OPERATOR'S MANUAL

933301

36 HYDRO MID-15HP KAW KAI

933302

36 HYDRO MID-17HP ES KAW KAI

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48 HYDRO MID-17HP KAW KAI

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MAN 4158461
Rev. B 9-2007

SCHILLER GROUNDS CARE

PARTS MANUAL 4158348

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.

⚠ WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Californie Proposition 65 Avertissement

Les échappements des moteurs diesel et certains de leurs composés sont reconnus par l'Etat de Californie pour être cancérigènes, provoquer des défauts congénitaux et d'autres dangers en matière de reproduction.

⚠ AVERTISSEMENT

L'émission du moteur de ce matériel contient des produits chimiques que l'Etat de Californie considère être cancérigènes, provoquer des défauts congénitaux et d'autres dangers en matière de reproduction.

California Advertencia de la Proposicion 65

El estado de California hace saber que los gases de escape de los motores diesel y algunos de sus componentes producen cáncer, defectos de nacimiento y otros daños en el proceso de reproducción humana.

⚠ ADVERTENCIA

El estado de California hace saber que los gases de escape de este producto contienen productos quÍmicos que producen cáncer, defectos de nacimiento y otros daños en el proceso de reproducción humana.

CALIFORNIA

Proposition 65 Warning

Battery posts, terminals, wiring insulation, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. **WASH HANDS AFTER HANDLING.**

IMPORTANT MESSAGE

Thank you for purchasing this CGC, Inc. product. You have purchased a world class mowing product, one of the best designed and built anywhere.

This machine comes with an Operation and Safety Manual and a separate Setup, Parts and Maintenance Manual. The useful life and good service you receive from this machine depends to a large extent on how well you read and understand these manuals. Treat your machine properly, lubricate and adjust it as instructed, and it will give you many years of reliable service.

Your safe use of this CGC, Inc. product is one of our prime design objectives. Many safety features are built in, but we also rely on your good sense and care to achieve accident-free operation. For best protection, study the manuals thoroughly. Learn the proper operation of all controls. Observe all safety precautions. Follow all instructions and warnings completely. Do not remove or defeat any safety features. Make sure those who operate this machine are as well informed and careful in its use as you are.

See a CGC, Inc. dealer for any service or parts needed. CGC, Inc. service ensures that you continue to receive the best results possible from CGC, Inc. products. You can trust CGC, Inc. replacement parts because they are manufactured with the same high precision and quality as the original parts.

CGC, Inc. designs and builds its equipment to serve many years in a safe and productive manner. For longest life, use this machine only as directed in the manuals, keep it in good repair and follow safety warnings and instructions. You'll always be glad you did.

Commercial Grounds Care, Inc.
One Bob Cat Lane
Johnson Creek, WI 53038-0469

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NOTICE !!!

Unauthorized modifications may present **extreme** safety hazards to operators and bystanders and could also result in product damage.

Commercial Grounds Care, Inc. strongly warns against, rejects and disclaims any modifications, add-on accessories or product alterations that are not designed, developed, tested and approved by Commercial Grounds Care, Inc. Engineering Department. Any Commercial Grounds Care, Inc. product that is altered, modified or changed in any manner not specifically authorized after original manufacture–including the addition of "after-market" accessories or component parts not specifically approved by Commercial Grounds Care, Inc.–will result in the Commercial Grounds Care, Inc. Warranty being voided.

Any and all liability for personal injury and/or property damage caused by any unauthorized modifications, add-on accessories or products not approved by Commercial Grounds Care, Inc. will be considered the responsibility of the individual(s) or company designing and/or making such changes. Commercial Grounds Care, Inc. will vigorously pursue full indemnification and costs from any party responsible for such unauthorized post-manufacture modifications and/or accessories should personal injury and/or property damage result.

This symbol means:
ATTENTION!
BECOME ALERT!

Your safety and the safety of others is involved.

Signal word definitions:

The signal words below are used to identify levels of hazard seriousness. These words appear in this manual and on the safety labels attached to Commercial Grounds Care, Inc. machines. For your safety and the safety of others, read and follow the information given with these signal words and/or the symbol shown above.

⚠DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

⚠WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

⚠CAUTION

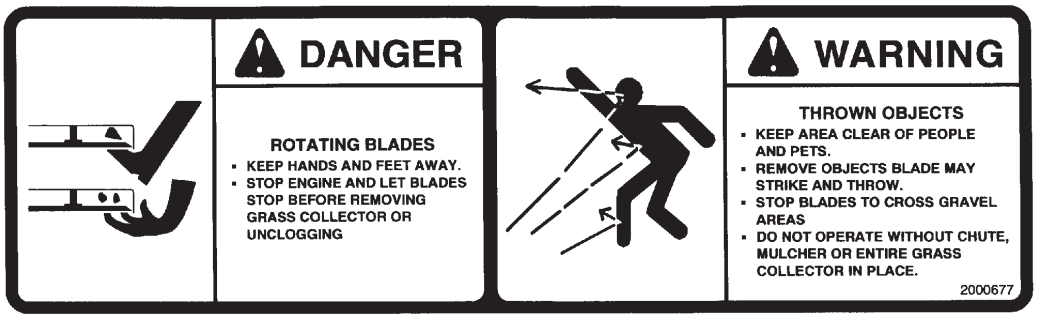
CAUTION indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices or property damage.

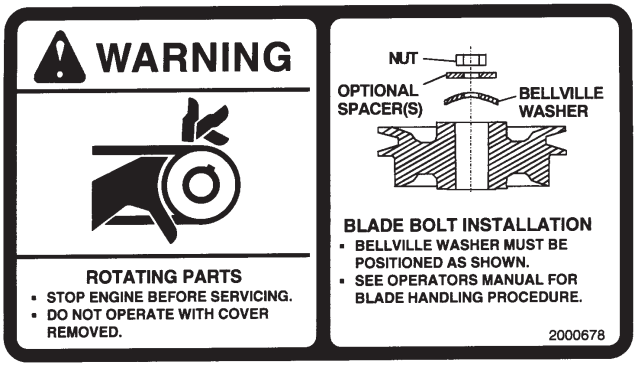
CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, **MAY** result in property damage.

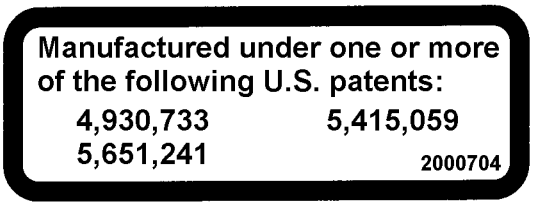
MODEL NUMBER: This number appears on sales literature, technical manuals and price lists.

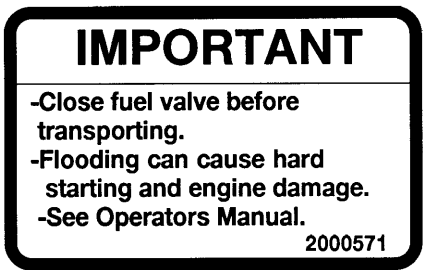
SERIAL NUMBER: This number appears only on your mower. It contains the model number followed consecutively by the serial number. Use this number when ordering parts or seeking warranty information.


