



3950 Steffler Rd. • Elmira Ontario • N3B 2Z3
Toll Free: 855-664-2752 • Tel.: 519-664-2752 • Fax: 519-664-3695
sales@mkmartin.ca • mkmartin.ca

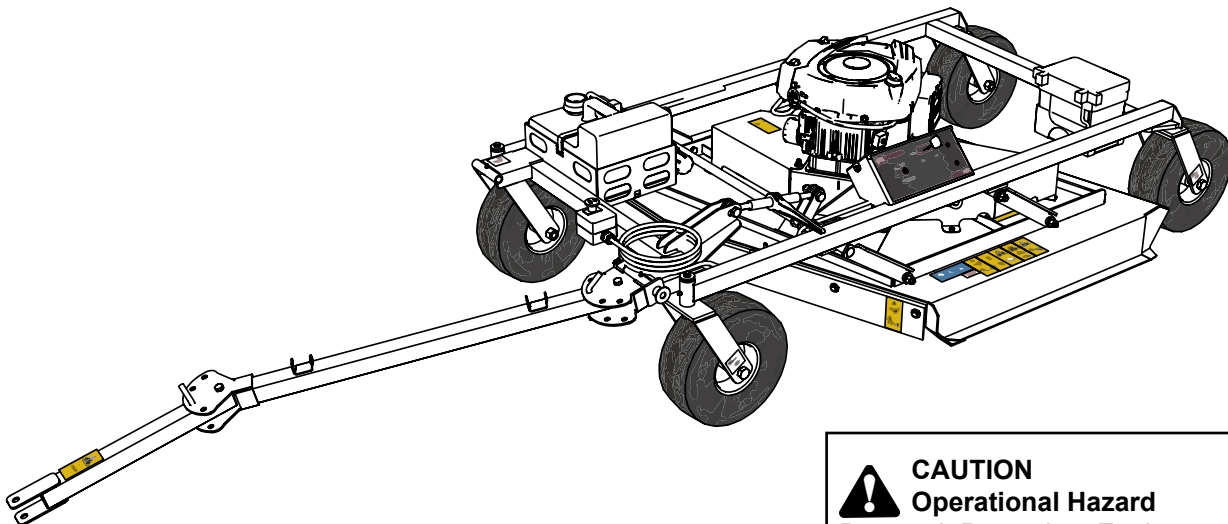
Operator's Manual

Keep this manual with the machine at all times


Pulsar UTV Mower

Rough Cut 48" Tow Mower,

Model PTM48



CAUTION
Operational Hazard
Personal Protection Equipment (PPE) is required when operating or maintaining this machine.



Do not attempt to operate the equipment without thoroughly reviewing this manual for safe and proper operation.

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3950 Steffler Rd. • Elmira • Ontario, Canada • N3B 2Z3 • Email : sales@mkmartin.ca • Fax : (519)-664-3695 • Tel : (519)-664-2752

Warranty

Effective on products retailed on or after November 1, 2017

Two Year Limited Consumer Warranty

Five Year Limited Consumer Warranty on Gearboxes

90 Day Limited Commercial Warranty including Gearboxes

Commercial includes rental and industrial applications.

Warranty begins at the time of customer delivery and is activated upon warranty registration receipt at MK Martin Enterprise Inc.

Warranty coverage is null and void unless the Warranty Registration form has been completed in full and is on file at MK Martin Enterprise Inc.

Keep your registration copy in a safe place, it is required as proof of warranty activation.

This new and unused product is warranted by MK Martin Enterprise Inc. to be free from defects in material and workmanship under normal use and regular service as described in the owner's manual, for a consumer period of 2 years and 5 years for gearboxes, from the date of delivery, and commercial period of 90 days, including gearboxes, from the date of delivery. Warranty is limited to the replacement of parts and / or repair of the product.

If issues develop within the warranty period with the product, contact the local dealer from which you purchased the unit. Only MK Martin authorized dealers may make repairs to the product or affect the replacement of defective parts, unless otherwise approved by MK Martin. Repairs / replacement will be done at no charge within a reasonable time after the receipt of the product.

This warranty does not cover the following items:

1. Normal replacement of service items.
2. Normal maintenance or adjustments.
3. Machines or parts lost or damaged during shipment,
4. Accessory items / parts not supplied by MK Martin
5. Damages resulting from:
 - misuse, negligence, accident, theft or fire
 - use of improper or insufficient fuel, fluids or lubricants
 - use of after market parts or accessories, unless approved by MK Martin
 - modifications, alteration, tampering or improper repair
 - any device or accessories installed by other than an authorized dealer.
6. Tires are covered by the manufacturer of the tire and the warranty period specified by that manufacturer. **Please contact the tire manufacturer for warranty on these items.**

MK Martin Enterprise Inc. shall not, in any event, be liable for any losses, damages or costs; to include profits, travel, transportation, pick up, delivery, towing cost, tow vehicle, loss of use, whether special, incidental, consequential or otherwise, in any way. Unit or parts are returned at the customer's expense.

Include a copy of your completed Warranty Registration form with any claim as proof of warranty activation.

There are no warranties, expressed or implied, other than those specified herein. No agent, employee or other person has any authority to vary any of the foregoing provisions.

Warranty coverage is null and void unless the Warranty Registration form has been completed in full and is on file at MK Martin Enterprise Inc. Warranty begins at the time of customer delivery and is activated upon Warranty Registration receipt at MK Martin Enterprise Inc.

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INTRODUCTION

Thank you for purchasing your new **Pulsar UTV Mower**. Your mower has been designed and manufactured to give you many years of dependable service. **Pulsar** Series unique design helps to increase productivity by ensuring safe, effective and speedy completion of snow clearing at your job site.

The **Pulsar UTV Mower** is self powered with a 19 HP Briggs & Stratton engine with two rotors, each with 3 knives. With adjustable height and positionable offset towing, the UTV mower is designed for rough cutting of long grass, weeds, brush, even saplings up to 3/4" diameter. Excellent for trails, fields and other overgrown properties.

Safe, efficient and trouble free operation of your **Pulsar mower** requires that you or any other person, who will be assembling, operating, maintaining or working with this product, are required to read and completely understand the information and instructions contained in this manual.

If anyone does not fully understand every part of this manual, please obtain further assistance by contacting the dealer from which this product was purchased or by contacting MK Martin with the information listed on the cover of this manual.

Keep this operators manual available for reference by the operator and to pass on to new owners and or operators .

Assembly may be required depending on how you purchased your mower Follow the assembly procedures as outlined in the assembly section.

GENERAL INFORMATION

The purpose of this manual is to assist you in safely operating and maintaining your **Pulsar UTV mower** in a safe manner. Read this manual carefully to obtain valuable information and instructions that will help you achieve safe and dependable service. The illustrations and data used in this manual were current at the time of printing, but due to possible engineering and or production changes, this product may vary slightly in detail. MK Martin reserves the right to update and or change components as necessary without notification.

In this manual the **Pulsar UTV mower** may be referred to as mower, rough cut mower or implement.

UTV refers to any power unit attached to a MK Martin mower.

INTENDED USE

The MK Martin **Pulsar UTV mower** is intended for attachment and use on qualified power units (UTV, ATV, lawn tractor or small agricultural tractor) for the sole purpose of rough cutting grass, weeds, brush and saplings up to 1.9 cm (3/4") in diameter.

CALIFORNIA PROPOSITION 65

You may see a warning label like the following:

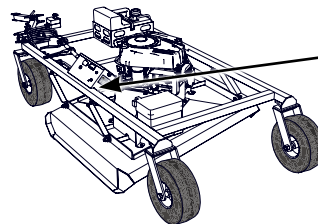


This warning is required by California Proposition 65 (Prop 65), which is meant to notify California residents of exposures to Prop 65-listed chemicals. For more information go to 'www.P65Warnings.ca.gov'.

SERIAL NUMBER LOCATION

The serial number for your Pulsar mower is located on the right side of the control panel.

Please record your serial number here as a handy reference. In case of warranty issues, you dealer will ask for the serial number to verify your warranty.



Model Number _____

Serial Number _____

SAFETY



This Safety Alert Symbol means:
ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!

The Safety Alert symbol identifies important safety messages on the implement and in the manual. When you see this symbol, read and understand the message, be alert to the potential hazard in the message. Follow the instructions in the safety message.

SAFETY MESSAGES

Throughout this manual, the terms **DANGER**, **WARNING**, **CAUTION** and **IMPORTANT** are used to indicate the degree of hazard to personnel if proper safety procedures and guidelines are not followed. The appropriate term for each message has been selected using the following guide-lines:

DANGER - Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury, and includes most extreme situations typically for implement components which, for functional purposes, cannot be guarded.

WARNING - Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

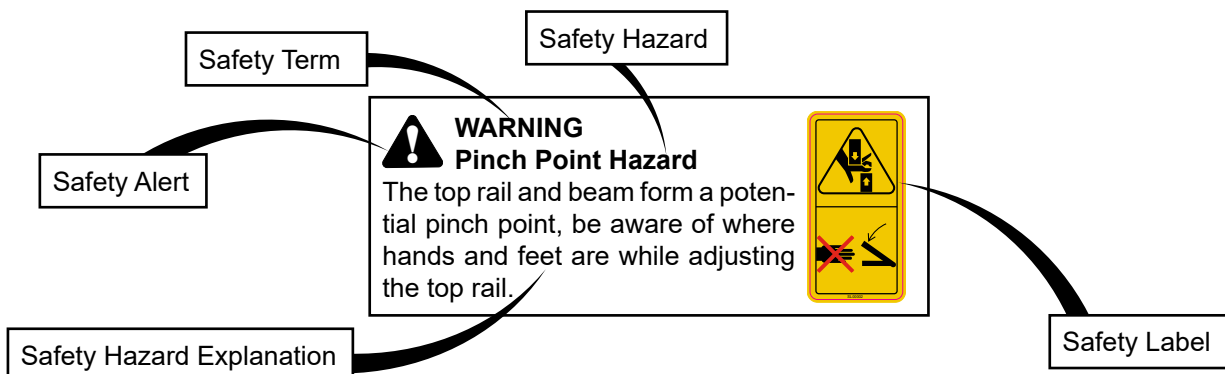
CAUTION - Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

IMPORTANT - Indicates a situation that could result in damage to the implement or other property.

In the owners manual, when a hazard is present you will see a safety message box. The box may contain:

- The safety alert symbol,
- The safety term
- The safety hazard
- The safety hazard explanation

When applicable you may also see the appropriate safety label displayed with the message, as shown below.



The safety information given in this manual does not replace any safety codes, insurance needs, government and local laws.

ACCIDENT PREVENTION

ACCIDENTS CAN BE PREVENTED WITH YOUR HELP!

YOU are responsible for the SAFE operation and maintenance of your implement. **YOU** must ensure that you and anyone else who is going to use, maintain or work around the implement be familiar with the work and maintenance procedures and related SAFETY information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be used.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices an effective part of your day to day work habits. Be certain that EVERYONE using this implement is familiar with the recommended maintenance and work procedures and follow all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.



The best accident prevention is a careful operator.

MK Martin and your dealer ask that YOU be that careful, responsible equipment operator.

YOU ARE THE KEY TO SAFETY:



• Familiarize yourself, and anyone else who will operate, maintain, or work around this product, with the safety and operation information contained in this manual.

- Read and understand the safety labeling which appears on the implement.
- Have a first-aid kit available for use should the need arise and know how to use it. 
- Pay attention to the job at hand. Do not let your mind lose concentration on what you are doing. No accident prevention program can be successful without the wholehearted cooperation of the person who is directly responsible for the operation of the implement.
- Have a fire extinguisher available for use should the need arise and know how to use it. 
- Reduce the risk of injury or death by following all safety precautions and by using good safety practices.
- Accidents can be prevented: that prevention will come from equipment operators who accept their complete responsibility and anticipate the results of their actions.

- Never exceed the limits of the implement. Safety of the operator and safe operation are the main concerns in designing a safe product, however ignoring implement specifications by the operator can result in an accident which could have been prevented.



- Do not allow riders on the implement, loaded or empty.
- Do not operate this implement under the influence of drugs or alcohol.
- Be responsible for the SAFE operation and MAINTENANCE of YOUR implement.
- Wear appropriate personal protective equipment (PPE). This list includes but is not limited to:

- Hard hat
- Heavy gloves
- Hearing Protection
- Protective foot wear
- Protective eye wear
- Safety Vest



SAFETY GUIDELINES

Safety of the operator and bystanders is one of the chief concerns in developing and designing equipment. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more cautious approach to handling equipment.

