



Safety and Operation Manual

JACOBSEN[®] *HR-5111 Rotary Mower with ROPS*

Model: 69158 Engine: Kubota V2203
Serial Number 1651 and Up



WARNING: If incorrectly used this machine can cause severe injury. Those who use and maintain this machine should be trained in its proper use, warned of its dangers and should read the entire manual before attempting to set up, operate, adjust or service the machine.



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Proposition 65 Warning
Engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, and other reproductive harm

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2.1 OPERATING SAFETY



WARNING

EQUIPMENT OPERATED IMPROPERLY OR BY UNTRAINED PERSONNEL CAN BE DANGEROUS.

Familiarize yourself with the location and proper use of all controls. Inexperienced operator's should receive instruction from someone familiar with the equipment before being allowed to operate the machine.

1. Safety is dependent upon the awareness, concern and prudence of those who operate or service the equipment. Never allow minors to operate any equipment.
2. It is your responsibility to read this manual and all publications associated with this equipment (Parts and Maintenance Manual, Engine Manual, accessories and attachments). If the operator can not read English it is the owner's responsibility to explain the material contained in this manual to them.
3. Learn the proper use of the machine, the location and purpose of all the controls and gauges before you operate the equipment. Working with unfamiliar equipment can lead to accidents.
4. Never allow anyone to operate or service the machine or its attachments without proper training and instructions; or while under the influence of alcohol or drugs.
5. Wear all the necessary protective clothing and personal safety devices to protect your head, eyes, ears hands and feet. Operate the machine only in daylight or in good artificial light.
6. Inspect the area where the equipment will be used. Pick up all the debris you can find before operating. Beware of overhead obstructions (low tree limbs, electrical wires, etc.) and also underground obstacles (sprinklers, pipes, tree roots, etc.) Enter a new area cautiously. Stay alert for hidden hazards.
7. Never direct discharge of material toward bystanders, nor allow anyone near the machine while in operation. The owner/operator can prevent and is responsible for injuries inflicted to themselves, to bystanders and damage to property.
8. Never operate equipment that is not in perfect working order or is without decals, guards, shields, discharge deflectors or other protective devices securely fastened in place.
9. Never disconnect or bypass any switch.
10. Carbon monoxide in the exhaust fumes can be fatal when inhaled. Never operate the engine without proper ventilation.
11. Fuel is highly flammable, handle with care.
12. Keep the engine clean. Allow the engine to cool before storing and always remove the ignition key.
13. Disengage all drives and engage parking brake before starting the engine (motor). Start the engine only when sitting in operator's seat, never while standing beside the unit.
14. Equipment must comply with the latest federal, state, and local requirements when driven or transported on public roads.
15. Never use your hands to search for oil leaks. Hydraulic fluid under pressure can penetrate the skin and cause serious injury.
16. Operate the machine up and down the face of the slopes (vertically), not across the face (horizontally).
17. To prevent tipping or loss of control, do not start or stop suddenly; reduce speed when making sharp turns. Use caution when changing direction on slopes.
18. Keep legs, arms and body inside the seating compartment while the vehicle is in motion.

This machine is to be operated and maintained as specified in this manual and is intended for the professional maintenance of specialized turf grasses. It is not intended for use on rough terrain or long grasses.

2 SAFETY

2.2 IMPORTANT SAFETY NOTES



This safety alert symbol is used to alert you to potential hazards.

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

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

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

For pictorial clarity, some illustrations in this manual may show shields, guards or plates open or removed. Under no circumstances should this equipment be operated without these devices securely fastened in place



WARNING

The Interlock system on this tractor prevents the tractor from starting unless the brake lever is engaged, mower switch is off and traction pedal is in neutral. The system will stop the engine if the operator leaves the seat without engaging the parking brake or setting the mower switch off.

NEVER operate tractor unless the Interlock system is working.



WARNING

1. Before leaving the operator's position for any reason:
 - a. Return traction pedal to neutral.
 - b. Disengage all drives.
 - c. Lower all implements to the ground.
 - d. Engage parking brake.
 - e. Stop engine and remove the ignition key.
2. Keep hands, feet, and clothing away from moving parts. Wait for all movement to stop before you clean, adjust or service the machine.
3. Keep the area of operation clear of all bystanders and pets.
4. Never carry passengers, unless a seat is provided for them.
5. Never operate mowing equipment without the discharge deflector securely fastened in place.

By following all instructions in this manual, you will prolong the life of your machine and maintain its maximum efficiency. Adjustments and maintenance should always be performed by a qualified technician. If additional information or service is needed, contact your Authorized Textron Turf Care And Specialty Products Dealer who is kept informed of the latest methods to service this equipment and can provide prompt and efficient service.

3.1 DECALS

Familiarize yourself with the decals. They are critical to the safe operation of the machine. REPLACE DAMAGED DECALS IMMEDIATELY.

⚠ PRECAUCION

1. No opere esta maquina sin previo entrenamiento, instruccion y sin haber leido el manual de operacion.
2. Tenga todas las guardas en su lugar y piezas bien aseguradas.
3. Neutralice todas las velocidades y apague el motor antes de vaciar los recolectores de pasto, darie servicio, limplar, ajustar y destrabar la maquina.
4. Mantenga las manos, los pies y ropa suelta lejos de piezas en movimiento.
5. No deberan transportar pasajeros si no existe un asiento para ellos.
6. Si no sabe leer ingles, pida que alguien le lea las calcomanias de avisos y los manuales de instruccion y operacion.

340623

⚠ DANGER

To avoid injury when working with battery:

1. Always connect the black ground (-) cable last and remove it first.
2. Keep sparks and flames away, and avoid contact with acid.

To avoid injury when jumping battery:

1. Connect positive (+) terminal to positive (+) terminal.
2. Connect negative (-) terminal on good battery to frame of vehicle that has dead battery.