DANGER
ROTATING BLADES
• KEEP HANDS AND FEET AWAY.
• STOP ENGINE AND LET BLADES STOP BEFORE REMOVING GRASS COLLECTOR OR UNCLOGGING
WARNING
THROWN OBJECTS
• KEEP AREA CLEAR OF PEOPLE AND PETS.
• REMOVE OBJECTS BLADE MAY STRIKE AND THROW.
• STOP BLADES TO CROSS GRAVEL AREAS
• DO NOT OPERATE WITHOUT CHUTE, MULCHER OR ENTIRE GRASS COLLECTOR IN PLACE.
2000677


WARNING
ROTATING PARTS
• STOP ENGINE BEFORE SERVICING.
• DO NOT OPERATE WITH COVER REMOVED.
NUT
OPTIONAL SPACER(S)
BELLVILLE WASHER
BLADE BOLT INSTALLATION
• BELLVILLE WASHER MUST BE POSITIONED AS SHOWN.
• SEE OPERATORS MANUAL FOR BLADE HANDLING PROCEDURE.
2000678

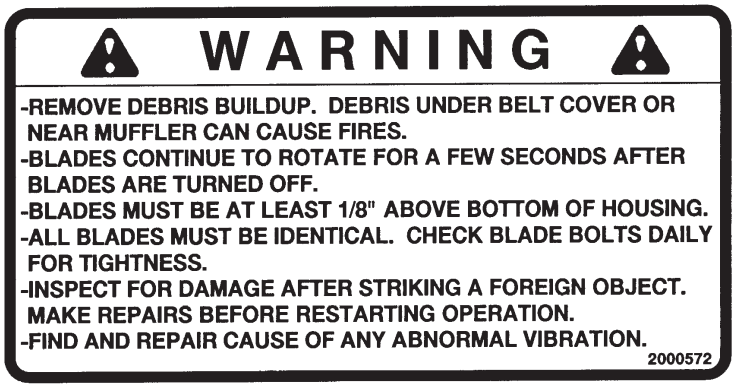

WARNING
TO CHECK OR ADD FUEL:
-Do it outdoors.
-Stop engine. Allow to cool.
-Do not smoke.
-Clean up spilled fuel.
-Do not overfill.
-Fill to one inch below bottom of filler neck.
2000570

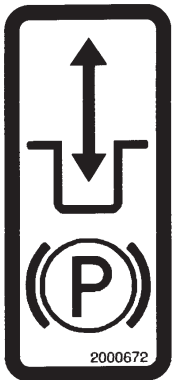

Manufactured under one or more of the following U.S. patents:
4,930,733
5,415,059
5,651,241
2000704


IMPORTANT
-Close fuel valve before transporting.
-Flooding can cause hard starting and engine damage.
-See Operators Manual.
2000571


WARNING
SPARKS OR FLAME CAN START EXPLOSION.
DISCONNECT (-)NEGATIVE TERMINAL FIRST.
RECONNECT (-)NEGATIVE TERMINAL LAST.
2000590


Operator's Manual
Inflate tires to 14 psi (1.0 kg/cm²)
2000673


WARNING
-REMOVE DEBRIS BUILDUP. DEBRIS UNDER BELT COVER OR NEAR MUFFLER CAN CAUSE FIRES.
-BLADES CONTINUE TO ROTATE FOR A FEW SECONDS AFTER BLADES ARE TURNED OFF.
-BLADES MUST BE AT LEAST 1/8" ABOVE BOTTOM OF HOUSING.
-ALL BLADES MUST BE IDENTICAL. CHECK BLADE BOLTS DAILY FOR TIGHTNESS.
-INSPECT FOR DAMAGE AFTER STRIKING A FOREIGN OBJECT. MAKE REPAIRS BEFORE RESTARTING OPERATION.
-FIND AND REPAIR CAUSE OF ANY ABNORMAL VIBRATION.
2000572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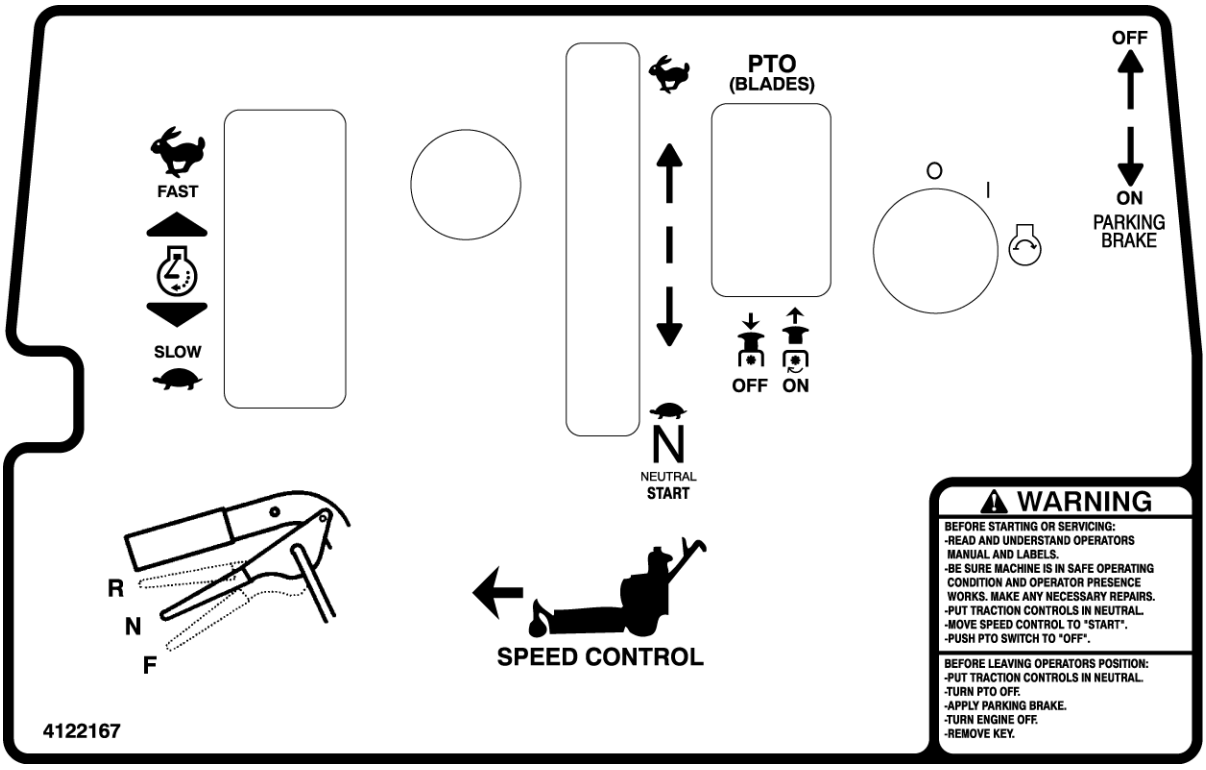

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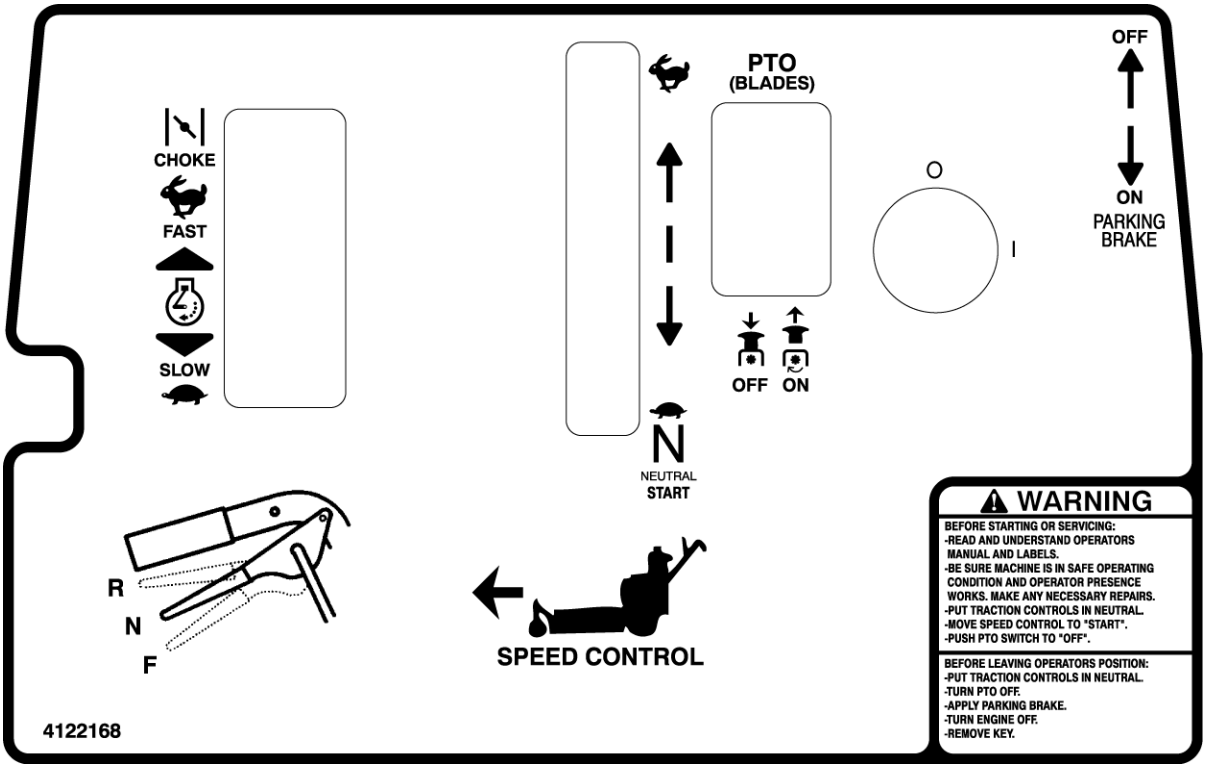