You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury or death, study the following precautions and insist those working with you, or for you to follow them.

In addition to the design and configuration of this implement, including safety labels and safety devices, hazard control and accident prevention are dependent upon the awareness, concern, and proper training of personnel involved in the operation, transport, maintenance, and storage of the implement. Refer also to safety messages and operation instruction in each of the appropriate sections of the tractor and implement manuals. Pay close attention to the safety labeling affixed to the implement.

1. In order to provide a better view, certain illustrations in this manual may show an assembly with a safety device removed. However, equipment should never be used in this condition. Keep all safety devices in place, if removal becomes necessary for repairs, replace the device prior to use.
2. Replace any safety label or instruction sign that is unreadable or is missing. Location of safety signs is indicated in this manual.
3. Never use alcoholic beverages or drugs which can hinder alertness or coordination while using this implement. Consult your doctor about using this implement while taking prescription medications.
4. Under no circumstances should young children be allowed to work with this implement.
5. This implement is dangerous to persons unfamiliar with its operation. Do not allow persons to use or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works. Review the safety instructions with all users annually.
6. If the elderly are assisting with work, their physical limitations need to be recognized and accommodated. Assistants should be a responsible, properly trained and physically able person familiar with machinery and trained in this implement's operations.
7. Never exceed the limits of the implement. If its ability to do a job, or to do so safely, is in question - DON'T TRY IT.
8. Do not modify the implement in any way. Unauthorized modification may result in serious injury or death and may impair the function and life of the implement.

SAFETY TRAINING

A person who has not been trained or has not read and understood all use and safety instructions is not qualified to use the implement. An untrained operator exposes himself and bystanders to possible serious injury or death.

- Train all new personnel with the instructions alongside the implement. Be certain only a properly trained and physically able person will use the machinery.
- Working with unfamiliar equipment can lead to careless injuries. If this implement is used by any person other than yourself, or is loaned or rented, it is the implement owner's responsibility to make certain that the operator, prior to using:
 - Reads and understands the operator's manuals.
 - Is instructed in safe and proper use of the implement
- If the elderly are assisting with the work, their physical limitations need to be recognized and accommodated.
- Operators or maintenance personnel who are not fully able to read and understand this manual should not operate or work on the implement:
- Make certain that all operators and maintenance personnel have complete understanding of the full and exact contents of this manual and safety labeling.
- ALL information contained in this manual and labeling on the implement must be conveyed CLEARLY and FULLY, in order to be able to operate safely and knowledgeably.
- Review the implement and instructions regularly with existing workers.

SAFE WORK AREA

Not all work spaces are the same, but the principles presented here can be applied to any work space.

Survey the work site, remove debris and make note of nearby or overhead obstructions, knowing your work area will make the clearing job easier and safer.

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

For worker safety a preseason site visit is recommended. Make a site clearing plan to identify hidden obstacles, structures and dangerous incline areas. Sudden impact from obstacles hidden in the grass may cause injury.

Be aware of:

Bystanders or any one not directly involved with the work are only allowed outside of the work area, minimized hazards.

Workers helping the operator must wear the appropriate PPE and must always make eye contact with the operator before entering the work area. Unauthorized Workers or bystanders are not allowed in the work area. Hazards are present.

Operator, do not operate the mower outside of the operator area.

PREPARATION

1. Inspect implement for shipping damage. If damage does exist, do not use. Notify your dealer immediately to have damaged parts replaced or repaired.
2. Assembly may be required depending on how you purchased your equipment. Follow the assembly procedures as outlined in the manual, ensure all hardware is secure.
3. Inspect all fasteners that they are not loose or missing. Ensure fasteners and wheel bolts are torqued according to the torque chart at the back of this manual
4. Ensure that all applicable safety decals are installed and legible.
5. Personal protection equipment (PPE) including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, cleaning, or moving the unit. Do not allow long hair, loose fitting clothing or jewelry to be around equipment.
6. **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!**
Gas or diesel powered equipment can often be noisy enough to cause permanent, partial hearing loss. We recommend that you wear hearing protection on a full-time basis. Noise over 85dB on a long-term basis can cause severe hearing loss. Noise over 90db adjacent to the Operator over a long-term basis may cause permanent, total hearing loss.
7. When not attached to the power unit block the implement to prevent movement.

OPERATION SAFETY

1. NEVER allow helpers or bystanders under or near the machine.
2. Ensure the implement is securely attached to the power unit before moving.
3. Inspect all fastening devices, do not use if worn or damaged.
4. Make sure that bystanders and children are clear before using or moving the implement.
5. NEVER position yourself between the power unit and the implement while the power unit is running
6. Avoid distractions: wait until it is safe to operate mobile communication equipment such as cell phones, text messaging devices, pagers or two-way radios: always give undivided attention to the machine, the job at hand and your surroundings.
7. Do not put hands or feet near or under rotating parts.
8. Watch for traffic when mowing near roadways.
9. Do not permit riders while operating this implement.
10. Shut off the mower and exercise extreme caution when on or crossing drives, walks, or roads.
11. Where possible, avoid operating near ditches, embankments and holes.
12. Operate the machine up and down the face of slopes.
13. Exercise extreme caution when changing direction on slopes.
14. NEVER operate on slopes greater than 20 degrees. or wet or slippery slopes.
15. NEVER park the power unit on a steep grade or slope
16. Always wear the seat belt, if equipped, when mowing, sudden contact with a hidden object can result in serious personal injury.
17. Before beginning the job inspect areas to be mowed for potential hazards, and mark obstructions with stakes that will be seen in long grass or brush.
18. Avoid cutting wet grass or brush.
19. If the machine makes an unusual noise or vibration or if there are obstructions underneath the machine, shut off the power unit and the mower engine. Wait five (5) minutes for the engine to cool. Disconnect the spark plug and then inspect the machine for clogs or loose parts. Clear any obstructions and repair and/or replace damaged parts.
20. NEVER operate the mower when under the influence of alcohol, drugs, or medication.
21. Keep all shields and guards in place.
22. Do not fill fuel tank while engine is running or hot.
23. Use the remote E-STOP to stop the blade rotation quickly.

BATTERY SAFETY

1. Charge the battery at the proper rate. Trickle charger is recommended. Overcharging could create excessive gassing.
2. Provide adequate air circulation when charging battery. Do not charge battery in any other container besides the supplied battery box.
3. Do not place batteries in close proximity to objects which can produce sparks or flames.
4. Do not expose battery case to organic solvents or adhesives.
5. Do not attempt to disassemble batteries. Contact with sulfuric acid may cause harm.
6. Avoid contact with battery electrolyte:
External Contact: Flush immediately with water.
Eye Contact: Flush with water for 15 minutes. Get prompt medical attention. Clean up any spilled electrolyte immediately.
7. Do not throw batteries into fire. Batteries may rupture or explode. Recycle or dispose of batteries in an environmentally safe fashion.
8. To avoid injury from spark or short circuit, disconnect battery ground cable before servicing any part of the electrical system.
9. DO NOT charge a frozen battery. Frozen batteries can explode and result in death or serious injury. Let battery thaw before charging.

TRANSPORT SAFETY

1. Mower should be transported from job to job with the use of a trailer attached to a motor vehicle.
2. Do not tow mower with a truck or passenger car, mower is not designed for travel on public roads or highway speeds. Loss of control resulting in death, serious injury or property damage.

MAINTENANCE SAFETY

1. Good maintenance is your responsibility, follow the maintenance schedule. Poor maintenance is an invitation to trouble.
2. Follow good shop practices.
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.
3. Never work under or around the implement unless it is blocked securely.
4. Use personal protection equipment (PPE) such as eye, hand and hearing protectors.
5. Never adjust, service, clean or lubricate the implement until all power is shut off when attached to the tow unit.
6. Ensure hardware is torqued according to the torque chart at the back of this manual.
7. Disconnect battery ground cable before servicing any part of the electrical system.
8. Mower blades are sharp. Wrap the blades or wear gloves and use extra caution when servicing.

STORAGE SAFETY

1. Store the unit in an area away from human activity.
2. Do not allow children to play on or around the stored implement.
3. Store the unit in a dry, level area. Cover if stored outside.
4. Guard any sharp corners.
5. Ensure components and safety features are not damaged and in good condition before storing the implement. Make repairs now to be ready for the following season.
6. Secure the implement to prevent unwanted movement.

GAS MOTOR SAFETY

Before starting engine, read and understand the operating and maintenance instructions that came with your engine.

1. DO NOT run engine in an enclosed area. Exhaust gases contain carbon monoxide, an odourless and deadly poison.
2. DO NOT place hands or feet near moving or rotating parts.
3. DO NOT store, spill, or use gasoline near an open flame, or devices such as a stove, furnace, or water heater which use a pilot light or devices which can create a spark.
4. DO NOT refuel indoors where area is not well ventilated. Outdoor refuelling is preferred.
5. DO NOT refuel while engine is running. Allow engine to cool for 5 minutes before refuelling. Store fuel in approved safety containers.
6. DO NOT remove fuel tank cap while engine is running.
7. DO NOT operate engine if gasoline is spilled. Move machine away from the spill and avoid creating any ignition until gasoline has been cleaned up.
8. DO NOT smoke while filling fuel tank.
9. DO NOT choke carburettor to stop engine. Whenever possible, gradually reduce engine speed before stopping.
10. DO NOT run engine above rated speeds. This may result in injury.
11. DO NOT tamper with governor springs, governor links or other parts which may increase the governed speed.
12. DO NOT check for spark with spark plug or spark plug wire removed.
13. DO NOT crank engine with spark plug removed. If engine is flooded, crank until engine starts.
14. DO NOT operate engine without a muffler. Inspect periodically and replace, if necessary.
15. DO NOT operate engine with an accumulation of grass, leaves, dirt or other combustible materials in the muffler area.
16. DO NOT touch hot muffler, cylinder or fins because contact may cause burns.

SAFETY LABELS

Safety labeling is an important part of the overall safe use of the implement. Safety labeling alerts and warns against potential injury or death, and is important to follow these points to help keep your implement safe for you and others who may be using it.

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replaced parts that displayed a safety sign should also display the current sign.
- Safety signs are available from your authorized Distributor or the factory order desk.

SAFETY LABEL DESCRIPTIONS



Caution: read and understand ALL safety and operating instructions in the manual, read and understand ALL safety labels located on the machine. The most important safety device on this equipment is an informed SAFE operator.



Caution: Keep hands or limbs away from rotating parts. Do not operate machine without shields in place. If shield is removed, replace it before operating machine. Risk of crushing or amputation could result.



Warning: Risk of injury from flying objects. Stay clear of mower deck material discharge chute. Machine can expel objects fast enough to cause injury. Impact or impalement could result.



Caution: Extremely flammable. Do not refuel the machine while smoking or near open flame or sparks. Risk of explosion, serious injury from burns could result.



Warning: Do not step, stand or rode on mower deck. Deck is not designed to support weight. Risk of fall injury and machine damage could result.



Caution: Personal Protection Equipment (PPE) is required when operating or maintaining this machine. Failure to wear PPE will result in personal injury.



Warning: Shut off engine and remove the key. If the engine is not shut off during maintenance procedures, Risk of serious injury or death could result.



Notice: This label is required by California Proposition 65 (Prop 65), which is meant to notify California residents of exposures to Prop 65-listed chemicals.



