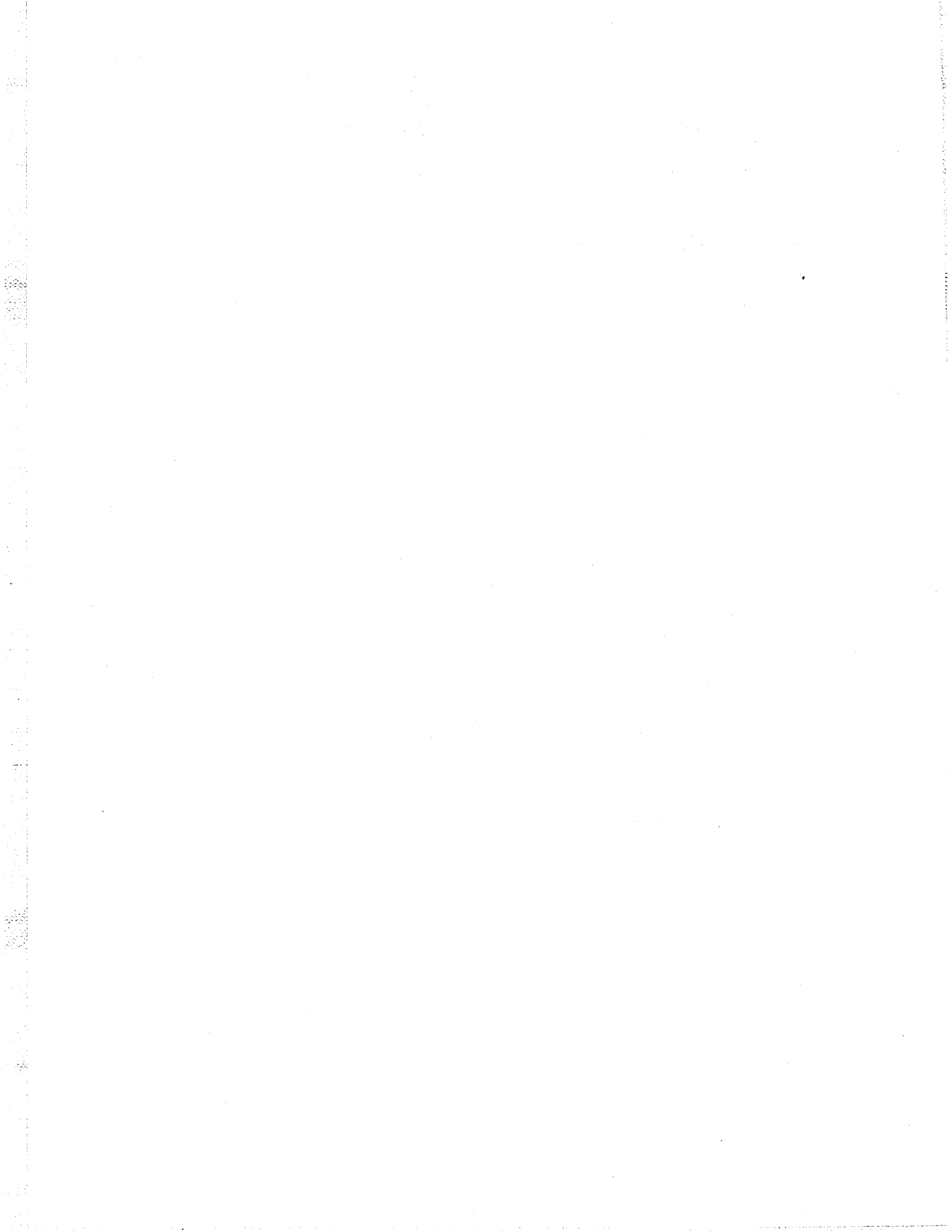


TABLE OF CONTENTS

	PAGE
TO THE OWNER/OPERATOR.....	1
GENERAL INFORMATION.....	2
Using this Manual.....	2
Warranty Registration.....	2
Model and Serial Number.....	2
Parts and Service.....	2
SAFETY PRECAUTIONS.....	3-4
Training.....	3
Preparation.....	3
Operation.....	4
CONTROLS AND OPERATIONS.....	5-9
Pre-Start.....	5
Starting the Engine.....	5
Transmission By-pass.....	5
Operating Controls.....	6-7
Curb Climbing.....	8
Trial Run.....	8
Cutting with the Machine.....	9
Cutting Speed.....	9
Grass Discharge.....	9
ADJUSTMENT AND SERVICING.....	10-20
Cutting Height.....	10-11
Caster Wheels.....	12
Cutter Blades.....	12
Mower Belt Tensions and Adjustments.....	13
Brake Lever Height.....	14
Speed and Direction Control Positioning.....	14
Steering Brake Adjustment.....	15
Brake Lining Replacement.....	16
Belt Removal/Replacement Instructions.....	16-17
Maintenance and Lubrication.....	18-20
Break-In Maintenance.....	18
Daily Maintenance.....	19
Every 40 Operating Hours.....	19
Every 100 Operating Hours.....	20
Grease Fitting Locations.....	20

To the Owner/Operator:

Congratulations on the purchase of your new FERRIS Commercial Mower.

This product has been carefully designed and manufactured to give you a maximum amount of mowability, dependability and trouble-free years of operating.

Like all mechanical products, the useful life and service you obtain from your machine depends to the large extent on the way it is maintained and operated. Outlined in this instruction manual you will find safety and service hints to keep your mower operating like new for years to come.

We recommend that you read this instruction manual and the enclosed engine manual before operating this unit. Keep this booklet handy for all operators and service men.

Throughout this manual, the terms **DANGER**, **WARNING** and **CAUTION** are used in conjunction with the Safety Alert Symbol (a triangle with an exclamation point) to indicate a personal safety hazard. The term **IMPORTANT** is used to indicate that failure to observe the instruction can cause damage to the equipment.



The Safety Alert Symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**



DANGER:

Denotes an extreme intrinsic hazard exists, which would result in high probability of death or irreparable injury if proper precautions are not taken.



WARNING:

Denotes a hazard exists which can result in injury or death if proper precautions are not taken.



CAUTION:

Denotes a reminder of safety practices or directs attention to unsafe practices which could result in personal injury if proper precautions are not taken.

IMPORTANT:

Indicates that failure to observe can cause damage to equipment.

IMPORTANT: If any safety or control decals are missing, non-legible, or damaged, replace them as soon as possible.


GENERAL INFORMATION


USING THIS MANUAL

Illustrations used in this manual were current at the time of printing, but subsequent production changes may cause your machine to vary slightly in detail. Ferris Industries, Inc. reserves the right to redesign and change the machine as deemed necessary, without notification. Throughout this manual, references are made to right and left directions. These are determined from the operator's position facing the direction of forward travel. Blade rotation is clockwise as viewed from the top of the cutter deck.

WARRANTY REGISTRATION

Please complete and sign the warranty registration card. It is necessary to validate your warranty protection. As the new equipment owner, you are expected to see that the card is completed and forwarded to Ferris Industries, Inc. at the time of delivery.

