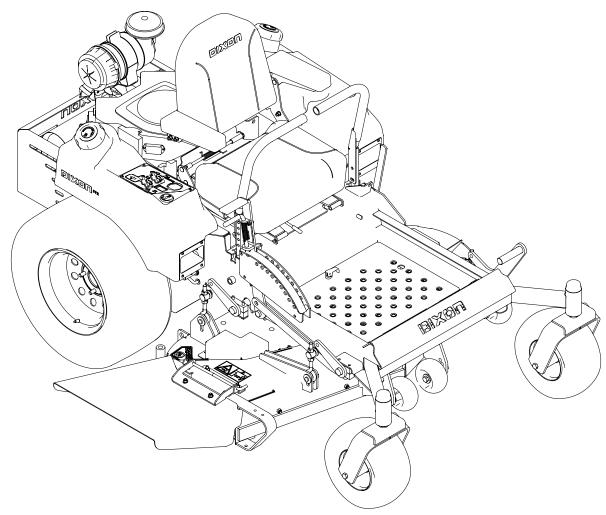


GRIZZLY™ ZTR®



Operator's Manual

GRIZZLY 52, 27 KOH/968999588 GRIZZLY 60, 27 KOH/968999590 GRIZZLY 60, 30 KOH/968999591 GRIZZLY 72, 30 KOH/968999592 GRIZZLY 60, 27 KOH/968999626 GRIZZLY 60, 30 KOH/968999627 GRIZZLY 72, 30 KOH/968999628

Please read the operator's manual carefully and make sure you understand the instructions before using the machine.



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WARNING!

Failure to follow cautious operating practices can result in serious injury to the operator or other persons. The owner must understand these instructions, and must allow only trained persons who understand these instructions to operate the mower.

Each person operating the mower must be of sound mind and body and must not be under the influence of any mind altering substance.



WARNING!

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



WARNING!

Battery posts, terminals 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.

INTRODUCTION

Congratulations

Thank you for purchasing a Dixon ride-on mower. This machine is built for superior efficiency to rapidly mow primarily large areas. A control panel easily accessible to the operator and a hydrostatic transmission regulated by steering controls both contribute to the machine's performance.

This manual is a valuable document. Read the contents carefully before using or servicing the machine. The following of instructions (use, service, maintenance, etc.) by all who operate this machine is important for the safety of the operator and others. It can also considerably increase the life span of the machine and increase its resale value.

If you sell your machine, be sure to give the operator's manual to the new owner.

The final chapter of this operator's manual provides a Service Journal. Ensure that service and repair work are documented. A well-kept service journal reduces service costs for the maintenance and affects the machine's resale value. Please contact your dealer for more information. Take the operator's manual along when the machine is taken to your dealer for service.

General

In this operator's manual, left and right, backward and forward are used in relation to the machine's normal driving direction.

Continuous dedication to improve our products require that specifications and design are subject to change without notice.

Driving and Transport on Public Roads

Check applicable road traffic regulations before transporting on public roads. If the machine is transported, you must always use approved fastening equipment and ensure that the machine is well anchored. DO NOT operate this machine on public roadways.

Towing

Do not tow this machine, it may cause damage to the drive system.

Do not tow any trailers, etc. with this mower. They may jackknife or overturn causing damage to the mower and possible serious injury to the operator.

Operating

This machine is constructed only for mowing grass on lawns and even ground without obstacles such as stones, tree stumps, etc. The machine can also be used for other tasks when equipped with special accessories provided by the manufacturer. Operating instructions for the accessories are provided with delivery. All other types of uses are incorrect. The manufacturer's directions concerning operation, maintenance, and repairs must be carefully followed.

Lawn mowers and all power equipment, can be potentially dangerous if used improperly. Safety requires good judgement, careful use in accordance with these instructions and common sense.

The machine must only be operated, maintained, and repaired by persons familiar with the machine's special characteristics and who are also knowledgeable about the safety instructions. Use only approved repair parts to maintain this machine.

Accident prevention regulations, other general safety regulations, occupational safety rules, and traffic regulations must be followed without fail.

Unauthorized modifications to the design of the machine may absolve the manufacturer from liability for any resulting personal injury or property damage.

INTRODUCTION

Good Service

Dixon's products are sold all over the world and only in specialized retail stores with complete service. This ensures that you as a customer receive only the best support and service. Before the product is delivered, the machine has, for example, been inspected and adjusted by your retailer. See the certificate in the Service Journal in this operator's manual.

When you need spare parts or support in service questions, warranty issues, etc., please consult the following professional:

This Operator's Manual belongs to the machine with the manufacturing number:	Engine	Transmission

Manufacturing Number

The machine's manufacturing number can be found on the printed plate affixed to the left in the engine compartment. Stated on the plate, from the top are:

- The machine's type designation (I.D.).
- The manufacturer's type number (Model).
- The machine's serial number (Serial no.)

Please have the type designation and serial number available when ordering spare parts.

The engine's manufacturing number is stamped on one of the valve covers.

The plate states:

- The engine's model.
- The engine's type.
- Code

Please have these available when ordering spare parts.

The wheel motors and hydrostatic pumps have a barcode decal affixed at the rear.

SYMBOLS AND DECALS

These symbols are found on the machine and in the operator's manual. Study them carefully so that you know what they mean.



WARNING!

Used in this publication to notify the reader of a risk of **personal injury or death**, particularly if the reader should neglect to follow instructions given in the manual.

IMPORTANT INFORMATION

Used in this publication to notify the reader of a risk of **material damage**, particularly if the reader should neglect to follow instructions given in the manual. Used also when there is a potential for misuse or misassembly.













Reverse



Warning!

Neutral

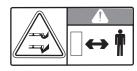


Parking Brake

Fast

CE conformity marking. Only for European market

Slow



Warning! Rotating blades, keep away from the discharge deck

Choke





Fuel

Do not touch parts







Do not stand here





Battery acid is corrosive, explosive and flammable



Use protective glasses



Use protective gloves

Noise emissions to the surroundings in accordance with the European Union's directive. The machine's emission is stated in the chapter TECHNICAL DATA and on the decals.

Only machines for European market

SYMBOLS AND DECALS

Read Operator's Manual Shut off engine and remove key before performing any maintenance or repair work Keep a safe distance from the machine

Use on slopes no greater than 10° No passengers



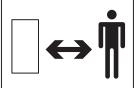








Severing of fingers and toes





Do not open or remove safety shields while engine is running





Careful backing up, watch for other people





Careful going forward, watch for other people



Moving sharp blades under cover

Safety Instructions

These instructions are for your safety. Read them carefully.



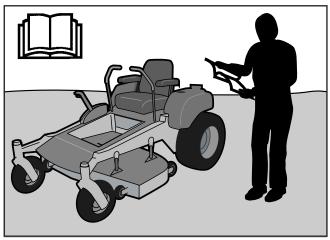
WARNING!

This symbol means that important safety instructions need to be emphasized. It concerns your safety.

IMPORTANT: THIS CUTTING MACHINE IS CAPABLE OF AMPUTATING HANDS AND FEET AND THROWING OBJECTS. FAILURE TO OBSERVE THE FOLLOWING SAFETY INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR DEATH.

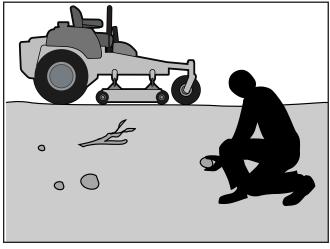
General Operation

- Read, understand, and follow all instructions on the machine and in the manual before starting.
- Do not put hands or feet near rotating parts or under the machine. Keep clear of the discharge opening at all times.
- Only allow responsible adults, who are familiar with the instructions, to operate the machine.
- Clear the area of objects such as rocks, toys, wire, etc., which could be picked up and thrown by the blades.
- Be sure the area is clear of bystanders before operating. Stop machine if anyone enters the area.
- Never carry passengers. The machine is only intended for use by one person.
- Do not mow in reverse unless absolutely necessary. Always look down and behind before and while backing.
- Never direct discharged material toward anyone. Avoid discharging material against a wall or obstruction. Material may ricochet back toward the operator. Stop the blades when crossing gravel surfaces.
- Do not operate machine without the entire grass catcher, discharge guard, or other safety devices in place and working
- Slow down before turning.
- Never leave a running machine unattended. Always turn off blades, set parking brake, stop engine, and remove keys before dismounting.



2011-512

Read the operator's manual before starting the machine



8011-513

Clear the area of objects before mowing

- Disengage blades when not mowing. Shut off engine and wait for all parts to come to a complete stop before cleaning the machine, removing the grass catcher, or unclogging the discharge guard.
- Operate machine only in daylight or good artificial light.
- Do not operate the machine while under the influence of alcohol or drugs.
- Watch for traffic when operating near or crossing roadways.
- Use extra care when loading or unloading the machine into a trailer or truck.
- Always wear eye protection when operating machine.
- Data indicates that operators, age 60
 years and above, are involved in a large
 percentage of riding mower-related injuries.
 These operators should evaluate their ability
 to operate the riding mower safely enough to
 protect themselves and others from serious
 injury.
- Follow the manufacturer's recommendation for wheel weights or counterweights.
- Anyone who operates this machine must first read and understand this Operation Manual. Local laws may regulate the age of the user.
- Keep machine free of grass, leaves or other debris buildup which can touch hot exhaust / engine part and burn. Do not allow the mower deck to plow leaves or other debris which can cause buildup to occur. Clean any oil or fuel spillage before operating or storing the machine. Allow machine to cool before storage.



8011-520

Never take passengers



WARNING!

Engine exhaust and certain vehicle components contain or emit chemicals considered to cause cancer, birth defects, or other reproductive system damage. The engine exhaust contains carbon monoxide, which is a odorless, colorless, poisonous gas. Do not use the machine in enclosed spaces.

Personal Safety Equipment



WARNING!

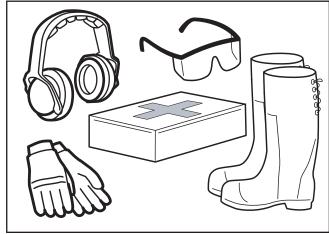
When using the machine, approved personal protective equipment (shown in illustrations) shall be used. Personal protective equipment cannot eliminate the risk of injury but it will reduce the degree of injury if an accident does happen. Ask your retailer for help in choosing the right equipment.

- Make sure that you have first aid equipment close at hand when using the machine.
- Never use the machine when barefoot.
- Always wear protective shoes or boots, preferably with steel toe caps.
- Always wear approved protective glasses or a full visor when assembling or driving.
- Always wear gloves when handling the blades.
- Never wear loose clothing that can get caught in moving parts.
- Use ear protectors to avoid damage to hearing.

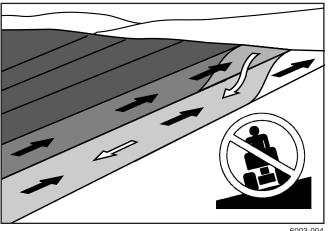
Slope Operation

Slopes are a major factor related to loss of control and tip-over accidents, which can result in severe injury or death. Operation on all slopes requires extra caution. If you cannot back up the slope or if you feel uneasy on it. do not mow it.

- Mow up and down slopes (10 degrees maximum), not across.
- · Watch for holes, ruts, bumps, rocks, or other hidden objects. Uneven terrain could overturn the machine. Tall grass can hide obstacles.
- Choose a low ground speed so that you will not have to stop while on the slope.
- Do not mow on wet grass. Tires may lose traction.
- Avoid starting, stopping, or turning on a slope. If the tires lose traction, disengage the blades and proceed slowly straight down the slope.
- Keep all movement on the slopes slow and gradual. Do not make sudden changes in speed or direction, which could cause the machine to roll over.
- Use extra care while operating machine with grass catchers or other attachments; they can affect the stability of the machine.
- · Do not use on steep slopes.



Personal protective equipment



6003-004

Mow up and down, not side to side



WARNING!

Do not drive up or down hills with slopes greater than 10 degrees. And do not drive across any slopes.

- Do not try to stabilize the machine by putting your foot on the ground.
- Do not mow near drop-offs, ditches, or embankments. The machine could suddenly roll over if a wheel is over the edge or if the edge caves in.

Children

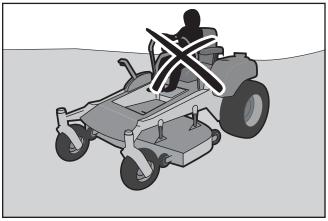
Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine and the mowing activity. Never assume that children will remain where you last saw them.

- Keep children out of the mowing area and in the watchful care of a responsible adult other than the operator.
- Be alert and turn machine off if a child enters the area.
- Before and while backing, look behind and down for small children.
- Never carry children, even with the blades shut off. They may fall off and be seriously injured or interfere with safe machine operation. Children who have been given rides in the past may suddenly appear in the mowing area for another ride and be run over or backed over by the machine.
- Never allow children to operate the machine.
- Use extra care when approaching blind corners, shrubs, trees, or other objects that may block your view of a child.



8011-509

Be extra cautious when driving on slopes



8011-517

Never allow children to operate the machine



8011-518

Keep children away from work area

Maintenance



WARNING!

The engine must not be started when the driver's floor plate or any protective plate for the mower deck's drive belt is removed.

Safe Handling of Gasoline

To avoid personal injury or property damage, use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive.

- Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
- Use only approved gasoline container.
- Never remove gas cap or add fuel with the engine running. Allow engine to cool at least two (2) minutes before refueling.
- Never fuel the machine indoors.
- Never store the machine or fuel container where there is an open flame, spark, or pilot light such as on a water heater or other appliances.
- Before you begin refueling, minimize the risk of static electricity by touching a metal surface
- Never fill containers inside a vehicle or on a truck or trailer bed with plastic liner. Always place containers on the ground away from your vehicle when filling.
- Remove gas-powered equipment from the truck or trailer and refuel it on the ground.
 If this is not possible, then refuel such equipment with a portable container, rather than from a gasoline dispenser nozzle.
- Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lockopen device.
- If fuel is spilled on clothing, change clothing immediately.
- Never overfill fuel tank. Replace gas cap and tighten securely.
- Do not start the engine near spilled fuel.
- Never use gasoline as a cleaning agent.



8011-516

Never fill the fuel tank indoors



WARNING!

The engine and the exhaust system, become very hot during operation.

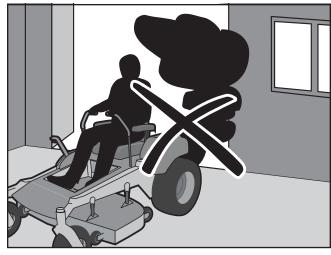
Risk for burns if touched.

Allow engine and exhaust system to cool at least two (2) minutes before refueling.

- If leaks arise in fuel system, engine must not be started until problem has been resolved.
- Check the fuel level before each use and leave space for the fuel to expand, because the heat from the engine and the sun may otherwise cause the fuel to expand and overflow.