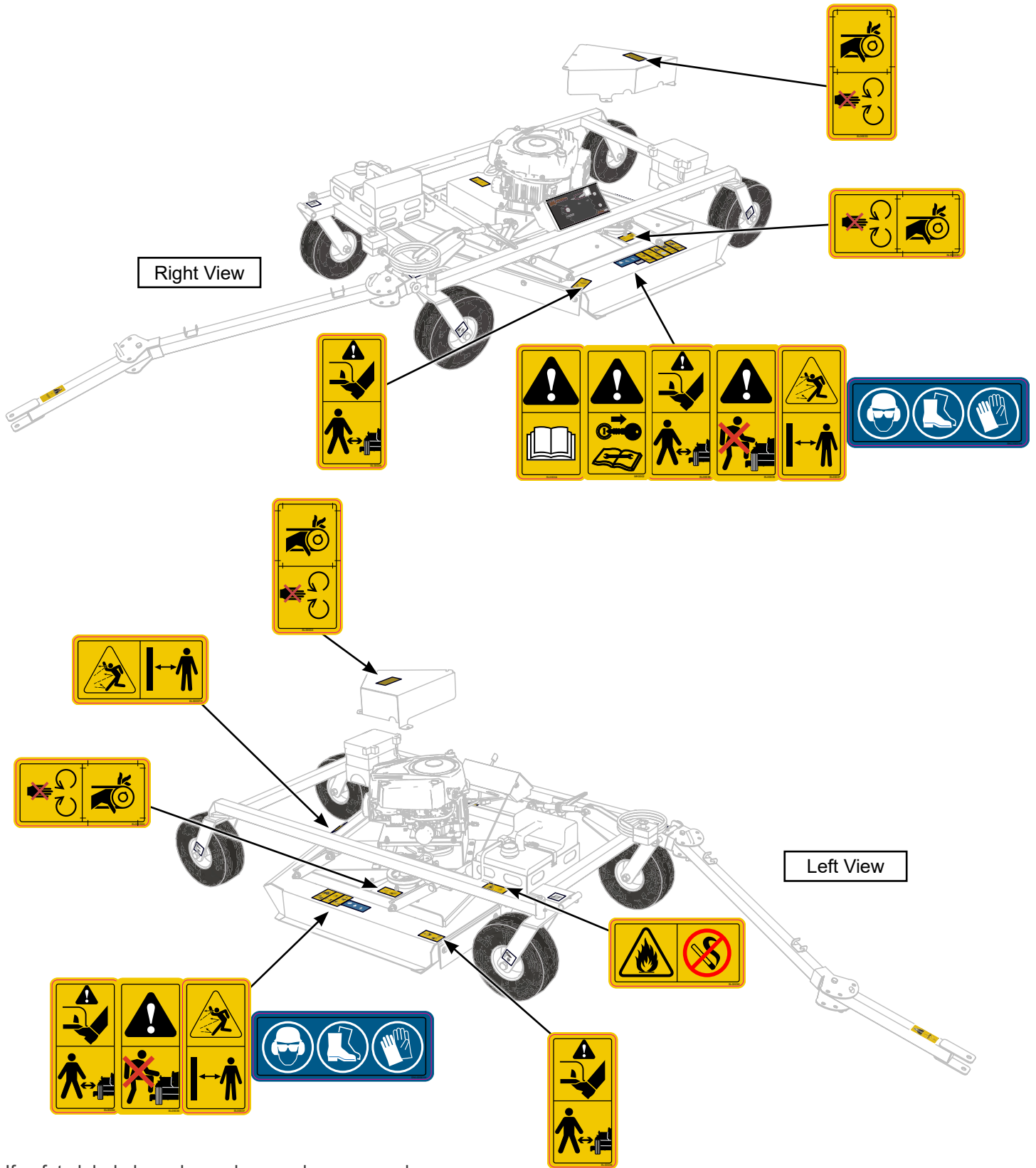
Danger: Keep hands and feet away from mower deck and discharge openings while machine is operating. Wait for all moving parts to come to a complete stop before clearing obstructions. Risk of amputation could result. Do not operate machine without shields in place. If shield is removed, replace it before operating machine.

IF LABELS NEED TO BE REPLACED:

- Be sure that the installation area is clean and dry.
- Be sure temperature is above 50°F (10°C).
- Determine exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

SAFETY LABEL LAYOUT

Safety signs and locations on the equipment are shown in the illustrations below. Good safety practice requires that you familiarize yourself with the label and the safety message it is delivering. Be aware of the equipment or particular equipment feature that requires your SAFETY AWARENESS.

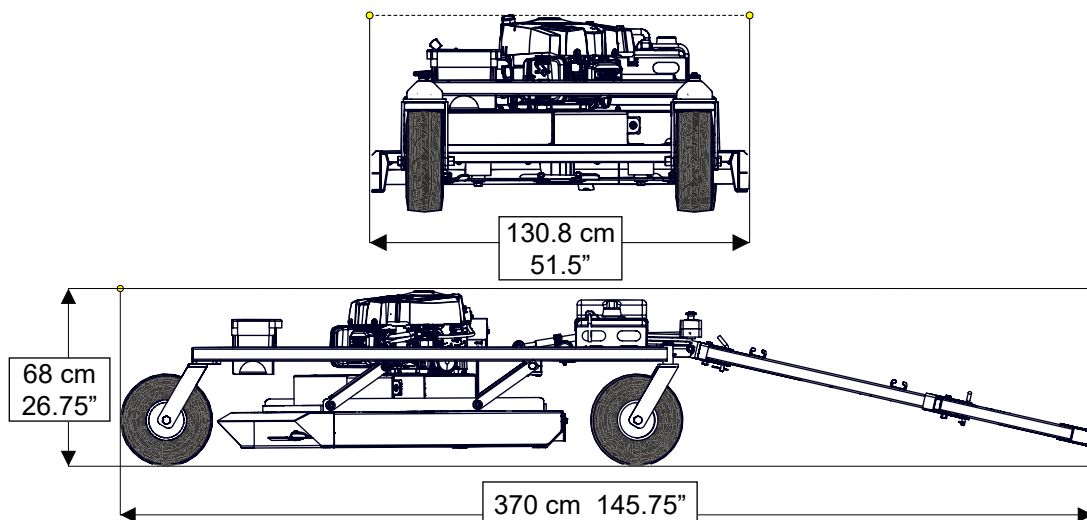


If safety labels have been damaged or removed, new labels must be applied. New safety signs are available from your dealer or contact MK Martin

SPECIFICATIONS AND DIMENSIONS

Model	PTM48
Engine Brand	Briggs & Stratton with solenoid fuel shutoff
Engine Power	19 Horse Power
Starting System	Electric key start
Fuel Tank	11.35 litre (3 US gallon) capacity with fuel gauge
Battery	12 Volt, 340 CCA, vented lead acid
Deck	Rear discharge
Deck Thickness	10 ga
Tow Bar	157.5 cm (62") offset adjustable bar, left or right mounting, with clevis hitch
Blade Assembly	Dual Rotors each with 3 spring steel special hardened reversable swing knives
Drive	B-76 V belt on dual blade pulleys with spring tension idler and electric clutch drive with safety brake
Cut Width	119.5 cm (47")
Cut Height	Infinite ratchet adjustable: 5 cm to 18 cm (2" to 7")
Wheels	13 x 5.00 x 6 NHS Flat Free Solid Core Turf Tire Front - swivel Rear - fixed
Weight	326.5 kg (720 lbs)

DIMENSIONS



ASSEMBLY & INSPECTION

Depending on how you ordered your machine, some minor assembly may be required. To assemble your implement please follow the assembly instructions below

Before beginning assembly or putting the UTV Mower into service the first time, inspect the machine for shipping damage. If damage does exist, do not use. Notify your dealer immediately to have damaged parts replaced or repaired.

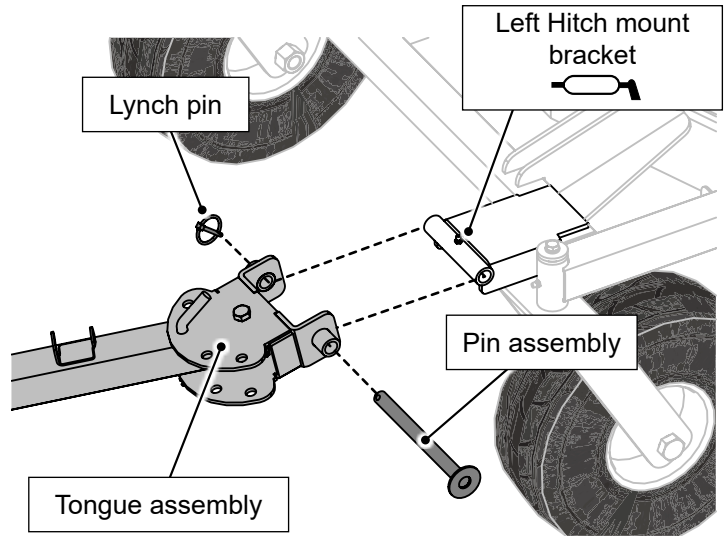
If you received your machine assembled, inspect machine for damaged or loosened parts. If damaged or loosened parts exist, do not use. Notify your dealer immediately to have affected parts replaced or repaired.

The MK Martin UTV Mower is shipped from the factory without the tongue attached to the mower frame and the negative terminal disconnected from the battery.

TONGUE ASSEMBLY:

Note: Tongue may be mounted on the left or right side of the mower

- Remove the lynch pin and pin assembly from the hitch mount bracket.
- Find the tongue assembly and line up the mounting holes to the hitch mount bracket and insert the pin assembly and secure it with the lynch pin.
- At the hitch mount bracket grease zerk, pump in grease till it begins to flow out the ends of the pin assembly.
- Test the tongue assembly for free movement.



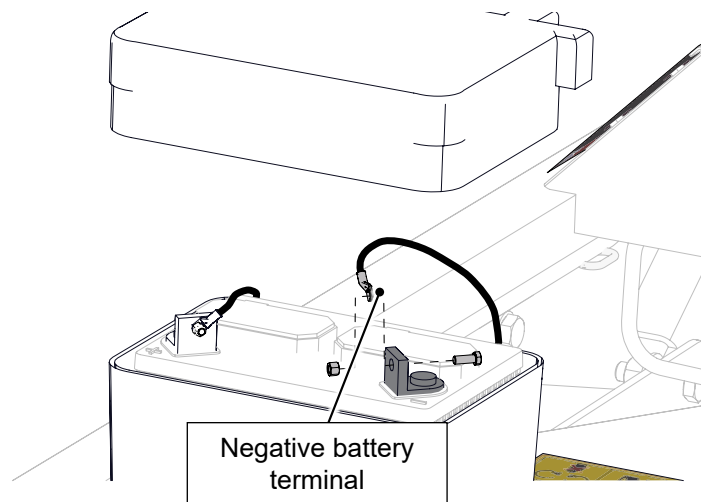
CAUTION

Heavy or bulky parts

Prevent potential strain injury, use approved lifting equipment or ask for help when lifting or moving heavy, bulky parts.

BATTERY TERMINAL ASSEMBLY:

- Ensure the ignition is turned off and the key removed and pocketed.
- Remove the battery cover.
- Find the negative battery terminal and remove the nut and bolt, ensure the terminal is clean and dry.
- Find the negative battery lead cable, ensure the ring terminal is clean and dry.
- Fit it up to the negative battery terminal and secure with the nut and bolt. 11.25 - 13.55 nm torque (8.3 - 10 lb-ft torque)
- Replace and secure the battery cover.



CAUTION

Battery Hazard

Poison / Danger - causes severe burns. Battery contains sulphuric acid. Avoid contact with skin, eyes or clothing. Keep out of reach of children.

COMPONENTS AND FEATURES

The Pulsar UTV mower is designed for rough cut creating and maintaining trails, and managing your open fields.