 **WARNING:** Any unauthorized modification, alteration, or use of non-approved attachments may present safety hazards that are not presented in this manual. If any such modifications, alterations or attachments are used, it voids all warranties and releases Ferris Industries, Inc. from any liability from injury and/or damage arising from subsequent use of this equipment.

 **WARNING:** Some illustrations in this manual show the mower with safety shields removed to provide a better view. The machine should NEVER be operated with any safety shields removed.

MODEL AND SERIAL NUMBER

Model and serial numbers are found on the serial identification plate, located on the handle bars. These numbers are required on the Warranty Registration card. They will also assure you of the correct service parts if replacement becomes necessary.

PARTS AND SERVICE

Use original FERRIS equipment replacement parts only. These parts are available through your local FERRIS equipment dealer. Use of substitute parts could affect the performance and safety of your FERRIS mower. To obtain prompt, efficient service, provide the following information when ordering parts:

1. Correct part description and number, as given in the illustrated list supplied within your owner's packet.
2. Correct model number.
3. Correct serial number.

ALL WARRANTY REPAIR AND SERVICE MUST BE HANDLED THROUGH AN AUTHORIZED FERRIS DEALER.

SAFETY PRECAUTIONS



Safety is NO accident.....BE ALERT!

This symbol is used to attract your attention to the safety precautions that should be understood by the operator to avoid accidents.

Your lawn mower was built to the highest standards in the industry. However, a mower is only as safe as the operator. As with any type of power equipment, carelessness or error on the part of the operator can result in injury. Please read and follow these instructions on safe operation and be certain anyone using this lawn mower is familiar with these simple rules.

TRAINING

1. Read this operator's manual and the engine operating instructions carefully. Be thoroughly familiar with the controls and proper use of the equipment.
2. Never allow children to operate a power mower.
3. Keep the area of operation clear of all persons, particularly small children.
4. Never allow children to ride on garden tractors or riding mowers as passengers.
5. Keep children indoors and supervised at all times when any outdoor power equipment is being used nearby. Young children move quickly and are attracted to the mower and the mowing activity, especially if they have been give rides before.
6. Never assume children will remain where you last saw them. Be alert and turn the mower off if any children enter the area. Use extra care when approaching corners, shrubs and trees.

PREPARATION

! WARNING: Always disconnect the spark plug wire and place wire where it cannot contact spark plug to prevent accidental starting when setting up, adjusting or servicing.

1. Thoroughly inspect the area where the equipment is to be used. Remove all stones, sticks, wires and other foreign objects.
2. Do not operate the equipment when barefoot, wearing open-toed sandals or shorts. Always wear hard-toed or safety footwear, eye protection, hearing protection, long sleeve shirts and pants.
3. Check the fuel level before starting. Do not fill the fuel tank indoors, when the engine is running, or while the engine is still hot. Wipe off any spilled gasoline before starting the engine.
4. Mow only in daylight or in good artificial light.
5. Never permit any person other than the operator to ride or board the machine at any time.
6. Before starting the machine, with the key removed from the ignition switch, visually inspect to see the cutter blades, blade bolts and cutter assembly are not worn or damaged. (Replace in sets to preserve balance.)
7. Never attempt to make a caster wheel height adjustment while the engine is running
8. Before starting the engine, be sure all guards are in place and that all safety interlocks are in proper working order.

OPERATION

1. Do not change the engine governor settings or over-rev the engine.
2. Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times. Never pick up or carry a mower while it is running.
3. Stop the blades when crossing gravel drives, walks or roads.
4. After striking a foreign object, stop the engine and remove the spark plug wire. Thoroughly inspect the mower for any damage and repair before restarting and operation the machine.
5. If the equipment should start to vibrate abnormally, immediately stop the engine and check for the cause. Vibration is generally a warning of trouble.
6. Stop the engine whenever you leave the mower, before cleaning the cutter deck, when making any repairs or inspections.
7. When cleaning, repairing or inspecting, make sure the blades and all moving parts have stopped. Disconnect the spark plug wire and place the wire where it cannot contact the spark plug to prevent accidental starting.
8. Do not run the engine indoors. They produce deadly carbon monoxide gas.
9. Shut the engine off and wait until the blades have come to a complete stop before removing the grass catcher or unclogging the chute.
10. Mow across the face of slopes, never up and down. Exercise extreme caution when changing direction on slopes. Do not mow excessively steep slopes. (See illustration on pg. 6)
11. Never operate the mower without the proper guards, plates, or other safety protection devices in place.
12. Do not use any attachments unless they are approved by FERRIS.
13. Make sure blade and transmission controls are disengaged before attempting to start engine.
14. Keep operation clear of all persons and never direct discharge of material toward bystanders.
15. Know how to stop the blades and engine quickly in case of an emergency.
16. Never leave key in the ignition switch of unattended equipment.
17. Avoid sudden starts and stops. Decrease speed when turning, especially on slopes.

WHEN YOU SEE THIS SYMBOL



IT MEANS:

ATTENTION!

BECOME ALERT!

YOUR SAFETY IS INVOLVED!

CONTROLS AND OPERATIONS

 **READ THE SAFETY INSTRUCTIONS.**

PRE-START

1. Make sure the fuel shut off valve in the fuel line is on.
2. Check oil level in crank case.
3. Fill fuel tank outdoors with good, clean regular grade unleaded gasoline. **DO NOT USE HIGH TEST FUEL!**
4. Make sure blade engagement lever is disengaged and your parking brake is on.

IMPORTANT: Before using this machine for the first time, check engine oil level.

STARTING THE ENGINE (HOT OR COLD)

For machines equipped with Kawasaki engines:

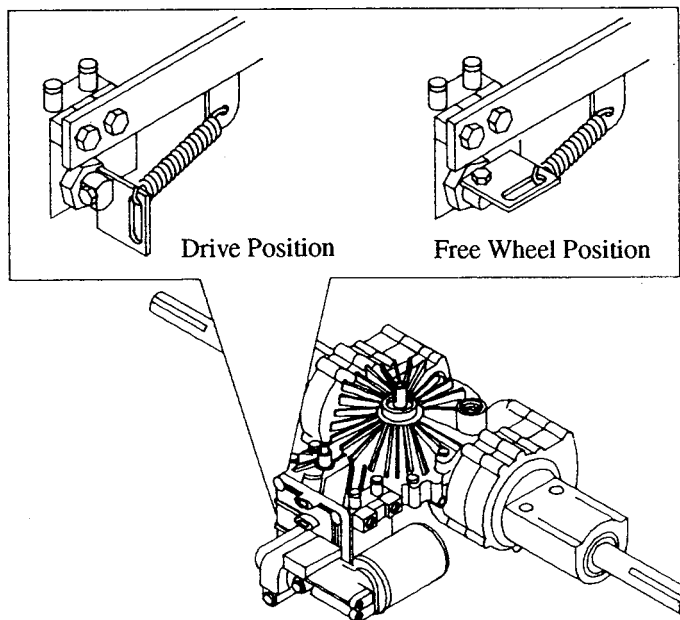
1. Move the throttle control as far to the right into the “choke” position.
2. Turn key to “ON” position and turn over engine.
3. As soon as the engine starts, move throttle down to normal operating speed. Failure to do so will flood the engine.