WARNING

-DO NOT OPERATE WHERE FLYING DEBRIS MAY INJURE PEOPLE OR DAMAGE PROPERTY. KEEP PEOPLE AND PETS AT A SAFE DISTANCE.

-DO NOT USE IF THERE ARE ANY DOUBTS ABOUT SAFETY.

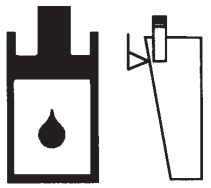
-KEEP LABELS, GUARDS AND SHIELDS IN PLACE. REPLACE IF LOST OR DAMAGED. REPLACE OPERATORS MANUAL IF LOST OR DAMAGED.

-OBEY SAFETY INSTRUCTIONS. FAILURE TO DO SO MAY CAUSE INJURY TO YOURSELF OR OTHERS.

-DO NOT DEFEAT INTERLOCKS. CHECK OPERATION DAILY.

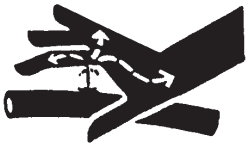
-DO NOT ALLOW CHILDREN, UNSKILLED OR UNTRAINED PERSONS TO OPERATE MACHINE.

-DISCONNECT SPARK PLUG WIRE(S) BEFORE DOING ANY MAINTENANCE.



HYDRAULIC OIL FILL TO LEVEL INDICATED WITH 10W30 OIL.

WARNING



HIGH PRESSURE FLUID:

-LEAKS CAN PENETRATE SKIN.

-SEEK IMMEDIATE MEDICAL ATTENTION FOR OIL PENETRATION INJURY.

-SEE OPERATORS MANUAL FOR PROPER METHOD OF LOCATING LEAKS, OR SERVICING HYDRAULIC SYSTEM.

2000661

ADVERTENCIA

1. Leer el manual del operador. No permitir que personas no capacitadas para ello usen la máquina.
2. Mantener los protectores en su lugar y sus tornillos debidamente fijados.
3. Antes de limpiar, ajustar o reparar este equipo, apagar todos los mandos, aplicar el freno de estacionamiento y apagar el motor.
4. Mantener las manos, los pies y la ropa alejados de las piezas en movimiento.
5. No conducir como pasajero ni llavar pasajeros en máquinas sin asiento para ello.
6. Mantener a las demás personas alejadas durante el funcionamiento de la máquina.
7. Si no sabe leer inglés, solicitarle a otra persona que le lea y explique el contenido de las etiquetas y del manual de la máquina.

340830

Before using machine for the first time, check engine and hydraulic fluid levels and lubricate all points.

TRAINING

a) Read the operator's manual carefully. All rotary grass cutters are potentially dangerous. No person should operate the machine unless they are familiar with the controls and the proper use of the machine.

b) Never allow children or people unfamiliar with these instructions to use the mower. Local regulations may restrict the age of the operator.

c) Keep the area of operation clear of all persons, particularly small children and pets.

d) Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people or their property.

PREPARATION

a) Do not operate the equipment when barefoot or wearing open sandals. Always wear substantial footwear and long trousers.

b) Wear hearing protection.

c) Thoroughly inspect the area where the equipment is to be used and remove rock, toys, wire or other debris which may be picked up and thrown by the machine.

d) Gasoline is highly flammable.
- Store gasoline only in a container specifically designed for gasoline storage in a cool, dry place away from sparks and open flame.
- When refueling or checking fuel level:
- Stop engine. Allow to cool.
- Refuel outdoors only.
- Do not smoke.
- Use a funnel. Do not overfill. Clean up spills and move machine away from spills before starting.
- Replace caps tightly.

e) Replace faulty mufflers.

f) Before using, always visually inspect to see that the blades, blade bolts and cutter assembly are not worn or damaged. Replace worn or damaged blades and bolts.

g) On multi-bladed machines, take care as rotating one blade can cause other blades to rotate.

h) Disengage the self-propelled mechanism or drive clutch on units so equipped before starting the engine (motor).

i) Never attempt to make adjustments while the engine (motor) is running.

j) Never operate the equipment in wet grass. Always be sure of your footing; keep a firm hold on the handle and walk; never run.

OPERATION

a) Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.

b) Mow only in daylight or in good artificial light.

c) Always be sure of your footing on slopes.

d) Walk, never run.

e) With walk behind machines, mow across the slopes, not up and down.

f) Exercise extreme caution when changing direction on slopes.

g) Do not mow excessively steep slopes.

h) Use extreme caution when reversing or pulling the mower towards you. Be sure the area behind is clear.

i) Stop the blades if the mower has to be tilted for transportation, when crossing surfaces other than grass and when transporting the mower to and from the area to be mowed.

j) Never operate the mower without proper guards, plates, grass catcher or other safety protective devices in place.

k) Do not change the engine governor settings or overspeed the engine.

l) Disengage all blades and drive clutches before starting the engine.

m) Start the engine or switch on the motor carefully according to instructions and with feet well away from the blades.

n) Do not start the engine when standing in front of the discharge chute.

o) Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times.

p) Never pick up or carry a mower while the engine is running.

q) Stop the engine, wait for the blades to come to a complete stop, and disconnect the spark plug wire:

- before clearing blockages or unclogging chute;
- before checking, cleaning or working on the mower;
- after striking a foreign object. Inspect the mower for damage and make repairs before restarting and operating the mower;
- if mower starts to vibrate abnormally (check immediately for the cause). Vibration is generally

a warning of trouble.

r) Stop the engine:

- whenever you leave the mower;
- before refuelling.

s) Shut the engine (motor) off and wait until the blades come to a complete stop before removing the grass catcher or unclogging chute.

t) Reduce the throttle setting during engine shut down and, if the engine is provided with a shut-off valve, turn the fuel off at the conclusion of mowing.

u) Go slow when using a trailing seat.

v) Keep washout ports and other mower-housing service openings closed when mowing.

x) Do not engage PTO at full throttle. Throttle midway between idle and highest possible engine speed.

y) Do not start the cutting blades until you are ready to start mowing.

z) Do not carry passengers.

aa) Do not operate where flying debris may injure people or damage property. Keep people and pets at a safe distance.

ab) Do not use if there are any doubts about safety.

ac) Keep labels, guards and shields in place. Replace operators manual if lost or damaged.

ad) Obey safety instructions. Failure to do so may cause injury to yourself or others.

ae) Do not defeat interlocks. Check operation daily.

af) Do not allow children, unskilled or untrained persons to operate machine.