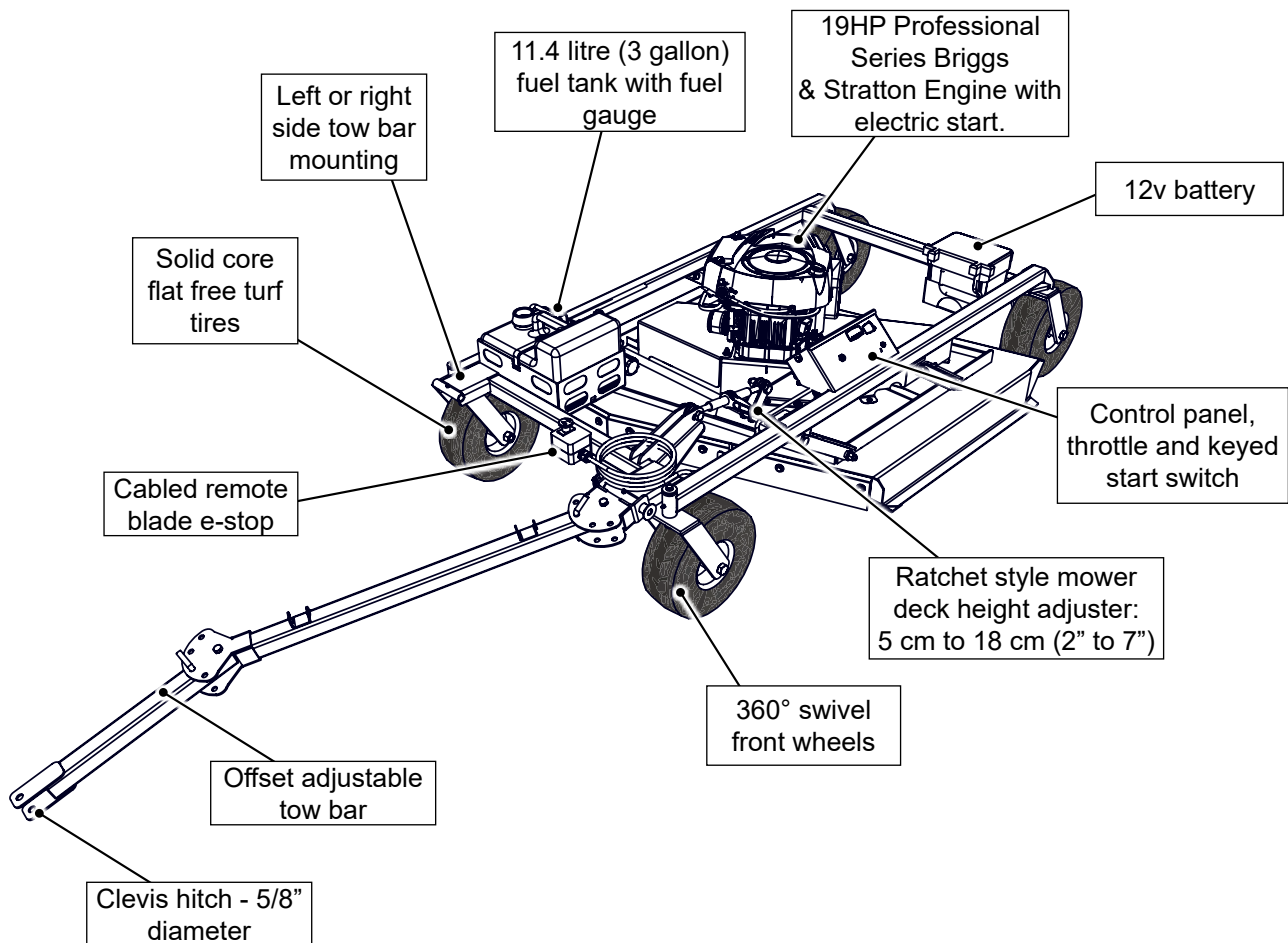
The owner or operator has the responsibility of being familiar with all the features of the mower and know how to operate them. Each owner or operator must train all other operators before they start working with the machine.

Read this section carefully to learn how to use the mower safely and how to set it to provide maximum field efficiency. By following instructions in conjunction with a good maintenance program, your Pulsar mower will provide many years of trouble-free service.

Do not operate this mower if you are not familiar with its features.

The Pulsar UTV mower is illustrated below, showing its basic components and features. Review the various components and their position, the names of the components will be used to describe where they are and how they work through out the manual.

PULSAR UTV MOWER COMPONENTS



PRODUCT FEATURES

THROTTLE / CHOKE

This lever controls the engine speed and choke. Push the lever to the left to increase engine speed and right to decrease. For starting push the lever all the way to the left to engage the choke, then reposition to the desired speed.

IGNITION SWITCH

This key-operated switch controls the electric power to the engine.

STOP – Turn key fully counterclockwise to stop the electrical system power and turn the engine off.

RUN – Turn key clockwise to detent at the RUN position. This is the position where the engine will continue to run.

START – Turn key fully clockwise to the last spring-loaded detent position to engage the starter solenoid and start the engine. Release the key when the engine starts and it will return to the RUN position.

BRIGGS & STRATTON ENGINE

19HP Professional Series Briggs & Stratton Engine features electric start and solenoid fuel shut-off.

Please refer to the Briggs & Stratton engine owners manual under 'Operation' for further detail concerning the safe operation of the engine.

REMOTE E-STOP

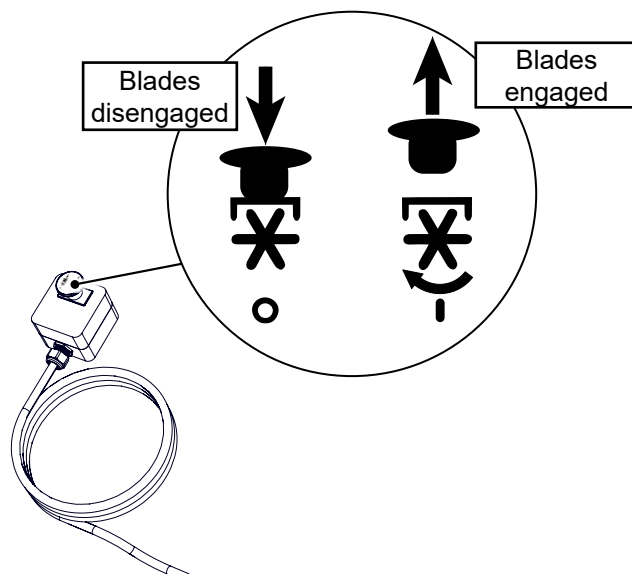
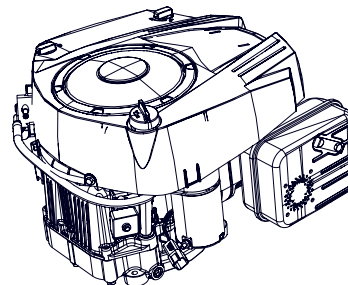
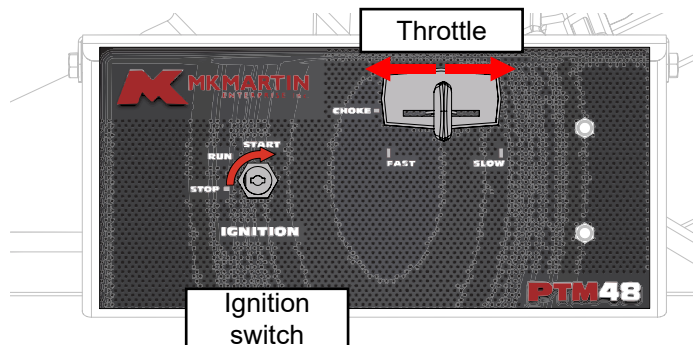
Cabled e-Stop stops the rotation of the cutting blades while allowing the engine to continue to run.

For safety the mower cannot be started when the e-stop is activated (blades engaged).

Disengage blades: depress the red e-stop button, and the clutch pulley is **disengaged** from the engine drive shaft and the clutch brake will quickly bring the blades to a stop.

Engage blades: lift the red e-stop button, and the blade clutch pulley is **engaged** to the engine drive shaft and the blades begin to rotate.

The e-stop is tethered to the mower control panel by a 450 cm (180" inch) long cable and features a magnetic bottom to facilitate easy mounting on your UTV.



CAUTION

Operational Hazard

Personal Protection Equipment (PPE) is required when operating or maintaining this machine.

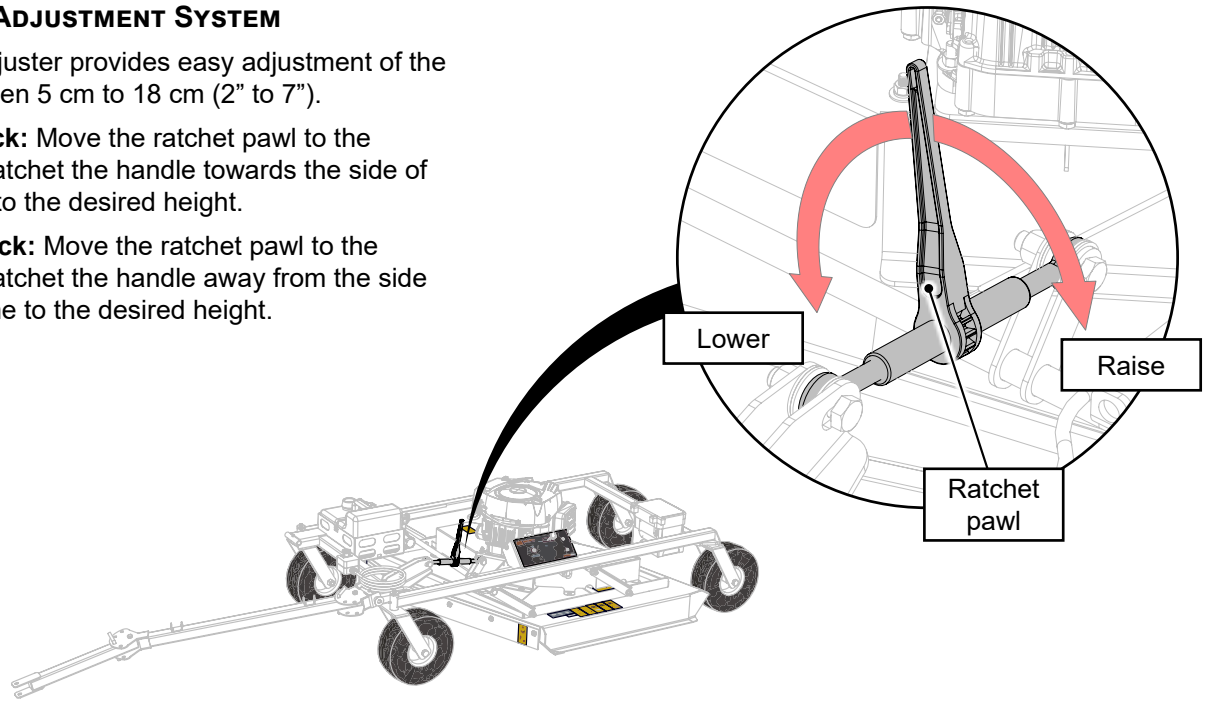


MOWING HEIGHT ADJUSTMENT SYSTEM

The ratchet style adjuster provides easy adjustment of the cutting height between 5 cm to 18 cm (2" to 7").

Raise mower deck: Move the ratchet pawl to the correct position, ratchet the handle towards the side of the mower frame to the desired height.

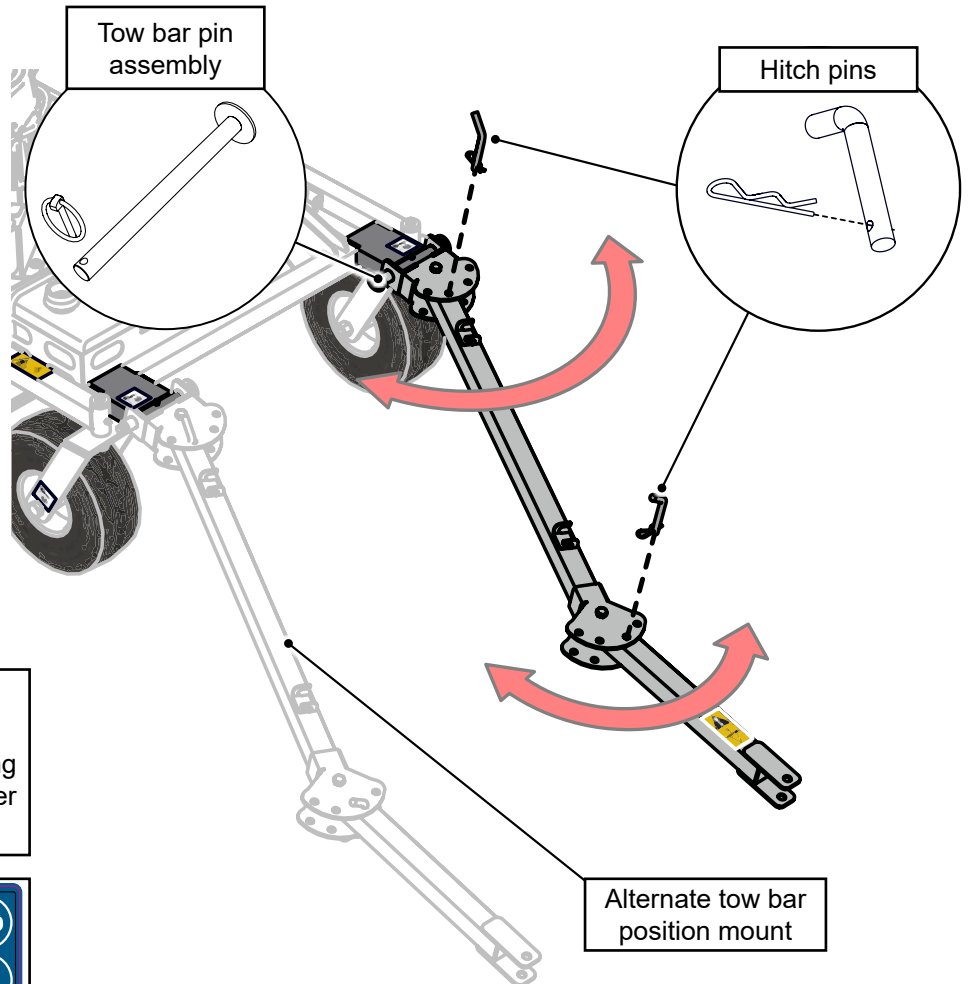
Lower mower deck: Move the ratchet pawl to the correct position, ratchet the handle away from the side of the mower frame to the desired height.