For machines equipped with Kohler engines:

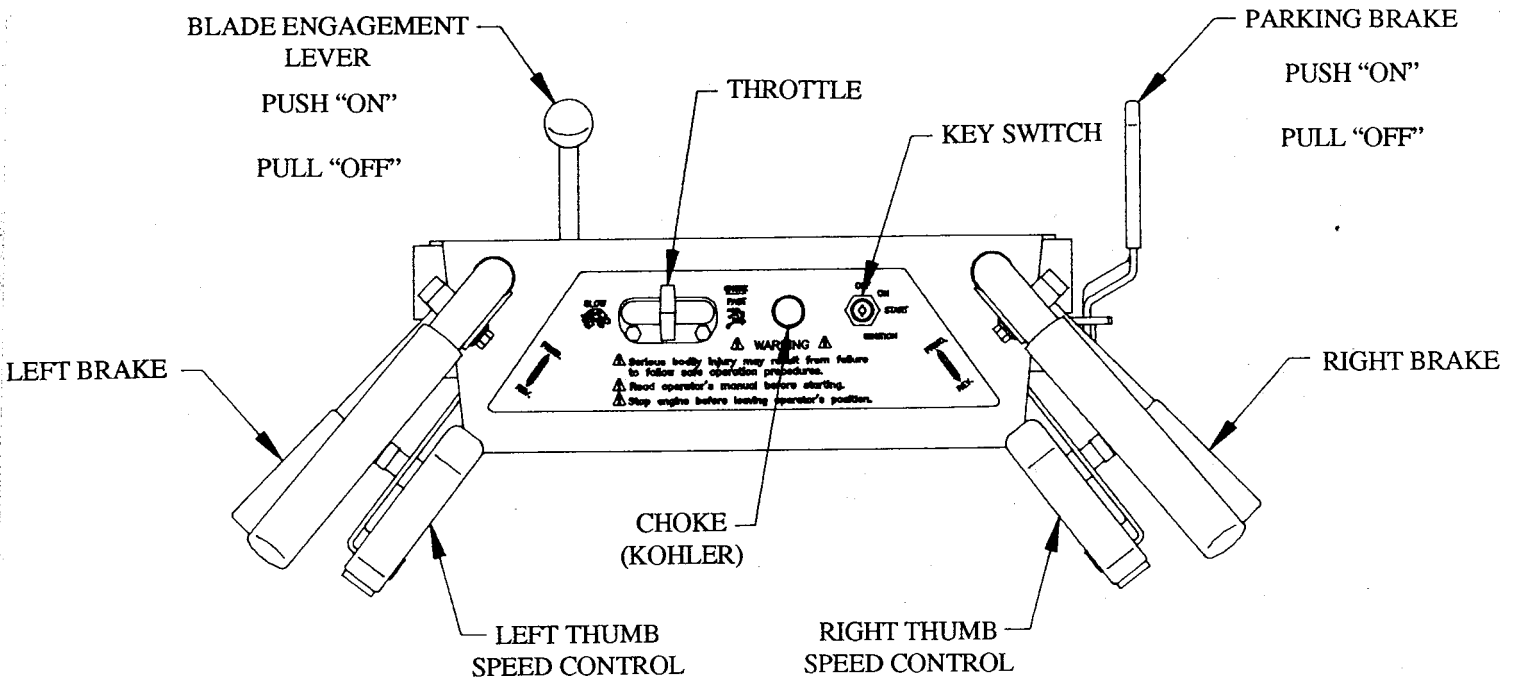
1. Move throttle control to approximately 1/2 position.
2. Fully pull out choke cable.
3. Turn key to “ON” position and turn over engine.
4. As soon as the engine starts, push choke cable in approximately 1/2 way, and continue to push in choke cable until engine reaches normal operating speed. Failure to do so will flood the engine.

NOTE: The blade Engagement Lever must be in the “OFF” position in order to allow the engine to start.

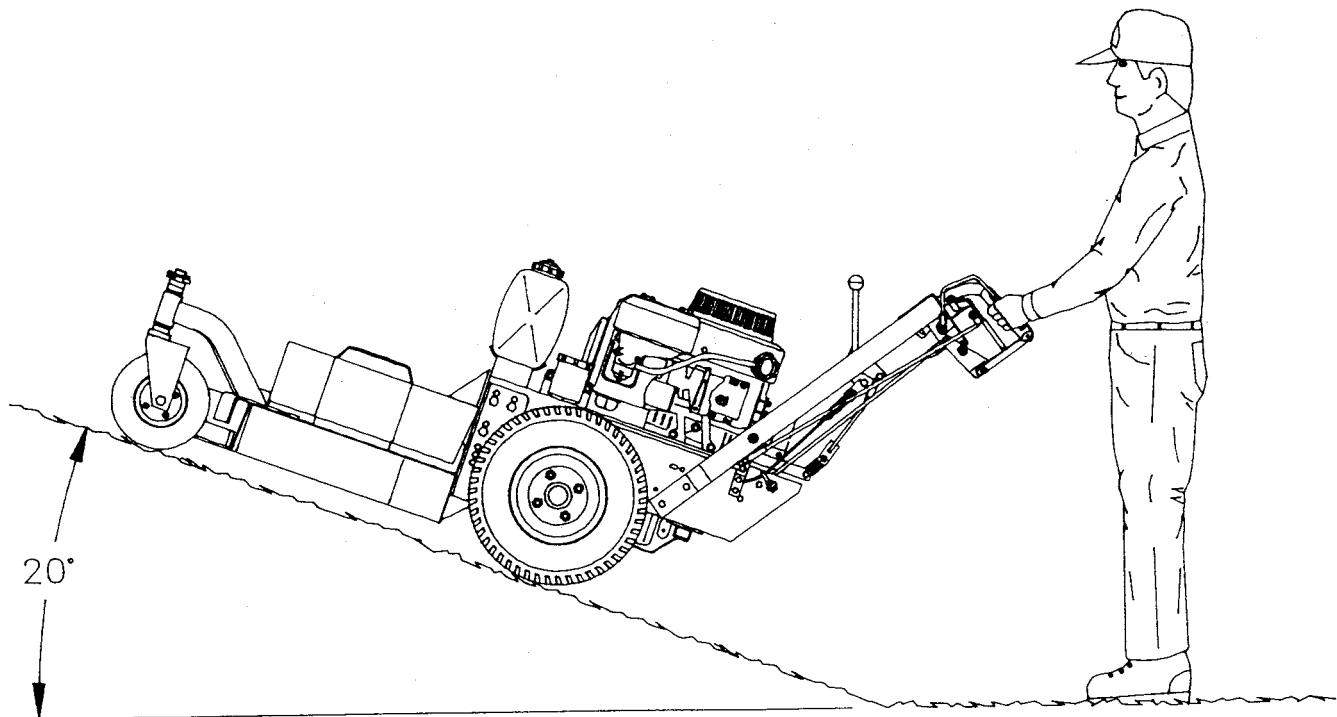
TRANSMISSION BY-PASS (FREE WHEEL)