3001435

⚠ WARNING

To prevent serious injury never disconnect or tamper with the seat switch.
Read manual for more information.

365339

⚠ DANGER



Serious injury or death can result from blade contact or from objects being thrown very long distances.

- Do not operate machine with discharge chute or guards flipped up or removed.
- Do not operate machine with bent components or with implement in raised position.
- Keep yourself and others away from the mower when in operation.

3002502

⚠ WARNING

RADIATOR IS UNDER PRESSURE. REMOVE CAP SLOWLY TO AVOID BODILY INJURY.

365956

⚠ WARNING

To prevent burns, do not touch muffler or muffler shield.
Temperature may exceed 150°F (66°C).

339237

⚠ WARNING

- Fit roll over protective structure before using this machine on slopes greater than 14°.
- Do not use on slopes greater than 21°.
- Keep bystanders away

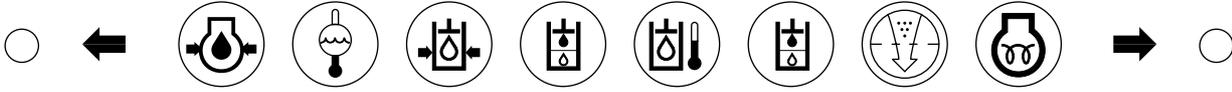
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⚠ WARNING

DO NOT USE FOR TOWING

361175

3 DECALS



CAUTION

1. Do not operate tractor with horn sounding. Horn will sound to warn of overheated engine or hydraulic system. See instructions in Operator's manual to properly clean the radiator or oil cooler and check fluid level.
2. When implements become clogged, disconnect power and stop engine before cleaning.
3. Keep hands, feet and clothing away from power driven moving parts.
4. Do not ride on machine or allow passengers unless seat is provided.
5. Keep all shields in place.
6. Stop engine for all servicing, adjustments or fluid level changes.
7. Read manual thoroughly before operating machine.
8. Do not shift between 2WD / 4WD while tractor is moving

3002518



WARNING

Filter is under pressure. Remove filter slowly to avoid personal injury

366160

CAUTION

Fill oil tank to 2 inches below filler neck.
DO NOT OVERFILL

365919

DANGER



THIS TRACTOR MAY TIP OVER UNEXPECTEDLY AND QUICKER THAN AN OPERATOR IS ABLE TO JUMP FREE.

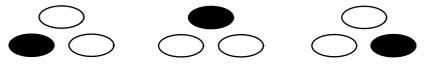
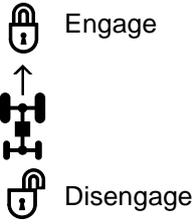
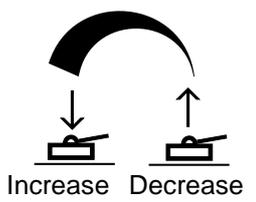
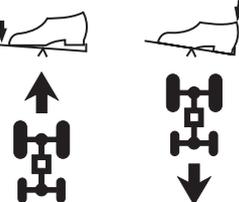
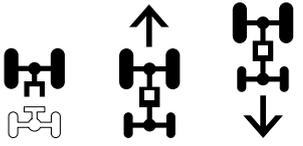
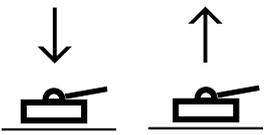
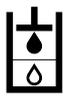
1. NEVER OPERATE A TRACTOR WITHOUT PROPER ROLL PROTECTION (SEE MANUAL)
2. ALWAYS WEAR YOUR SEAT BELT WHEN OPERATING THIS TRACTOR EQUIPPED WITH ROLL PROTECTION
3. NEVER HITCH ABOVE OR TO THE REAR AXLE.
4. DO NOT OPERATE TRACTOR ON STEEP SLOPES OR NEAR DROP OFFS.
5. AVOID HIGH SPEED TURNS.

Serious injury or death may result because of tractor upsets.

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3002502

4.1 ICONS

<p>Read Manual</p> 	<p>Hour Meter</p> 	<p>Engine Throttle High Low</p> 	<p>Engine Off Run Start</p> 
<p>Coolant Temperature</p> 	<p>Parking Brake</p> 	<p>Diesel Fuel</p> 	<p>Implement Position Left Center Right</p> 
<p>Cruise Control</p> 	<p>Weight Transfer to Decks</p> 	<p>Traction Forward Reverse</p> 	<p>Drive Mode 2WD 4WD 4WD Momentary</p> 
<p>Engine Oil</p> 	<p>Air Filter</p> 	<p>Differential Lock</p> 	<p>Cutting Units Raise Lower</p> 
<p>Horn</p> 	<p>Service Brake</p> 	<p>PTO Switch Engage Disengage</p> 	<p>Hydraulic Oil Temperature Pressure</p> 
<p>Glow Plug</p> 	<p>Lights Work Road</p> 	<p>Filter Service</p> 	<p>Tachometer</p> 