OPERATING ON SLOPES

USE EXTRA CARE WHEN WORKING ON SLOPES

- With walk behind machines, mow across slopes, **not** up and down. With ride-on machines, mow up and down slopes, **not** across, except zero turn machines. Zero turn machines should mow across slopes.
- Be alert to dips and rises which change the general slope. Watch for holes, rocks and roots in the terrain and other hidden hazards. Keep away from drop offs. Avoid ground conditions which will cause the machine to slide.
- If the operator is uncomfortable or unsure of the machines stability, operation on these slopes should cease immediately.
- The ultimate responsibility for safe operation on slopes, rests with the operator.
- Use lower speeds and exercise extreme caution on slopes and especially in sharp turns to prevent tipping and loss of control. Use extra caution when changing direction on slopes.

LEAVING THE DRIVING POSITION

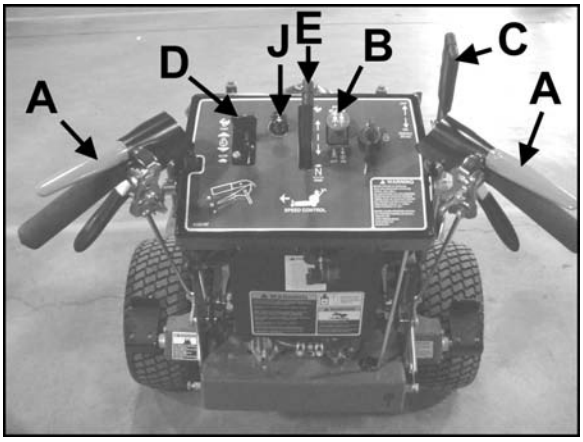
Park the machine on level ground. Before leaving the driving position, stop the engine, make sure all moving parts are stationary and that the traction control levers are in the neutral position. Apply parking brake.

MAINTENANCE AND ADJUSTMENTS

- Disconnect spark plug wire(s) before doing any maintenance.
- Particular care must be taken when adjusting the carburetor while the engine is running. Keep hands and feet clear. Shut off PTO.
- When working underneath lifted parts or machines, make sure adequate support is provided.
- Do not dismantle the machine without releasing or restraining forces which can cause parts to move suddenly.
- Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
- Check the grass catcher frequently for wear and deterioration.
- Replace worn or damaged parts for safety.

STORAGE

- Never store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark.
- Allow the engine to cool before storing in any enclosure.
- To reduce the fire hazard, keep the engine, muffler, battery compartment and gasoline storage area free of grass, leaves or excessive grease.
- If the fuel tank has to be drained, this should be done outdoors.
- Use only replacement parts supplied by the original manufacturer.



OPERATOR PRESENT CONTROLS (A)
The control levers must be held down for PTO operation and to shift the speed control out of neutral. If the PTO switch is on or speed control is shifted from neutral and the control levers are released, the engine will kill. On electric start models the control levers must be released, the blades must be off and the speed control must be in neutral for the engine to start.

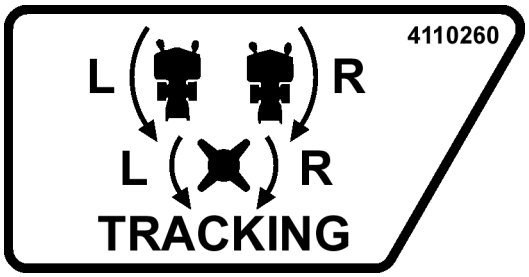
PTO SWITCH (B)
- DO NOT START CUTTING BLADES UNTIL READY TO START MOWING.
- **DO NOT ENGAGE PTO AT FULL THROTTLE. SET ENGINE SPEED MIDWAY BETWEEN HIGH IDLE AND LOW IDLE FOR ENGAGEMENT.**
- Disengage drive to cutting blades whenever you stop or leave the operators position.
- Shut off engine and remove spark plug wire before making adjustments or unplugging mower.
- The drive to the cutters is engaged when the PTO switch is pulled up toward the operator **(ON)** and disengaged by pushing the PTO switch back down **(OFF)**.

PARKING BRAKE (C)
Pull lever back to engage parking brake. Push lever forward to disengage parking brake.

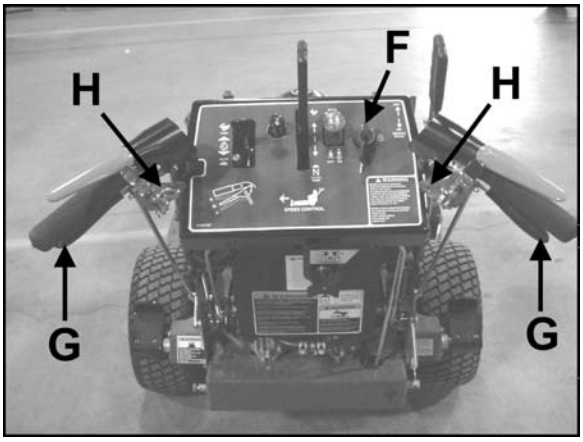
THROTTLE CONTROL (D)
By moving the throttle lever forward towards the engine, the engine speed is increased until the maximum governed rpm is obtained. By moving the throttle lever fully back, the engine will Idle down. On engines with an integrated choke, Moving the throttle lever forward to the detent gives maximum governed rpm. Moving it past the detent, chokes the engine.

SPEED SELECTOR (E)
The speed selector levers in the center of the control panel set the maximum forward and reverse speeds. The further the levers are moved forward, the faster the maximum preset speed. The levers must be moved forward for both forward and reverse speeds. Speed changes can be done on the go. The operator present levers must be held down or the engine will kill when the speed control levers are moved out of the neutral position.

TRACKING ADJUSTMENT KNOB (I)
The tracking adjustment knob provides on-the-go tracking control to correct for any hydraulic circuit or linkage differences from one side to the other.
To correct tracking:
1. Rotate the tracking adjustment knob to the right to make the machine track to the right.
2. Rotate the tracking adjustment knob to the left to make the machine track to the left.



CHOKE (J)
Provided with engines that do not have the integrated choke/throttle **D**. Pull up on choke control to engage choke when starting the engine. Push down on choke control to remove choke after engine starts.



KEYSWITCH (F)
Recoil models: Turn to right to allow engine to be started. Turn key to left to stop engine.

Electric start models: Turn key to right and hold until machine starts. When machine starts, let go of key and it will return to run position. Turn key to left to stop engine.

TRACTION CONTROL LEVERS (G)
TRACTION LOCKS (H)
The traction locks provide a neutral position when pulled back and locked with traction control levers.
To release: pull the traction control levers up enough to push forward on the locks.

NOTE:
- Squeezing the traction levers past the neutral position will cause the machine to back up)
- Both traction control levers must be released at the same time in order to go straight ahead. Using one traction control lever will cause the machine to turn to one side.
- When using the locks to provide a neutral position be sure the traction control rods are fully seated in the rear notch of the traction locks. Failure to do this may result in serious injury.

The traction control levers have **five** functions:

1. To provide a neutral position to stop the machine or to start the engine. Squeeze the levers enough to engage the traction lever locks by moving the tops of the locks towards the handgrip, then release the levers.
2. To engage the drive to wheels: gradually release the traction control levers to the speed set by the speed control and throttle.
3. To stop: pull the levers up to neutral.
4. To steer the unit: pulling up on the R.H. lever will initiate a R.H. turn and pulling up on the L.H. lever will initiate a L.H. turn.
5. To back up: squeeze the levers equally past neutral. This may be done any time the engine is running and the speed selector is not set in neutral, allowing instant forward/reverse operation and zero turning with one wheel driving forward and one wheel driving backward. Releasing the traction lever from reverse automatically returns the machine to neutral or the preset forward speed, depending on where the traction locks are set.

NOTE: There is a noticeable difference in the force required at the traction levers in the transition from neutral to reverse.

BEFORE STARTING THE ENGINE:

- Disengage cutterdeck drive.
- Traction levers are positively locked in neutral.
- Parking brake is on and speed selector is in neutral.

1. Check the engine oil level and add if necessary. Open the fuel valve under the fuel tank. Set the traction levers in the neutral position and the PTO switch to the off position. Shift the speed selector to neutral.

2. For cold starts, set the throttle lever to the half open position and apply the choke.

   NOTE: For engines with combination choke/throttle controls, move throttle lever all the way forward to choke position.