OPERATING CONTROLS



MAXIMUM SAFE OPERATING ANGLE



OPERATING CONTROLS


1. The hydrostatic transmission has an infinite number of speeds between full speed forward and reverse, with the faster speeds being achieved by moving the speed control lever farthest in the direction of travel.
2. TO MOVE:
 - A) Disengage the parking brake
 - B) Gently move the speed control lever in the direction of travel desired.
3. To make a left hand turn, simply apply the left hand brake. A sharp or gentle turn is determined by the amount of force applied to the brake lever. Do likewise to make a right hand turn.
NOTE: ALWAYS REDUCE SPEED IN A TURN
4. TO SLOW OR STOP MACHINE:
 - A) Moving the speed control lever to neutral will bring the machine to a stop on level ground.
 - B) The machine may be stopped faster by releasing the speed control lever and applying BOTH hand brakes firmly.
 - C) When traveling down a grade, you may move the speed control lever gently toward the reverse direction to reduce speed or stop. This will **NOT** damage the transmission.
5. For normal use, the throttle should be kept fully open and the ground speed of the machine determined by the speed control levers. When transporting the machine or when loading or unloading from a truck/trailer, partial throttle should be used to slow the reaction time of the controls and reduce noise.
6. When making sharp turns, reduce your speed to avoid chasing the machine around corners.
7. Practice maneuvering the machine at a slow engine speed on level ground with the Blade Engagement Lever in the "OFF" position until you are familiar with the controls.
8. WORKING ON A SLOPE:



CAUTION: This machine will climb a greater slope than it is safe to be on. Always reduce speed when working on a slope.

- A) Climbing Hills: Since the hill climbing ability of the machine will probably far exceed any other machine you may have operated, caution should be observed as followed:
 - 1.) Never make a abrupt speed or direction change on a slope.
 - 2.) Never push down on the handlebars going up a grade. A slight lifting pressure is recommended on slopes to help keep the front of the machine on the ground.
 - 3.) **NEVER** attempt to mow any grade when the grass is wet.
 - B) Going Down Hills: A very slow speed should always be used when traveling down hill. This can be accomplished by GENTLY moving the speed control lever into the reverse position.
 - C) Traveling Across Slopes: To keep a straight traveling line, apply the uphill side brake. The brake force needed will be in direct relation with the severity of the slope. In most cases, a constant pressure will yield better results than an "on-off" action.
9. Blade Engagement Lever: The Blade Engagement Lever controls power to the mower deck. To engage the blades, push the lever forward to the "ON" position with a firm motion. To disengage the blades, first slow the engine speed, then pull the lever back towards you until it rests against the stop in the "OFF" position.
 10. Safety Interlock System: This mower is equipped with an electrical interlock system that will not allow the engine to start unless the Blade Engagement Lever is in the "OFF" position.


CURB CLIMBING

 **WARNING:** Never attempt to climb a curb or any obstacle with the blades engaged.

1. Curbs 4" or less can be easily climbed with a straight approach. Push down on the handle bars to raise the front of the cutter deck approximately 18"-20" so that machine is balanced over the drive tires.
2. Curbs over 4" should be backed over one wheel at a time.
 - A) Place left or right drive tire against the curb, leaving other drive tire approximately one (1) foot into the street.
 - B) Firmly apply the brake to the drive tire farthest from the curb and slowly move the speed control lever into reverse until the tire against the curb climbs on top of the curb.
 - C) With one drive tire on the curb, firmly apply the brake for the tire on the curb and slowly move the speed control lever into reverse until the other tire climbs on top of the curb.
 - D) With both drive tires securely on top of the curb, push down on the handle bars to raise the front of the cutter deck and ease the speed control lever into reverse until machine has completely cleared the curb.

TRIAL RUN

Now that you have located the controls and understand their function and operation, it is time to test run your new mower. Do this with the cutter blades OFF until you feel comfortable with operating the machine.

 **WARNING:** Improper use of this machine can result in serious injury. Give complete and undivided attention to safe operation of the mower.

CUTTING WITH THE MACHINE

IMPORTANT: Do not disengage the parking brake until you are ready to move.

1. To engage the cutter blades, push Blade Engagement Lever forward slowly until it snaps into place. This control is located to your front left.
2. To disengage the mower blades, pull the Blade Engagement Lever back toward operator slowly.


IMPORTANT: Do not engage mower blades until you are ready to start mowing.

CUTTING SPEED


For best mowing results, it is important that the blades be run at maximum speed. Set the throttle control at the "FAST" position which will provide the proper blade speed and maximum engine horsepower.

Choose a ground speed which will provide the desired finish cut, maximum operator comfort and will not overload the mower drive. A slower ground speed will provide a smoother operating machine and a more uniform cut.

GRASS DISCHARGE

 **DANGER:** To avoid personal injury, keep all shields and guards in place. Never operate machine without Grass Discharge Chute in place.

The Grass Discharge Chute was designed to scatter clippings and prevent clogging in heavy cutting. When cutting lush, thick, tall or wet grass, reduce ground speed and/or reduce width of cut to prevent possible belt damage. For best cutting results, DO NOT mow wet grass. Wet grass will cause clogging and produce unsightly clumping on the lawn. In medium to heavy cuttings, plan your mowing to discharge clippings away from uncut grass.

 **DANGER:** If cutter deck becomes clogged, stop engine and disengage mower blades before cleaning.

If the mower becomes clogged, disengage mower blades and back unit out from uncut grass. Turn off engine, remove ignition key and spark plug wire and clean underside of deck using a stick or scraper.

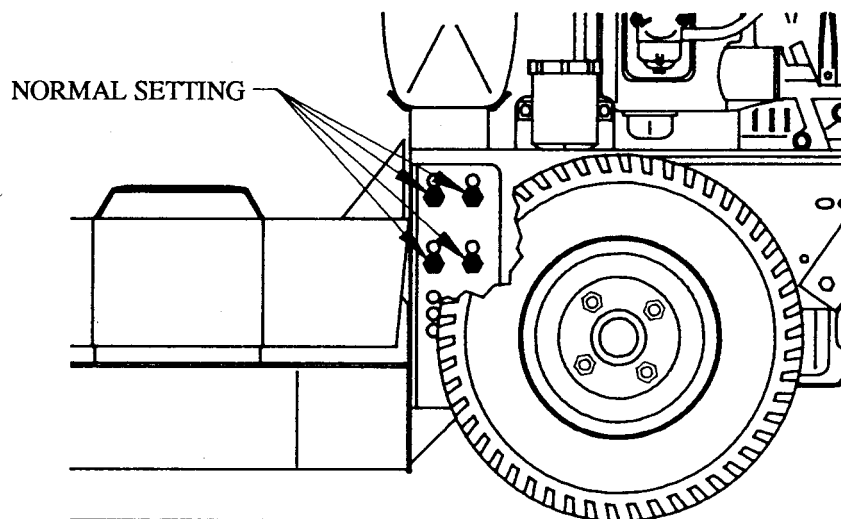
NOTE: The underside of the cutter deck should be cleaned out (hosed off with water) after each use with the engine off and cutter blades disengaged. This will aid in the performance of the mower on its next use.