General Maintenance

- Never operate machine in a closed area.
- Keep all nuts and bolts tight to be sure the equipment is in safe working condition.
- Never tamper with safety devices. Check their proper operation regularly.
- Keep machine free of grass, leaves, or other debris buildup. Clean oil or fuel spillage and remove any fuel-soaked debris. Allow machine to cool before storing.
- If you strike a foreign object, stop and inspect the machine. Repair, if necessary, before restarting.
- Never make any adjustments or repairs with the engine running.
- Check grass catcher components and the discharge guard frequently and replace with manufacturer's recommended parts, when necessary.
- Mower blades are sharp. Wrap the blade or wear gloves, and use extra caution when servicing them.
- Check brake operation frequently. Adjust and service as required.
- Maintain or replace safety and instruction labels, as necessary.
- Do not modify safety equipment. Check regularly to be sure it works properly. The machine must not be driven with defective or unmounted protective plates, protective cowlings, safety switches, or other protective devices.
- Do not change the settings of governors and avoid running the engine with overly high engine speeds. If you run the engine too fast, you risk damaging the machine components.
- Be very careful when handling battery acid. Acid on skin can cause serious corrosive burns. If you spill battery acid on your skin, rinse immediately with water.
- Acid in the eyes can cause blindness, contact a doctor immediately.



8011-515

Never drive the machine in an enclosed space



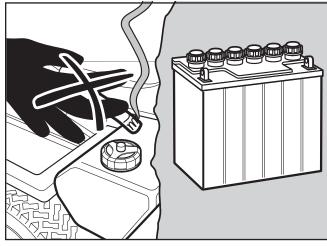
Use protective glasses for maintenance work.



WARNING!

The battery contains lead and lead compounds, chemicals that are considered to cause cancer, birth defects, and other reproductive system damage. Wash your hands after handling the battery.

- Be careful when servicing the battery.
 Explosive gases form in the battery. Never perform maintenance on the battery when smoking or near open flames or sparks.
- The battery can explode and cause serious injury/damage.
- Ensure that nuts and bolts, especially the fastening bolts for the blade attachments, are properly tightened, torqued and that the equipment is in good condition.
- Do not modify safety equipment. Check regularly to be sure it works properly. The machine must not be driven with defective or unmounted protective plates, protective cowlings, safety switches, or other protective devices.
- Do not change the settings of governors and avoid running the engine with overly high engine speeds. If you run the engine too fast, you risk damaging the machine components.
- Sparking can occur when working with the battery and the heavy cables of the starter circuit. This can cause battery explosion, fire or eye injury. Sparking in this circuit can not occur after the chassis cable (normally negative, black) is removed from the battery.



6003-009

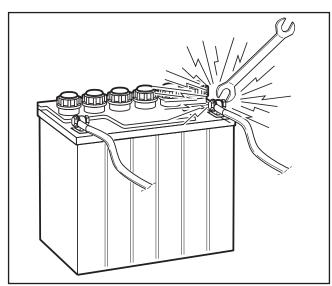
Do not smoke when performing maintenance on the battery. The battery can explode and cause serious injury/damage.



WARNING!

Avoid electrical sparking and its consequences by the following routines:

- Use protective goggles.
- Ensure that the fuel filler cap is mounted tightly and no flammable substances is stored in an open vessel.
- Never work with the starter circuit if there is spilled fuel.
- Disconnect the chassis cable from the battery first and reconnect it last.
- Do not make a bridge short circuit across the starter relay to run the starter.
- Never use the machine indoors or in spaces lacking proper ventilation. The exhaust fumes contain carbon monoxide, an odorless, poisonous, and lethal gas.
- Stop and inspect the equipment if you run over or into anything. If necessary, make repairs before starting.
- Never make adjustments with the engine running.

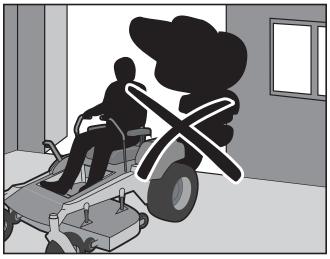


Risk of sparking

- The machine is tested and approved only with the equipment originally provided or recommended by the manufacturer. Only use approved repair parts for the machine.
- The blades are sharp and can cause cuts and gashes. Wrap the blades or use protective gloves when handling them.
- Check the parking brake's functionality regularly. Adjust and service as necessary.
- The mulch blades should only be used in familiar areas when higher quality mowing is desired.
- Reduce the risk of fire by removing grass, leaves, and other debris that may have accumulated on the machine. Allow the machine to cool before putting it in storage.
- Regularly clean deck and underside of deck, avoid spraying engine and electrical components with water.



- The machine is heavy and can cause serious crushing injuries. Be extra cautious when it is loaded on or unloaded from a vehicle or trailer.
- Use an approved trailer to transport the machine. Activate the parking brake, turn off the fuel supply, and fasten the machine with approved fastening devices, such as bands, chains, or straps, when transporting.
- Do not operate this machine on public roadways.
- Check and abide by local traffic regulations before transporting the machine on any road.
- Do not tow this machine, it may cause damage to the drive system.
- Do not tow any trailers, etc. with this mower.
 They may jackknife or overturn causing damage to the mower and possibly serious injury to the operator.
- Load the unit onto truck or trailer by driving up ramps of suitable strength using a slow speed. Do not lift! The machine is not intended to be lifted by hand.



8011-515

Never drive the machine in an enclosed space



WARNING!

Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin, causing serious injury. If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

IMPORTANT INFORMATION

The parking brake is not sufficient to lock the machine in place during transport. Ensure that the machine is well fastened to the transport vehicle. Always reverse the machine onto the transport vehicle to avoid tipping it over.

Roll over Protection system ROPS

The ROPS increases the basic weight of the unit by 42 lbs/19 kg. The ROPS on the US units are standard, on the European units the ROPS is an accessory.



WARNING!

The structures capability may be impaired by structural damage if overturned, or alteration occurs. If any of these conditions take place, the total structure MUST be replaced.

Do not use ROPS as a lifting, attaching or anchoring point.

Do not use ROPS for wrecking or towing.

Do not exceed Max GVW: 2822 lbs/1283 kg.

Read machine operator's manual before each use.

Securely fasten your seat belt if the unit has a ROPS.

Where possible, avoid operating the unit near ditches, embankments and holes.

Reduce speed when turning, crossing slopes and on rough, slick or muddy surfaces.

Stay off slopes too steep for safe operation.

Watch where you are going, especially at row ends, on roads and around trees.

Do not permit others to ride.

Operate the mower smoothly - no jerky turns, starts or stops.

When mower is stopped, set brakes securely and use park brake.

If any part of ROPS is damaged, the entire ROPS must be replaced.

Check all bolts including seat belt for correct torque before each use.

Check ROPS structure for damage before each use.

ROPS bar is NOT intended for use in sub zero temperatures.

Customer responsibilities

- Read and observe the safety rules.
- Follow a regular schedule in maintaining, caring for and using your mower.
- Follow the instructions under "Maintenance" and "Storage" sections of this owner's manual.



WARNING!

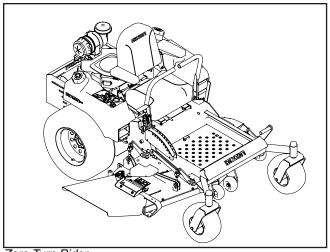
This mower is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, bush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator.

A spark arrester for the muffler is available through your authorized Dixon dealer.

Controls

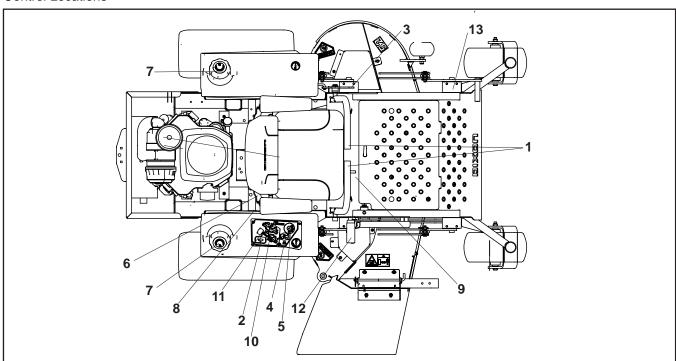
This operator's manual describes the Dixon Zero Turn Rider. The rider is fitted with a Kohler four-stroke overhead valve engine developing 27 - 30 horse power.

Transmission from the engine is made via two beltdriven hydraulic pumps, which in turn drive a hydraulic motor for each drive wheel. Using the left and right steering controls, the flow is regulated and thereby the direction and speed.



Zero Turn Rider

Control Locations



- 1. Motion control levers
- 2. Hour meter
- 3. Parking brake
- 4. Blade switch
- 5. Ignition switch
- 6. Fuses
- 7. Fuel tank cap

- 8. Fuel shut off valve
- 9. Seat adjustment lever
- 10. Choke control
- 11. Throttle control
- 12. Cutting height adjuster
- 13. Deck lift (foot assist)

1. Steering Control Levers

The machine's speed and direction are continuously variable using the two steering controls. The steering controls can be moved forward or backward about a neutral position. Furthermore, there is a neutral position, which is locked if the steering controls are moved outward.

When both controls are in the neutral position (N), the machine stands still.

By moving both controls an equal amount forward or backward, the machine moves in a straight line forward or backward respectively.

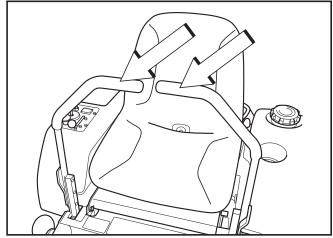
In order, for example, to turn right while moving forward, move the right control towards the neutral position. The rotation of the right wheel is reduced and the machine turns to the right.

Zero turn can be achieved by moving one control backward (behind the neutral position) and carefully moving the other steering control forward from its neutral position. The rotation direction when zero turning is determined by which steering control is moved backward behind the neutral position. If the left steering control is pulled backward, the machine turns to the left. Use extra care when using this maneuver.

If the steering controls are in uneven positions when standing still or do not fit in the slots for moving the controls outward, they can be adjusted.

Tracking

If the mower is not tracking straight, check the air pressure in both rear tires. Recommended air pressure is 15 psi. (1 bar) Tracking must be checked on a flat and level concrete or blacktop surface. If the unit still does not track straight contact your Dixon workshop for adjustments.



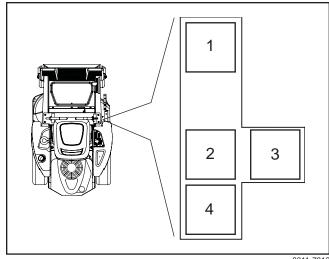
Steering controls

8011-789



WARNING!

The machine can turn very rapidly if one steering control is moved much further forward than the other.



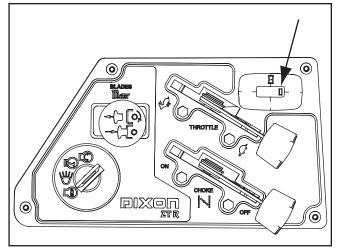
8011-7912

- 1. Forward
- 2. Neutral
- 3. Neutral slot, Neutral lock
- 4. Reverse

Motion control lever, right side

2. Hour Meter

The hour meter displays the total operating time. It will flash CHG OIL (Change Oil) at 50 hour intervals. The flash duration is one hour before and one hour after the interval. The CHG OIL icon will come on and shut off automatically. The hour meter can not be manually reset.



Hour meter

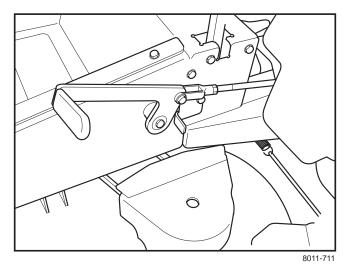
8050-147

3. Parking Brake

IMPORTANT INFORMATION

The machine must stand absolutely still when applying the parking brake. Always set the parking brake before dismounting. Release the parking brake before moving the mower.

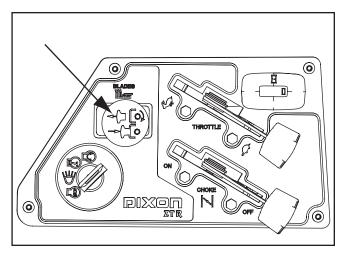
The parking brake is found on the left of the machine. Pull the lever backward to activate the brake and forward to release it.



Parking brake not activated

4. Blade switch

In order to engage the mower deck, pull the knob out; the mower blades are disengaged when the knob is depressed.

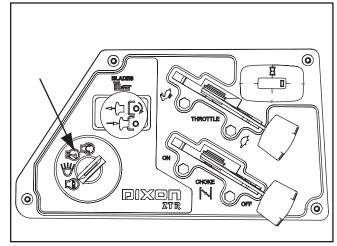


Blade Switch

8050-151

5. Ignition Switch

The ignition key is placed on the control panel and is used to start and stop the engine.



8050-147

Ignition Switch

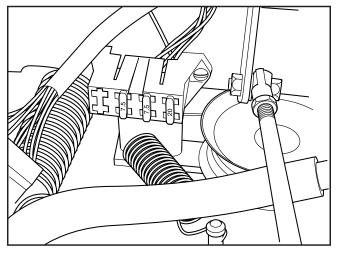
6. Fuses

The fuses are located in a holder at the right hand side of the battery compartment. They are flat pin fuses of the same type used in automobiles.

There are three fuses as well as socket for one spare fuse.

Fuse ratings and functions:

- 20 A, Primary fuse.
- 7.5 A, Mower deck coupling.
- 7.5 A, Accessory outlet.
- Socket for spare fuse.



Fuses

7. Refueling

Read the safety instructions before refueling. The machine has two fuel tank, just behind the seat. The tanks take 5.7 gallons (22 liters) each.

Make sure the fuel caps are properly tightened and the cap gasket is not damaged.

The engine will run on a minimum of 85-octane unleaded gasoline (no oil mix). Environmentally adapted alkylate gasoline can be used. See also Technical Data concerning ethanol fuel. Methanol fuel is not allowed. Do not use E85 alcohol based fuel. Damage to engine and components may occur.



WARNING!

Gasoline is highly flammable. Observe caution and fill the tank outdoors (see the safety instruction).



WARNING!

The engine and the exhaust system, become very hot during operation.

Risk for burns if touched.

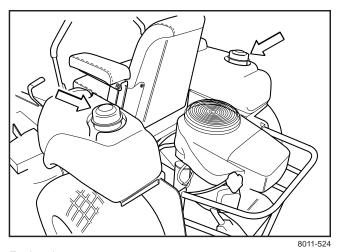
Allow engine and exhaust system to cool at least two (2) minutes before refueling



WARNING!

Fill to bottom of filler neck. Do not overfill. Wipe off any spilled oil or fuel. Do not store, spill or use gasoline near an open flame.

When operating in temperatures below 32° F. (0° C.), use fresh, clean winter grade gasoline to help insure good cold weather starting.



Fuel tanks

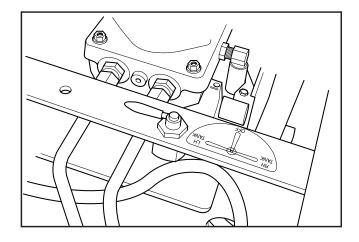
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IMPORTANT INFORMATION

Experience indicates that alcohol blended fuels (called gasohol, ethanol or methanol) can attract moisture which leads to separation and formation of acids during storage. Acidic gas can damage the fuel system of an engine while in storage. To avoid engine problems, the fuel system should be emptied before storage of 30 days or longer. Drain the gas tank, start the engine and let it run until the fuel lines and carburetor are empty. Use fresh fuel the next season. See Storage Instructions for additional information. Never use engine or carburetor cleaners in the fuel tank or permanent damage may occur.

8. Fuel Shut Off Valve

The fuel shut off valve is located at the right rear of the seat. The valve has three positions; right tank, left tank and center is the off position.