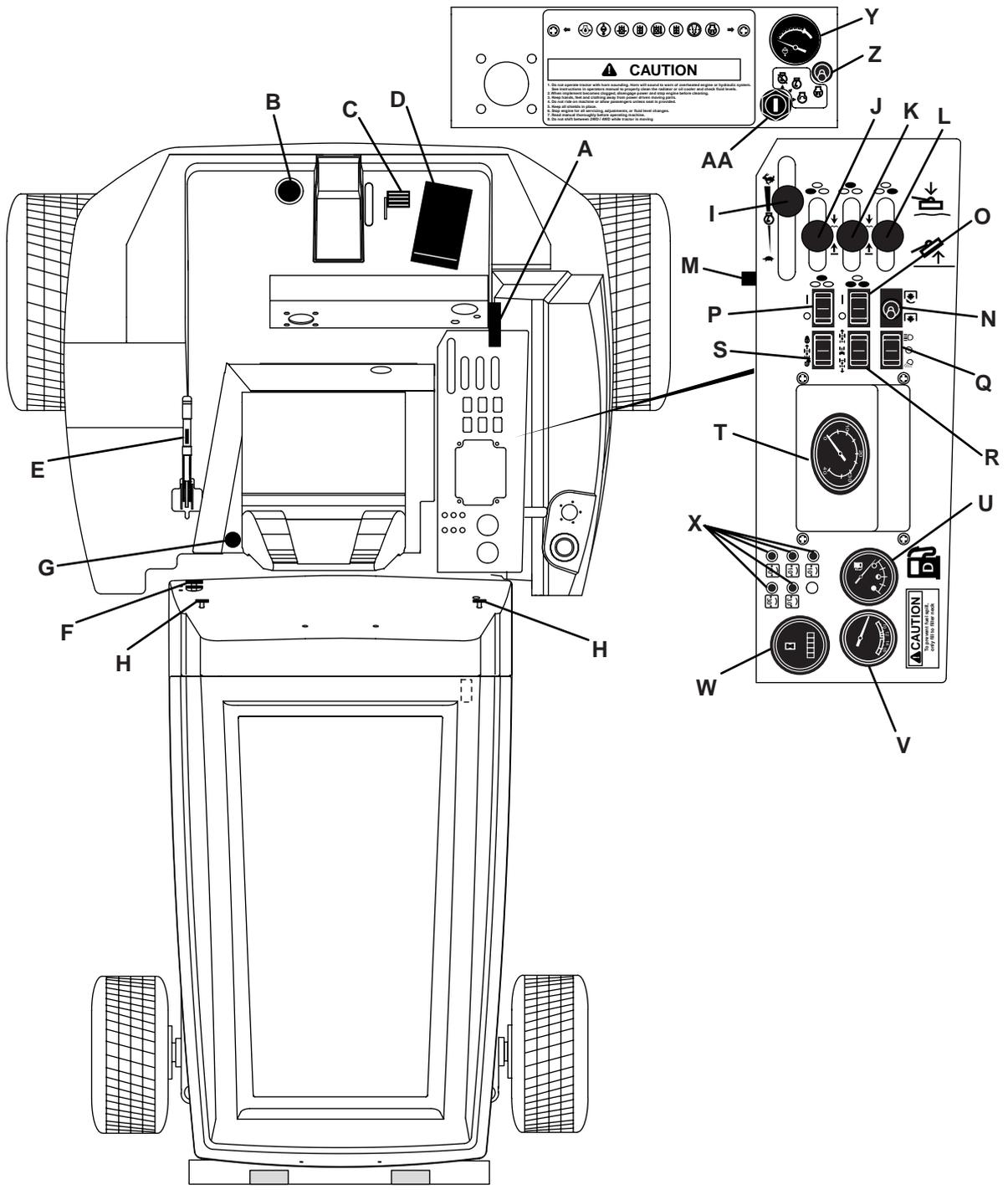
WARNING

Never attempt to drive the tractor unless you have read the Safety and Operation Manual and know how to operate all controls correctly.

Familiarize yourself with the icons shown above and what they represent. Learn the location and purpose of all the controls and gauges before operating this tractor.

4 CONTROLS

- | | | |
|------------------------------|--------------------------------------|--------------------------------|
| A Steering Tilt Lever | J Left Wing Lift/Lower Lever | S Cruise Control Switch |
| B Differential Lock | K Front Lift/Lower Lever | T Tachometer |
| C Service Brake | L Right Wing Lift/Lower Lever | U Fuel Gauge |
| D Traction Pedal | M Horn / Test Switch | V Volt Meter |
| E Parking Brake | N PTO Switch | W Hour Meter |
| F Ground Pressure | O Wing Mower Switch | X Circuit Breakers |
| G Seat Tilt knob | P Front Mower Switch | Y Temperature Gauge |
| H Transport Latches | Q Light Switch (Optional) | Z Glow Plug Switch |
| I Throttle Lever | R 2WD / 4WD Switch | AA Ignition Switch |



4.2 CONTROL DESCRIPTIONS

A. **Steering Tilt Lever**

Used to adjust position of steering console. Pull lever back to release and push lever forward to lock console in place. Do not adjust position when tractor is moving.

B. **Differential Lock**

Press and hold pedal to lock front wheels into synchronous rotation. Release pedal to return to normal operation. Do not engage or disengage differential lock while tractor is moving.



WARNING

With the differential lock engaged, the effort required to turn the tractor is increased and the tractor's steering ability is reduced. Stop machine and disengage differential lock before turning.

C. **Service Brake**

Press pedal down to slow or stop the machine and to disengage cruise control. Never press both service brake pedal and traction pedal at the same time.

D. **Traction Pedal**

Used to control the speed and direction of tractor. Depress the front of the pedal for forward movement. Depress the rear portion of pedal for reverse movement. The farther the pedal is depressed, the faster the tractor will move. The pedal will automatically return to neutral when released. Never press traction pedal with parking brake engaged or service brake pedal pressed.

E. **Parking brake**

Pull lever up to engage parking brake. Press lever latch then push lever forward to disengage. Do not engage parking brake while tractor is moving.

F. **Ground pressure**

Used to adjust the ground pressure of the mowers. See your Parts & Maintenance manual.

G. **Seat Tilt Knob**

Pull knob out and rotate seat forward for access to tow valve. Make sure seat is latched in closed position during operation.

H. **Transport Latches**

Used to prevent accidental lowering of the wing cutting units during transport.

I. **Throttle Lever**

Regulates engine speed. Push lever forward to increase speed or pull lever back to decrease speed. Always operate tractor at full throttle during normal operation.