ADJUSTMENTS AND SERVICING

CUTTING HEIGHT

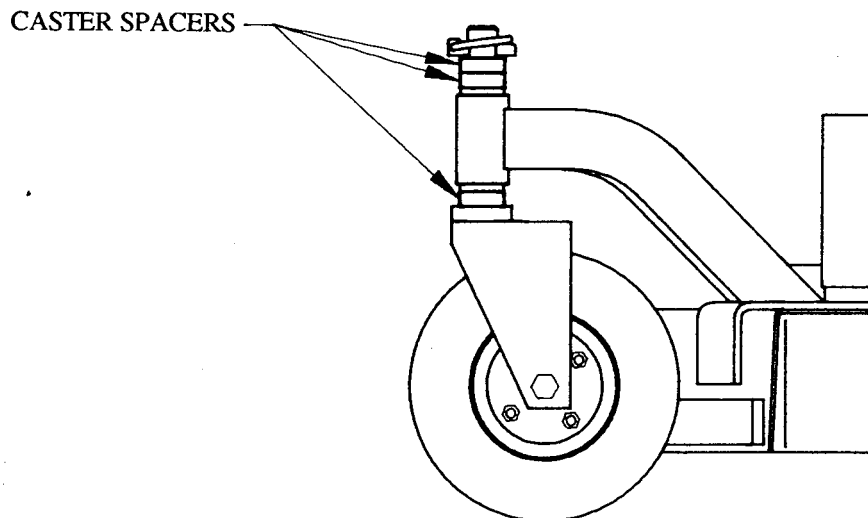
1. JUNCTURE OF MOWER DECK TO ENGINE DECK:

- A) Insert eight (8) bolts and nylon lock nuts in lower set of bracket holes. Do not tighten these bolts at this time.

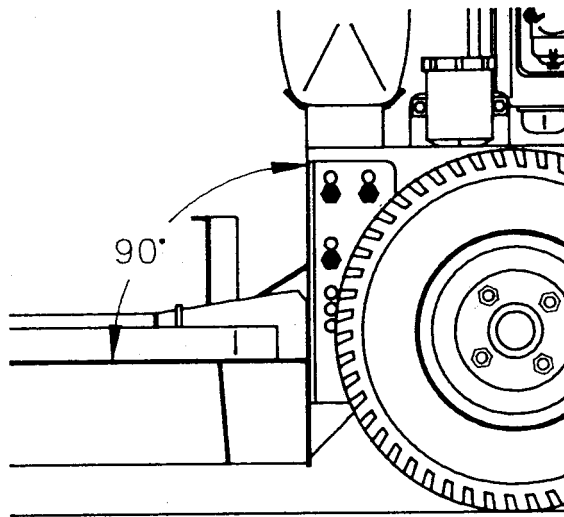


NOTE: This set of mounting holes will accommodate approximately 95% of all mowing conditions. The upper set of holes should only be used for cutting 2" and below. For maximum belt life when cutting 2" or below, lower the jackshaft pulley to the bottom of the shaft.

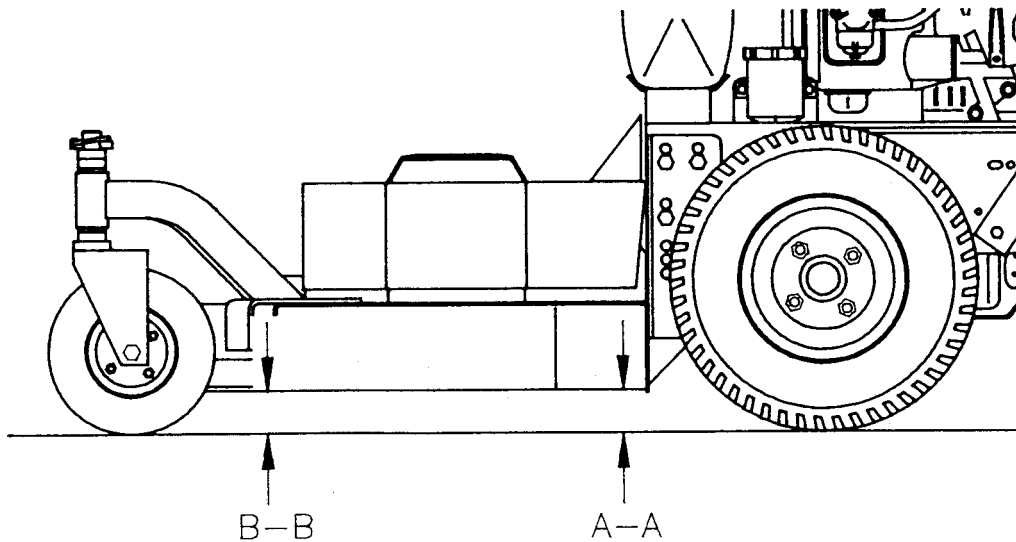
- B) Place 1 caster spacer on the bottom of the caster wheel mount and 2 on top of caster mount.



- C) It is important that the engine deck and cutter deck be exactly square to ensure proper pulley alignment and avoid premature belt wear. When the engine deck and cutter deck are square tighten the eight mounting bolts. (NOTE: Bolts need to be extremely tight.)



- D) Measure the cutter deck at the front and then at the rear by laying a straight edge on top of the cutter deck. The distance between "A-A" at the rear of the cutter deck should always be $1/16'' - 3/16''$ greater than the distance between "B-B" at the front of the cutter deck.



- E) If a cutting height nearing 3" is desired, 2 spacers will be required under the caster mount. If 2 spacers are to be used, the cutter deck should be measured again to ensure the front of the deck is lower than the rear. If the rear of the deck is lower than the front, loosen the eight (8) mounting bolts and rock the engine deck until the above mentioned measurement is reached. Retighten bolts.

2. CASTER WHEELS:

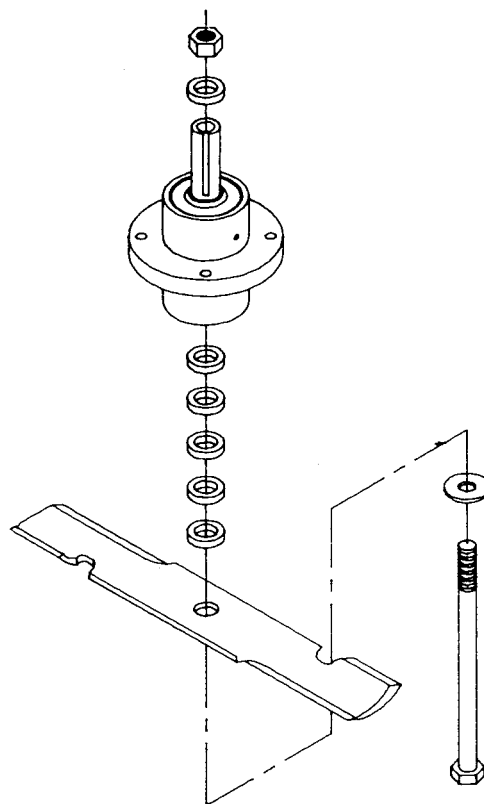
- A) With the cutter deck mount square as suggested, place 1 caster spacer below the caster mount and 2 above. This will accommodate a cutting height of 2-1/4" to 2-3/4". For a cutting height of 2-3/4" to 3-1/4", place 2 spacers below the caster mount and 1 above.
- B) If a cutting height below 2" is desired, lower the cutter deck on the eight mounting holes and place all three caster spacers above the caster mount. Check to make sure the front of the cutter deck is lower than the rear. (See pg. 11, 1C & 1D) No other variation is recommended in this position.