ADJUSTABLE TOW-BAR

The mower features a left of right side tow bar mount, Tow bar can be easily switched and attached on either side of the mower, via an removable tow bar pin assembly.

The offset-able tow bar features up to 16 towing configurations including straight behind the towing. Configurations are held in place by two hitch pins each secured by a hair pin.



WARNING

Pinch Point Hazard

When making adjustments and hitching the tongue be aware of hand and finger pinch points.



CAUTION

Operational Hazard

Personal Protection Equipment (PPE) is required when operating or maintaining this machine.



MOWER OPERATION

This section describes how to safely and effectively operate the UTV Mower in the field of operation. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the work site. Not all situations and conditions can be addressed, proceed with care & caution and use safety as your guide. The owner or operator has the responsibility of being familiar with the operation of the mower and must train all other operators before they start working with the machine. First time operators must review this manual before operating the mower and at least once per season thereafter.

Work in a safe manner and follow all instructions exactly, safety is everyone's business. Untrained operators are not qualified to use the machine. Know and understand how to safely shut off the machine.

See specifications to ensure your power unit is suitable for the mower. Consult your UTV Operator's Manual to determine proper operating requirements and maximum weight limitations.

SAFE PRACTICES

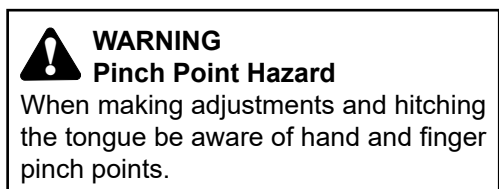
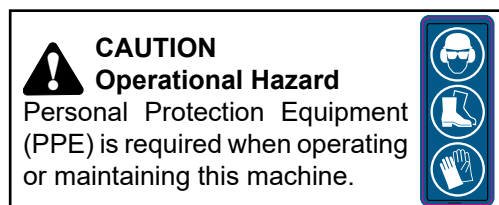
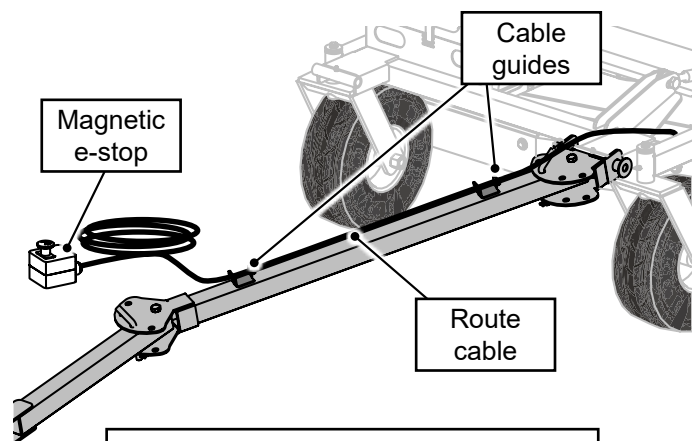
- Shut off engine remove and pocket the key when filling the gas tank. Wipe up spills and never attempt to fill a tank on a mower that is still hot from recent use.
- Shut off engine remove and pocket the key and wait to allow the engine to cool before performing any maintenance procedure, adjustment or inspection.
- Do not wear loose-fitting clothing that could get caught on controls or fast-moving parts. Instead, wear long pants, sturdy boots and a form-fitting shirt.
- Wear the appropriate hearing and eye protection.
- Make sure that objects and other workers are out of the area before mowing.
- Drive tow vehicles directly up and down slopes, not across to avoid rollovers.
- Never leave a running mower unattended.
- Never run the mower indoors, engine exhaust contains toxic carbon monoxide, which you cannot smell or see and can be lethal.
- Disconnect spark plugs when servicing a mower to prevent the engine from accidentally starting.
- Never disconnect any of the safety features.
- Do not travel faster than 8 km/h (5 mile/h). Traveling faster is dangerous and could result in loss of control of the equipment and serious injury.
- Never put hands, face, feet, or clothing under the deck or near the discharge area with the engine running.
- Do not allow riders on the mower.
- Place the blade e-stop (engage/disengage) remote control within easy reach of the driver. E-stop will stop the rotating blades within 10 seconds.
- Never exit the tow vehicle before stopping blades and shutting tow vehicle OFF.

ATTACH THE MOWER

A clevis hitch is used to attach the tow bar to the UTV, ensure your UTV is equipped with a clevis style drawbar.

Note: 1/2" hitch pin and hair pin clip are not supplied with your mower and are required for securing the clevis hitch.

1. Position the mower on a level surface and back the UTV up to it. Remove any debris under or around the mower.
2. Align the tow bar clevis to the UTV drawbar and insert a 1/2" hitch pin, secure with a hair pin clip.
3. Move the magnetic remote e-stop control from the mower to a flat metal location on your UTV. Ensure the e-stop is easily accessible in case of emergency.
4. To prevent damage to the cable, route the e-stop cable along the tongue using the cable guides.



PREPARATION FOR MOWING

For worker safety a pre-season site visit is recommended. Make a work plan to identify hidden obstacles and structures. Sudden impact from obstacles hidden under the grass may cause injury.

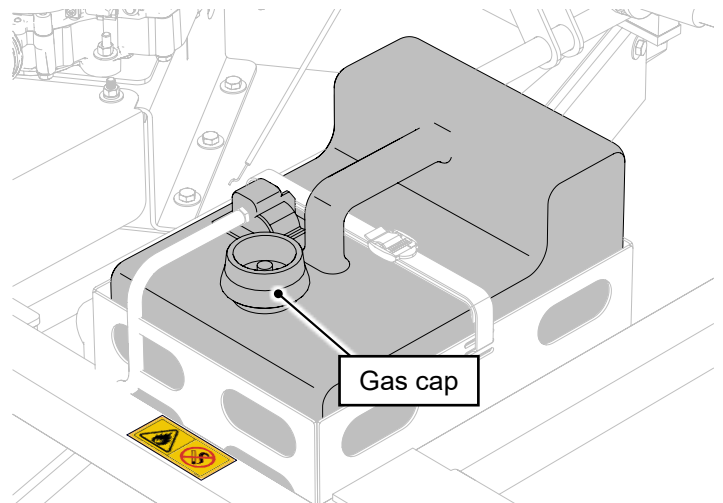
Make the following inspections with mower attached to a UTV, gearshift set in park, and engine off and key pocketed:

INSPECT THE MOWER:

- Check for bent, broken, and extreme wear on cutting blades. Repair or replace as required.
- Make sure that shields and guards are in place and working properly.
- Ensure the e-stop control cable is undamaged.
- Ensure mower is set at the appropriate level for the desired cut height.
- Ensure tow bar is adjusted to the desired tow position.
- Check for and remove foreign objects wrapped around the blades or deck.
- Ensure the e-stop control is functioning correctly before beginning work.
- Verify the mower is securely attached to the tow vehicle.
- Survey the work site, remove debris and make note of nearby obstructions. Knowing your work area will make the mowing job easier and safer.
- Where possible, avoid operating near ditches, embankments and holes.
- Ensure no bystanders are in the work area.

ADDING FUEL:

- Place unit on a level surface in a well ventilated area.
- Ensure the mower is OFF and let engine cool at least 2 minutes.
- Remove the gas fill cap.
- Do not overfill fuel tank. To allow for expansion of the fuel, do not fill above the bottom of the fuel tank neck.
- Fill tank with fresh, unleaded gas. Tank capacity is 11.35 litres (3 US gallons)
- Keep fuel away from sparks, open flames, pilot lights, heat, and other ignition sources.
- If fuel is spilled, wipe it away carefully and wait until the remaining fuel has dried before starting the engine.



CAUTION Explosion Hazard

Refuel in a well-ventilated area with the engine stopped. Never refuel the mower inside a building where gasoline fumes can come in contact with flames or sparks.

CAUTION Explosion Hazard

Gasoline is extremely flammable. Do not refuel the machine while smoking or near open flame or sparks. Do not store near heat sources



START THE MOWER

For complete engine starting procedure, please see the engine owners manual. The following describes the steps required on the MK Martin UTV Mower.

- Check engine oil level.
- Check fuel level.
- Depress the e-stop button to disengage the blades (engine will not start if e-stop is engaged)
- Set the throttle to the 'Choke' position.
- Turn the key to the 'Start' position and release once the engine has started.
- Run engine for a few minutes to allow it to warm up.
- Move the throttle to the 'Fast' position.
- Check for any bystanders, ensure you are wearing safety equipment.
- Set the e-stop to engage the cutting blades and begin the mowing operation.

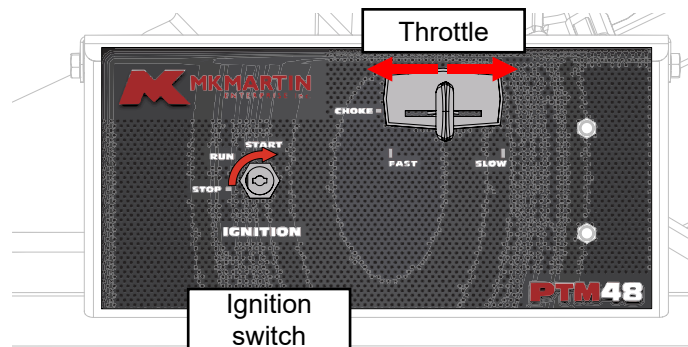
DANGER **Amputation Hazard**

Keep hands and feet away from mower deck and discharge openings while machine is operating. Risk of amputation could result.



WARNING **Impact Hazard**

Risk of injury from flying objects. Stay clear of mower deck material discharge chute. Machine can expel objects fast enough to cause injury.



STOP THE MOWER

When stopping the mower remember to always do the following:

- Depress the e-stop button to disengage the blades.
- Stop on level ground and set UTV park brake.
- Stay on the UTV until mower blades have come to a stop. (Blades usually stop within 10 sec)
- Turn off the mower engine and remove and pocket the key.

WARNING **Operational Hazard**

Shut off engine and remove the key during maintenance. Risk of serious injury or death could result



Note: Cleaning the clippings and other yard debris from the underside of the deck on your lawn mower after each use is critical to prevent build-up and corrosion and for smooth, even mowing. Accumulated clippings beneath the deck can decrease the airflow needed for the mower to function efficiently.

MOWER STORAGE

After the season's use or when the machine will not be used for a period of time, completely inspect all parts of the mower. Replace or repair any worn or damaged components to prevent any unnecessary down time at the beginning of the next season.


Your implement is an important investment. Spending some time to protect it from rust and corrosion will result in a safer, longer service life and better performance.


Cleaning the clippings and other yard debris from the underside of the deck on your lawn mower is critical to prevent build-up and corrosion and for smooth, even mowing. Accumulated clippings beneath the deck can decrease the airflow needed for the mower to function efficiently.

See the Engine Operators Manual for additional information.

PLACING IN STORAGE:


1. Store the mower level (normal operating position).
2. Remove the battery and store it in a cool, dry vented area that won't freeze, or attach a trickle charger to keep the battery charged.
3. Thoroughly wash the machine with a pressure washer or water hose to remove all dirt, mud or debris and packed yard debris under the deck.
4. Remove all remaining material and debris from around and inside the machine. Use caution: the blade assemblies have sharp edges.
5. Inspect for damaged or worn parts. Repair or replace before next season.
6. Inspect for loose or missing hardware, tighten or replace as required.
7. Replace any missing or unreadable safety decals.
8. Repaint any chipped or scraped areas to prevent rust and corrosion.
9. It is best to store the machine inside in a dry clean area. If that is not possible, cover with a waterproof tarpaulin and tie down securely.
10. Store the implement away from work area's and livestock.
11. Do not permit children to play on or around the stored machinery.
12. Ensure all pins, latches and locks are secure.
13. Guard any sharp corners.