J. **Left Wing Lift/Lower Lever**

Raises and lowers left wing mower. Push lever forward to lower left wing mower. Pull lever back to raise left wing mower. Mower will start automatically when lowered when both PTO (**N**) and wing mower (**P**) switches are engaged.

K. **Front Lift/Lower Lever**

Raises and lowers front mower. Push lever forward to lower front mower. Pull lever back to raise front mower. Mower will start automatically when lowered when both PTO (**N**) and front mower (**P**) switches are engaged.

L. **Right Wing Lift/Lower Lever**

Raises and lowers right wing mower. Push lever forward to lower right wing mower. Pull lever back to raise right wing mower. Mower will start automatically when lowered when both PTO and wing mower switches are engaged.

M. **Horn/Test Switch**

Used to sound horn and test "System Sentry" lights. Depress switch, horn should sound and all "system Sentry" lights, except for glow plug, engine oil and charge pressure, should light.

N. **PTO Switch**

Lift up and push switch lever forward to engage mower switches (**O** and **P**). Pull switch lever back to disengage.

O. **Wing Mower Switch**

Used to engage or disengage both wing mowers. Depress front of switch to engage mowers. Return switch to center position to disengage mowers. Pressing rear of switch has no function. PTO switch (**N**) must be engaged and cutting units lowered for switch to operate.

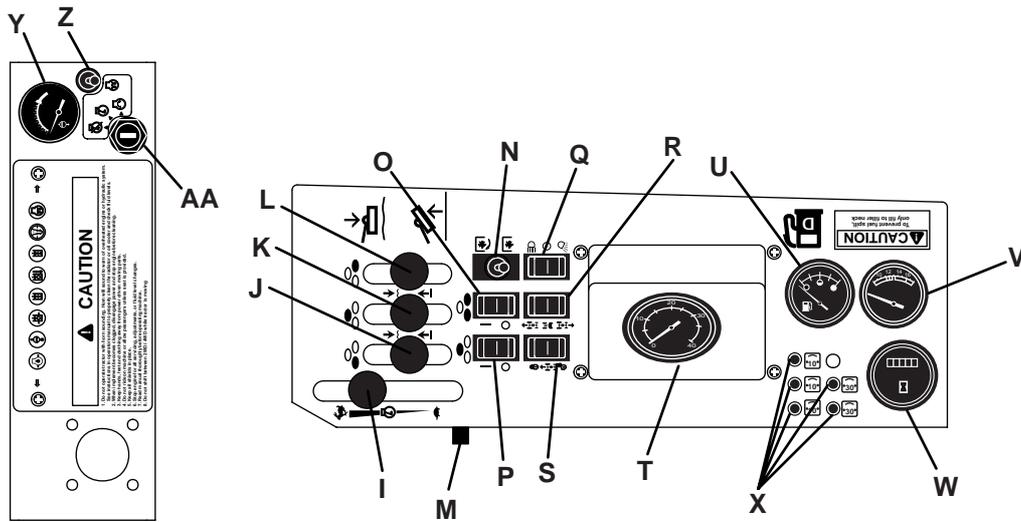
P. **Front Mower Switch**

Used to engage or disengage front mower. Depress front of switch to engage mower. Return switch to center position to disengage mower. Pressing rear of switch has no function. PTO switch (**N**) must be engaged and cutting units lowered for switch to operate.

Q. **Light Switch (Optional)**

Press front of switch for road lights. Press rear of switch for work lights. Return switch to center position to shut off lights

4 CONTROLS



R. **2WD / 4WD Switch**

Used to switch tractor between 2WD and 4WD mode. Depress front of switch for 4WD in forward direction only. Place switch in center position for 2WD. Depress rear of switch for momentary 4WD in reverse. Do not engage or disengage 4WD while tractor is moving.

S. **Cruise Control Switch**

Depress traction pedal for desired speed and press front of switch to engage cruise control. Depress service brake pedal or press rear of switch to disengage cruise control.

T. **Tachometer**

Used to monitor engine speed.

U. **Fuel Gauge**

Displays fuel level in tank. Do not allow tractor to run out of fuel.

V. **Voltmeter**

Displays electrical system voltage.

W. **Hour Meter**

Records engine operating hours. The hour meter can be used to time maintenance intervals or mowing operations.

X. **Circuit Breakers**

Used to protect electrical system. Push down on rubber boot to reset circuit breaker.

Y. **Temperature Gauge**

Displays engine coolant temperature. Do not operate tractor if temperature is above 230° F (110° C).

Z. **Glow Plug Switch**

Used to energize the glow plugs before starting. Do not hold switch for more than 7 seconds. Glow Plug light will be on when switch is depressed.

AA. **Ignition Switch**

Used to start and stop the engine. The ignition switch has three positions OFF, RUN and START. To prevent unauthorized use of this tractor, remove ignition key when not in use.

4.3 SYSTEM SENTRY

The System Sentry monitors vital machine systems. It uses an audible alarm and warning lights to alert the operator of conditions requiring immediate action. When an alert occurs follow the general guidelines listed in the chart below, and any specific actions outlined by the grounds superintendent or service manager.

To test alarm system:

Turn ignition switch to RUN. The engine oil light and charge pressure light should come on. Press horn/test switch. Horn will sound and Air Filter, Engine Temperature, Return Filter, Hydraulic Temperature, and Charge Filter light will come on.