3. CUTTER BLADES


⚠ DANGER: Before making this adjustment, make sure the ignition key is "OFF" and the key is removed from the machine.

- A) Remove belt guard from cutter deck by pulling up and away the three rubber latches.
 - B) Lift cutter deck and block up to support the deck.
 - C) Using two 15/16" wrenches, remove the nut from the top of the blade bolt.
 - D) Withdraw the blade bolt complete with washer, blade and blade spacers.
 - E) Place required number of blade spacers below the cutter deck on the blade bolt. Five on the top of the blade is the factory pre-set. (See illustration below.)
- NOTE:** NEVER place all six blade spacers on either side of the spindle housing.
- F) Replace bolt, washer, blade and blade spacers.
 - G) Place remaining spacer(s) above spindle pulley. Replace nut and tighten to 70 FT/LBS.

⚠ DANGER: Insert blade bolt from under cutter deck only. Never place blade spacers below blade.



MOWER BELT TENSIONS AND ADJUSTMENTS

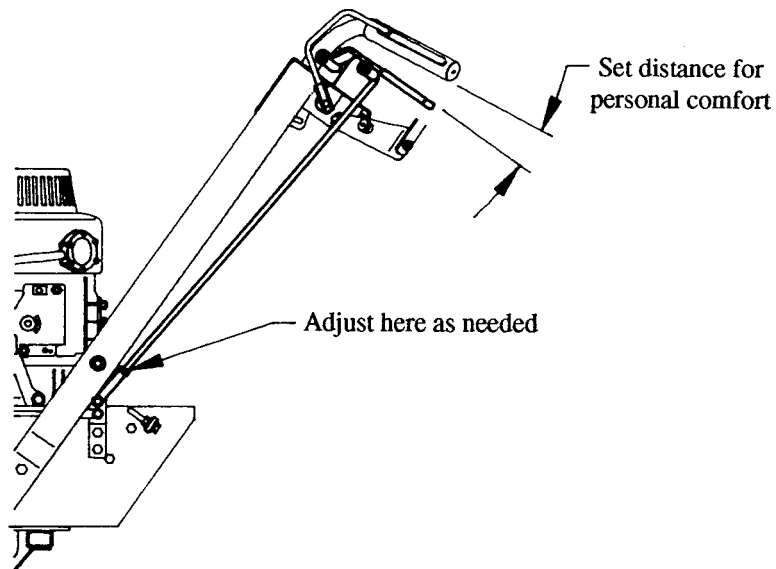
 **DANGER:** Before making this adjustment, make sure the ignition key switch is "OFF" and the key has been removed from the machine.

1. Remove the belt guard from cutter deck by pulling up and away the three rubber latches.
2. Check the mower belt clears the belt guides by 1/8" to 3/16". Adjust guides as necessary.
3. Adjust 36" deck as follows:
 - A) Mower Clutch Belt:
With blade control lever engaged, loosen the turnbuckle jam nut with a 1/2" wrench. Adjust turnbuckle so that only a moderate force is required to engage and disengage the blade control lever. Retighten the turnbuckle jam nut. DO NOT over tighten.
4. Adjust 48" deck as follows:
 - A) The Blade Clutch Belt is spring tensioned. No adjustment is necessary.
5. Blade Spindle Belt: (Double 'B')
 - A) 36" Deck- Does not apply.
 - B) 48" Deck- Tighten eye bolt so that 10 lbs. of pull is required to deflect the belt 1/2" between the idler pulley and the right hand spindle.
6. Engine to Jackshaft Spindle Belt is spring tensioned. No adjustment is necessary.
7. Hydro Drive Belt is spring tensioned. No adjustment is necessary.

NOTE: Do not use a lever or screw driver to tension Mower Drive Belt.

BRAKE LEVER HEIGHT ADJUSTMENT

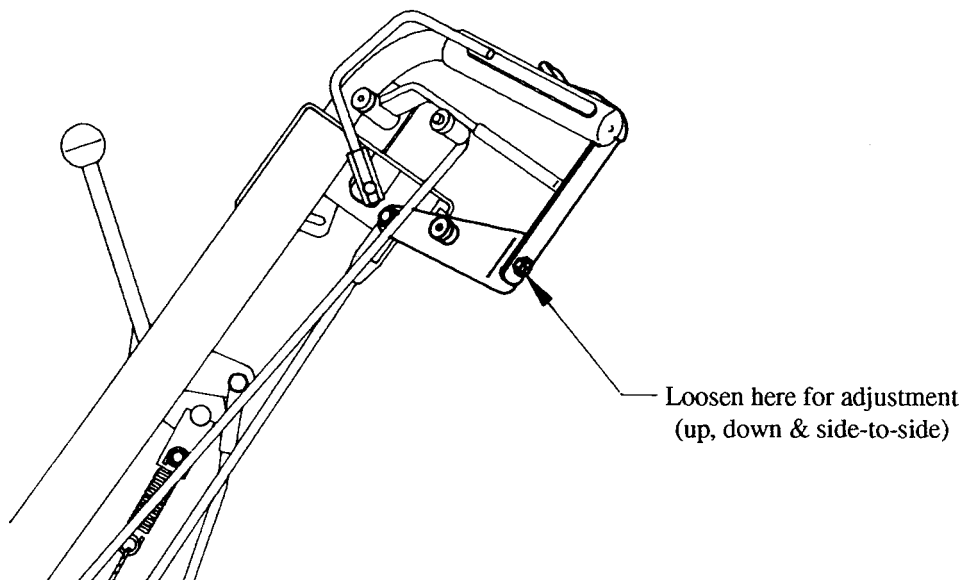
Brake lever height can be adjusted to suit individual needs by turning the clevis in or out. (Lengthening or shortening the linkage rod.)



SPEED AND DIRECTION CONTROL POSITIONING

Loosen the bolts shown by turning the bolt head. Position control so it is most comfortable at your normal cutting speed. Retighten bolts and test run.

NOTE: Thumb controls must run parallel with the handle bars in both forward and reverse without rubbing.