3. Pull the rope operated recoil starter firmly, or turn the key to operate electric starter (if so equipped) to start the engine. Allow the rope to recoil slowly before releasing the handle.

4. As soon as the engine starts, gradually back the choke off from the choke position until the engine will run with no choke at all.

OPERATING THE MACHINE

- Practice at slow engine and speed selector speeds with the blade control disengaged until completely familiar with the controls.
- For normal cutting the throttle should be set at the full open position. By using the speed control lever to speed up or slow down the machine during use, maximum control and cutting efficiency can be maintained.
- Using the machine at less than full throttle in heavy conditions will cause the engine to labor and result in excessive wear.
- For maneuvering where the speed control lever does not give the required speed, partial throttle may be used.
- Steering is controlled by the operation of the traction control levers. To steer the machine to the left, reduce the drive to the L.H. wheel by pulling up the L.H. traction control lever. To steer to the right, reduce the drive to the R.H. wheel by pulling up the R.H. traction control lever. Pulling a traction control lever up past neutral will cause that wheel to back up.
- To change speeds, depress the operator present controls then move speed control levers to desired speed.

FUEL TANK

⚠WARNING GASOLINE IS HIGHLY FLAMMABLE!

- Fill fuel tank with good quality, clean, regular unleaded gasoline.
- Do not use hi-test fuel.
- Do not smoke.
- Do not spill fuel.
- Fill outdoors.
- Do not overfill. Fill to 1" below bottom of filler neck to allow room for expansion.
- USE A FUNNEL TO FILL GAS TANK

DRIVING THE MACHINE IN TRANSPORT

1. With the PTO switch disengaged, and the operator present controls depressed, move the speed selector lever to give the required forward speed.
2. Release the traction lever locks and gradually engage both traction control levers together.

NOTE: Engaging only one traction lever will cause the machine to turn to one side. Squeezing one traction lever past neutral will cause the machine to back up to one side.

CUTTING WITH THE MACHINE

1. Make sure the discharge chute is in position or a grass collector is correctly fitted before starting to cut.
2. Depress the operator present controls.
3. Turn blades on with the PTO switch.
4. Do not start blades at full throttle. Use engine speed midway between high idle and low idle.
5. Move the speed selector lever to give the required cutting speed. Release the traction locks and gradually engage both traction control levers together.
6. Operate so that clippings are discharged onto the area that has been cut. This will result in a more even distribution of clippings and more uniform cutting.

- When mowing large areas, start by turning to the right so that clippings will be discharged away from shrubs, fences, driveways, etc. After two or three rounds, mow in the opposite direction, left hand turns, until finished.
- If grass is extremely tall, it should be mowed twice, the first cut relatively high, the second cut to the desired height.
- Use the left side of the mower for trimming.

TO STOP THE MACHINE

1. Pull traction levers up to neutral.
2. Engage the traction lever locks in neutral position.
3. Disengage the cutterdeck with PTO switch.
4. Move speed control to neutral.
5. Close the throttle to slow the engine, turn engine off with the keyswitch.

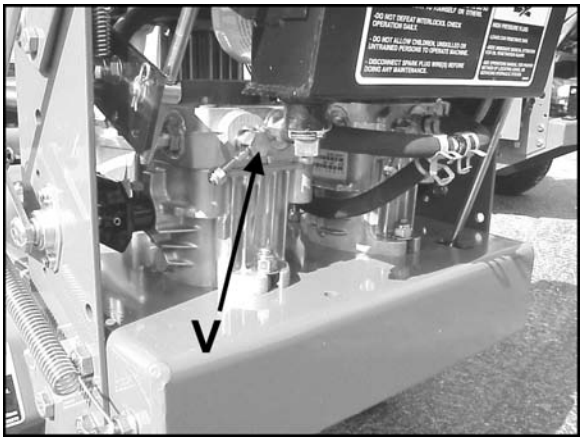
NOTE: When the machine is transported by truck or trailer or left to stand unused, the fuel valve (under the fuel tank) should be turned off. This avoids the possibility of flooding should any dirt get under the carburetor float needle. Leaving the fuel valve open can allow severe flooding which may ruin the engine by diluting the oil.

⚠WARNING **PREVENT INJURY OR PROPERTY DAMAGE FROM THROWN OBJECTS OR FROM CONTACT WITH THE BLADE**

- Keep body parts away from blades.
- Stop engine and let blades stop before removing grass collector or unclogging.
- Keep area clear of people and pets.
- Remove objects blade may strike and throw.
- Stop blades to cross gravel areas.
- Do not operate without chute, mulcher or entire grass collector in place.

PUSHING THE MACHINE WITH THE ENGINE STOPPED:

Open dump valve **V** on each pump by turning counter clockwise two revolutions. Move the machine and close dump valve **V** by turning clockwise until valve is firmly seated.



Make all adjustments with the engine shut off, spark plug wire disconnected and mower drive disengaged.

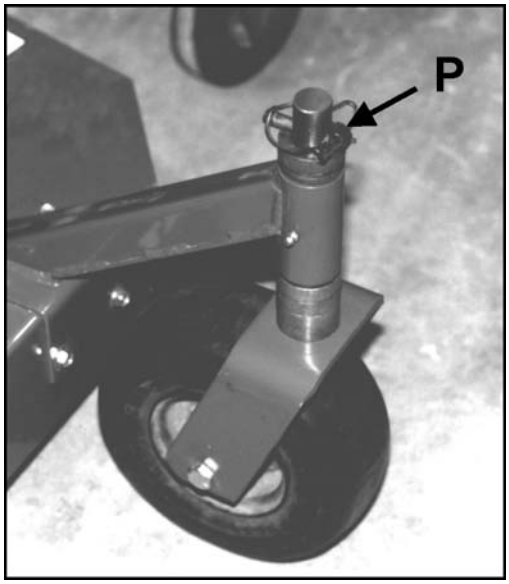
Two types of cutterdeck mounting systems are available, fixed and floating. Fixed mounting rigidly attaches the cutterdeck to the power unit. Floating mounting allows the cutterdeck to move independant of the power unit providing a more uniform cut.

FIXED CUTTERDECK HEIGHT OF CUT

The cutting height is determined by the position of the blades in relation to the wheels. Variation to this height may be made at THREE points. (See Height of Cut Charts on Page 13 or Height of Cut decal located under belt cover to set desired cutting height.)

1. THE CASTER WHEELS

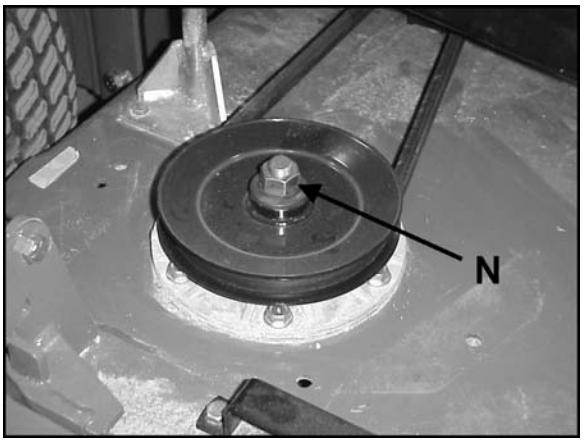
1. Remove the quick pin **P** from the top of the caster wheel pivot spindle.
2. Place required spacers above or below wheel support bracket and replace the quick pin **P**.

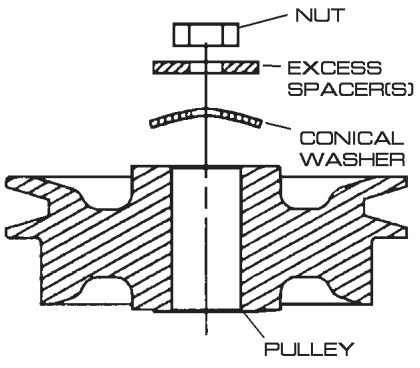


2. CUTTERDECK BLADE SPINDLES

NOTE: See MAINTENANCE section of the Setup, Parts & Maintenance manual for blade removal and replacement procedures.