This system monitors:

1. Engine oil pressure
2. Engine coolant temperature
3. Charge pressure
4. Hydraulic return oil filter
5. Hydraulic oil temperature
6. Hydraulic charge filter
7. Air filter

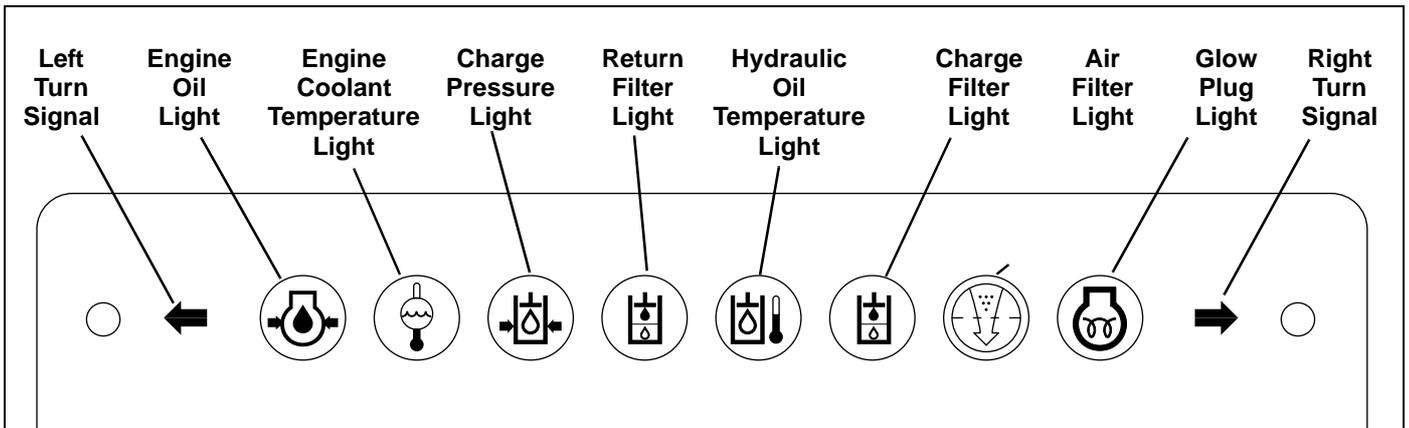


Figure 4A

Alert	Action
<p>1. Engine Oil Pressure - Alarm sounds and oil pressure light comes on. Oil pressure low.</p>	<p>Stop tractor immediately, lower implements and shut off engine! Inspect oil level in engine. If oil light remains on with oil at proper level, shut off engine and tow or trailer tractor back to service area. NEVER operate engine with oil light on, severe damage to the engine can occur.</p>
<p>2. Engine Coolant Temperature Horn sounds. Engine coolant temperature high.</p>	<p>Stop tractor immediately, lower implements and shut off engine! Remove debris such as leaves and grass clippings that may be restricting air flow through rear screen on hood and area between radiator and oil cooler. If engine continues to run hot, return tractor to service area.</p> <p>CAUTION: Engine coolant is under pressure. Turn engine off and allow fluid to cool before checking fluid level or adding coolant to radiator.</p>
<p>3. Charge Pressure Light stays on after starting engine or comes on during operation. Indicates low charge pressure in traction system.</p>	<p>Stop tractor immediately, lower implements and shut off engine! Check hydraulic oil level in main tank. Visually inspect tractor for obvious signs of leaks around connections, hoses and tubes. Tow or trailer tractor back to service area. Never operate tractor with charge pressure light on, severe damage to hydraulic system components can result.</p> <p>CAUTION: Hydraulic system is under pressure. Turn engine off and allow oil to cool before checking oil level or adding oil to tank.</p>
<p>4. Hydraulic Return Oil Filter - Oil filter warning light comes on.</p>	<p>Return tractor to a service area as soon as possible. Change hydraulic return oil filter.</p>
<p>5. Hydraulic Oil Temperature Horn sounds. Hydraulic oil temperature high.</p>	<p>Stop tractor, disengage drives and lower implements. Run engine at low idle for a few minutes until light goes off. If light remains on, shut off engine and allow hydraulic system to cool. Remove debris such as leaves and grass clippings that may be restricting air flow through rear screen on hood and area between radiator and oil cooler. If engine continues to run hot, return tractor to service area.</p> <p>CAUTION: Hydraulic system is under pressure. Turn engine off and allow oil to cool before checking oil level or adding oil to tank.</p>
<p>6. Hydraulic Charge Oil Filter - Oil filter warning light comes on.</p>	<p>Return tractor to a service area as soon as possible. Change hydraulic charge oil filter.</p>
<p>7. Air Filter - Air filter warning light comes on.</p>	<p>Return tractor to a service area as soon as possible. Change air filter.</p>

5 OPERATION

5.1 DAILY INSPECTION

CAUTION

The daily inspection should be performed only when the engine is off and all fluids are cold. Lower mowers to the ground, engage the parking brake, Stop engine and remove ignition key.

1. Perform a visual inspection of the entire unit, look for signs of wear, loose hardware, and missing or damaged components. Check for fuel or oil leaks to ensure connections are tight and hoses and tubes are in good condition.

2. Check the fuel supply, radiator coolant level, crankcase oil and hydraulic oil. All fluids must be at the full level mark with engine cold.
3. Make sure all mowers are adjusted to the same cutting height.
4. Check tires for proper inflation.
5. Test the Interlock system.

Note: For more detailed maintenance information, adjustments and maintenance/lube charts, see the **Parts & Maintenance** manual.

5.2 Interlock System

1. The Interlock system prevents the engine from starting unless the parking brake is engaged and the PTO switch is OFF. The system also stops the engine if the operator leaves the seat with the PTO switch ON or parking brake DISENGAGED.

WARNING

Never operate equipment with the Interlock system disconnected or malfunctioning. Do not disconnect or bypass any switch.

2. Perform each of the following tests to insure the Interlock system is functioning properly. Stop the test and have the system inspected and repaired if any of the tests **fail** as listed below:
 - the engine **does not** start in test 1;
 - the engine **does** start during tests 2 or 3;
 - the engine **continues** to run during tests 4 or 5.

3. Refer to the chart below for each test and follow the check (✓) marks across the chart. Shut engine off between each test.

Test 1: Represents normal starting procedure. The operator is seated, parking brake is engaged and the PTO switch is OFF. The engine should start.