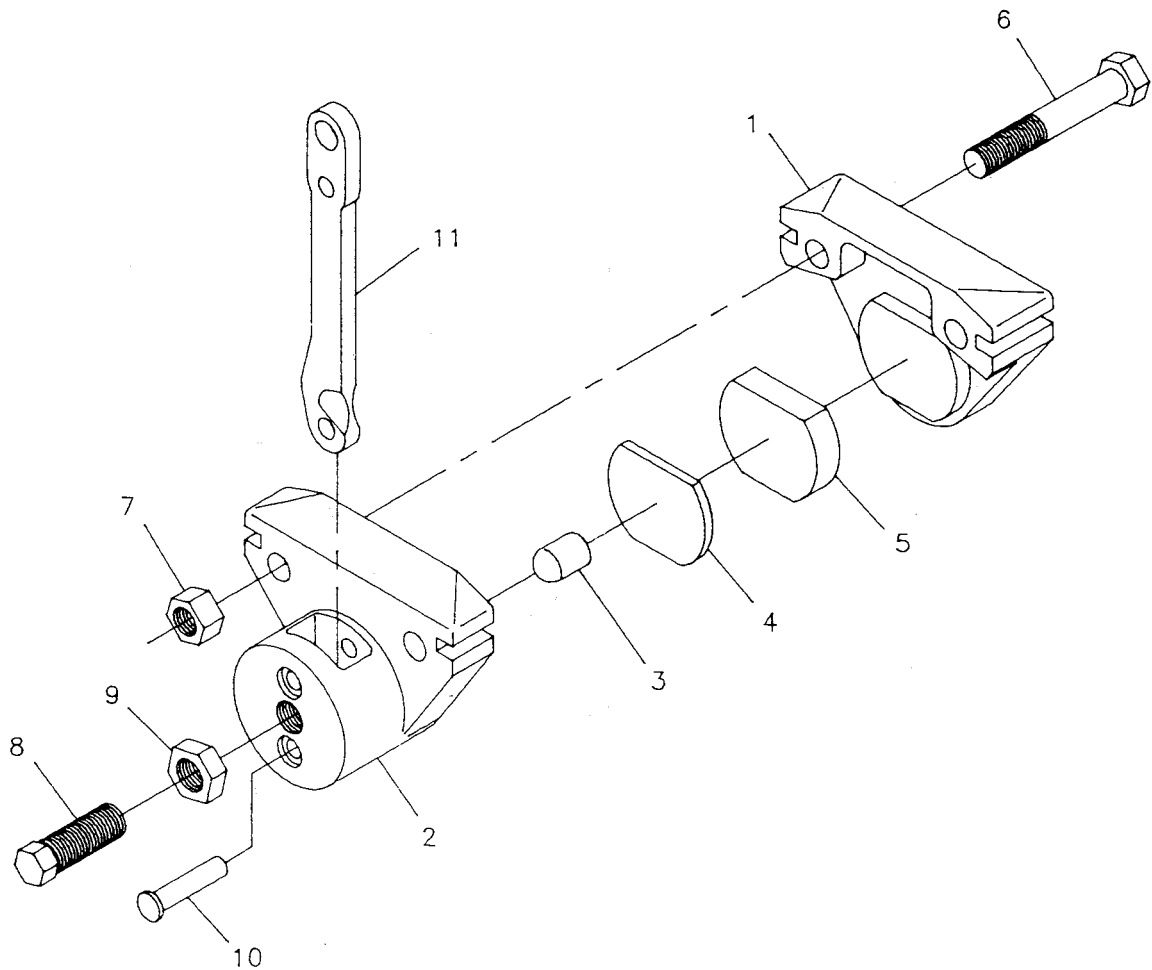
STEERING BRAKE ADJUSTMENT

⚠ DANGER: To avoid personal injury, turn off engine and wait for all movement to stop. Remove spark plug wire before servicing.

ADJUST: When the brake lever travel becomes excessive.

1. Loosen jam nut. (Item #9)
2. Turn the adjuster bolt (Item #8) clockwise until snug.
3. Back off adjuster bolt (Item #8) 1/2 turn.
4. While holding adjusting pin, retighten jam nut.

EXPLODED VIEW OF BRAKE ASSEMBLY

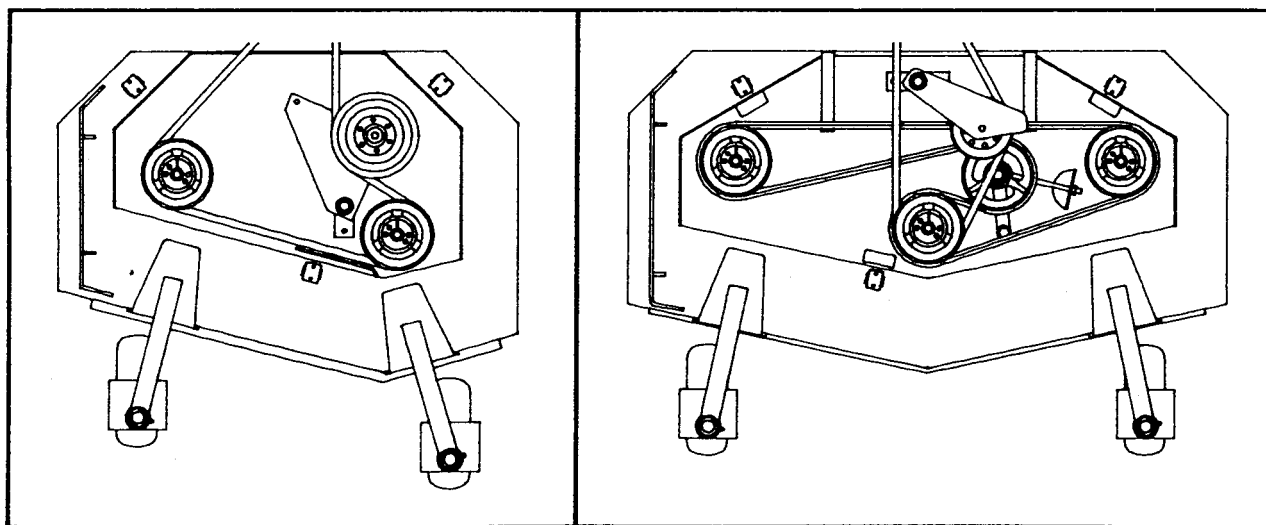


BRAKE LINING REPLACEMENT


1. Remove the adjuster bolt from the brake caliper, disconnect the clevis pin from the brake lever, and remove the bolts holding the brake mount to the engine deck.
2. Remove the brake caliper assembly from the mount, remove the two bolts (Item #6) and separate the caliper halves.
3. Remove the brake puck (Item #5) and back plate (Item #4) and discard worn brake puck.
4. Remove the actuator pin (Item #3) (behind the back plate) and inspect the pin and brake lever for galling or cracks. If either is defective, these parts should be replaced in sets.
5. Grease the spherical end of the actuator pin, the end of the adjuster bolt, and the ramp areas of the brake lever with a good TEFLON-additive grease. Replace the actuator pin into the caliper housing, spherical end first. Replace the adjuster bolt only by a few threads to hold it in place.
6. Place the back plate into the brake caliper housing, then the new brake puck on top of the back plate.
7. If the brakes are severely worn, it may be necessary to replace the anvil side (Item #1) of the brake caliper.
8. Reassemble the brake caliper and tighten the bolts to 24 FT/LBS. (288 IN/LBS)
9. Replace the caliper in the brake mount, reassemble the brake mount to the engine deck, reconnect the clevis to the brake lever.
10. Adjust as described on page 15.