1. Remove belt cover.
2. Remove nut **N** from the top of the cutter spindle bolt.
3. Withdraw the cutterdeck spindle bolt (from bottom) complete with washer, blade and spacers
4. Place the required number of spacers (no more than 2) on the cutterdeck spindle bolt below the cutterdeck, between blade and spindle shaft.
5. Fit any excess spacers on the cutterdeck spindle bolt above the deck, between the conical washer and the nut. Replace nut and tighten to 70 ft-lbs.

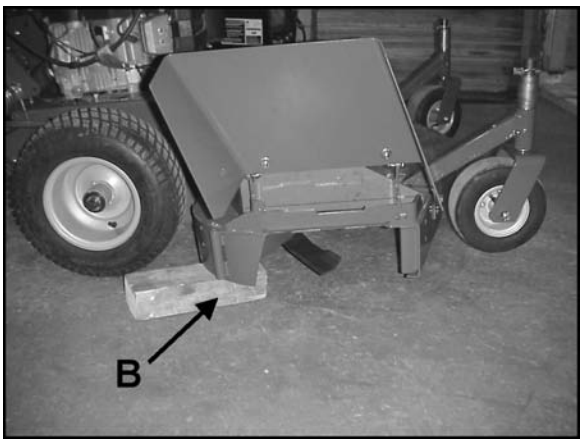


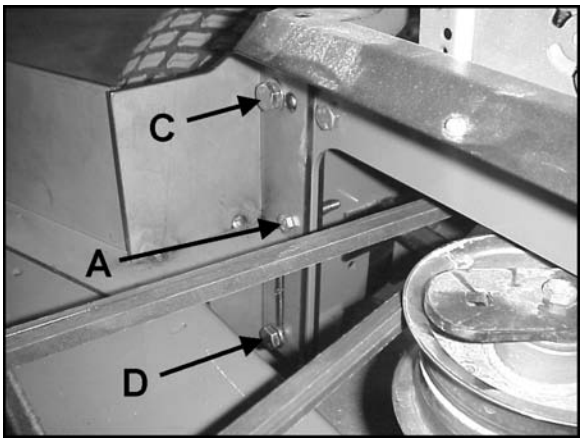


3. CUTTERDECK POSITION

The cutterdeck has FIVE positions relative to the engine deck. To change height of cut start on one side of cutterdeck.

1. Place support blocks of the appropriate thickness under both rear outside edges of the cutterdeck at **B**. See Support Block Chart below.
2. Remove guide pin **A** if installed.
3. Remove the top (2) M12-1.75 bolts.
4. Loosen the lower (2) M12-1.75 bolts **D** enough to allow the deck to lower onto the support blocks, or if the deck is being raised, allow the front of the deck to lower onto the caster wheels.
5. Reinstall top (2) M12-1.75 bolts and tighten all (4) bolts **C** and **D**.
6. Reinstall belt cover.

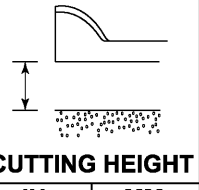


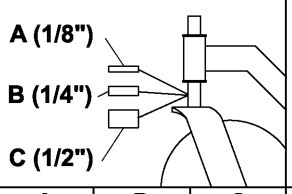


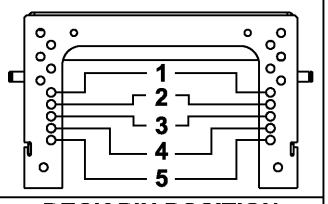
CUTTING HEIGHT	HOLE POSITION ON ENGINE DECK*	BLOCK HEIGHT AT REAR OF DECK (B)
1.375" - 1.625"	5	1.25"
1.875" - 2.375"	4	2.00"
2.625" - 3.125"	3	2.75"
3.375" - 3.875"	2	3.50"
4.125" - 4.625"	1	4.25"

*** Position 1 is the highest hole on the engine deck.**

FIXED CUTTERDECK HEIGHT OF CUT







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CUTTING HEIGHT						NUMBER OF SPACERS BETWEEN SPINDLE AND BLADE (1/4" THICK)
IN	MM	A	B	C	DECK PIN POSITION	
1.375	35	1	1	0	5	2
1.625	41	1	1	0	5	1
1.875	48	1	1	0	5	0
2.125	54	1	0	2	4	2
2.375	60	1	0	2	4	1
2.625	67	1	0	2	4	0
2.875	73	1	1	3	3	2
3.125	79	1	1	3	3	1
3.375	86	1	1	3	3	0
3.625	92	1	0	5	2	2
3.875	98	1	0	5	2	1
4.125	105	1	0	5	2	0
4.375	111	1	1	6	1	2
4.625	118	1	1	6	1	1

NOTE: Use only these combinations of settings. If any other setting is used, quality of cut will suffer because of wrong blade angle. These height of cut charts were developed in a controlled workshop environment. Slight variations can occur in the field, depending on tire pressures, etc. Make sure front of blade is lower than back of blade to prevent double cutting. Adjustment is provided by removing 1/8" washer beneath caster support.

PTO BELT

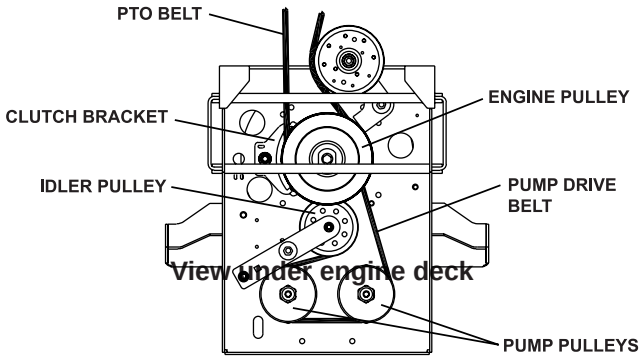
1. Rotate idler arm using a 3/8" ratchet or breaker bar and remove belt.

CUTTERDECK BELT

1. Remove PTO belt.
2. Rotate idler arm using a 3/8" ratchet or breaker bar and remove belt.
3. Replace in the reverse order.

PUMP-DRIVE BELT

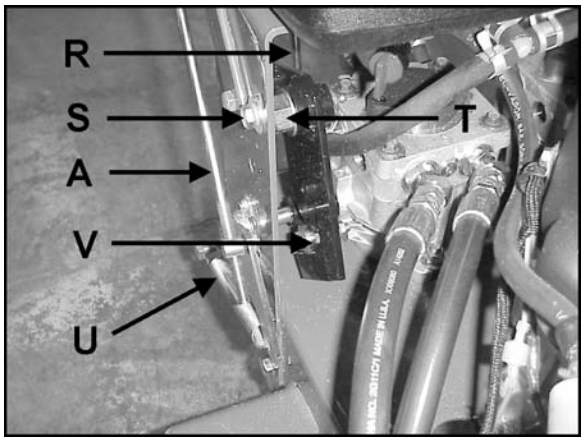
1. Remove PTO belt from the engine clutch.
2. Disconnect the clutch wire harness.
3. Unbolt clutch bracket from clutch and rotate the clutch to allow enough clearance to remove the clutch bracket.
4. Rotate idler arm using a 3/8" ratchet or breaker bar inserted into the square hole in the idler arm.
5. Remove pump drive belt.
6. Replace by following steps in reverse order.



TRACTION DRIVE HYDROSTAT ADJUSTMENTS: The following adjustments must be done in order.