**WARNING**
Operational Hazard
Shut off engine and remove the key during maintenance. Risk of serious injury or death could result



FUEL TANK

1. Fuel can become stale when stored over 30 days. Stale fuel causes acid and gum deposits to form in the fuel system or on essential carburetor parts. To keep fuel fresh, use fuel treatment & stabilizer. There is no need to drain gasoline from the tank if a fuel stabilizer is added according to instructions.
2. Fill fuel tank with fuel leave room for the stabilizer and add stabilizer. Do not overfill.
3. Run the engine for two (2) minutes to circulate the stabilizer throughout the fuel system before storage.
4. If gasoline has not been treated with a fuel stabilizer, it must be drained into an approved container. Run the engine until it stops from lack of fuel. The use of a fuel stabilizer in the storage container is recommended to maintain freshness.

**CAUTION**
Explosion Hazard
Gasoline is extremely flammable. Do not refuel the machine while smoking or near open flame or sparks. Do not store near heat sources



SERVICE & MAINTENANCE

Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.

To keep your MK Martin Pulsar UTV Mower in good working condition, and increase product life as well as maintain ease of operation, periodic lubrication is essential. This also helps to flush out moisture and dirt.

By following a careful service and maintenance program for your machine, you will enjoy many years of trouble-free operation.

Replacement of parts should be done by qualified personnel only. Keep a record of all maintenance, to ensure scheduled inspections and maintenance are performed.

MAINTENANCE SAFETY CHECKLIST

- ✓ Ensure mower key is removed and pocketed and battery is disconnected. Follow good shop practices.
- ✓ Keep service area clean and dry.
- ✓ Use adequate light for the job at hand.
- ✓ Never work under equipment unless it is supported securely to prevent any movement.
- ✓ A fire extinguisher and first aid kit should be kept readily accessible.
- ✓ Parts replacement should be performed by qualified personnel to ensure safe and complete installation.
- ✓ Always use personal protection devices such as eye, hand, foot and hearing protectors.
- ✓ Use heavy gloves when handling heavy or sharp components.

GENERAL MOWER MAINTENANCE

Before lubricating and inspection, confirm the ignition key is removed and pocketed and battery is disconnected.

Ensure the mower is clean and free of debris and is secured from unexpected movement.

Remove the pulley shields, inspect the belt drive and clean out any material buildup around and under the pulley shields.

On a regular basis check all nuts, bolts and screws and ensure they are all properly secured.

On a regular basis check the condition of all electrical cables and connections. Replace any that are damaged. Re-route those that are rubbing, pinched or crimped.

WHEEL BUSHINGS:

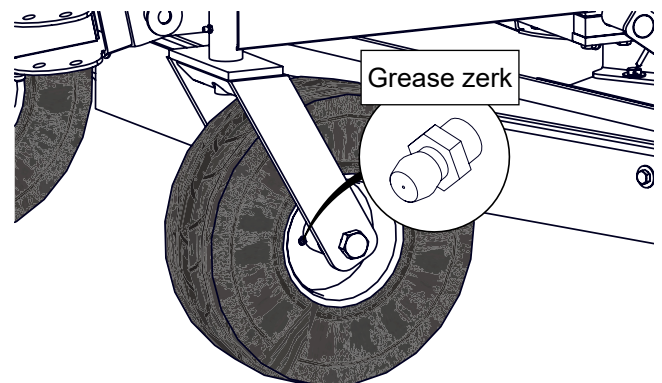
Grease every 50 hrs or more often with heavy use. Inspect bushings monthly and check for:

- Unusual front to back movement or chatter
- Free spinning with no grinding noise.

Replace if required, replacements should be performed by qualified personnel. For replacement parts please call your dealer or contact MK Martin.

Wheel bushings should be cleaned, re-packed & adjusted, annually, or every 1000 hours of operation, whichever comes first. • Lubricate with a good Lithium EP2 grease or equivalent.

- Wipe grease zerk with a clean cloth before greasing, to avoid injecting dirt and grit.
- Use a hand-held grease gun for all greasing, one shot of grease is adequate
- Replace broken zerk fitting immediately.
- If grease zerk will not take grease, remove and thoroughly clean zerk and lubricant passage way.



CAUTION

Operational Hazard

Personal Protection Equipment (PPE) is required when operating or maintaining this machine.



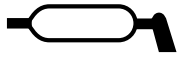
GENERAL MOWER LUBRICATION:

Inspect mower components monthly. Unusual play or noise could be an indication of worn parts. Parts replacement should be performed by qualified personnel.

GREASE:

Inspect bushing and components before each use. Unusual play or noise could be an indication of worn parts. Parts replacement should be performed by qualified personnel.

To prevent premature wear the grease zerks on the mower should be greased every 50 hrs unless otherwise noted, or more often with heavy use.



This symbol indicates a grease zerk location shown in the illustrations below.

- Lubricate with an good Lithium EP2 grease or equivalent.
- Use a hand-held grease gun for all greasing, one shot of grease is adequate.
- Wipe grease zerk with a clean cloth before greasing, to avoid injecting dirt and grit.
- Replace any broken zerk fittings immediately.
- If grease zerk will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fittings if necessary.

LUBRICATE:

Inspect mower components before each use. Unusual play or noise could be an indication of worn parts. Parts replacement should be performed by qualified personnel.


To ensure freedom of movement and prevent corrosion the mower components should be lubricated every 50 hrs or more often with heavy use.

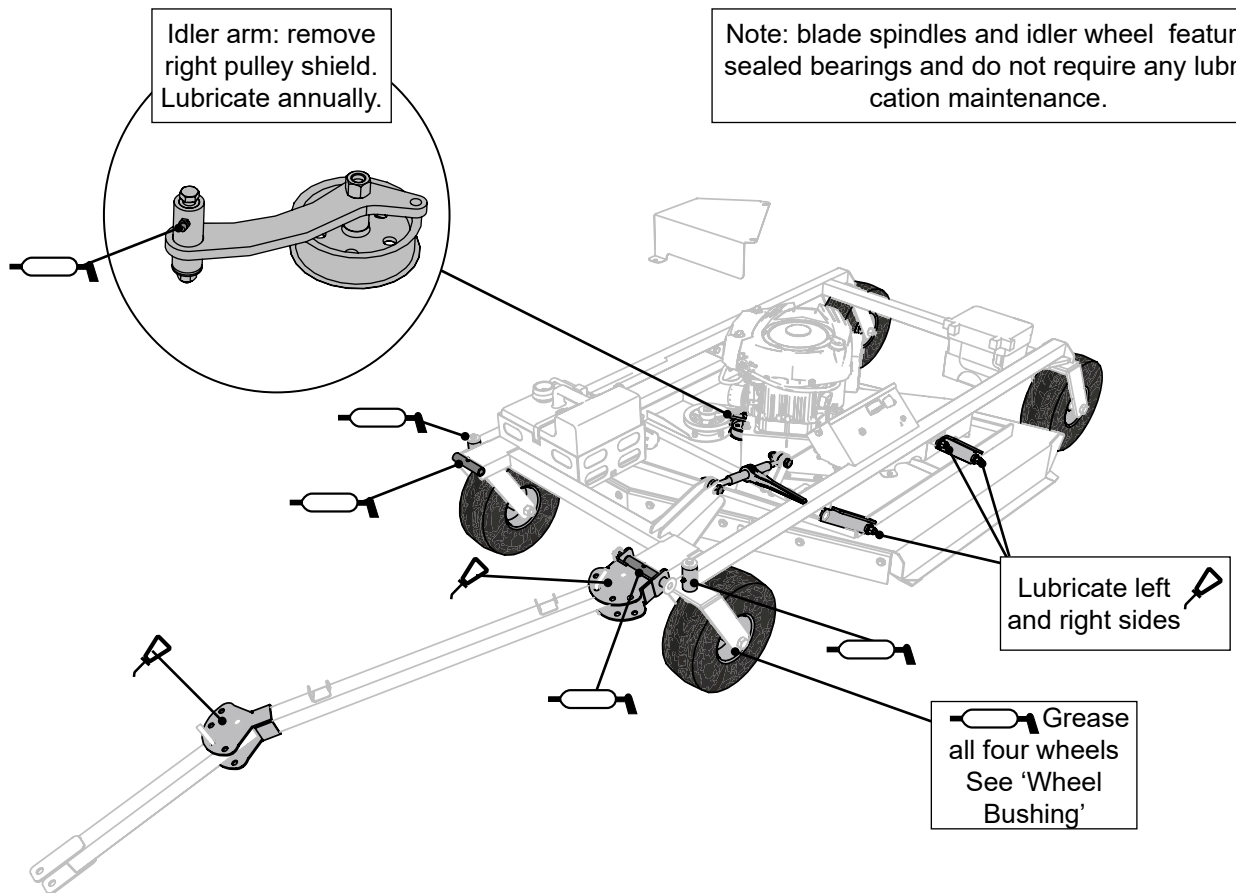


This symbol indicates a lubrication point shown in the illustrations below.

- Use a light oil or lubricating spray.

CAUTION
Operational Hazard
Shut off engine and remove the key during maintenance. Risk of serious injury or death could result





DRIVE BELT

#36855 B76 V Belt - 21/32" Width X 79" Length

It is important to periodically check belt tension and condition. Frayed, cracked or worn drive belts should be replaced immediately.

The clutch on the engine shaft features an internal brake. When engaged, it brakes the engine pulley to stop the belt drive and blade pulleys. When the belt is worn or loose, the ability to stop the rotor quickly may be affected.

IMPORTANT! When changing or removing drive belt check belt tension, adjust if required.

Wear appropriate personal protection equipment.

REMOVE BELT

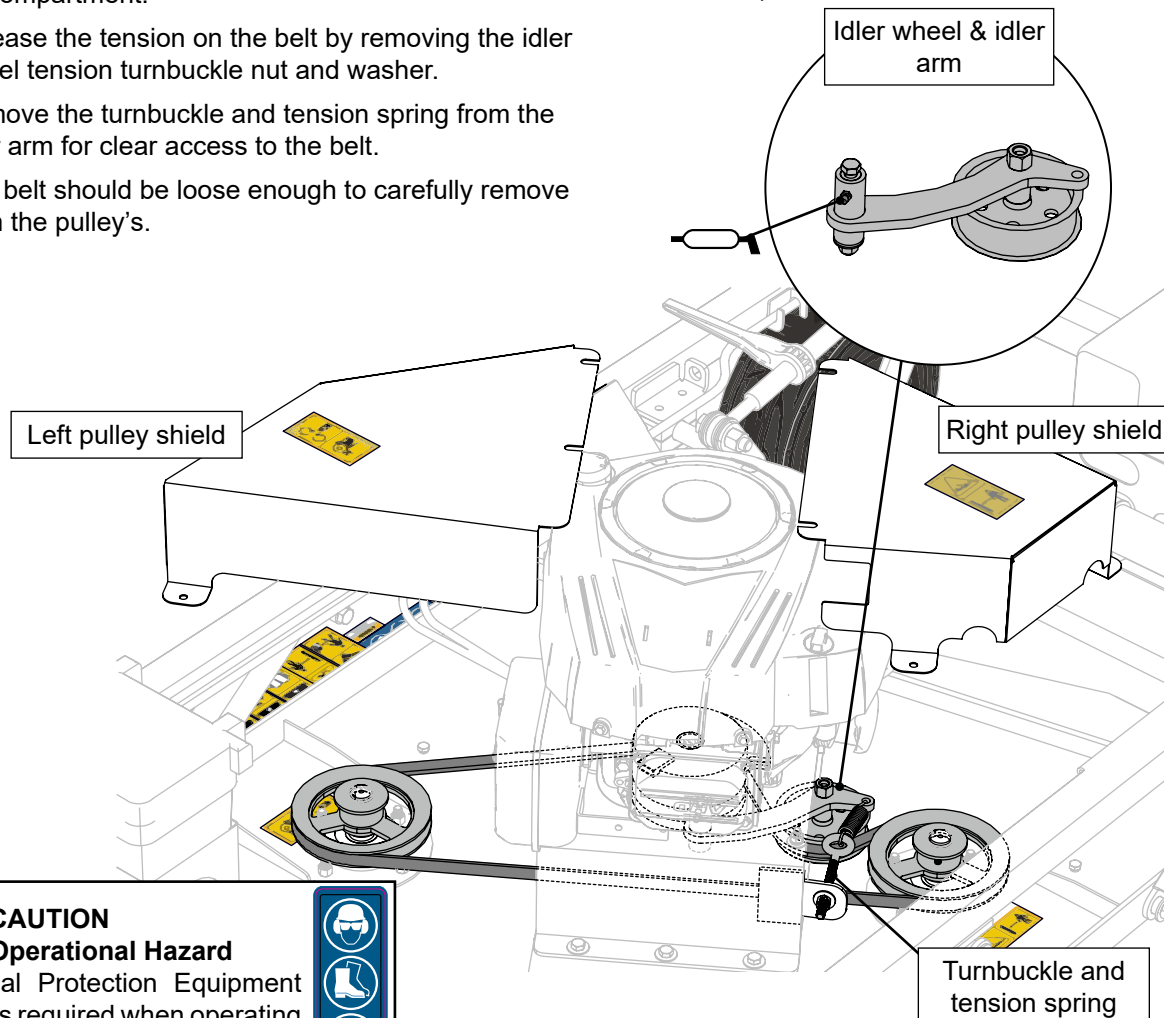
Make sure the engine is off, key is removed and pocketed and components are cool to touch before starting this procedure. Be aware of possible sharp edges and confined working space.