BELT REMOVAL AND REPLACEMENT

36" & 48" CUTTER DECK BELT LAYOUTS



BELT REMOVAL AND REPLACEMENT

 **DANGER:** Before any maintenance is performed on the machine, be sure ignition key is "OFF", the Blade Engagement Lever is disengaged, and the spark plug wire is removed from the spark plug.

NOTE: We recommend using only FERRIS replacement belts. Other belts may be slightly longer or shorter. This could cause interference, damage and/or improper clutching of the cutter blades.

1. CUTTER BLADE CLUTCH BELT


- A) Using a 9/16" wrench, loosen and/or remove all belt guides on both the cutter deck and the jackshaft mount.
- B) The belt can now be easily removed and replaced.
- C) 36" Deck ONLY: Tension the belt with the turnbuckle so that only a moderate force is necessary to engage the cutter blades. DO NOT over tighten.

2. ENGINE TO HYDROSTATIC TRANSMISSION BELT

- A) Using a 1/2" wrench, remove the nylon lock nut from spring anchor bolt on the idler arm.
- B) Release the spring tension by sliding the spring off of the anchor bolt.
NOTE: You may want to disassemble the cutter blade linkage to allow more working room.
- C) Remove and replace the belt. Be sure the belt is properly seated in the transmission pulley before connecting the belt tension spring and reinstalling the lock nut. Failure to do so can cause belt and/or pulley damage upon starting the engine.

3. ENGINE TO JACKSHAFT BELT

- A) See instructions for ENGINE TO HYDROSTATIC TRANSMISSION BELT to remove the belt off of the engine pulley. This is necessary in order to remove the jackshaft pulley.
- B) Using a 1/2" wrench, remove the nylon lock nut from the spring anchor bolt and the idler arm.
- C) Release the spring tension by sliding the spring off of the anchor bolt.
- D) Remove and replace the belt. Reconnect the spring and replace the lock nut.
- E) See instructions for ENGINE TO HYDROSTATIC TRANSMISSION BELT to reinstall the belt.

 **CAUTION:** Replace all safety guards before starting and operating the machine.

MAINTENANCE AND LUBRICATION

IMPORTANT: Before using this machine for the first time, check engine oil level.

⚠ DANGER: To avoid personal injury, turn engine OFF and wait for all movement to stop. Remove key from the ignition and remove the spark plug wire from the spark plug before servicing the mower.

1. BREAK-IN MAINTENANCE AND LUBRICATION

IMPORTANT: Apply oil and grease carefully only where required. Oil and grease on drive belts or pulleys will cause slippage and loss of drive. Wipe up all spills of excess oil and grease completely.

- A) The engine oil and filter should be changed according to the manufacturers recommendations. See the engine owners manual for proper instruction. The best time to change the engine oil is just after the engine has been run.
- B) Check and perform all operations outlined in the "DAILY MAINTENANCE" section of the manual.
- C) Adjust the cutter blade drive belt after the first 5 hours of operation. See the MOWER BELT TENSIONS AND ADJUSTMENTS section of this manual.
- D) The hydrostatic transmission is a sealed unit and requires no other maintenance than the following:
 - 1. Keep the cooling fins clean. This is the single most important factor in the useful life span of the transmission.
 - 2. Keep oil level so it is at the "FULL" line of the oil reservoir. Extra oil in the reservoir WILL NOT benefit the machine.
 - 3. Make sure the oil reservoir cap is secure.

IMPORTANT: If it absolutely necessary to remove the oil reservoir cap, only do so after completely cleaning on and around the reservoir cap. A small amount of dirt or debris in the oil will severely damage the transmission.

2. DAILY MAINTENANCE

- A) **GENERAL:** Make a general visual inspection of the mower for loose or damaged parts. Periodically check nuts and bolts for looseness caused by vibration or rough handling. Damaged parts should be replaced before operating the mower again.
- B) **BELTS:** Check the condition and tension of all belts. Replace any badly worn or damaged belt BEFORE it fails and possibly causes component damage. See the "ADJUSTMENT AND SERVICING" section of this manual for belt adjustment or replacement.
- C) **ENGINE OIL LEVEL:** Refer to the engine owner's manual. Check oil level with the mower on level ground and the engine OFF. Before removing the oil fill cap, clean any dirt or debris near the oil fill area.
- D) **AIR INTAKE SCREENS:** Check bolt air intake screens on the engine and engine deck for debris build up. Also check the cooling fins of both the engine and hydrostatic transmission for debris build up. Clean as necessary.
- E) **AIR CLEANER:** Visually inspect if operating under dusty conditions. Refer to the engine owner's manual for cleaning instructions.
- F) **TIRE PRESSURE:** Check the tire pressure in both the drive tires and caster tires. Be sure the drive tires are inflated to 15 PSI and the caster tires to 25 PSI.
- G) Grease the caster wheels, caster wheel mounts, jackshaft spindle and blade spindles.

3. EVERY 40 OPERATION HOURS

- A) Perform the "DAILY MAINTENANCE" schedule.
- B) **ENGINE OIL:** Refer to the engine owner's manual for proper time frame for changing the oil.
- C) **AIR CLEANER:** Clean or replace the air cleaner cartridge every 40 operating hours. (Clean or replace more often if operating under dusty conditions.) Refer to engine owner's manual for cleaning instructions.
- D) Oil all linkage points.
- E) Oil the transmission neutral rod assembly. (See your Illustrated Parts List, pg. 7, items 26 & 29)

NOTE: Wipe off grease fittings before attaching grease gun. Wipe off all excess grease as it will only attract dirt which could cause bearing damage or failure.

4. EVERY 100 OPERATING HOURS

- A) Perform the "EVERY 40 OPERATING HOURS" schedule.
- B) **ENGINE COOLING SYSTEM:** Remove the engine blower/flywheel shroud and clean any dirt or debris build up on the engine to prevent overheating and engine damage. Refer to the engine owner's manual for cleaning instructions.
- C) Check oil level of the hydrostatic transmission oil reservoir. Do not remove the cap unless it is absolutely necessary to determine the oil level. Before doing so, clean the cap and surrounding area. Any dirt or debris in the oil will severely shorten the transmission life.

5. GREASE FITTING LOCATIONS

PART	36" QTY.	48" QTY.	DAILY	WEEKLY
Caster Wheel Mounts	2	2	X	
Caster Wheel Bearings	2	2	X	
Blade Spindle Bearings	2	3		X
Jackshaft Spindle Bearings	1	1		X
Idler Pulley Pivot	2	1		X

IMPORTANT: Lubricate the blade and jackshaft spindle bearings with a "high speed, no melt" grease. Use of a conventional grease may greatly decrease the life expectancy of the bearings. The same grease may be used on all other grease points but is not necessary.

NOTE: When greasing the jackshaft spindle, pump grease until it starts to extrude through the relief hole in the spindle housing. Wipe up all excess grease to prevent it from running onto the cutter blade drive belt.