STEP 1 - Set Neutral

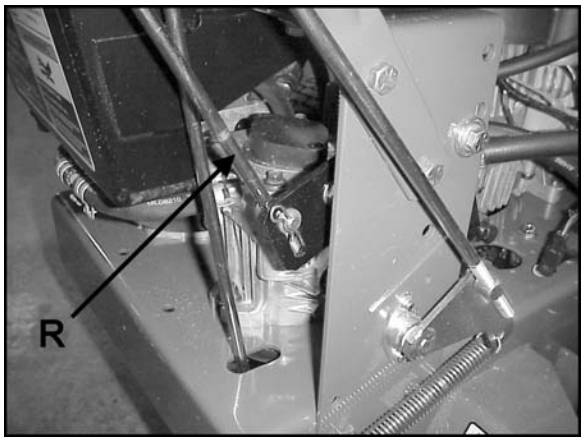
Neutral is set at the factory. If it should require adjustment, raise the wheels off the ground by setting the machine on jackstands or blocks. Disconnect the traction control rod **A** and speed control rod **R** at each pump end. Disconnect pump arm spring **U** from bolt on engine deck. Loosen bolt **S** securing the neutral plate eccentric shaft just enough to turn the shaft. Start the engine and run at low speed. Turn eccentric shaft **T** to raise or lower the point at which the follower bearing is held in the center of the "**V**" until the wheels stop turning. Tighten the eccentric shaft bolt. Increase the throttle setting and check the adjustment. Readjust if necessary. Shut the engine off before proceeding to steps 2 and 3.



STEP 2 - Adjust Speed Control Rods

First adjust neutral, as outlined in Step 1. Set speed control levers to neutral. Adjust swivels on lower ends of speed control rods **R** so they just go into the slots on the neutral plates.

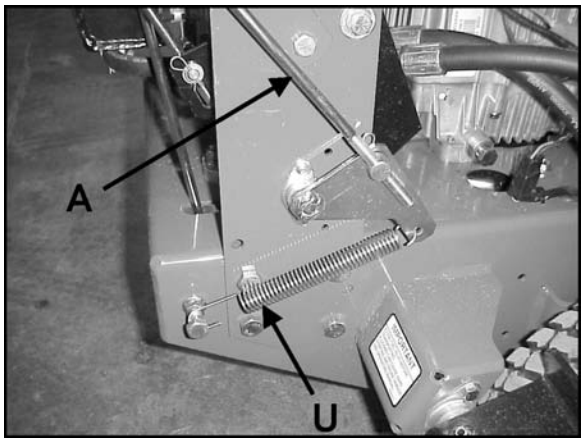
NOTE: If the speed control levers do not have adequate tracking adjustment, the swivel on one of the rods needs to be turned 1 turn.



STEP 3 - Adjust Traction Levers

Set neutral and adjust speed control rods as outlined in Steps 1 and 2. Set traction locks in the neutral position. Grasp traction rod **A** and pull down on it to take out any slack. The pump control arm has some back and forth play. Adjust the swivel to the center of the control arm play. Connect the swivel to the control arm. Reattach pump arm spring **U** to bolt on engine deck.

NOTE: More reverse speed may be gained by adjusting the swivel to the rear of the control arm play. A minimum of 1/16" play is required so the traction controls can be put in neutral without the machine backing up.



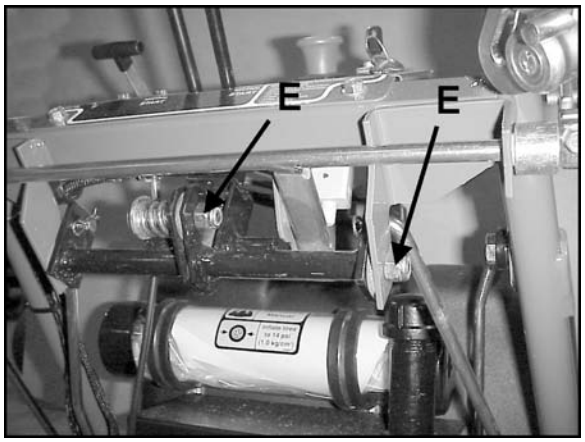
Speed Control Lever Friction

The speed control levers are held where set by friction pads. If the setting will not hold, tighten nuts **E** to increase friction on speed control levers.

Center nut tightens tracking movement between individual levers.

End nut tightens movement of both levers for speed.

Both speed control levers should move together when one lever is moved. If not, increase friction. Do not overtighten–this will make tracking adjustment difficult.



PARKING BRAKE

Apply parking brakes and open the bypass valves on the hydraulic pumps. Try to push the machine forward. If wheels rotate, adjust brakes as follows.

TO ADJUST:

1. Remove the hairpin cotter **A** from the brake rod at the brake lever as shown.

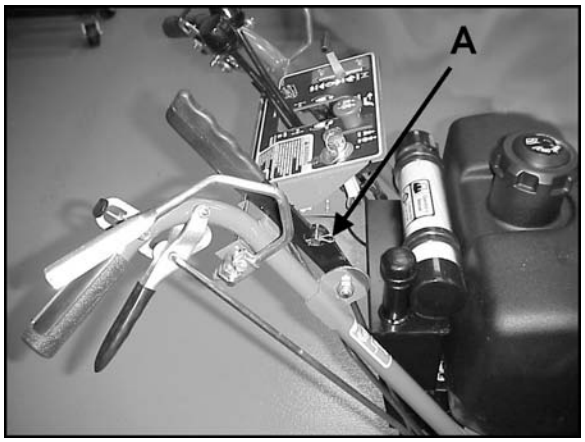
2. Slide the brake rod out of the brake lever and turn the rod in or out of the brake swivel **B** as needed.

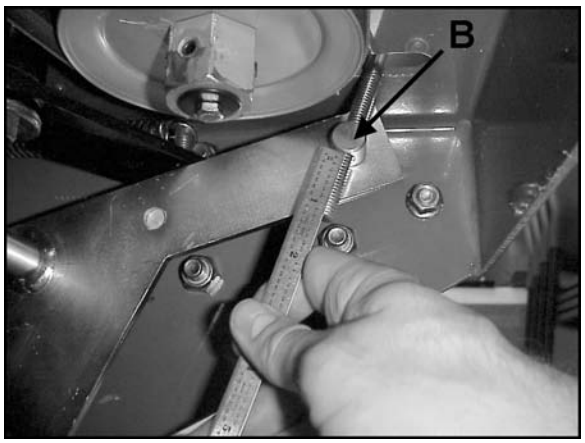
   NOTE: The brake should initially be adjusted so that the brake rod extends through swivel **B** 1-1/4" as shown. If more brake pressure is required adjust as necessary.

3. Reassemble brake rod to the brake lever using hairpin **A**.

4. Apply parking brakes and try to push the machine forward. If wheels rotate, readjust brakes.

5. Close bypass valves on the hydraulic pumps.

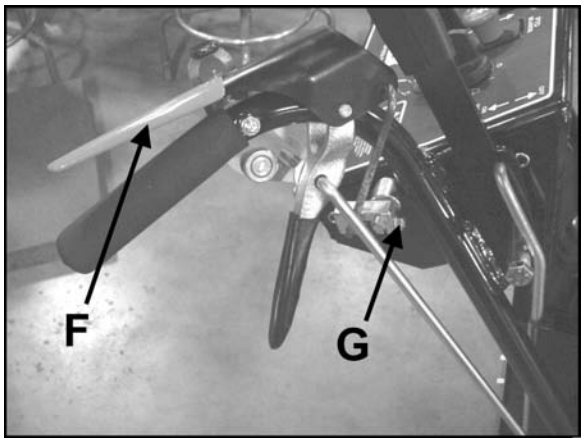




Make all adjustments with the engine shut off, spark plug wire disconnected and mower drive disengaged.

OPERATOR PRESENT CONTROLS

The operator present (OP) controls should be adjusted to control the operation of the plunger of the operator present switch (located under the right side of the control panel). Depressing OP levers **F** should depress the plunger; releasing the levers should extend it.