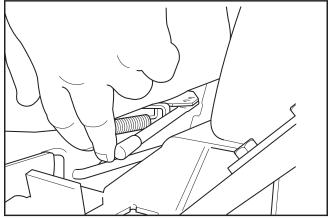


Fuel shut off valve

8011-506

9. Seat Adjustment Lever

The seat can be adjusted lengthways. When making adjustments, the lever under the front edge of the seat is moved to the left (as seen by the driver in the seat), after which the seat can be moved backward or forward.



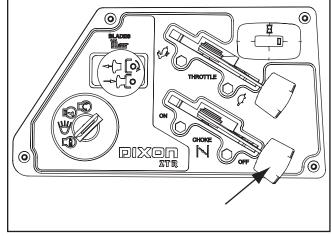
Lengthways adjustment

8011-441

10. Choke Control

position.

The choke control is used for cold starts in order to provide the engine with a richer fuel mixture. For cold starts the control should be pushed to the on



Choke control

11. Throttle Control

The throttle control regulates the engine speed and thereby the rate of rotation of the blades, assuming the blade switch is pulled out, see Engaging the Mower Deck.

In order to increase or decrease the engine speed, the control is moved forward or back respectively.

Avoid idling the engine for long periods, as there is a risk of fouling the spark plugs.

USE FULL THROTTLE WHEN MOWING, for best mower performance and battery charging.

12. Lifting Lever for the Mower Deck

The lifting lever is used to place the mower deck in the transport position or one of the 17 different cutting height positions.

The cutting height is set by placing a peg in the hole for the desired cutting height and the peg is then locked on the inside (hidden in the illustration) with the supplied pin.

Pull the lever backward to the locked position to engage the transport position. The deck is then raised. Depress the lock handle, counter hold, and move the lifting lever forward toward the peg to engage the set cutting height. The deck is then lowered.

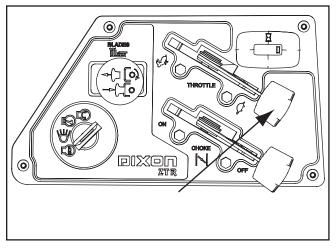
The lifting lever can also be used to temporarily adjust the cutting height, such as when passing a minor bump in the lawn.

IMPORTANT INFORMATION

In order to obtain an even cutting height it is important that the air pressure in all four tires is the same 15 psi (1 bar).

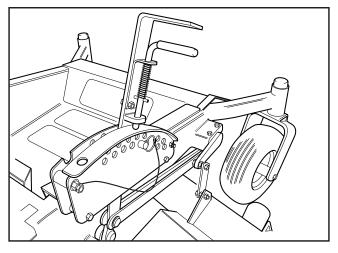
IMPORTANT INFORMATION

Always use the high position to transport.



Throttle control

8050-150



The mower deck's lifting lever

8011-525-1

Pump release valves

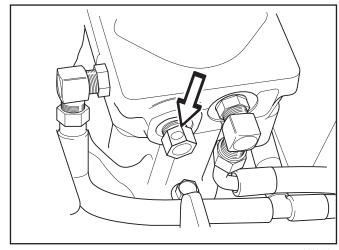
IMPORTANT INFORMATION

Only rotate valve $\frac{1}{4}$ - $\frac{1}{2}$ turn to release system.

Tighten the valve moderately.

Do not overtighten the valve when closing. That can damage the valve seat.

Pump release valves are located at the pumps. They are used to release the system so the machine may be moved by hand when not running. Tilt seat forward to gain access to the pumps. Use a 5/8" wrench to open both valves.

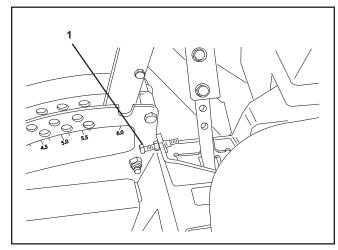


Pump release valve

8011-507

Tracking

- Tracking adjustment is done using the tracking bolts. The tracking bolts act as limiting devices for the motion control levers when in the full-forward position.
- 2. Start by loosening jam nut on right tracking bolt. Back the tracking bolt out until flush with nut.
- Loosen left bolt and back out until flush with nut.
- 4. Move unit to an open, unobstructed area such as an empty parking lot or open field for tracking adjustment.
- 5. Test operation of the unit by driving it at full throttle and full forward position on both motion control levers. Gradually turn in the tracking bolt on the right hand side until the unit noticeably starts drifting right.
- 6. Stop the unit and tighten right jam nut in this position.
- 7. Restart the unit and drive forward at full throttle with both motion control levers in full forward position. Gradually turn in the left bolt until unit tracks straight. Tighten jam nut.



1. Tracking bolt

Tracking adjustment

Accessories

For mulching, there is a BioClip attachment available. This is mounted underneath the mower deck and consists of control plates and BioClip blades.

Operation

Read "Safety Instructions" section and following pages, if you are unfamiliar with the machine.

Training

Zero turn mowers are far more maneuverable than typical riding mowers due to their unique steering capabilities. We suggest that this section be reviewed in its entirety prior to attempting to move the mower under its own power. Additionally, we suggest when first operating the mower, use a reduced throttle speed and reduced ground speed by NOT moving control levers to the furthest forward or reverse positions during initial operation, or until operator becomes comfortable with controls. We also suggest first time users, or new users to Zero Turn mowers to become familiar with the mower's movement on a hard surface, such as concrete or blacktop PRIOR to attempting to operate on turf. Until operator becomes comfortable with mower controls and zero turning capability, they may damage turf due to overly aggressive maneuvers.

To move forward and backward

The direction and speed of the mower's movements is effected by the movement of the control lever(s) on each side of mower. The left control lever controls the left wheel. The right control lever controls the right wheel.

IMPORTANT INFORMATION

When control levers are in the reverse position they return to neutral when released. This may cause the mower to suddenly stop.

First time users should push mower (see "Moving by Hand" in the "Operation" section) to an open, flat area, without other people or vehicles/obstacles nearby. In order to move unit under its own power, the operator must be in the seat, start engine (see "Before Starting" in "Operation" section), adjust engine speed to idle, disengage parking brake, do not engage blades at this time, rotate control levers inward. As long as the control levers have not been moved forward or backwards, mower will not move. Slowly move both control levers forward slightly. This will allow mower to start moving forward in a straight line. Pull back on control levers to the neutral position and mower should stop moving. Pull back slightly on control levers, this will allow mower to start moving backwards. Push forward on control levers to the neutral position and mower should stop moving.

To turn to the right

While moving in a forward direction, pull the right lever back towards the neutral position while maintaining the position of the left lever, this will slow the rotation of the right wheel and cause the machine to turn in that direction.

To turn to the left

While moving in a forward direction pull the left lever back towards the neutral position while maintaining the position of the right lever, this will slow the rotation of the left wheel and cause the machine to turn in that direction.

To zero turn

While moving in a forward direction, first pull both control levers back until the mower stops or slows dramatically. Then by alternating one lever slightly to the forward position and the other in the reverse position.

Roll bar and safety belt

Operate the unit with the roll bar in the raised and locked position and use the seat belt. There is no rollover protection when the roll bar is down. If it is necessary to lower roll bar, do not wear the seat belt. Raise the roll bar as soon as clearance permits.



WARNING!

The seat belt must be used when the roll bar is in upright position.

Before Starting

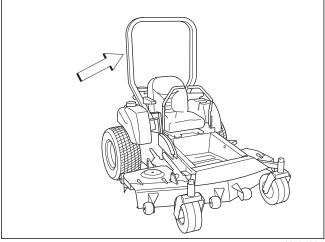
- Read the sections Safety Instructions and Controls before starting the machine.
- Perform the daily maintenance before starting (see Maintenance Schedule in the Maintenance section).
- Check that there is sufficient fuel in the fuel tank
- Adjust the seat to the desired position.

The following conditions must be fulfilled before the engine can be started:

- The driver must be seated on the seat.
- The blade switch for engaging the mower blades must be depressed.
- The parking brake must be on.
- Both steering controls must be in the locked (outer) neutral position.

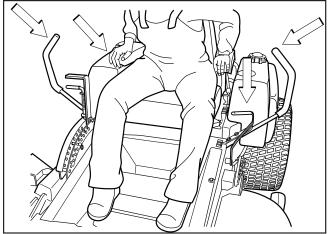
Starting the Engine

- 1. Sit on the seat.
- Raise the mower deck by pulling the lifting lever backward to the locked position (transport position).
- 3. Activate the parking brake.



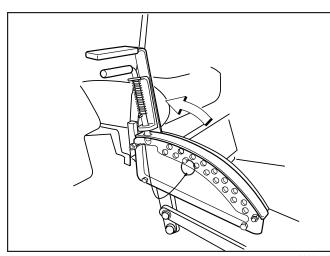
Roll bar in upright position

8011-464-1



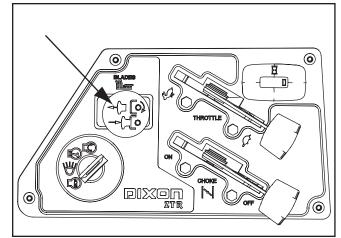
Start conditions

8011-527-1



Raise the mower deck

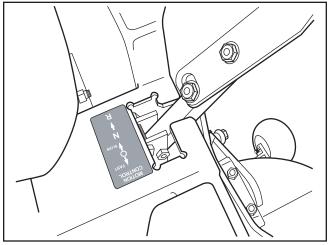
4. Disengage the mower blades by depressing the blade switch.



8050-151

Depress the control for disengaging the mower deck

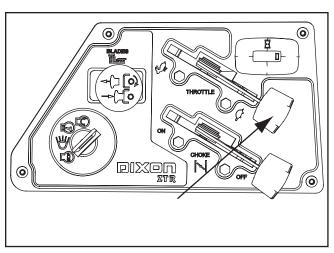
5. Move the steering controls outward to the locked (outer) neutral position.



8011-526

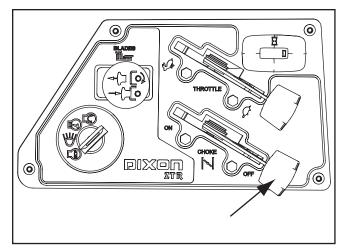
Steering controls in the outward, locked neutral position

6. Move the throttle to the middle position.



Set the throttle

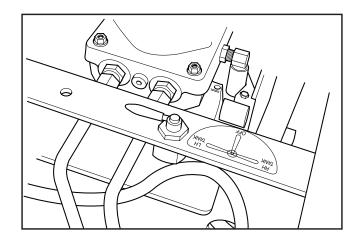
7. If the engine is cold, the choke control should be pushed to its extents.



8050-148

Set the choke control

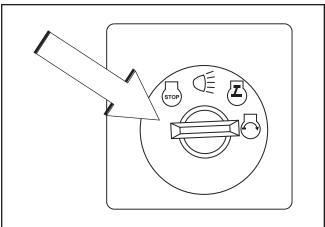
8. Open the fuel valve for the selected fuel tank.



8011-506

Open the fuel valve

Press in and turn the ignition key to the start position.



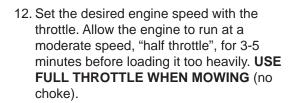
Turn to the start position

10. When the engine starts, immediately release the ignition key back to the run position.

IMPORTANT INFORMATION

Do not run the starter for more than 5 seconds each time. If the engine does not start, wait about 10 seconds before retrying.

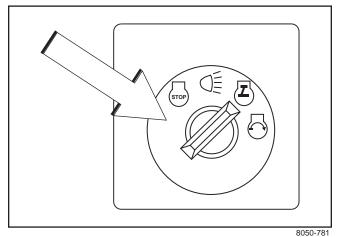
11. Gradually pull choke control back when the engine has started.



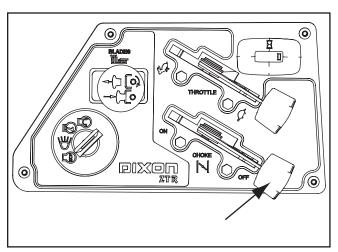


WARNING!

Engine exhaust and certain vehicle components contain or emit chemicals considered to cause cancer, birth defects or other reproductive system damage. The engine exhaust contains carbon monoxide, which is a odorless, colorless, poisonous gas. Do not use the machine in enclosed spaces.

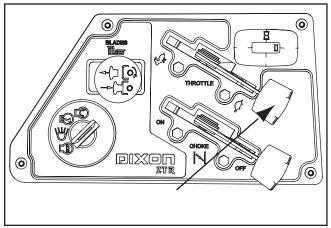


Return to run position



8050-148

Gradually pull choke control back



Set the engine speed

To start an engine with a weak battery



WARNING!



Lead-acid batteries generate explosive gases. Keep sparks, flame and smoking materials away from batteries. Always wear eye protection when around batteries.

If your battery is too weak to start the engine, it should be recharged. (See "Battery" in the Maintenance Section.)

If "jumper cables" are used for emergency starting, follow this procedure:

IMPORTANT INFORMATION

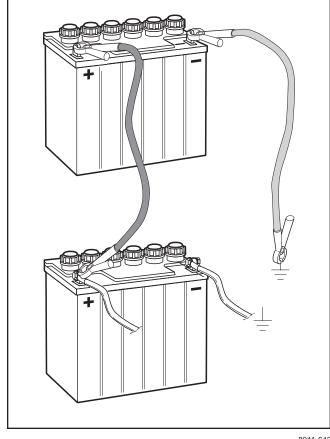
Your mower is equipped with a 12-volt negative grounded system. The other vehicle must also be a 12-volt negative grounded system. Do not use your mower to start other vehicles.

To attach jumper cables

- · Connect each end of the RED cable to the POSITIVE (+) terminal on each battery, taking care not to short against chassis.
- Connect one end of the BLACK cable to the NEGATIVE (-) terminal of the fully charged battery.
- Connect the other end of the BLACK cable to a good CHASSIS GROUND on the mower with the discharged battery, away from the fuel tank and battery.

To remove cables, reverse order

- Remove BLACK cable first from chassis and then from the fully charged battery.
- Remove RED cable last from both batteries.



Jumper cable connection

Running

- 1. Release the parking brake by moving the lever downward.
 - Your mower is equipped with an operator presence system. When the engine is running, any attempt by the operator to leave the seat without first setting the parking brake will shut off the engine.
- 2. Move the steering controls to the neutral position (N).

IMPORTANT INFORMATION

The mower deck's anti-scalp rollers should be evenly adjusted.

3. Select the cutting height by adjusting the cutting height pin. Release latch and lower deck to set cutting height.



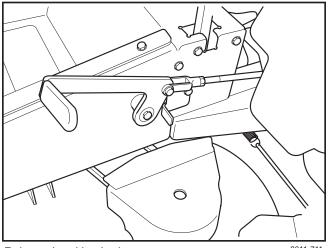
WARNING!

Ensure that no one is near mower when engaging blade switch.

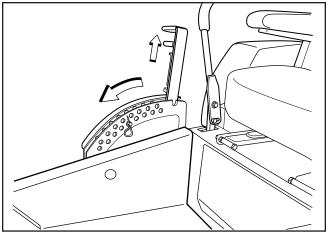
- 4. Make sure the work area is free from objects that could be thrown by the rotating blades.
- 5. Engage the mower deck by pulling out the blade switch.
- 6. Move throttle control to full throttle.
- 7. The machine's speed and direction are continuously variable using the two steering controls. When both controls are in the neutral position, the machine stands still. By moving both controls an equal amount forward or backward, the machine moves in a straight line forward or backward respectively.