Test 2: The engine must not start if the PTO switch is ON.

Test 3: The engine must not start if the parking brake is DISENGAGED.

Test 4: Start the engine in the normal manner then turn the PTO switch ON and lift your weight off the seat. ★

Test 5: Start the engine in the normal manner then disengage parking brake and lift your weight off the seat. ★

Interlock System Check

Test	Operator Seated		Parking Brake		PTO Switch		Engine Starts	
	Yes	No	Engaged	Disengaged	On	Off	Yes	No
1	✓		✓			✓	✓	
2	✓		✓		✓			✓
3	✓			✓		✓		✓
4	✓	★	✓		✓		★	
5	✓	★		✓		✓	★	

★ Lift your weight off seat. The engine will shut down.

5.3 OPERATING PROCEDURES

WARNING

A Rollover Protection Structure (ROPS) for this tractor is included. Seat belts must be worn whenever a ROPS is installed on the tractor. Always keep seat belt snugly adjusted. **DO NOT** use seat belts on a tractor without a ROPS.

If a ROPS is installed and the tractor is overturning, hold onto the steering wheel. Do not attempt to jump out or leave the seat.

CAUTION

To prevent injury, always wear safety glasses, leather work shoes or boots, a hard hat, and ear protection.

1. Under no circumstances should the engine be started without the operator seated on the tractor.
2. Do not operate tractor or attachments with loose, damaged or missing components. Whenever possible mow when grass is dry.
3. First mow in a test area to become thoroughly familiar with the operation of the tractor and control levers.
4. Study the area to determine the best and safest operating procedure. Consider the height of the grass, type of terrain, and condition of the surface. Each condition will require certain adjustments or precautions. Only use accessories and attachments approved by Textron Turf Care and Specialty Products.
5. Never direct discharge of material toward bystanders, nor allow anyone near the machine while in operation. The owner/operator is responsible for injuries inflicted to bystanders and/or damage to their property.
9. Stop and inspect the equipment for damage immediately after striking an obstruction or if the machine begins to vibrate abnormally. Have the equipment repaired before resuming operation.

WARNING

Before you clean, adjust, or repair this equipment, always disengage all drives, lower implements to the ground, engage parking brake, stop engine and remove key from ignition switch to prevent injuries.

10. Slow down and use extra care on hillsides. Read Section 5.8. Use caution when operating near drop offs.
11. Look behind and down before backing up to be sure the path is clear. Use care when approaching blind corners, shrubs, trees or other objects that may obscure vision.
12. Never use your hands to clean cutting units. Use a brush to remove grass clippings from blades. Blades are extremely sharp and can cause serious injuries

CAUTION

Before mowing, pick up all debris such as rocks, toys and wire which can be thrown by the machine. Enter a new area cautiously. Always operate at speeds that allow you to have complete control of the mower.

6. Use discretion when mowing near gravel areas (roadway, parking areas, cart paths, etc.). Stones discharged from the implement may cause serious injuries to bystanders and/or damage the equipment.
7. Always turn PTO switch off to stop blades when not mowing.
8. Disengage the drive motors and raise the mowers when crossing paths or roadways. Look out for traffic.

5 OPERATION

5.4 STARTING

IMPORTANT: Do not use starting assist fluids. Use of such fluids in the air intake system may be potentially explosive or cause a “Runaway” engine condition and could result in serious engine damage.

1. Make sure fuel shut off valve is completely open and the tow valve (**See Section 5.10**) is closed.
2. Sit in operator’s seat, make sure the PTO switch (**N**) is OFF and the parking brake (**E**) is engaged.
3. Move throttle lever (**I**) between 1/4 to 1/3 throttle. Turn ignition switch (**AA**) to RUN
4. Press glow plug switch (**Z**) for about 3 to 7 seconds. The colder the temperature, the longer it will take to energize plugs. Do not press switch for more than 7 seconds Energizing glow plugs is not necessary when starting a warm engine.
5. Turn ignition switch (**AA**) to START position. Release switch as soon as engine starts. Do not hold key in start position for more than 15 seconds at a time. If engine does not start, turn ignition switch off, wait 30 seconds and try again.
6. Allow the engine to become warm and properly lubricated before operating at high RPM.

CAUTION

When starting engine at temperatures below 40° F (4° C), operate the engine at low idle for 5 minutes to prevent damage to engine or hydraulic system.

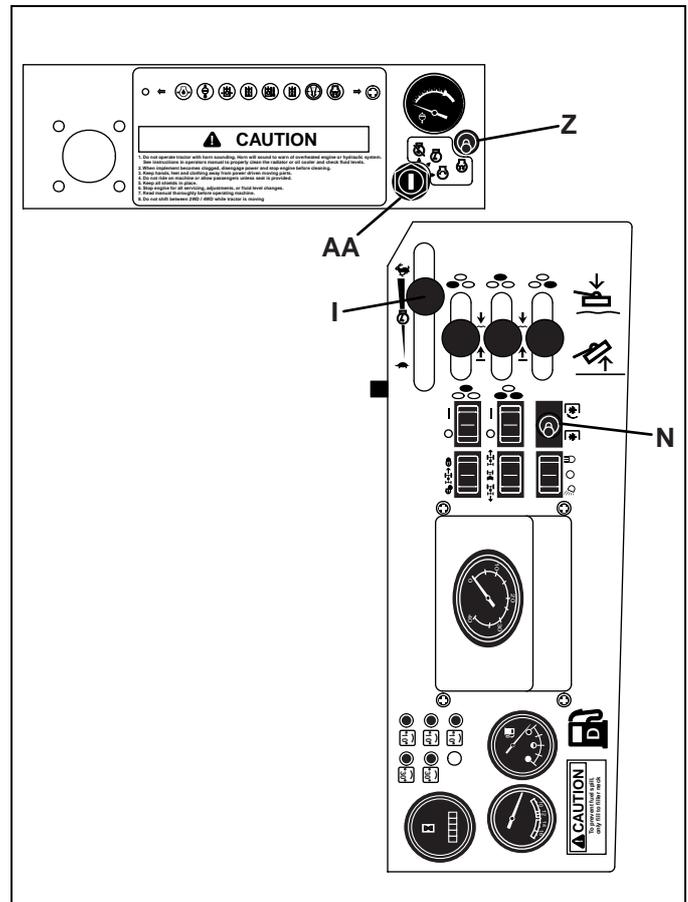


Figure 5A

5.5 STOPPING / PARKING

To stop:

Remove your foot from traction pedal and stop the tractor. The tractor will automatically brake when the traction pedal returns to neutral.