TO ADJUST:

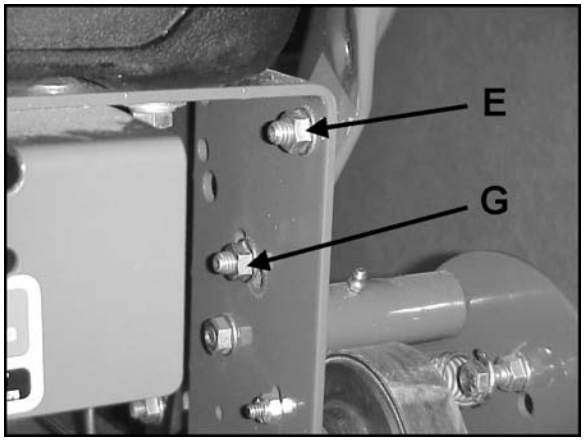
1. Loosen clamp bolts on both ends **G** so clamps can rotate on shaft.

2. Rotate actuator lever to depress switch plunger. Keep OP levers against handles and tighten bolts **G**.

3. When released, the OP levers should rise and the actuator lever should rotate away from the switch, allowing the switch plunger to extend completely.

HANDLE BAR HEIGHT ADJUSTMENT

To adjust handle bar height: Remove bolts **G** and loosen bolts **E** on each side of handlebars. Raise or lower as required. Reposition upper handle and reinsert bolts **G** into appropriate hole in lower handle and tighten. Readjust traction control rods, brakes and parking brakes.



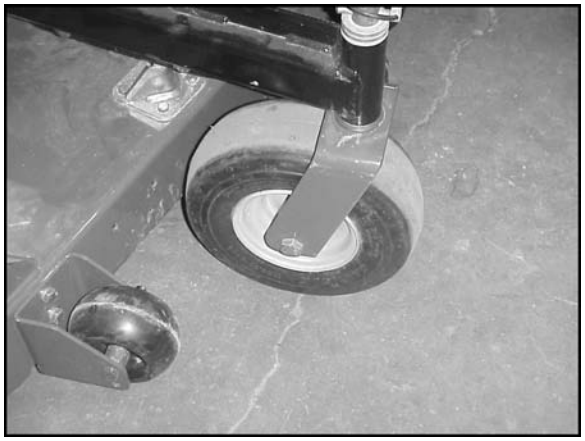
TRACK WIDTH ADJUSTMENT

The track width originally set from the factory can be increased an additional 3-1/4" overall by performing the following steps.

1. Loosen wheel lug nuts on both drive tires.
2. Raise rear of unit so that drive tires are off the ground. Support the unit with jack stands.
3. Remove wheel lug nuts and wheels. Reattach wheels with the tires rotated so the wheel offset is the opposite of when they were previously installed.
4. Lower machine off of the jack stands and torque wheel lug nuts to 85 ft-lbs.

TIRE PRESSURE ADJUSTMENT

Tire pressures should be maintained at 14 psi (1.0 kg/cm^2).



POWER UNITS

CONTROLS:
Throttle, choke, PTO switch, speed selector levers, key switch, operator present, traction levers (1 per wheel), parking brake.

GROUND SPEED:
0-6 mph Forward
0-2 mph Reverse

DRIVE TIRES:
16 x 7.50 Turf Saver

BRAKES:
Hydrostat provides dynamic braking
Parking brake: Mechanical on tire surface

TRANSMISSION DRIVE SYSTEM:
Belt from engine to hydrostat input shafts, hydrostatic drive to wheels.

TURNING RADIUS:
inside wheel 0".

HYDRAULIC RESERVOIR CAPACITY:
1.2 Gallons

POWER STEERING:
Independently controlled drive wheels.

CUTTERDECKS

CONSTRUCTION:
10 and 7 gauge steel deck welded single unit, baffled for high velocity air flow, large discharge opening with chute guard deflector.

SPINDLES:
1" spindle shaft on maintenance free sealed ball bearings in precision
machined housing.

CASTERS:
9 x 3.50-4 pneumatic (fixed decks only)
11 x 4.00-5 pneumatic (floating decks only)

HEIGHT OF CUT:.
adjustable from 1-3/8" to 4-5/8" (3.5-11.7 cm)

BLADE DRIVE:
industrial b section heavy duty v-belt drive (not twisted) from crankshaft to
cutterdeck with 5" steel idlers on sealed ball bearings. pto switch on control panel controls engagement of blades..

BLADE MATERIAL:
1566 alloy steel, austempered and heat treated.

ACCESSORIES AVAILABLE

standup sulky
jumbo grasscatcher
eco-plate

SIDE DISCHARGE DECKS			
MODEL NUMBER	933301, 933302	934301, 934302	935301, 935302
WIDTH (CHUTE DOWN)	47" (1194 mm)	58.5" (1486 mm)	64" (1854 mm)
WIDTH (CHUTE UP)	36.5" (927 mm)	48" (1219 mm)	55.75" (1416 mm)
WIDTH OF CUT	35.25" (895 mm)	47.25" (1200 mm)	52.5" (1336 mm)
NUMBER OF BLADES	2	3	3
BLADE LENGTH	18" (457 mm)	16.25" (413 mm)	18" (457 mm)
BLADE TYPE	High Lift (Low Lift option)	High Lift (Low Lift option)	High Lift (Low Lift option)
BLADE THICKNESS	0.205" (5.2 mm)	0.205" (5.2 mm)	0.205" (5.2 mm)
TIP SPEED	16965 ft/min (5171 m/min)	15315 ft/min (4668 m/min)	16965 ft/min (5171 m/min)
DAILY PRODUCTION @ 5 mph (8 km/hr)	14.2 acres/8hrs (5.74 ha/8hrs)	19.0 acres/8hrs (7.4 ha/8 hrs)	21.1 acres/8hrs (8.6 ha/8hrs)
SHIPPING WEIGHT	236 lbs (107 kg)	270 lbs (122 kg)	326 lbs (148 kg)

ENGINES			
MODEL NUMBER	933301	934301, 935301	933302, 934302, 935302
MANUFACTURER	KAWASAKI	KAWASAKI	KAWASAKI
MODEL	FH430V	FH541V	FH541V
CYLINDERS	2	2	2
COOLING	Air	Air	Air
FUEL	Gasoline	Gasoline	Gasoline
BORE/STROKE	2.6" X 2.6" (65 X 65mm)	2.91" X 2.68" (74 X 68mm)	2.91" X 2.68" (74 X 68mm)
DISPLACEMENT	28.3 ci (431 cc)	35.7 ci (585 cc)	35.7 ci (585 cc)
COMPRESSION	8.5:1	8.5:1	8.5:1
OUTPUT POWER	15 hp (11.2 kw) @ 3600 rpm	17 hp (12.7 kw) @ 3600 rpm	17 hp (12.7 kw) @ 3600 rpm
OUTPUT TORQUE	21.9 ft-lb (34.6 N•m) @2000 rpm	27.9 ft-lb (37.0 N•m) @2400 rpm	27.9 ft-lb (37.0 N•m) @2400 rpm
OIL CAPACITY	1.9 qt (1.8l)	1.9 qt (1.8l)	1.9 qt (1.8l)
LUBRICATION	Full Pressure	Full Pressure	Full Pressure
MAIN BEARINGS (MAGNETO/PTO)	2 Plain	2 Plain	2 Plain
CYLINDER BLOCK	Aluminum with cast iron sleeve	Aluminum with cast iron sleeve	Aluminum with cast iron sleeve
CYLINDER HEAD	Aluminum	Aluminum	Aluminum
GOVERNOR	Mechanical	Mechanical	Mechanical
AIR CLEANER	Ducted Dual Element	Ducted Dual Element	Ducted Dual Element
IGNITION SYSTEM	Electronic	Electronic	Electronic
CHARGING SYSTEM	CLUTCH COIL	CLUTCH COIL	12V-15 Amp
BATTERY	None	None	12V
FUEL CAPACITY	4.2 gal (16.2 l)	4.2 gal (16.2 l)	4.2 gal (16.2 l)
FUEL TANK	Polyethylene	Polyethylene	Polyethylene
FUEL CONSUMPTION @ MAX LOAD/SPEED	1.4 gal/hr (5.2 l/hr)	1.6 gal/hr (5.9 l/hr)	1.6 gal/hr (5.9 l/hr)

SCHILLER GROUNDS CARE, INC.
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