In order, for example, to turn right while moving forward, move the right control towards the neutral position. The rotation of the right wheel is reduced and the machine turns to the right.

Turning on the spot (zero turn) can be achieved by moving one control backward (behind the neutral position) and carefully moving the other steering control forward from its neutral position.

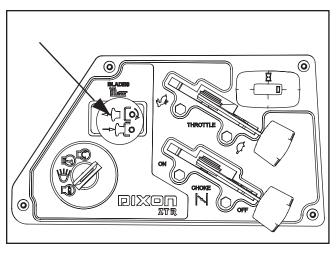


Released parking brake



8011-561-1

Cut height selection



8050-151

Engaging the mower deck

Operating on hills

Read the Safety Instructions "Driving on Slopes" in the "Safety Instructions".



WARNING!

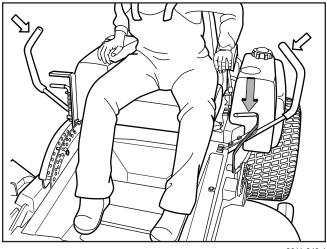
Do not drive up or down hills with slopes greater than 10 degrees. Do not drive across slopes.

- The slowest speed possible should be used before starting up or down hills.
- Avoid stopping or changing speed on hills.
- If stopping is absolutely necessary, pull drive levers into the neutral position and push to the outside of the unit and engage the parking brake.

IMPORTANT INFORMATION

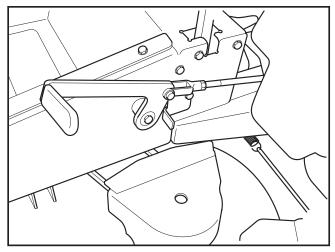
Control levers return to neutral when released. This may cause the mower to suddenly stop.

- To restart movement, release the parking brake.
- Pull the control levers back to the center of the mower and press forward to regain forward motion.
- Make all turns slowly.



8011-640-1

Stopping conditions



8011-711

Released parking brake

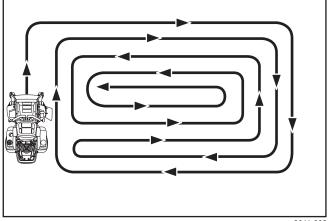
Mowing Tips

- Observe and flag rocks and other fixed objects to avoid collisions.
- Begin with a high cutting height and reduce it until the desired mowing result is attained.
 The average lawn should be cut to 2½"
 (64 mm) during the cool season and over 3"
 (76 mm) during the hot months. For healthier and better looking lawns, mow often after moderate growth.
 - For best cutting performance, grass over 6" (15 cm) in height should be mowed twice. Make the first cut relatively high; the second to the desired height.
- The mowing result will be best with a high engine speed (the blades rotate rapidly) and low speed (the rider moves slowly). If the grass is not too long and dense, the driving speed can be increased without negatively affecting the mowing result.
- The finest lawns are obtained by mowing often. The lawn becomes more even and the grass clippings more evenly distributed over the mown area. The total time taken is not increased as a higher operating speed can be used without poor mowing results.
- Avoid mowing wet lawns. The mowing result is poorer because the wheels sink into the soft lawn, clumps build, and the grass clippings fasten under the cowling.
- Hose the mower deck underside with water after each use. When cleaning, the mower deck shall be raised into the transport position. Make sure the mower is cooled and the engine is off.
- Use compressed air to clean top surface of the deck. Avoid flooding water on top surface, engine and electrical components.
- When the mulching kit is used, it is important that the mowing interval is frequent.



WARNING!

Clear the lawn of stones and other objects that can be thrown out by the blades.



8011-603

Mowing pattern



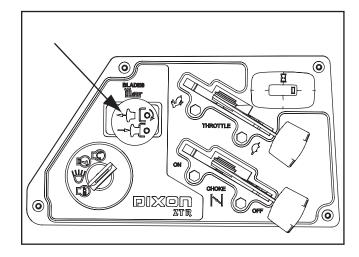
WARNING!

Never drive the rider on terrain that slopes more than 10 degrees. Mow slopes up and down, never side to side. Avoid sudden directional changes.

Stopping the Engine

Allow the engine to idle a minute in order to attain normal operating temperature before stopping it, if it has been worked hard. Avoid idling the engine for longer periods, as there is a risk of the spark plugs fouling.

 Disengage the mower deck by depressing the blade switch.



8050-151

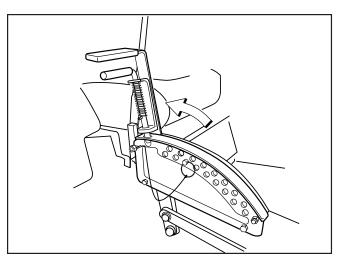
Disengage the mower deck

- 2. Raise the mower deck by depressing the pedal forward to the transport position.
- 3. When the machine is standing still, activate the parking brake by pulling the lever upward.
- Move the throttle to the minimum position (tortoise symbol). Turn the ignition key to the stop position.
- 5. Move the steering controls outward.
- Remove key. Always remove key when leaving the mower to prevent unauthorized use.

Moving by Hand

IMPORTANT INFORMATION

Leaving the ignition switch in any other position than "OFF" will cause the battery to be discharged and the hour meter to accumulate hours.



Raise the mower deck

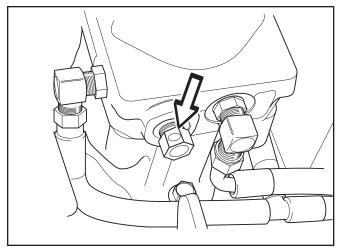
In order for the machine to be moved with the engine turned off, the vent screws on both hydraulic pumps must be opened $^{1}\!/_{_{\! 4}}$ -1 $\!/_{_{\! 2}}$ turn.Open both vent screws to move mower by hand.



WARNING!

No adjustments or maintenance to be carried out unless:

- the engine stopped
- ♦ the ignition key removed
- the parking brake activated



8011-507

Vent screw on the hydraulic pump

Maintenance

Maintenance Schedule

The following is a list of maintenance procedures that must be performed on the machine. For those points not described in this manual, visit an authorized service workshop. An annual service carried out by an authorized service workshop is recommended to maintain your machine in the best possible condition and to ensure safe operation.

Read "Maintenance" in the Safety Instructions section.

¹⁾ First change after 5-8 hours. When operating with a heavy load or at high ambient temperatures, replace every 50 hours. ²⁾ In dusty conditions, cleaning and replacement are required more often. ³⁾ For daily use, the machine should be lubricated twice weekly. ⁴⁾ Performed by authorized service workshop.

= Described in this manual

O = Not described in this manual

	Daily		Weekly	At least in hours once			ce inte	iterval
Maintenance	Before	After		each year	25	50	100	300
Check the parking brake	•							
Check the engine's oil level (every refueling)	•							
Check the safety system	•							
Check for fuel and oil leakages	O							
Check/clean the engine's cooling air intake		•						
Check the mower deck		•						
Check hardware (screws, nuts, etc.)		•						
Clean under the mower deck		•						
Start the engine and blades, listen for unusual sounds		0						
Check for damage		0						
Thoroughly clean around the engine		0						
Clean around belts, belt pulleys, etc.		0						
Check the tire pressures					•			
Check battery					•			
Sharpen/Replace mower blades					•			
Check the fuel pump's air filter 2)					•			
Clean the engine's cooling air intake 2)				•	•			
Clean the air cleaner's pre-filter 2) (foam)				•	•			
Clean the air cleaner's filter cartridge 2)				•		•		
(paper filter)								
Check/adjust the parking brake				0		0		
Inspect muffler/Spark arrester				0		0		

	Daily		Weekly	At least once	Maintenance interval in hours			
Maintenance	Before	After		each- year		50	100	300
Check/adjust throttle and choke cables							•	
Check the condition of belts, belt pulleys, etc.				•			•	
Change the engine oil 1)				•		•		
Replace the engine oil filter				•			•	
Clean/replace the spark plugs				•			•	
Replace the fuel filter				•			•	
Replace the air filter (paper filter) 2)				•			•	
Check the caster wheels (every 200 hours)							•	
Clean the cooling fins 2)							0	
Replace the air cleaner's pre-filter 2) (foam)				•				•
Check/adjust the mower deck				•				•
Check the engine valve clearance 4)				0				0
Perform the 300-hour service 4)				0				•
Lubricate according to Lubrication Schedule				•	•	•	•	•
Check hydraulic oil at reservoir			•					
Change hydraulic oil & filter (200 hours)				•				
Clean fins of oil cooler (Kohler)				•			•	

¹⁾ First change after 5-8 hours. When operating with a heavy load or at high ambient temperatures, replace every 50 hours. ²⁾ In dusty conditions, cleaning and replacement are required more often. ³⁾ For daily use, the machine should be lubricated twice weekly. ⁴⁾ Performed by authorized service workshop.

- = Described in this manual
- **Q** = Not described in this manual



WARNING!

Before performing any service or adjustment checklist:

- Engage the parking brake.
- Place the Blade-switch in the disengaged position.
- Turn the ignition switch to "OFF" position and remove the key.
- · Make sure the blades and all moving parts have completely stopped.
- Disconnect the spark plug wire from all spark plugs and place the wire where it cannot come in contact with the plug.

Battery

Your mower is equipped with a maintenance free battery and does not need servicing. However, periodic charging of the battery with an automotive type battery charger will extend its life.

- Keep battery and terminals clean.
- Keep battery bolts tight.
- Recharge at 6-10 amperes for 1 hour

To clean battery and terminals

Corrosion and dirt on the battery and terminals can cause the battery to "leak" power.

- 1. Open the terminal access doors.
- Disconnect BLACK battery cable first, then the RED battery cable and remove the battery from the machine.
- 3. Rinse the battery with plain water and dry.
- 4. Clean terminals and battery cable ends with wire brush until shiny.
- 5. Coat terminals with grease or petroleum jelly
- 6. Reinstall battery.

Replacing battery

- 1. Lift Seat and rotate forward.
- 2. Remove the red terminal guard.
- 3. Using two ½" wrenches disconnect BLACK battery cable then RED battery cable.
- 4. Remove the knobs and remove battery hold downs.
- 5. Carefully remove the battery from the mower.
- 6. Install new battery with terminals in the same position as the old battery.
- 7. Reinstall battery hold downs.
- 8. First connect RED battery cable to positive (+) battery terminal with hex bolt and hex nut.
- Connect BLACK grounding cable to negative (-) battery terminal with remaining hex bolt and hex nut.
- 10. Fit the terminal guard.
- 11. Lower seat.



Always use protective glasses when handling the battery.

IMPORTANT INFORMATION

Do not attempt to open or remove caps or covers. Adding or checking level of electrolyte is not necessary.

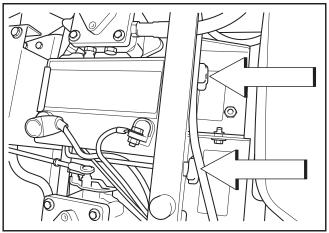
Always use two wrenches for the terminal screws



WARNING!

Do not short battery terminals by allowing a wrench or any other object to contact both terminals at the same time. Before connecting battery, remove metal bracelets, wristwatch bands, rings, etc.

Positive terminal must be connected first to prevent sparks from accidental grounding.



8011-466

Battery installation

Ignition System

The engine is equipped with an electronic ignition system. Only the spark plugs require maintenance. For recommended spark plugs, see Technical Data.

- 1. Remove the ignition cable boot and clean around the spark plug.
- 2. Remove the spark plug with a spark plug socket wrench.
- Check the spark plug. Replace the spark plug
 if fouled, the electrodes are burned and if the
 insulation is cracked or damaged. Clean the spark
 plug with a steel brush if it is to be reused.
- 4. Measure the electrode gap with a gapping tool. The gap should be .030" (0.75 mm). Adjust as necessary by bending the side electrode.
- 5. Reinsert the spark plug, turning by hand to avoid damaging the threads.
- 6. After the spark plug is seated, tighten it using a spark plug wrench so that the washer is compressed. A used spark plug should be turned ¹/8 of a turn from the seated position. A new spark plug should be turned ¼ a turn from the seated position.
- 7. Replace the ignition cable.

Checking the Safety System

The machine is equipped with a safety system that prevents starting or driving under the following conditions.

The engine can only be started when:

- 1. The mower deck is disengaged.
- 2. The steering controls are in the outer, locked neutral position.
- 3. The driver is sitting in the driver's seat.
- 4. The parking brake is on.

Make daily inspections to ensure that the safety system works by attempting to start the engine when one of the conditions is not met. Change the conditions and try again.

If the machine starts when one of these conditions is not met, turn the machine off and repair the safety system before using the machine again.

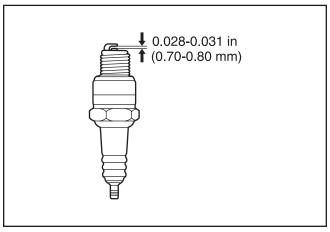
Make sure the engine stops when the park brake is not engaged and the operator leaves the seated position.

Check that the engine stops if the mower blades are engaged and the driver temporarily moves off the drivers seat.

IMPORTANT INFORMATION

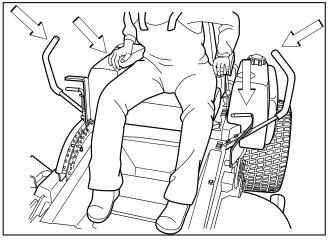
Fitting the wrong spark plug type can damage the engine.

Inadequately tightened spark plugs can cause overheating and damage the engine. Tightening the spark plugs too hard can damage the threads in the cylinder head.



8011-054

Measure the electrode gap



8011-527-1

Conditions for starting

IMPORTANT INFORMATION

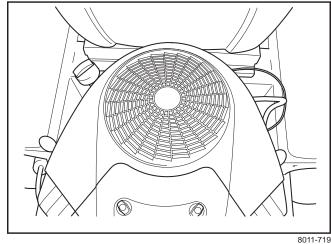
In order to be able to drive, the driver must sit in the seat and release the parking brake before the steering controls can be moved into the neutral position, otherwise the engine will stop.

Checking the Engine's Cooling Air Intake

Check that the engine's cooling air intake is free from leaves, grass, and dirt.

If the cooling air intake is clogged, engine cooling deteriorates, which can lead to engine damage.

The cooling air intakes rotates when the engine is running. Mind your fingers.



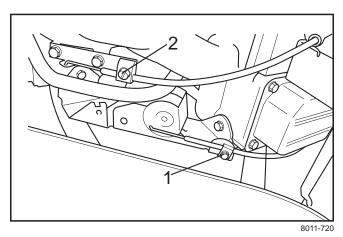
Check and clean the cooling air intake

Checking and Adjusting the Throttle Cable

Check that the engine responds to throttle increases and that a good engine speed is attained at full throttle.

If doubts arise, contact the service workshop. If adjustments are necessary, they can be made as follows for the lower cable:

- 1. Loosen the clamping screw for the cable's outer casing and move the throttle to the full throttle position.
- 2. Check that the throttle cable is mounted in the correct hole in the lower lever, see illustration.
- 3. Push the throttle cable's outer casing as far to the right as possible and tighten the clamping screw.