1. Remove left and right pulley shields and carefully set them aside:
 - Remove the two bolts that hold each shield to the deck.
 - Loosen (do not remove) the two nuts that hold each shield to the motor mount.
 - Clean out any debris inside the drive compartment.
2. Release the tension on the belt by removing the idler wheel tension turnbuckle nut and washer.
3. Remove the turnbuckle and tension spring from the idler arm for clear access to the belt.
4. The belt should be loose enough to carefully remove from the pulley's.

INSTALL BELT

Inspect and clean the pulleys, check that the idler arm is free and easy to move. Grease the idler arm weldment grease zerks if required.

1. Install the new belt onto the pulleys (see belt routing below for reference)
2. Attach the turnbuckle and spring, and insert the turnbuckle into the spring bracket hole, fasten the washer and nut.
3. Tighten the nut to apply tension. Tension is correct when the spring measures 9.2 cm to 9.5cm (3.625 to 3.75").



CAUTION
Operational Hazard
Personal Protection Equipment (PPE) is required when operating or maintaining this machine.



BLADE MAINTENANCE

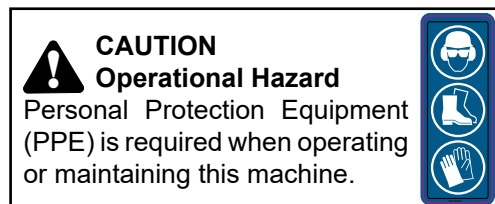
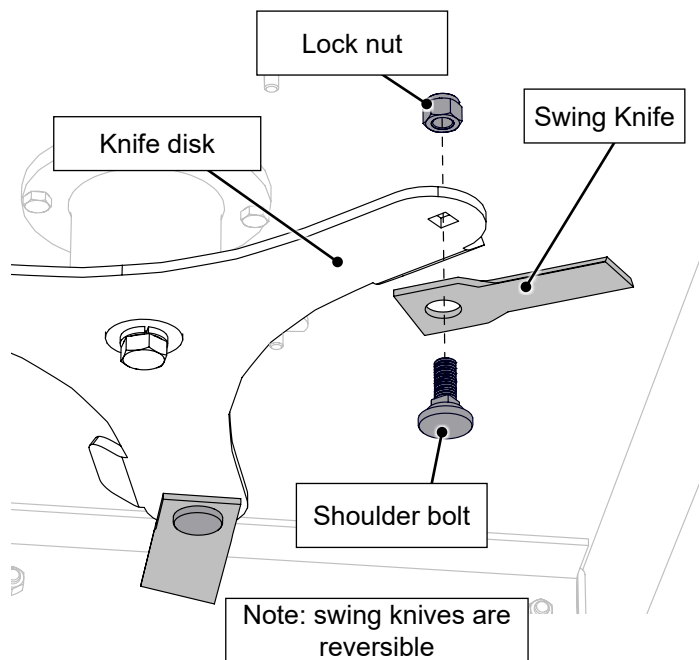
Before beginning work, ensure the ignition key is removed and pocketed. Disconnect the battery and spark plug wire. Read section on maintenance safety for safe work procedure.

Mower knives are extremely sharp. Use appropriate personal protective equipment when handling and servicing blades. Failure to do so could result in serious injury.

Replacement parts are available from your dealer or MK Martin. Note: swing knives are reversible and can be resharpened.

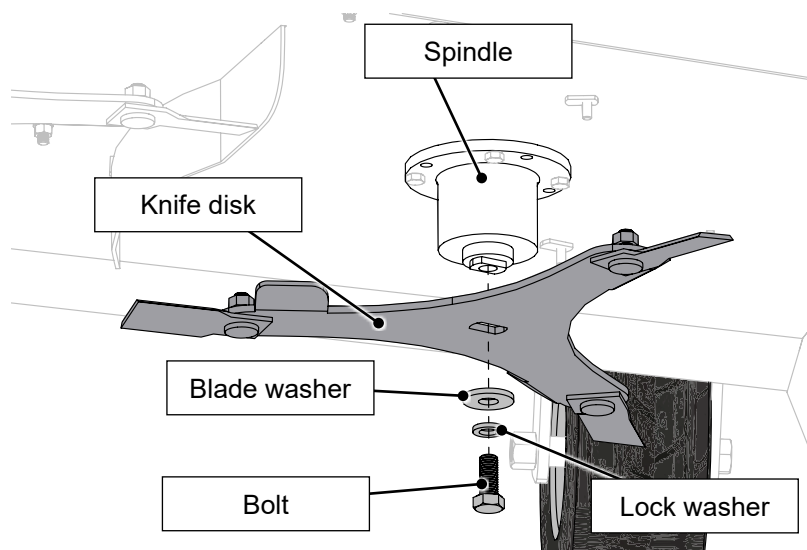
SWING KNIFE REPLACEMENT

- Ensure front wheels are swivelled to the back.
- Chock front wheels or hitch mower to the UTV to prevent unexpected movement.
- Use jack stands or ramps to lift the rear of the mower off the ground.
- Ensure the under deck is clean and free of debris.
- Carefully locate the knife assemblies under the mower deck, and clean the swing knives and knife disk.
- Use a 3/4" wrench, remove shoulder bolt and lock nut and remove swing knife from knife disk.
- Position new or flipped swing knife under knife disk .
- Reinstall shoulder bolt through swing knife into square hole in the knife disk and secure the assembly with locknut.
- Tighten locknut with 3/4" wrench until locknut bottoms out on shoulder bolt. Torque to: 67.8 nm (50 lb-ft)
- NOTE: The knife must swing freely after tightening. If knife does not swing freely, check for debris between the swing knife and knife disk.
- Repeat steps for remaining swinging knives.



KNIFE DISK REPLACEMENT

- Ensure front wheels are swivelled to the back.
- Chock front wheels or hitch mower to the UTV to prevent unexpected movement.
- Use jack stands or ramps to lift the rear of the mower off the ground.
- Ensure the under deck is clean and free of debris.
- Carefully locate the knife assemblies under the mower deck, and clean the swing knives and knife disk.
- Using 15/16" wrench, remove bolt, lock-washer and blade washer remove knife disk.
- Remove all the swing knives from the old knife disk, and install on the new one.
- Position new knife disk on the spindle shaft and lock into the shaped shoulder.
- Reinstall bolt, lock washer and blade washer and secure and torque the bolt to 203.4 nm (150 lb-ft.)



ENGINE

Refer to the engine manufacturer's manual for maintenance and service information.

BATTERY

Before beginning any work with the battery, ensure the ignition key is removed and pocketed. Read section on battery safety for safe handling of the battery.

Always recycle batteries in accordance with local laws and regulations. Contact your local solid waste collection site or recycling facility to obtain information on local recycling processes.

Due to the characteristics of this battery, after six to nine months of storage, the battery should be recharged.

REMOVE

1. Remove battery box cover
2. Disconnect negative (–) cable first, then positive (+) cable.
3. Remove battery from unit.

INSTALL

1. Place the battery unit into the battery box.
2. Connect positive (+) cable first, then negative (–) cable.
3. Coat terminals with dielectric grease or petroleum jelly.

CLEANING THE BATTERY

1. Disconnect negative (–) cable first, then positive (+) cable.
2. Clean battery cable ends and terminals with wire brush. Rinse with a weak baking soda solution.
3. Connect positive (+) cable first, then negative (–) cable.
4. Coat terminals with dielectric grease or petroleum jelly.

CHARGING THE BATTERY

Use a trickle charger, DO NOT fast charge. Charging at a higher rate will reduce battery life.

ALWAYS follow information provided on battery and battery charger. Contact battery manufacturer and battery charger manufacturer for detailed instructions.

1. Remove battery from unit.
2. Use a battery carrier to lift the battery or place hands at opposite corners to avoid spilling acid through the vents
3. Place battery on bench or other well-ventilated area.
4. Ensure the trickle charger is unplugged.
5. Connect positive (+) lead of charger to positive (+) terminal, and negative (–) lead to negative (–) terminal.
6. Plug in battery trickle charger.
7. Charge battery according to the instructions from battery charger manufacturer and battery manufacturer.

JUMP STARTING BATTERY

Unit used for jump-starting should have a 12-volt battery and a negatively grounded system.

1. Connect positive (+) jumper cable to positive terminal of discharged battery.
2. Connect the other end of the same jumper cable to positive (+) terminal of booster battery.
3. Connect one end of the second jumper cable to negative (–) terminal of booster battery.
4. Make the final jumper cable connection to engine block or the furthest ground point away from the discharged battery.
5. Start engine.
6. After engine starts leave cables connected for one to two minutes.
7. Disconnect jumper cables in reverse order of installation.
8. Operate unit as normal to charge battery.



WARNING **Battery Hazard**

Frozen batteries can explode and result in death or serious injury. DO NOT charge a frozen battery. Let battery thaw before charging.



WARNING **Explosion Hazard**

Do not dispose of batteries in a fire. Batteries are explosive. Electrolyte solution can cause burns and blindness. If electrolyte contacts skin or eyes, flush with water and seek immediate medical attention.



WARNING **Explosion Hazard**

Batteries emit explosive gases while charging. Keep fire and spark away. Wear protective gear when working with batteries. Failure to do so could result in death or serious injury.

TROUBLE SHOOTING

Engine: Refer to the engine manufacturer's manual for maintenance and service information.

Issue	Cause	Solution
Knives are not cutting, or are loose	Knife disc is loose	Tighten knife disk mounting bolt: torque to 150 lb-ft 15/16" socket.
	One or more swing knives are loose	Retighten swing knife mounting hardware: torque to 50 lb-ft
	One or more swing knives are dull	Sharpen dull or nicked swing knives
Knives will not engage and/or disengage	Wiring damaged	check wiring from control panel to electric clutch
	Estop switch worn	Remove and replace estop control switch.
	Electric clutch worn	have the clutch inspected by a qualified mechanic
Excessive vibration when engaging the mower	Spindle bearings or spindle shaft worn.	Inspect spindle bearings or spindle shaft for unusual play, replace if required.
	Knife disc is loose	Tighten knife disk mounting bolt: torque to 150 lb-ft 15/16" socket.
	One or more swing knives are loose	Retighten swing knife mounting hardware: torque to 50 lb-ft
	One or more swing knives are damaged	Inspect swing knives, replace if bent or broken
	knife disc is damaged	Inspect knife disk, replace if bent or broken
Belt fraying or rolls off of pulley's	Pulley grooves dirty or damaged	Inspect and clean pulley's with steel wool. File off cuts or nicks.
	Belt loose	Inspect belt for stretching.
		Inspect idler tension spring, check measurement (measures 3.625 to 3.75") adjust if required, replace if broken
		Inspect belt for wear or hard spots.
Uneven cut	Knife disc is loose	Tighten knife disk mounting bolt: torque to 150 lb-ft 15/16" socket.
	One or more swing knives are loose	Retighten swing knife mounting hardware: torque to 50 lb-ft
	One or more swing knives are dull	Sharpen dull or nicked swing knives
	Hieght adjustment issue	Inspect hieght adjust system is not damaged and adjusts evenly
	Low engine RPM	Run engine at full RPM
	Belt slipping	Inspect idler tension spring, check measurement (measures 3.625 to 3.75") adjust if required, replace if broken
	Deck plugged, grass accumulation	Clean underside of deck
	Wet grass	Cut grass after it has dried out
	One or more swing knives are damaged	Inspect swing knives, replace if bent or broken
	Knife disc is damaged	Inspect knife disk, replace if bent or broken
	Spindle bearings or spindle shaft worn.	Inspect spindle bearings or spindle shaft for unusual play, replace if required.
	Uneven ground	Reduce ground speed, raise cutting height, and/or change direction of cut pattern
Ground speed too fast	Slow speed to adjust for conditions	

BOLT TORQUE TABLE

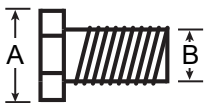
These tables are offered as the suggested maximum torque values for dry (not lubricated) threaded products and are only a general guide.