To park the tractor under normal conditions:

1. Disengage the PTO switch, raise the mowers, engage transport latches and move away from the area of operation.
2. Select a flat and level area to park.
 - a. Release traction pedal to bring the tractor to a complete stop.

- b. Disengage all drives, disengage transport latches, lower mowers to the ground, reduce throttle to slow and allow engine to operate at no load for a minute.

3. Engage parking brake, stop the engine and always remove the ignition key.

If an emergency arises and the tractor must be parked in the area of operation, follow the guidelines outlined by the grounds superintendent. If the tractor is parked on an incline, chock or block the wheels.

5.6 TO DRIVE / TRANSPORT

Read and follow all safety notes contained in this manual when driving or transporting tractor. Refer to Section 5.3 for general operating instructions. When operating in reverse look behind you to ensure you have a clear path.

Important: If this tractor is driven on public roads, it must comply with federal, state and local ordinances. Contact local authorities for regulations and equipment requirements.

1. Disengage all drives and raise implements to the transport position and engage transport latches when driving to and from the area of operation.
2. Shift tractor to 2WD
3. Disengage parking brake and move throttle lever to "Fast". Depress traction pedal slowly.

4. Always bring the tractor to a complete stop before changing travel direction or shifting from 2WD to 4WD.
5. For better traction and handling, engage differential lock.

 **WARNING**

With the differential lock engaged, the effort required to turn the tractor is increased and the tractor's steering ability is reduced. Stop machine and disengage differential lock before turning.

To prevent tipping or loss of control, travel at reduced speed when making turns.

5.7 TRANSPORT LATCHES

1. The wing mowers are equipped with a latch to prevent accidental lowering of the cutting units during transport or maintenance operations. The latch knobs are located on the engine fire wall, behind and to the left and right of the operator's seat.
2. Fully raise the wing mowers and push the latch knobs in to secure the mower. The weight of the mower/lift arm must not rest on the latch.

3. To release latch, pull the latch knob out and lower the mower to the ground.

CAUTION

Do not transport with the arms resting on the latch. Transport latches are only used to prevent accidental lowering of the cutting units.

5.8 HILLSIDE OPERATION

 **WARNING**

To minimize the possibility of overturning, the safest method for operating on hills and terraces is to travel up and down the face of the slope (vertically), not across the face (horizontally). Avoid unnecessary turns, travel at reduced speeds, stay alert for hidden hazards, and drop offs.

 **CAUTION**

Do not operate this tractor on slopes greater than 14°.

The tractor has been designed for good traction and stability under normal mowing conditions; however, use caution when operating on slopes, especially over rough terrain or when the grass is wet. Wet grass reduces traction and steering control.

1. Always mow with the engine at full throttle but reduce forward speed to maintain the proper cutting frequency.
2. If the tractor tends to slide or the tires begin to "mark" the turf, angle tractor into a less steep grade until traction is regained or tire marking stops.
3. If tractor continues to slide or mark the turf, the grade is too steep for safe operation. Do not make another attempt to climb, back down slowly.
4. When descending a steep slope, always lower implements to the ground to reduce the risk of tractor overturning.
5. Correct tire pressure is essential for maximum traction.
6. If additional traction is required, adjust the ground pressure knob as described in the Parts and Maintenance manual.

5 OPERATION

5.9 MOWING

WARNING

To prevent serious injuries, keep hands, feet and clothing away from cutting unit when the blades are moving.

NEVER use your hands to clean cutting units. Use a brush to remove grass clippings from blades. Blades can be sharp and could cause injuries.

To clear obstructions from cutting unit, disengage PTO switch, engage parking brake, stop engine and remove key from ignition switch then remove obstruction.

To mow:

1. Start the engine and lower the mowers to the ground.
2. Turn PTO switch to ON, depress front of desired mower switch(es), shift tractor to 4WD and disengage parking brake.
3. Move throttle lever to FAST then slowly depress traction pedal to the desired mowing speed.

5.10 TOWING / TRAILERING

If the tractor experiences problems and must be shut down and removed from the area, it should be loaded onto a trailer for transport. If a trailer is not available, the unit can be towed slowly short distances.

NOTE: Do not exceed 2 MPH (3.2 KPH) while towing. Long distance towing is not recommended.

Use care when loading and unloading tractor. Fasten tractor to trailer to prevent tractor from rolling or shifting during transport.

Before towing, open tow valve. The tow valve permits moving the tractor without starting the engine and prevents possible damage to hydraulic components.

The tow valve (**Z**) is located on the drive pump beneath the seat. Pull seat tilt knob and rotate seat forward. To open valve, insert a pin into the small hole in the tow valve and turn the valve counterclockwise 90°.

Close valve completely and make certain seat is latched in the closed position.

- a. For complete even cutting, overlap swaths by a few inches.
 - b. When cutting tall grass, cut grass higher than desired the first time so mower will clear unseen obstructions and will not scalp if ground is rough.
 - c. Stop and raise the mowers to the transport position when crossing paths or roadways. Look out for traffic.
4. For better traction and handling, adjust ground pressure and engage differential lock.