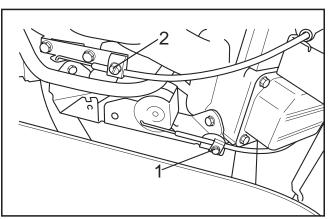
1. Throttle cable Adjusting the throttle cable

Checking and Adjusting the Choke Cable

If the engine produces black smoke or is difficult to start, this can be because the choke cable is incorrectly adjusted (upper cable).

If doubts arise, contact the service workshop. If adjustments are necessary, they can be made as follows:

- 1. Loosen the clamping screw for the cable's outer casing and push the choke control fully in.
- 2. Check that the choke cable is mounted in the upper lever, see illustration. Push the choke cable's outer casing as far to the left as possible and tighten the clamping screw.

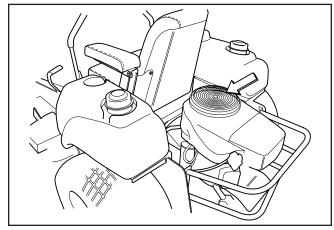


2. Choke cable Adjusting the choke cable

Checking the Engine's Cooling Air Intake

Check that the engine's cooling air intake is free from leaves, grass, and dirt.

If the cooling air intake is clogged, engine cooling deteriorates, which can lead to engine damage.



Check and clean the cooling air intake

8011-625

Checking and Adjusting the Throttle Cable

On Kohler engine the cables are mounted under the air filter housing. The throttle cable on Kohler must be mounted in the middle hole.

Check that the engine responds to throttle increases and that a good engine speed is attained at full throttle.

If doubts arise, contact the service workshop.

If adjustments are necessary, they can be made as follows for the lower cable:

- Loosen the clamping screw for the cable's outer casing and move the throttle to the full throttle position.
- 2. Check that the throttle cable is mounted in the correct hole in the lower lever, see illustration.
- 3. Push the throttle cable's outer casing as far to the left as possible and tighten the clamping screw.

Checking and Adjusting the Choke Cable

If the engine produces black smoke or is difficult to start, this can be because the choke cable is incorrectly adjusted (upper cable).

If doubts arise, contact the service workshop.
If adjustments are necessary, they can be made as follows:

- Loosen the clamping screw for the cable's outer casing and move the choke lever to the full choke position.
- 2. Check that the choke cable is mounted in the upper lever, see illustration. Push the choke cable's outer casing as far to the right as possible and tighten the clamping screw.

Replacing the Air Filter - Kohler Engine

These engines are equipped with a replaceable, high density paper air cleaner element. Some engines are also equipped with an oiled, foam precleaner which surrounds the paper element. Two different capacity air cleaner systems are available.

Check the air cleaner daily or before starting the engine. Check for a buildup of dirt and debris around the air cleaner system. Keep this area clean. Also check for loose or damaged components. Replace all bent or damaged air cleaner components.

IMPORTANT INFORMATION

Operating the engine with loose or damaged air cleaner components could allow unfiltered air into the engine causing premature wear and failure.

Servicing Precleaner:

If so equipped, wash and re-oil the precleaner every **25 hours** of operation (more often under extremely dusty or dirty conditions). Replace the precleaner **annually**, **or every 100 hours**.

- Open the door on the blower housing to access the air cleaner element and precleaner.
- Unhook the latch and remove the precleaner from the air cleaner element, or remove as an assembly for servicing. Make sure the base and the sealing area is clean before reassembly is performed.
- Wash the precleaner in warm water with detergent. Rinse the precleaner thoroughly until all traces of detergent are eliminated. Squeeze out excess water (do not wring). Allow the precleaner to air dry.
- 4. Saturate the precleaner with new engine oil. Squeeze out all excess oil.
- 5. Reinstall the precleaner over the paper element and secure with the latch.
- 6. Close and latch the door.

Service Paper Element:

Check the paper element **every 50 hours** of operation, (more often under extremely dusty or dirty conditions). Clean or replace the element as necessary. Replace the air cleaner element **annually**, or every **100 hours**.

- 1. Open the door on the blower housing to access the air cleaner element.
- 2. Unhook the latch and remove the air cleaner element and precleaner (if equipped).
- Remove the precleaner (if so equipped) from the paper element. Service the precleaner as described in Precleaner Service.
- 4. Gently tap the paper element to dislodge dirt. Do not wash the paper element or use pressurized air, as this will damage the element. Replace a dirty, bent, or damaged element with a new one. Handle the new element carefully; do not use if the sealing surfaces are bent or damaged.
- 5. Clean the air cleaner base as required and check condition.
- Reinstall the precleaner (if equipped) over the paper air cleaner element and install on the base. Secure with the latch.
- 7. Close and latch the door.

Air Filter Maintenance

If the engine seems weak or runs unevenly, the air filter may be clogged. If running with a dirty air filter, the spark plugs can become fouled.

For this reason, it is important to replace the air filter regularly (see the heading Maintenance Schedule for the proper service interval).



WARNING!

The engine and the exhaust system become very hot during operation. Risk for burns if touched.

Allow engine and exhaust system to cool at least two (2) minutes.

IMPORTANT INFORMATION

Do not use compressed air to clean the air filter.

Do not wash the paper filter.

Do not oil the paper filter.

Do not tap filter to clean this could cause damage to the sealing.

Cleaning/replacing the air filter is carried out as follows:

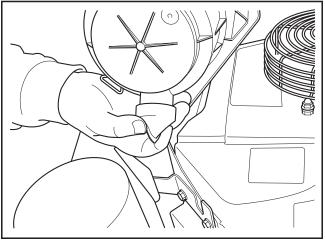
Dust cap

Check the dust cap every day by pressing the rubber valve with two fingers to let out the dirt.

IMPORTANT INFORMATION

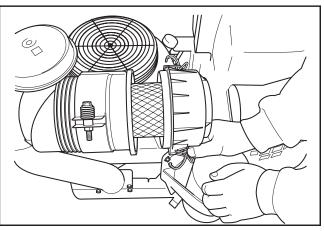
The end cover must be installed with the rubber valve pointing downwards, otherwise the rubber valve will not function.

Clean the dust cap by removing the end cover of the air cleaner and clean inside.



8011-447

Pressing the rubber valve

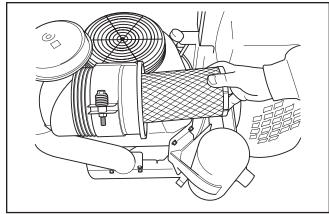


Removing the end cover

8011-448

Filter replacement

- 1. Remove the end cover.
- 2. Remove the main filter (outer filter) by pulling it out by hand.
- Remove the inner filter by pulling it out by hand.
- 4. Clean inside of the filter housing. Wipe dry only.
- 5. Install the inner filter with the open end first. Ensure that it enters its recess at the end of the housing and push it in to the end.
- 6. Install the main filter with the open end first. Ensure that it enters its recess at the end of the housing and push it in to the end.



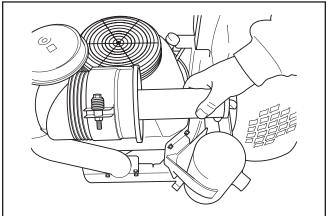
8011-449

Removing the main filter

IMPORTANT INFORMATION

The end cover must be installed with the rubber valve pointing downwards, otherwise the rubber valve will not function.

7. Turn the end cover with the rubber valve pointing downwards and install it.

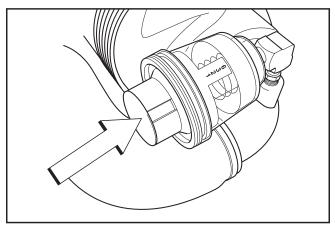


8011-450

Air filter indicator (optional)

Change the main filter when the yellow piston is hanging at the top of the cylinder. To reset the indicator, push on the button (arrow) at the cylinder. A number of pushes may be required. If it indicates soon after a main filter replacement, change the inner filter.

Removing the inner filter



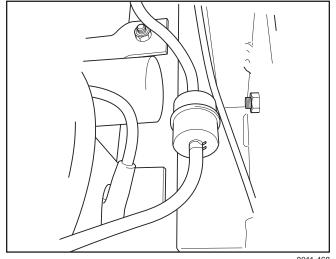
8011-467

Air filter indicator

Replacing the Fuel Filter

Replace the line-mounted fuel filter every 100 hours (once per season) or more regularly if it is clogged. Replace the filter as follows:

- 1. Move the hose clamps away from the filter. Use flat-nosed pliers.
- 2. Pull the filter loose from the hose ends.
- 3. Push the new filter into the hose ends. Position the filter with the "FLOW" arrow pointing up toward the fuel pump. If necessary, a soap solution can be applied to the filter ends to ease mounting.
- 4. Move the hose clamps back toward the filter.



Fuel filter

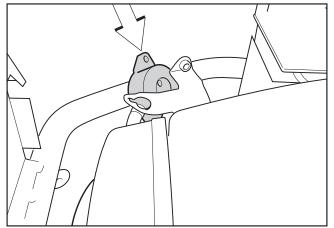
8011-468

Checking the Fuel Pump's Air Filter

Regularly check that the fuel pump's air filter is free from dirt.

Remove the screws and open the pump, no hoses need be removed.

The filter can be cleaned with a brush if necessary. Replace the filter on the console.

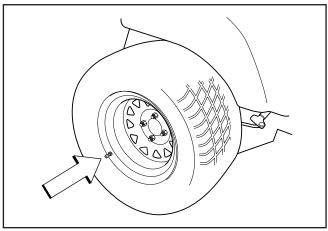


The fuel pump's air filter

8009-147

Checking Tire Pressures

All four tires shall have a pressure of 15 psi / 103 kPa /1 bar.



8011-564

Tire pressures

Checking the Parking Brake

Visually check that no damage is found on the lever, links, or switch belonging to the parking brake. Perform a standstill test and check that there is sufficient braking action.

To adjust the parking brake, contact the Dixon service workshop.



WARNING!

Faulty adjustment result in reduced braking ability and can cause an accident.

Checking the V-belts

Check every 100 hours of operation. Check for severe cracking and large nicks.

NOTE: The belt will show some small cracks in normal operation.

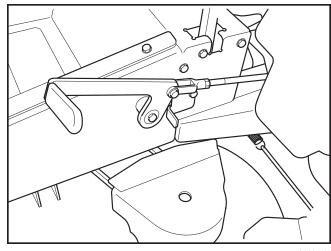
The belts are not adjustable. Replace belts if they begin to slip from wear.

Deck belt

To replace deck belt

Deck belt removal.

- Park on a level surface. Apply park brake.
- Lower the deck into the lowest cutting position.
- Using a ratchet with a 9/16" socket on the spring idler bolt to relieve the tension on the belt.
- Remove foot plate
- Remove screws from both the left and right belt shields, and remove shields.
- Remove any dirt or grass that may have accumulated around the cutter housings and entire deck surface.
- Carefully roll the belt over the top of the cutter housing pulleys.
- Remove the belt from around the electric clutch on the engine shaft.
- The belt can now be removed.

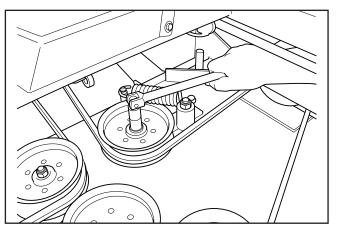


The parking brake in the disengaged position

8011-711

IMPORTANT INFORMATION

The machine must be absolutely standing still when applying the parking brake.



Slackening the belt tensioner

8011-62

Deck belt installation

NOTE: For ease in installing the deck belt, refer to the routing decal on the front edge of the deck.

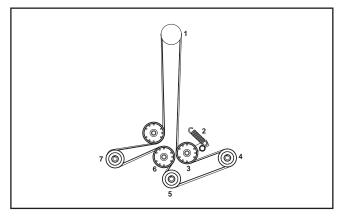
- Wrap the deck belt around the electric clutch that is located on the engine shaft.
- Push the rest of the belt through the IZT (Integrated Zeroturn Transaxle) support and up onto the deck.
- Starting on the right hand side of the deck, wrap the belt around the large right side idler, right cutter housing pulley, small center idler, center pulley, left side pulley and then around the large left side idler.
- The belt will be loose at this point.
- Using a ratchet with a ⁹/₁₆" socket on the spring idler bolt to relieve the tension on the belt.
 See decal on the top of deck for belt routing information.
- After installation is complete check the belt for twists.

Deck belt installation for 60" decks

square hole in the idler arm #3.

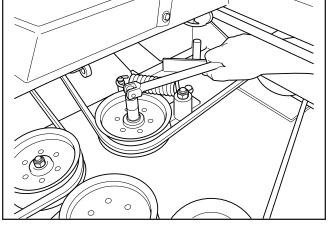
 Remove floor plate to gain access to the deck Route the belt according to the illustration.
 Route belt around clutch and all pulleys according to diagram except for spindle pulley #4.
 Using a ½" breaker bar and short ½" extension, insert extension into spring-loaded idler at the

Rotate spring-loaded idler #3 clockwise to relieve tension and lengthen belt until belt can be slipped over remaining pulley #4. Belt installation is complete.



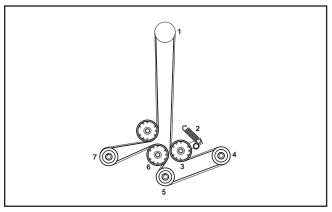
Belt routing, deck belt

8011-580



8011-622

Slackening the belt tensioner



8011-580

- 1. Clutch pulley
- 2. Spring
- 3. Spring-loaded idler pulley
- 4. Left spindle
- 5. Center spindle
- 6. Center fixed idler pulley
- 7. Right spindle

Belt routing, deck belt - 60" decks

Pump belt

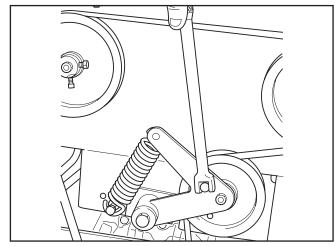
Check belt every 100 hours for excessive wear.

To replace belt. Relieve tension on the deck belt and remove deck belt from clutch. See "Deck belt" section. Loosen bolt on the clutch tie down and rotate out of the way.

Using a $\frac{1}{2}$ " drive ratchet inserted into the square hole in the pump idler arm relieve the tension on the pump belt and remove belt.

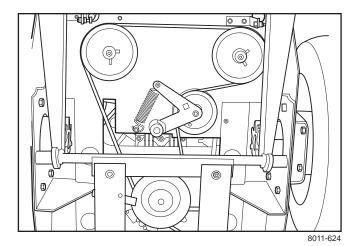
To reinstall belt: Swing pump idler pulley toward engine to route belt around it. Then route belt around the pulley for left pump first (right hand pulley in the illustration).

Reinstall idler spring and use the ratchet to rotate idler so the belt may be installed all the way around the last pulley.



8011-623

Slackening the belt tension



Belt routing, hydraulic pumps

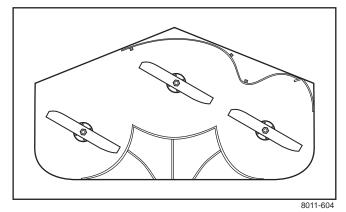
Checking the Blades

In order to attain the best mowing effect, it is important that the blades are well sharpened and not damaged.



WARNING!

Blades are sharp. Protect your hands with gloves and/or wrap blades with a heavy cloth when handling.



Check the blades

Bent or cracked blades or blades with large nicks should be replaced.

Damaged blades should be replaced when hitting obstacles that result in a breakdown. Let the service workshop decide whether the blade can be repaired/ground or must be replaced.

Balance the blades after sharpening.

Check the blade mounts.

IMPORTANT INFORMATION

The sharpening of blades should be carried out by an authorized service workshop.

Blade replacement



WARNING!

Blades are sharp. Protect your hands with gloves and/or wrap blades with a heavy cloth when handling.

Remove blade bolt by turning counterclockwise.

IMPORTANT INFORMATION

To ensure proper assembly, center hole in blade must align with star on cutter housing.

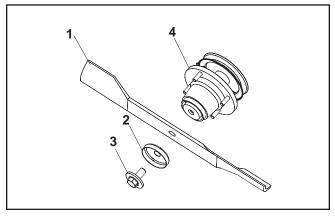
- Install new or re-sharpened blade with stamped "GRASS SIDE" facing towards ground/grass (down) or "THIS SIDE UP" facing deck and cutter housing.
- Install and tighten blade bolt securely.
- Torque blade bolt to 45-55 ft/lbs (60-75 Nm).

IMPORTANT INFORMATION

Special blade bolt is heat treated.

Replace with a Dixon bolt if required.

Do not use lower grade hardware than specified.



- 1. Blade
- 2. Debris shield
- 3. Blade bolt (special)
- 4. Cutter housing Blade attachment

Adjusting the Mower Deck



WARNING!

Before performing any service or adjustment checklist:

- 1. Engage the parking brake.
- 2. Place the Blade switch in the disengaged position.
- 3. Turn ignition switch to "OFF" position and remove the key.
- 4. Make sure the blades and all moving parts have completely stopped.
- 5. Disconnect the spark plug wire from all spark plugs and place the wire where it cannot come in contact with the plug.

Leveling

- Position the mower on a level, preferably concrete, surface.
- 2. Check the pressure in all four tires. See "Technical Data".
- 3. Rotate blades to align front to back.
- 4. Set the cutting height to 4".
- Measure front blade tip, should be 4" from ground, if not turn locknut on top of front eyebolt till measurement is achieved. Check blade tip at front on opposite front blade. Adjust locknut on front eyebolt as necessary.
- Check rear blade measurement, should be 4¼" from ground, if not turn locknut on top of rear eyebolt to achieve measurement. Repeat procedure on opposite side.

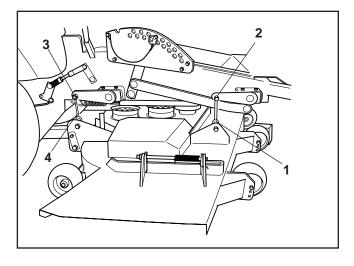
Adjusting Cutting Height

- 1. Raise and secure the deck height lever to the transport position (6").
- 2. Position blade tip so it is straight forward.
- Measure from the cutting edge of the blades to a flat level surface. The distance should be 6" (150 mm).
- 4. Drop and secure the lever at (for example) the 2" cutting height. Measure as above. The distance should be 2" (50 mm).



WARNING!

Blades are sharp. Protect your hands with gloves and/or wrap blades with a heavy cloth when handling.



8011-601-1

- 1. Front eyebolt
- 2. Front locknut
- 3. Rear locknut
- 4. Rear eyebolt

Leveling the mower deck

To adjust anti-scalp rollers

Anti-scalp rollers are properly adjusted when they are just slightly off of the ground when the deck is at the desired cutting height in the operating position. Anti-scalp rollers then keep the deck in the proper position to help prevent scalping in most terrain conditions.

IMPORTANT INFORMATION

Adjust Anti-scalp rollers with the mower on a flat level surface.

The anti-scalp rollers can be set in three positions:

- Upper position 1½ to 3" (38 to 76 mm) grass.
- Middle position 3" to 4½" (76 to 114 mm) grass.
- Lower position 4½" to 6" (114 to 152 mm) grass.

The rollers should be approximately ¼" (6.5 mm) from ground. Do not adjust the rollers to support the deck.

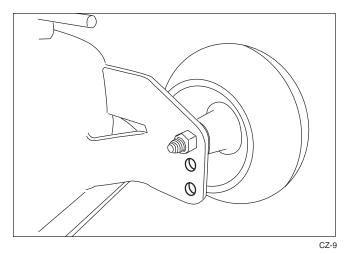


The anti-scalp rollers must not be used for gauge wheels or the roller and deck may be damaged.

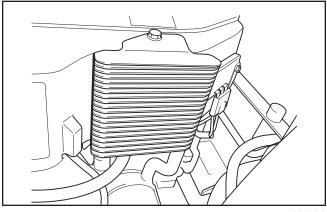
Engine oil cooler

Kohler engine only.

- 1. Clean the outside of fins with a brush.
- 2. Remove the two screws holding the cooler unit to the blower housing.
- 3. Tilt the cooler downward.
- 4. Clean the inside of the cooler with a brush or with compressed air.
- 5. Reinstall the oil cooler to the blower housing.



Anti-scalp roller



8011-472

Engine oil cooler

Cleaning and Washing

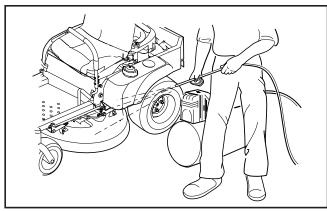
Regular cleaning and washing, especially under the mower deck, will increase the machine's life-span. Make it a habit to clean the machine directly after use (after it is cooled), before the dirt sticks.

Do not spray water on the top of the mower deck. Use compressed air to clean the top side of mower deck. Regularly clean deck and underside of the deck with normal water pressure. Do not use a high pressure washer or steam cleaner. Avoid spraying engine and electrical components with water



Use protective glasses when cleaning and washing.

Do not rinse hot surfaces with cold water. Let unit cool before washing.



8050-092

Cleaning

Caster Wheels

Check every 200 hours. Check that wheels rotates freely. If wheels do not rotate freely take the unit to your dealer for service.

IMPORTANT INFORMATION

DO NOT add any type of tire liner or foam fill material to the tires. Excessive loads created by foam filled tires will cause premature failures.

Only use O.E.M. specified tires.

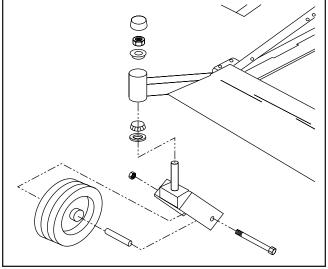
Foam filled tires or solid tires will void the warranty.

Removal and installation of caster wheel

Remove nut and caster bolt.

Pull the wheel out of the fork and take care of the sleeve.

Install in reverse order. Tighten caster bolt.



Caster wheels

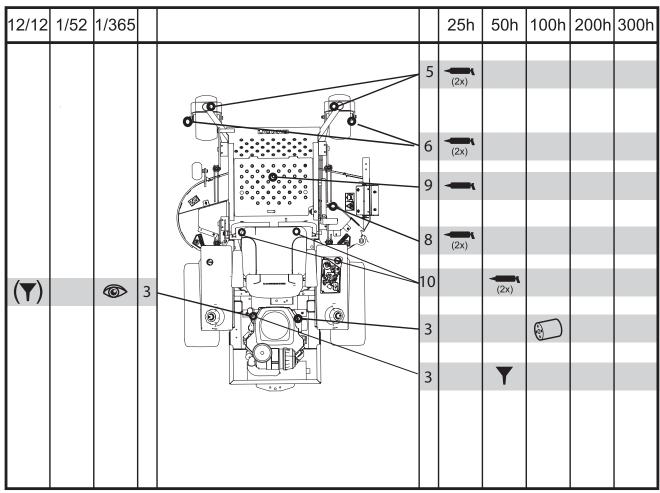
8011-619

Hardware

Check daily. Inspect the entire machine for loose or missing hardware.

Lubrication

Lubrication Schedule



8011-672-2

12/12 Every year 1/52 Every Week 1/365 Every day Lubricate with grease gun

Oil change

Filter change

Lubricate with oil can
Level check

*Change hydraulic (transmission) filters.

General

Remove the ignition key to prevent unintentional movements during lubrication.

When lubricating with an oil can, it must be filled with engine oil.

When lubricating with grease, unless otherwise stated, use a high grade molybdenum disulphide grease.

For daily use, the machine should be lubricated twice weekly.

Wipe away excess grease after lubrication.

It is important to avoid getting lubricant on the belts or the drive surfaces on the belt pulleys. Should this happen, attempt to clean them with spirits. If the belt continues to slip after cleaning, it must be replaced. Gasoline or other petroleum products must not be used to clean belts.

Lubricating the Cables

If possible, grease both ends of the cables and move the controls to end stop positions when lubricating. Refit the rubber covers on the cables after lubrication. Cables with sheaths will bind if they are not lubricated regularly. If a cable binds, it can disrupt operation.

If a cable binds, remove the cable and hang it vertically. Lubricate it with light engine oil until the oil begins to escape from the bottom.

Tip: Fill a small plastic bag with oil and tape it so that it seals against the sheath and allow the cable to hang vertically from the bag overnight. If you do not succeed in lubricating the cable, it must be replaced.

Shaft Bushings and Linkage

Lubricate the bearing of the shafts and linkage for brake system and steering with oil spray or oil can.

Lubricating in Accordance with the Lubrication Schedule

1. Hydraulic System, Oil Level

The hydraulic oil and filter must be replaced every 300 hours, and at least once a year. Contact an authorized service workshop.

Check the oil level in the hydraulic tank daily. The level shall be about $\frac{3}{4}$ "-1" (19 - 25 mm) below the top of the tank.

Check connections, hoses, and tubes for damage or leaks. Replace or repair if doubtful.

Changing Oil and Filters

Oil and filter changes should be carried out by an authorized service workshop due to the risk of impurities enter the system.

2. Driver's Seat

Tip the seat.

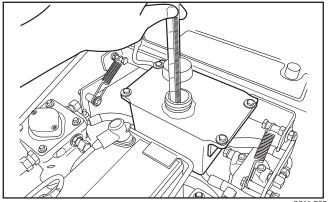
Lubricate the front hinges using an oil can.

Lubricate the lengthways adjustment mechanism with the oil can.

Lubricate the lengthways adjustment runners with the oil can.

IMPORTANT INFORMATION

Use minimal lubrication and remove excess lubricant so that is does not come into contact with belts or belt pulley drive surfaces.



Checking the hydraulic oil

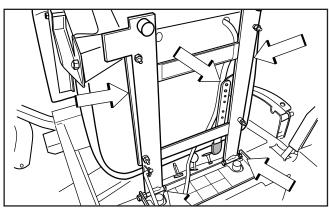
8011-565

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WARNING!

If a leak is suspected, use a piece of cardboard or wood, NOT your hands, to check for leaks. Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin, causing serious injury.

If injured by escaping fluid, see a doctor at once. Serious infection or reaction can develop if proper medical treatment is not administered immediately.



8011-571

Lubricating the lengthways adjuster under the seat

3. Engine Oil, Kohler Engine Changing the Engine Oil

Change oil after every 100 hours of operation (more frequently under severe conditions). Refill with service class SG, SH, SJ or higher oil as specified in the *Viscosity Grades* table.

Change the oil while the engine is still warm. The oil will flow more freely and carry away more impurities. Make sure the engine is level when filling, checking or changing the oil.

Change the oil as follows:

- To keep dirt, debris, etc., out of the engine, clean the area around the oil fill cap/dipstick before removing it.
- Remove the oil drain plug and the oil fill cap/ dipstick. Be sure to allow ample time for complete drainage.
- 3. Reinstall the drain plug. Make sure it is tightened to 10 ft. lb. (13.6 Nm) torque.
- 4. Fill the crankcase, with new oil of the proper type, to the "FULL" mark on the dipstick. Refer to the section on *Oil Type*. Always check the level with the dipstick before adding more oil.
- 5. Reinstall the oil fill cap/dipstick and tighten securely.



WARNING!

Engine oil can be very hot if it is drained directly after stopping the engine. Allow the engine to cool to a safe temperature first.

IMPORTANT INFORMATION

To prevent extensive engine wear or damage, always maintain the proper oil level in the crankcase. Never operate the engine with the oil level below the "ADD" mark or over the "FULL" mark on the dipstick.

6. Start the engine. Run it for a few seconds and recheck the oil level.

IMPORTANT INFORMATION

Used engine oil is a health hazard and must not be disposed of on the ground or in nature; it should always be disposed of at a workshop or appropriate disposal location.

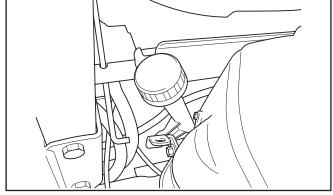
Avoid skin contact; wash with soap and water in case of spills.

Checking the Oil Level

The importance of checking and maintaining the proper oil level in the crankcase cannot be overemphasized.

Check oil before each use as follows:

- Make sure the engine is stopped, level, and cool so the oil has had time to drain into the oil pan.
- 2. To keep dirt, debris, etc., out of the engine, clean the area around the dipstick before removing it.
- Unthread and remove the dipstick; wipe oil off. Reinsert the dipstick into the tube and rest the cap on the tube. Do not thread the cap onto the tube.
- 4. Pull the dipstick out and check the oil level. The oil level should be up to, but not over, the "FULL" mark on the dipstick.



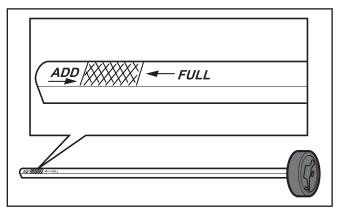
8011-471

Oil dipstick

5. If the level is low, add oil of the proper type, up to the "FULL" mark on the dipstick. Refer to *Oil Type*, page . Always check the level with the dipstick before adding more oil.

IMPORTANT INFORMATION

To prevent extensive engine wear or damage, always maintain the proper oil level in the crankcase. Never operate the engine with the oil level below the "ADD" mark or over the "FULL" mark on the dipstick.



Level marking

8009-159

Oil Recommendations

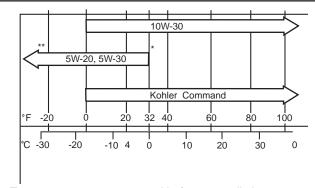
Using the proper type and weight of oil in the crankcase is extremely important. So is checking oil daily and changing oil regularly. Failure to use the correct oil, or using dirty oil, causes premature engine wear and failure.

Oil Type

Use high quality detergent oil of API (American Petroleum Institute) service class SG, SH, SJ or higher. Select the viscosity based on the air temperature at the time of operation.

IMPORTANT INFORMATION

Using other than service class SG, SH, SJ or higher oil or extending oil change intervals longer than recommended can cause engine damage.



Temperature range expected before next oil change

- Use of synthetic oil having 5W-20 or 5W-30 rating is acceptable, up to 40 °F (+4 °C).
- * Synthetic oils will provide better starting in extreme cold below -10 °F (-23 °C).

8011-766

Viscosity grades table

IMPORTANT INFORMATION

Synthetic oils meeting the listed classifications may be used with oil changes performed at the recommended intervals. However to allow piston rings to properly seat, a new or rebuilt engine should be operated for at least 50 hours using standard petroleum based oil before switching to synthetic oil.

A logo or symbol on oil containers identifies the API service class and SAE viscosity grade.

4. Throttle and Choke Cables, Lever Bearings

Lubricate the cable ends by the carburetor with the oil can. Move the controls to the end points and lubricate again.

The throttle cable is also lubricated by the control when the control console is removed.