WARNING

With the differential lock engaged, the effort required to turn the tractor is increased and the tractor's steering ability is reduced. Stop machine and disengage differential lock before turning.

To prevent tipping or loss of control, travel at reduced speed when making turns.

5. When operating in reverse and additional power is required to climb out of a small depression, press and hold the 2WD/4WD in the momentary 4WD Reverse position.

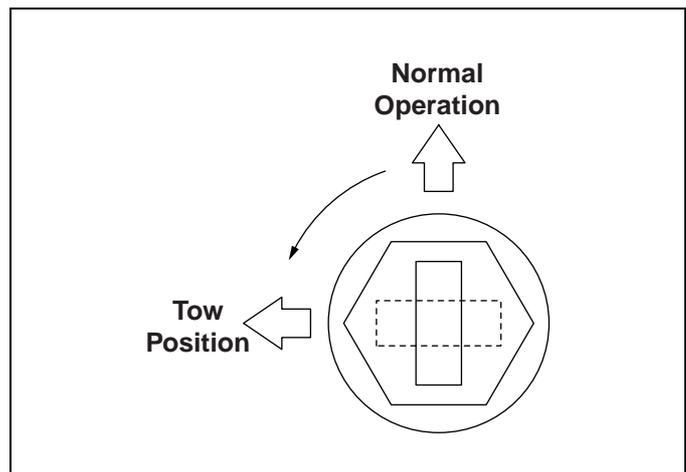


Figure 5B

5.11 DAILY MAINTENANCE

Important: For more detailed maintenance information, adjustments and maintenance/lubrication charts, see the **Parts & Maintenance** manual.

1. Park the tractor on a flat, level surface. Fully lower the implements to the ground, engage parking brake, stop the engine and remove key from ignition switch.
2. Grease and lubricate all points if required. To prevent fires, wash the cutting units and tractor after each use.

- a. Use only fresh water for cleaning your equipment.

Note: *Use of salt water or affluent water has been known to encourage rust and corrosion of metal parts resulting in premature deterioration or failure. Damage of this nature is not covered by the factory warranty.*

- b. Do not use high pressure spray.
- c. Do not spray water directly at the instrument panel, or any electrical components.
- d. Do not spray water into the cooling air intake or the engine air intake.

Note: *Do not wash a hot or running engine. Use compressed air to clean the engine and radiator fins.*

3. Fill tractor's fuel tank at the end of each operating day to within 1 in., (25 mm) below the filler neck.

Use clean, fresh #2 diesel fuel. Minimum Cetane Rating 45.

4. Handle fuel with care - it is highly flammable. Use an approved container, the spout must fit inside the fuel filler neck. Avoid using cans and funnels to transfer fuel.
 - a. Never remove the fuel cap from the fuel tank, or add fuel, when the engine is running or while the engine is hot.
 - b. Do not smoke when handling fuel. Never fill or drain the tank indoors.
 - c. Never overfill or allow the tank to become empty. Do not spill fuel. Clean any spilled fuel immediately.
 - d. Never handle or store fuel containers near an open flame or any device that may create sparks and ignite the fuel or fuel vapors.
5. Store fuel according to local, state or federal ordinances and recommendations from your fuel supplier.



WARNING

To prevent serious injury from hot, high pressure oil, never use your hands to check for oil leaks, use paper or cardboard.

Hydraulic fluid escaping under pressure can have sufficient force to penetrate skin. If fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.

6. Inspect hydraulic hoses and tubes daily. Look for wet hoses or oil spots and replace worn or damaged hoses and tubes before operating the machine.
7. Check the engine oil and hydraulic oil at the start of each day, before starting the engine. If the oil level is low, remove the oil filler cap and add oil as required. Do not overfill.

6 NOTES

Limited Warranty

1. Warranty

Textron Turf Care And Specialty Products (TTCSP) warrants only to the original retail purchaser ("Warrantee") that this product shall be free from defects in material and workmanship for a period of two years or 1500 hours (whichever comes first) from the date of the first retail purchase. (90 days if used for rental purposes)

2. Items Not Warranted

TTCSP makes no warranties or representations with respect to repairs performed by anyone other than an Authorized TTCSP Dealer or with respect to, where applicable, engines*, batteries, tires, and ROPS, which are separately warranted by their respective manufacturers. Routine adjustments or normal wear and maintenance items are not covered by this warranty.

3. Conditions Which Will Void Warranty

- A) The speed of the unit is increased beyond factory specifications or the product is modified in any way which would adversely affect its safety or performance;
- B) The unit is not maintained or serviced in accordance with this publication;
- C) The unit is abused, or is not used in its intended manner.

4. Exclusive Remedy

The warrantee's sole and exclusive remedy for breach of this warranty or any defect or failure of the product, including any remedy provided by applicable federal or state law, statutory or common, is that TTCSP will, at its sole option, repair or replace the product or any defective parts and cover the cost of labor associated with such repair or replacement. Transportation costs are not covered by this warranty.

5. How to Obtain Warranty Service

If warranty repair is necessary, contact an Authorized TTCSP Dealer. All defective parts must be returned to the Dealer and become the property of TTCSP.

6. Disclaimer

* *This warranty is made in lieu of all other warranties, implied or express, including any warranty of merchantability or fitness for a particular purpose.*

* *TTCSP further disclaims any liability for incidental, direct or consequential damages, to include by not limited to, personal injury or property damage, arising from a breach of this warranty or any other defect or failure of the product to the extent allowed by law.*

No agent, employee or representative of TTCSP, or any other person, has the authority to bind TTCSP to any other affirmation, representation, or warranty concerning the goods sold under this Warranty.

For further information, call (704) 588-5120 or write:

Textron Turf Care And Specialty Products

Warranty Department

PO Box 7708

Charlotte, NC 28241-7708

* *Kubota engines are warranted by TTCSP. All other engines are warranted by their respective manufacturers.*



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