On Kohler engine the cables are placed under the air filter housing.

5. Front Wheel Mount

Lubricate with a grease gun, one zerk for each wheel mount, until the grease is forced out.

Use only good quality molybdenum disulphide grease. Grease from well-known brand names (petrochemical companies, etc.) usually maintains a good quality.

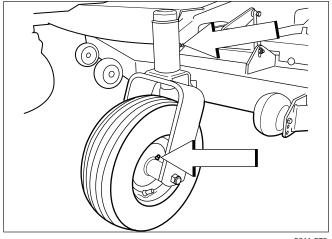
6. Front Wheel Bearings

Lubricate with a grease gun, one zerk for each set of wheel bearings, until the grease is forced out.

Use only good quality molybdenum disulphide grease. Grease from well-known brand names (petrochemical companies, etc.) usually maintains a good quality.

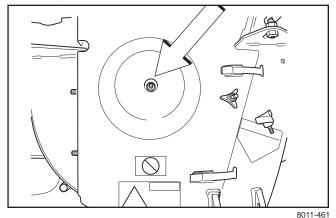


Lubricate with a grease gun two strokes.



8011-573-

Lubricating the front wheels

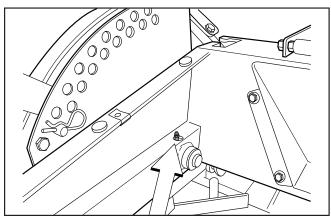


Deck belt pulley

8. Mower Deck Height Adjuster

Lubricate using a grease gun, one zerk, until the grease squeezes out.

Use only good quality molybdenum disulphide grease. Grease from well-known brand names (petrochemical companies, etc.) usually maintains a good quality.



8011-574

Lubricating the cutting height adjuster

9. Belt Adjuster, Mower Deck

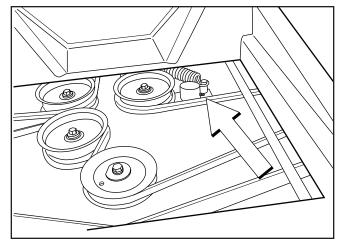
Remove the foot plate (two screws) and lubricate with a grease gun, one zerk, until grease is forced out.

Use only good quality molybdenum disulphide grease.

Grease from well-known brand names (petrochemical companies, etc.) usually maintains a good quality.

IMPORTANT INFORMATION

Use minimal lubrication and remove excess lubricant so that it does not come into contact with belts or belt pulley drive surfaces.



8011-573

The belt adjuster grease nipple

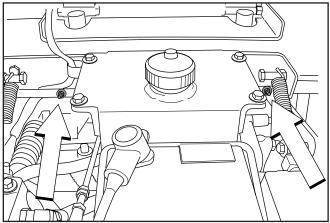
10. Steering Control Shafts

Tip the driver's seat.

Lubricate with a grease gun, one zerk for each steering control shaft, until the grease is forced out.

Use only good quality molybdenum disulphide grease.

Grease from well-known brand names (petrochemical companies, etc.) usually maintains a good quality.



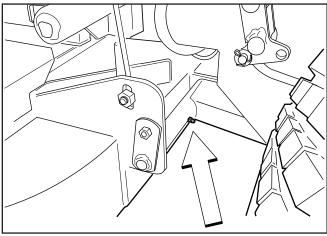
8011-578

Lubricating the steering control shafts

11. Mower Deck Struts

Lubricate with a grease gun, one zerk for each strut, until the grease is forced out.

Use only good quality molybdenum disulphide grease. Grease from well-known brand names (petrochemical companies, etc.) usually maintains a good quality.

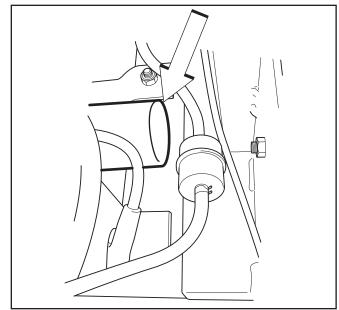


8011-577-1

Lubricating struts

12. Changing the Oil Filter

- Drain the engine oil in accordance with the work description under the heading Engine Oil/Change Engine Oil.
- 2. Remove the oil filter. If necessary, use a filter remover.
- 3. Wipe new, clean engine oil onto the seal for the new filter.
- 4. Mount the filter by hand with + 3/4 turn.
- 5. Run the engine warm, then check that there are no leaks around the oil filter seal.
- 6. Check the oil level in the engine, top up if necessary. The oil filter holds 0.2 qt. (0.2 liters) of oil.



8011-745

Changing the oil filter Kohler

TROUBLE SHOOTING GUIDE

Trouble Shooting Guide					
Problem	Cause				
The engine will not start.	The blade switch is engaged.				
	 The steering controls are not locked in the neutral position. 				
	 The driver is not sitting in the driver's seat. 				
	 The parking brake is not activated. 				
	 The battery is dead. 				
	 Contamination in the carburetor or fuel line. 				
	 The fuel supply is closed or the shut-off valve for the fuel tank is in the wrong position. 				
	 Clogged fuel filter or fuel line. 				
The starter does not turn the engine over.	Dead battery.				
	 Poor contacts on the battery terminal cable connections. 				
	 Fuse blown. 				
	 Ignition system faulty. 				
	 Fault in the starter safety circuit. See Checking the Safety System in the "Maintenance Section," 				
The engine runs rough.	Faulty carburetor.				
	 The choke control is pulled out with warm engine. 				
	Defective valves.				
	 Defective piston, cylinder, piston ring, or cylinder head seal. 				
	 The cylinder head bolts are loose. 				
	 Clogged fuel filter or jet. 				
	 Clogged ventilation valve on the fuel cap. 				
	 Fuel tank nearly empty. 				
	 Defective spark plugs. 				
	 The spark plugs are loose. 				
	 Defective ignition cable. 				
	 Defective spark plug electrode. 				
	 Defective spark plug connection. 				
	 Rich fuel mixture or fuel-air mixture. 				
	 Wrong fuel type. 				
	 Water in the fuel. 				
	 Clogged air filter. 				
	 Air trapped in hydraulic system. 				

TROUBLE SHOOTING GUIDE

The engine seems weak.	Clogged air filter.
	 Defective spark plugs.
	 Carburetor incorrectly adjusted.
	Air trapped in hydraulic system.
The engine overheats.	 Clogged air intake or cooling fins.
	 Engine overloaded.
	 Poor ventilation around engine.
	 Defective engine speed regulator.
	 Soot in the combustion chamber.
	 Too little or no oil in the engine.
	 Defective spark plugs.
	 Pre-ignition incorrect.
	 Air trapped in hydraulic system.
Battery not charging.	 Poor contact with battery terminal cable connectors.
The machine moves slowly, unevenly, or not at all.	Parking brake on.
	Bypass valve on pump open.
	 Drive belt for the transmission gears slack or has come off.
	Air trapped in hydraulic system.
Mower deck not engaging.	Drive belt for the mower deck has come loose.
	 Contact for the electromagnetic coupling has loosened.
	 The blade switch is faulty or has come loose, from the cable contact.
	The fuse has blown.
Transaxle leaks oil.	Damaged seals, housing, or gaskets.
	Air trapped in hydraulic system.

TROUBLE SHOOTING GUIDE

Uneven mowing results.	 Different air pressure in the tires on the left and right sides. 			
	Bent blades.			
	 The suspension for the mower deck is uneven. 			
	 The chain fixture has come loose. 			
	 The blades are blunt. 			
	 Driving speed too high. 			
	 The grass is too long. 			
	 Grass collected under the mower deck. 			
The machine vibrates.	The blades are loose.			
	 The blades are incorrectly balanced. 			
	The engine is loose.			

STORAGE

Storage

Winter Storage

At the end of the mowing season, the machine should be readied for storage (or if it will not be in use for longer than 30 days). Fuel allowed to stand for long periods of time (30 days or more) can leave sticky residues that can plug the carburetor and disrupt engine function.

Fuel stabilizers are an acceptable option as regards to the sticky residues that can occur during storage.

Add stabilizer to the fuel in the tank or in the storage container. Always use the mixing ratios specified by the manufacturer of the stabilizer. Run the engine for at least 10 minutes after adding the stabilizer so that it reaches the carburetor. Do not empty the fuel tank and the carburetor if you have added stabilizer

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WARNING!

Never store an engine with fuel in the tank indoors or in poorly ventilated spaces where fuel vapor can come in contact with open flames, sparks, or a pilot light such as in a boiler, hot water tank, clothes drier, etc. Handle the fuel with care. It is very flammable and can cause serious personal injury and property damage. Drain the fuel into an approved container outdoors and far away from open flame. Never use gasoline for cleaning. Use a degreaser and warm water instead.

To ready the machine for storage, follow these steps:

- Thoroughly clean the machine, especially under the mower deck. Touch up damage to the paint and spray a thin layer of oil on the underside of the mower deck to avoid corrosion.
- Inspect the machine for worn or damaged parts and tighten any nuts or screws that may have become loose.
- 3. Change the engine oil; dispose of properly.
- Empty the fuel tanks or add a fuel stabilizer. Start
 the engine and allow it to run until the carburetor
 is drained of fuel or the stabilizer has reached the
 carburetor.
- Remove the spark plug and pour about a tablespoon of engine oil into the cylinder. Turn over the engine so that the oil is evenly distributed and then refit the spark plug.
- 6. Lubricate all grease zerks, joints, and axles.
- Remove the battery. Clean, charge, and store the battery in a cool place, but protect it from direct cold.
- 8. Store the machine in a clean, dry place and cover it for extra protection.

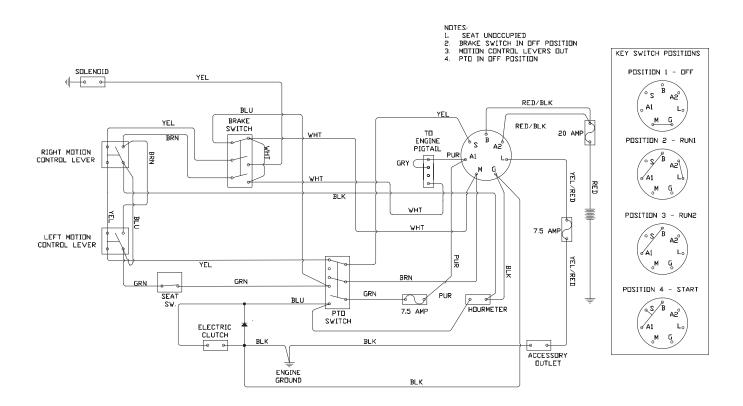
Service

When ordering spare parts, please specify the purchase year, model, type, and serial number.

Always use genuine Dixon spare parts.

An annual check-up at an authorized service workshop is a good way to ensure that your machine performs its best the following season.

WIRING DIAGRAM



Technical Data

	Grizzly / 968999588	Grizzly / 968999590
Engine		
Manufacturer	Kohler	Kohler
Туре	CV740S	CV740S
Power	27hp	27 hp
Lubrication	Pressure with oil filter	Pressure with oil filter
Oil capacity excl filter	1.6 qt / 1.5 liters	1.6 qt / 1.5 liters
Oil capacity incl filter	2.0 qt / 2.2 liters	2.0 qt / 2.2 liters
Engine oil, Synthetic Engine oil, Mineral Class	SAE 5W30, 10W30 SAE 30, (winter 10W30) API, SF, SJ, SH, SG	SAE 5W30, 10W30 SAE 30, (winter 10W30) API, SF, SJ, SH, SG
Fuel	Min 87 octane unleaded (Max methanol 5%, max eth- anol 10%, Max MTBE 15%)	Min 87 octane unleaded (Max methanol 5%, max ethanol 10%, Max MTBE 15%)
Fuel tank capacity	11.4 gallon / 43 liters	11.4 gallon / 43 liters
Spark plugs/gap	Champion RX12YC .030" / 0.75 mm	Champion RX12YC .030" / 0.75 mm
Cooling	Air cooling	Air cooling
Air filter	Standard	Standard
Alternator	12V 16A	12V 16A
Starter	Electric 12V	Electric 12V
Transmission		
Transmission	Dual pumps, wheel drive motors	Dual pumps, wheel drive motors
Speed and direction controls	Duel levers, foam gripped	Duel levers, foam gripped
Speed forward	0-10 mph / 16.1 km/h	0-10 mph / 16.1 km/h
Speed reverse	0-5 mph / 0-8 km/h	0-5 mph / 0-8 km/h
Brakes	Hydrostatic/disk brake	Hydrostatic/disk brake
Front caster tires, smooth tread	13x6.5-6 Tubeless	13x6.5-6 Tubeless
Rear tires, Turf pneumatic	24 X 12.00-12 tubeless	24 X 12.00-12 tubeless
Tire pressure, front and rear	15 PSI / 103 kPa / 1 bar	15 PSI / 103 kPa / 1 bar

	Grizzly / 968999588	Grizzly / 968999590
Equipment		
Cutting width	52"	60"
Cutting height	1.5" - 4.5" / 38mm - 114mm	1.5" - 4.5" / 38mm - 114mm
Uncut circle	0	0
Number of blades	3	3
Blade length	18" / 457 mm	20" / 508mm
Nose rollers	Yes	Yes
Seat	Standard	Standard
Hinged armrests	Yes	Yes
Hour meter	Standard	Standard
Blade engagement	Electric clutch	Electric clutch
Deck construction	11 gauge w/10 gauge skirts	11 gauge w/10 gauge skirts
Productivity		
Productivity	4.1 acres/h/16605m²h	5.1 acres/h/20655m ² h
Overall dimensions		
Weight	1140 lbs (517 kg)	1150 (522 kg)
Base machine length	84" (214 cm)	84" (214 cm)
Base machine width	50" (127 cm)	54" (137 cm)
Base machine height	48" (122 cm)	48" (122 cm)
Overall width, chute up	62" (157 cm)	69" (175 cm)
Overall width, chute down	68" (173 cm)	75" (91 cm)

Technical Data

	Grizzly / 968999592	Grizzly / 968999626
Engine		
Manufacturer	Kohler	Kohler
Туре	CV747S	CV740S
Power	30 hp	27 hp
Lubrication	Pressure with oil filter	Pressure with oil filter
Oil capacity excl filter	1.6 qt / 1.5 liters	1.6 qt / 1.5 liters
Oil capacity incl filter	2.0 qt / 2.2 liters	2.0 qt / 2.2 liters
Engine oil, Synthetic Engine oil, Mineral Class	SAE 5W30, 10W30 SAE 30, (winter 10w30) API, SF, SJ, SH, SG	SAE 5W30, 10W30 SAE 30, (winter 10W30) API, SF, SJ, SH, SG
Fuel	Min 87 octane unleaded (Max methanol 5%, max ethanol 10%, Max MTBE 15%)	Min 87 octane unleaded (Max methanol 5%, max ethanol 10%, Max MTBE 15%)
Fuel tank capacity	11.4 gallon / 43 liters	11.4 gallon / 43 liters
Spark plugs/gap	Champion RX12YC .030" / 0.75 mm	Champion RX12YC .030" / 0.75 mm
Cooling	Air cooling	Air cooling
Air filter	Standard	Standard
Alternator	12V 16A	12V 16A
Starter	Electric 12V	Electric 12V
Transmission		
Transmission	Dual pumps, wheel drive motors	Dual pumps, wheel drive motors
Speed and direction controls	Duel levers, foam gripped	Duel levers, foam gripped
Speed forward	0-10 mph / 16.1 km/h	0-10 mph / 16.1 km/h
Speed reverse	0-5 mph / 0-8 km/h	0-5 mph / 0-8 km/h
Brakes	Hydrostatic/disk brake	Hydrostatic/disk brake
Front caster tires, smooth tread	13x6.5-6 Tubeless	13x6.5-6 Tubeless
Rear tires, Turf pneumatic	24 X 12.00-12 tubeless	24 X 12.00-12 tubeless
Tire pressure, front and rear	15 PSI / 103 kPa / 1 bar	15 PSI / 103 kPa / 1 bar

	Grizzly / 968999592	Grizzly / 968999626
Equipment		
Cutting width	72"	60"
Cutting height	1.5" - 4.5" / 38mm - 114mm	1.5" - 4.5" / 38mm - 114mm
Uncut circle	0	0
Number of blades	3	3
Blade length	24.5" / 622mm	20" / 508mm
Nose rollers	Yes	Yes
Michigan Seat	Standard	Standard
Hinged armrests	Yes	Yes
Hour meter	Standard	Standard
Blade engagement	Electric clutch	Electric clutch
Deck construction	11 gauge w/10 gauge skirts	11 gauge w/10 gauge skirts
Productivity		
Productivity	6 acres/h/24300m²h	5.1 acres/h/20655m²h
Overall dimensions		
Weight	1200 lbs (544 kg)	1150 (522 kg)
Base machine length	86" (218 cm)	84" (214 cm)
Base machine width	52" (132 cm)	54" (137 cm)
Base machine height	48" (122 cm)	48" (122 cm)
Overall width, chute up	81" (206 cm)	69" (175 cm)
Overall width, chute down	88" (224 cm)	75" (91 cm)

Technical Data

	Grizzly / 968999628	Grizzly / 968999591
Engine		
Manufacturer	Kohler	Kohler
Туре	CV747S	CV747S
Power	30 hp	30 hp
Lubrication	Pressure with oil filter	Pressure with oil filter
Oil capacity excl filter	1.6 qt / 1.5 liters	1.6 qt / 1.5 liters
Oil capacity incl filter	2.0 qt / 2.2 liters	2.0 qt / 2.2 liters
Engine oil, Synthetic Engine oil, Mineral Class	SAE 5W30, 10W30 SAE 30, (winter 10w30) API, SF, SJ, SH, SG	SAE 5W30, 10W30 SAE 30, (winter 10w30) API, SF, SJ, SH, SG
Fuel	Min 87 octane unleaded (Max ethyl alcohol 10%, max MTBE 15%)	Min 87 octane unleaded (Max ethyl alcohol 10%, max MTBE 15%)
Fuel tank capacity	11.4 gallon / 43 liters	11.4 gallon / 43 liters
Spark plugs/gap	Champion RX12YC .030" / 0.75 mm	Champion RX12YC .030" / 0.75 mm
Cooling	Air cooling	Air cooling
Air filter	Standard	Standard
Alternator	12V 16A	12V 16A
Starter	Electric 12V	Electric 12V
Transmission		
Transmission	Dual pumps, wheel drive motors	Dual pumps, wheel drive motors
Speed and direction controls	Duel levers, foam gripped	Duel levers, foam gripped
Speed forward	0-10 mph / 16.1 km/h	0-10 mph / 16.1 km/h
Speed reverse	0-5 mph / 0-8 km/h	0-5 mph / 0-8 km/h
Brakes	Hydrostatic/disk brake	Hydrostatic/disk brake
Front caster tires, smooth tread	13x6.5-6 Tubeless	13x6.5-6 Tubeless
Rear tires, Turf pneumatic	24 X 12.00-12 tubeless	24 X 12.00-12 tubeless
Tire pressure, front and rear	15 PSI / 103 kPa / 1 bar	15 PSI / 103 kPa / 1 bar

	Grizzly / 968999628	Grizzly / 968999591
Equipment		
Cutting width	72" / 1829mm	60" / 1524mm
Cutting height	1.5" - 4.5" / 38mm - 114mm	1.5" - 4.5" / 38mm - 114mm
Uncut circle	0	0
Number of blades	3	3
Blade length	24.5" / 622mm	20" / 508mm
Nose rollers	Yes	Yes
Michigan Seat	Standard	Standard
Hinged armrests	Yes	Yes
Hour meter	Standard	Standard
Blade engagement	Electric clutch	Electric clutch
Deck construction	11 gauge w/10 gauge skirts	11 gauge w/10 gauge skirts
Productivity		
Productivity	6 acres/h/24300m²h	5.1 acres/h/20655m²h
Overall dimensions		
Weight	1200 lbs (544 kg)	1150 (522 kg)
Base machine length	86" (218 cm)	84" (214 cm)
Base machine width	52" (132 cm)	54" (137 cm)
Base machine height	48" (122 cm)	48" (122 cm)
Overall width, chute up	81" (206 cm)	69" (175 cm)
Overall width, chute down	88" (224 cm)	75" (91 cm)

Technical Data

	Grizzly / 968999627	
Engine		
Manufacturer	Kohler	
Туре	CV747S	
Power	30 hp	
Lubrication	Pressure with oil filter	
Oil capacity excl filter	1.6 qt / 1.5 liters	
Oil capacity incl filter	2.0 qt / 2.2 liters	
Engine oil, Synthetic Engine oil, Mineral Class	SAE 5W30, 10W30 SAE 30, (winter 10w30) API, SF, SJ, SH, SG	
Fuel	Min 87 octane unleaded (Max ethyl alcohol 10%, max MTBE 15%)	
Fuel tank capacity	11.4 gallon / 43 liters	
Spark plugs/gap	Champion RX12YC .030" / 0.75 mm	
Cooling	Air cooling	
Air filter	Standard	
Alternator	12V 16A	
Starter	Electric 12V	
Transmission		
Transmission	Dual pumps, wheel drive motors	
Speed and direction controls	Duel levers, foam gripped	
Speed forward	0-10 mph / 16.1 km/h	
Speed reverse	0-5 mph / 0-8 km/h	
Brakes	Hydrostatic/disk brake	
Front caster tires, smooth tread	13x6.5-6 Tubeless	
Rear tires, Turf pneumatic	24 X 12.00-12 tubeless	
Tire pressure, front and rear	15 PSI / 103 kPa / 1 bar	

	Grizzly / 968999627	
Equipment		
Cutting width	60" / 1524mm	
Cutting height	1.5" - 4.5" / 38mm - 114mm	
Uncut circle	0	
Number of blades	3	
Blade length	20" / 508mm	
Nose rollers	Yes	
Michigan Seat	Standard	
Hinged armrests	Yes	
Hour meter	Standard	
Blade engagement	Electric clutch	
Deck construction	11 gauge w/10 gauge skirts	
Productivity		
Productivity	5.1 acres/h/20655m²h	
Overall dimensions		
Weight	1150 (522 kg)	
Base machine length	84" (214 cm)	
Base machine width	54" (137 cm)	
Base machine height	48" (122 cm)	
Overall width, chute up	69" (175 cm)	
Overall width, chute down	75" (91 cm)	

Accessories

BioClip attachment (Mulch kit)

Collection system

Torque Specifications

-Engine crankshaft bolt
-Deck pulley bolts
-Lug nuts
-Blade bolt
50 ft/lb (67 Nm)
45 ft/lb (61 Nm)
75 ft/lb (100 Nm)
45-55 ft/lb (60-75 Nm)

-Standard ¼" fasteners 9 ft/lb (12 Nm)
-Standard $^{5}/_{16}$ " fasteners 18 ft/lb (25 Nm)
-Standard $^{3}/_{8}$ " fasteners 33 ft/lb (44 Nm)
-Standard $^{7}/_{16}$ " fasteners 52 ft/lb (70 Nm)
-Standard $^{1}/_{2}$ " fasteners 80 ft/lb (110 Nm)

When this product is worn out and no longer used, it should be returned to the reseller or other party for recycling.

In order to implement improvements, specifications and designs can be altered without prior notification.

Note that no legal demands can be placed based on the information contained in these instructions.

Use only original parts for repairs. The use of other parts voids the warranty.

Do not modify or install non-standard equipment to the unit without consent from the manufacturer. Modifications to the unit may cause unsafe operations or damage the unit.

CONFORMITY CERTIFICATES

Conformity Certificates

USA requirements

Labels are placed on the engine and/or in the engine compartment stating that the machine will fulfill the requirements. This is also applicable to special requirements for any of the states, (California emission rules etc.). Do not remove any of these labels. Certificates can also be supplied with the machine at delivery or written in the Engine manual. Take care of them as they are valuable documents.

CE requirements

Vibration data corresponding to Directive 2002/44/EC is given in the Technical Data Section.

The Declaration of Conformity is included in the literature packet.

Service Journal

Action		Date, mtr reading, stamp, sign
De	livery Service	
1.	Charge the battery.	
2.	Adjust the tire pressure of all wheels to 15 PSI (1 bar).	
3.	Mount the steering controls in the normal position.	
4.	Connect the contact box to the cable for the seat's safety switch.	
5.	Check that the right amount of oil is in the engine.	
6.	Adjust the position of the steering controls.	
7.	Fill with fuel and open the fuel shut off valve.	
8.	Start the engine.	
9.	Check that there is drive to both wheels.	
10.	Check the mower deck adjustment.	
11.	Check:	
	The safety switch for the parking brake.	
	The safety switch for the mower deck.	
	The safety switch in the seat.	
	The safety switch in the steering controls.	
	Parking brake functionality.	
	Driving forward.	
	Driving backward.	
	Engaging the blades.	
12.	Check the idle speed	
13.	Check the engine high idle speed	
14.	Inform the customer about:	Delivery service has been carried out.
	The need and advantages of following the service schedule.	No remaining notes.
	The need and advantages of leaving the machine for service every 300 hours.	Certified:
	The effects of service and maintaining a service journal on the machine's resale value.	
	Application areas for Mulching.	
15.	Fill in the sales papers, etc.	

SERVICE JOURNAL			
After the First 5-8 Hours			
1. Change engine oil.			

Action	Date, mtr reading, stamp, sign
25-Hour Service	
Check the fuel pump's air filter.	
2. Sharpen/Replace mower blades if required.	
3. Check the tire pressures.	
4. Check battery with cables.	
5. Lubricate according to lubrication chart.	
6. Check/clean the engine's cooling air intake.	
7. Clean the air cleaner's pre-filter (foam).	

A	ction	Date, mtr reading, stamp, sign
50)-Hour Service	
	Perform the 25-hour service.	
2.	Clean/replace the air cleaner's filter cartridge (paper filter)	
	(shorter intervals for dusty operating conditions).	
3.	Change engine oil.	
4.	Lubricate according to lubrication chart.	
5.		

Ac	tion	Date, mtr reading, stamp, sign
10	0-Hour Service	
1.	Perform the 25-hour service.	
2.	Perform the 50-hour service.	
3.	Change the engine oil filter.	
4.	Clean/replace the spark plugs.	
5.	Replace the fuel filter.	
6.	Clean the cooling fins on the engine and transmission.	
7.	Check V-belts.	
8.	Check tighten caster wheel axle bolts (every 200 hours).	
9.	Change the air filter's paper cartridge.	

Ac	tion	Date, mtr reading, stamp, sign
30	0-Hour Service	
1.	Inspect the machine. Come to agreement with the customer as to which additional work is to be carried out.	
2.	Perform the 25-hour service.	
3.	Perform the 50-hour service.	
4.	Perform the 100-hour service.	
5.	Check/adjust the mower deck.	
6.	Clean the combustion chamber and grind the valve seats.	
7.	Check the engine valve clearance.	
8.	Replace the air cleaner's pre-filter (foam).	
		-

Action	Date, mtr reading, stamp, sign
At Least Once Each Year	
Clean the engine's cooling air intake (25 hours).	
2. Replace the air cleaner's pre-filter (foam) (300 hours).	
Replace the air filter's paper cartridge.	
1. Change the engine oil (50 hours).	
5. Replace the engine oil filter (100 hours).	
6. Check/adjust the cutting height.	
7. Check/adjust the parking brake (50 hours).	
3. Clean/Change the spark plugs (100 hours).	
O. Change the fuel filter (100 hours).	
0. Clean the cooling fins (100 hours).	
1. Check the engine valve clearance.	
2. Perform the 300-hour service at an authorized service worksho	pp.

Action	Date, mtr reading, stamp, sign

WARRANTY

DIXON® ZTR® PRO SERIES COMMERCIAL / RESIDENTIAL WARRANTY POLICY Black Bear™, Kodiak® & Grizzly™ Mowers

DIXON® WARRANTS ITS ZTR® MOWERS AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR THE PERIODS SET FORTH BELOW. THE SOLE REMEDY UNDER THIS WARRANTY IS REPLACEMENT OR REPAIR OF PARTS INCLUDING LABOR COSTS.

THIS WARRANTY IS SUBJECT TO THE FOLLOWING CONDITIONS AND LIMITATIONS:

- 1. COMMERCIAL WARRANTY (use other than, or in addition to, mowing at owner's primary place of residence):
 - a. First two years 100% parts and labor subject to the conditions and limitations described herein with the exception of non-covered items specified below.
 - b. Third year limited to 100% parts cost as shown in the current Dixon® Parts Price List and subject to the conditions and limitations as described herein.
 - c. Attachments marketed through or approved by Dixon are warranted for one year parts and labor in commercial use applications.
 - d. Pro Series Models are not subject to hour meter restrictions.
 - e. Warranty applies to new mowers.
- 2. RESIDENTIAL WARRANTY (used only at owner's primary place of residence):
 - a. Three years 100% parts and labor subject to the conditions and limitations described herein for a period of three years from date of purchase by the original owner.
 - b. Attachments marketed through or approved by Dixon are warranted for two years parts and labor in residential use applications.
 - c. Warranty applies to new mowers.
- 3. All Dixon® warranty must be accomplished by authorized Dixon® dealers and in accordance with Dixon® warranty policy and allowances.
 - All warranty claims must be submitted to Dixon for approval.
- 4. Warranty labor reimbursement to dealers based on published Dixon® flat rate schedule.
- 5. Warranty does not apply to damage in transit or incidents of misuse, negligence, accidents, or alteration. The use of parts or components other than those supplied by Dixon VOIDS ALL WARRANTY.
- 6. Battery warranty is limited to 1 year from mower manufacture date.
- 7. The following items are <u>not</u> covered by this warranty policy:
 - (a) Routine maintenance or adjustments to include any oils, filters or other fluids used.
 - (b) Belts, blades, tires and cosmetic appearance (paint, seat fade, etc.)
 - (c) Pick up and delivery charges for transportation of mower to and from an authorized Dixon® dealer's place of business.
 - (d) Engines. These are covered under a separate warranty by each individual engine manufacturer. Consult engine manual for warranty details.
 - (e) Any costs or expense of providing substitute equipment while repair work is being performed on a warranted mower.
- 8. THERE IS NO OTHER EXPRESS WARRANTY. TO THE EXTENT PERMITTED BY LAW, ALL IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED; OTHERWISE, ALL SUCH IMPLIED WARRANTIES ARE LIMITED TO THE SAME DURATION AND REMEDIES AS THE EXPRESS WARRANTY. ALL LIABILITIES FOR CONSEQUENTIAL DAMAGES UNDER ANY EXPRESS OR IMPLIED WARRANTY ARE EXCLUDED.



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