Check tightness of bolts periodically, replace hardware with the same strength bolt.

Torque specification for bolts are identified by their head markings as shown.

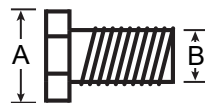
See the "Wheel Torque Specification" page for wheel bolt /nut torque settings

METRIC TORQUE SPECIFICATIONS



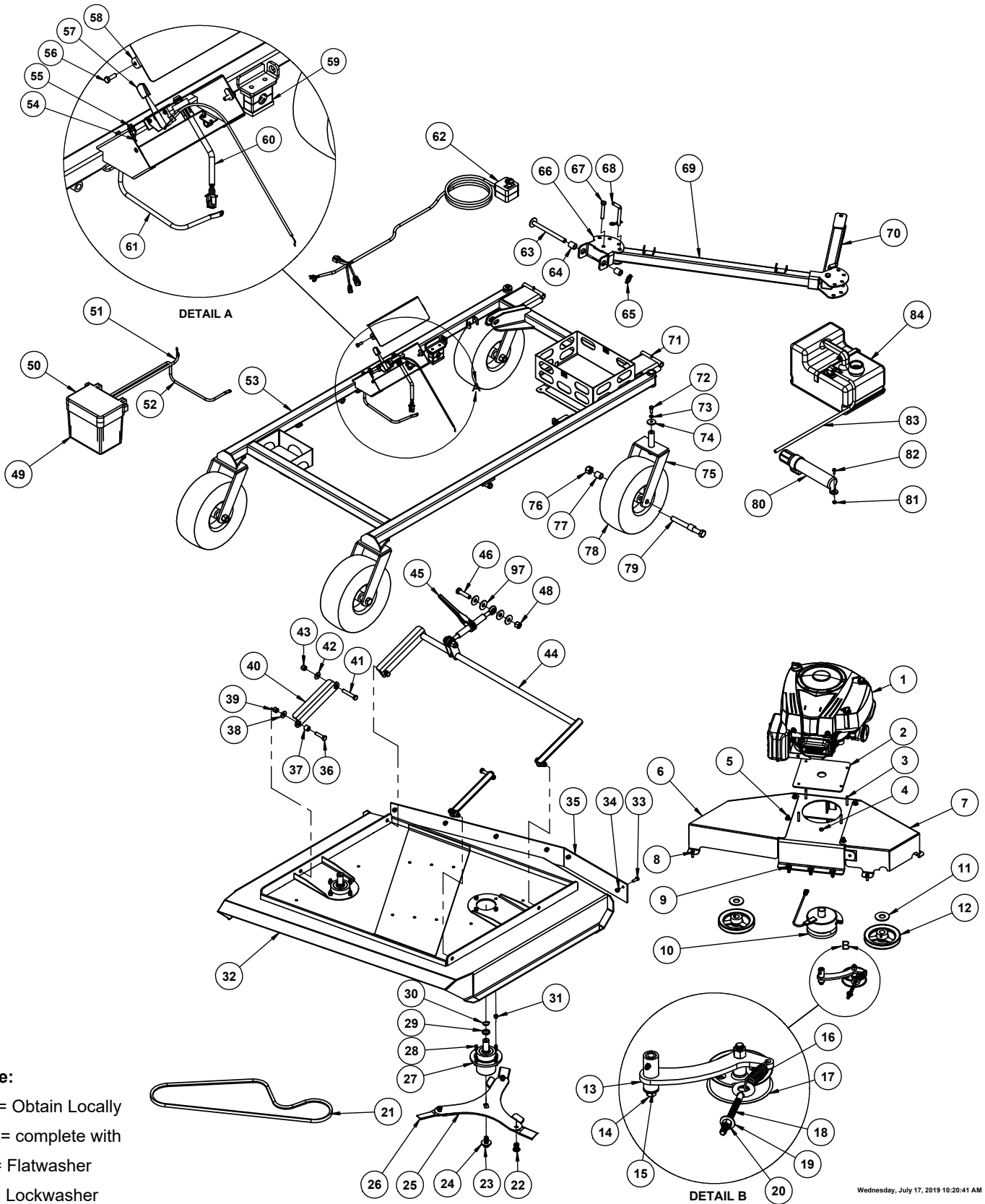
Wrench Size: "A"	Thread Size: "B" Fine	Class 8.8		Class 10.9		Thread Size: "B" Coarse	Class 8.8		Class 10.9	
		N-m	lbs-ft	N-m	lbs-ft		N-m	lbs-ft	N-m	lbs-ft
10 mm	6 x 0.75	---	---	---	---	6 x 1.0	11.3	8.3	16.5	12.2
13 mm	8 x 1.0	27	20	38	28	8 x 1.25	27.3	20.1	40.1	29.6
16 mm	10 x 1.25	52	38	73	54	10 x 1.5	54	40	49	36
18 mm	12 x 1.25	95	70	135	100	12.1.75	93	69	137	101
21 mm	14 x 1.5	150	111	210	155	14 x 2.0	148	109	218	161
24 mm	16 x 1.5	225	166	315	232	16 x 2.0	230	170	338	249
27 mm	18 x 1.5	325	240	460	339	18 x 2.5	329	243	469	346
30 mm	20 x 1.5	460	339	640	472	20 x 2.5	464	342	661	487
34 mm	22 x 1.5	610	450	860	634	22 x 2.5	634	468	904	667
36 mm	24 x 2.0	780	575	1100	811	24 x 3.0	798	588	1136	838
41 mm	27 x 3.0	---	---	---	---	27 x 3.0	1176	867	1674	1234
46 mm	30 x 2.0	---	---	---	---	30 x 3.0	1597	1178	2274	1677

SAE TORQUE SPECIFICATIONS



Wrench Size: "A"	Thread Size: "B" Fine	SAE 2		SAE 5		SAE 8		Thread Size: "B" Coarse	SAE 2		SAE 5		SAE 8	
		lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m		lbs-ft	N-m	lbs-ft	N-m	lbs-ft	N-m
7/16"	1/4-28	6	8.1	10	13.6	14	19.0	1/4-20	5	6.8	8	10.8	12	16.3
1/2"	5/16-24	13	17.6	19	25.7	27	36.6	5/16-18	11	14.9	17	23.0	25	33.9
9/16"	3/8-24	23	31.2	35	47.4	49	66.4	3/8-16	20	27.1	31	42.0	44	59.6
5/8"	7/16-20	36	48.8	55	74.5	75	101.6	7/16-14	32	43.4	49	66.4	70	94.9
3/4"	1/2-20	55	74.5	85	115.2	120	162.6	1/2-13	49	66.4	75	101.6	107	145.0
13/16"	9/16-18	79	107.0	122	165.3	172	233.1	9/16-12	70	94.9	109	147.7	154	208.7
15/16"	5/8-18	110	149.1	170	230.4	240	325.2	5/8-11	97	131.4	150	203.3	212	287.3
1-1/8"	3/4-16	192	260.2	297	402.4	420	569.1	3/4-10	173	234.4	266	360.4	376	509.5
1-5/16"	7/8-14	184	249.3	474	642.3	668	905.1	7/8-9	166	224.9	429	581.3	606	821.1
1-1/2"	1.0-12	274	371.3	705	955.3	995	1348.2	1.0-8	250	338.8	644	872.6	909	1231.7

MOWER PARTS



Note:

- OL = Obtain Locally
- c/w = complete with
- fw = Flatwasher
- lw = Lockwasher
- In = Locknut
- n = Nut

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Item #	Part #	Description #	Qty
1	55747	Professional Series 19 HP Briggs & Stratton	1
2	37224	Motor mount plate	1
3	OL	Bolt 5/16 X 2 c/w lw	4
4	OL	Bolt 3/8 X 3.5 c/w lw	1
5	OL	Bolt 5/16 X 1 c/w lw	4
6	36866	Left pulley shield	1
7	36869	Right side pulley shield	1
8	OL	Bolt 5/16 X 1 c/w lw	4
9	OL	Bolt 3/8 X 1.5 c/w lw	6
10	36853	Electric Clutch	1
11	OL	Flatwasher 1 9/16"	2
12	21934	6 1/2" Single pulley cast MB65X1 UTV mower	2
13	37244	Idler arm weldment	1
14	OL	3/8-16 Nylon Locknut Zinc	1
15	OL	3/8" Flatwasher Zinc	1
16	37823	Extension Spring, 3" .75OD ext length 3.822	1
17	36841	4" Flat Idler Pulley, 1/2" Bore-Steel	1
18	37824	Eye End for Turnbuckle, 3/8-16 Right Hand Thread	1
19	OL	3/8" Flatwasher Zinc	1
20	OL	3/8-16 Nylon Locknut Zinc	1
21	36855	B-76 V-belt	1
22	36761	Knife Bolt Kit	1
23	OL	5/8 x 1.5 c/w lw	1
24	OL	Flatwasher 5/8"	1
25	36762	Knife disc	1
26	36760	Knife	1
27	mkfm900001	Finishing Mower Spindle, w/ 5/8" hole	1
28	OL	Bolt 3/8 x 1.5 c/w lw	4
29	55448	Pulley Spacer	1
30	OL	Snap Ring 1"	1
31	OL	3/8-16 Nylon Locknut Zinc	4
32	36778	Deck assy	1
33	OL	3/8 x 1 Gr5 Hex Bolt Zinc	6
34	OL	3/8-16 Nylon Locknut Zinc	6
35	37243	Rubber guard	1
36	OL	Bolt 1/2 x 2 c/w lw	4
37	36837	Lift arm spacer	4
38	OL	Flatwasher 1/2"	4
39	OL	1/2 Nylon Locknut Zinc	4
40	36773	Lift linkage arm	1
41	OL	1/2 x 3 Hex Bolt Zinc [Gr. 2]	2
42	OL	Flatwasher 1/2"	2

Item #	Part #	Description #	Qty
43	OL	1/2 Nylon Locknut Zinc	2
44	37127	Lift arm assy	1
45	37249	Compacter Ratchet	1
46	OL	5/8 x 2 1/2 Gr5 Hex Bolt Zinc	1
47	OL	5/8" Flatwasher Zinc	1
48	OL	NylonLock-5/8-11	1
49	37304	U1 Size Battery Box, Polypropylene	1
50	37825	Battery	1
51	37349	Battery cable	1
52	37350	Battery cable	1
53	36753	Wheel mount assembly	1
54	37343	Solenoid	1
55	OL	1/4 x 3/4 gr.5 Hex flange serrated screw zinc	2
56	OL	BOLT 5/16 X 1 c/w lw	2
57	55525	Throttle cable Control Lever	1
58	37254	Control panel cover	1
59	37826	Vibration-Damping Routing Clamp, 1 1/16 ID	2
60	37398	Ignition wiring harness	1
61	37400	Starter cable assy	1
62	37403	Control box assy	1
63	36873	Pin assy	1
64	36835	Bushing	2
65	OL	3/16 Lynch Pins	1
66	37234	Hitch adjustment plate	1
67	OL	1/2 x 3 Hex Bolt Zinc [Gr. 2]	2
68	OL	1/2 bent hitch pin with hair pin	2
69	37229	Hitch tube assy	1
70	37240	Front short hitch tube assy	1
71	OL	1/4-28 straight grease nipple	2
72	OL	3/8 x 1 Gr5 Hex Bolt Zinc	1
73	OL	3/8 Lockwasher Zinc	4
74	36781	Wheel fork cap	4
75	37258	Front caster	2
76	OL	NylonLock- 3/4"	4
77	36884	Wheel spacer	16
78	483851	13X5.00 X6" Turf flat free tire for UTV mower	4
79	OL	3/4 x 7" Gr5 Hex Bolt Zinc	4
80	52649	Operator Manual Tube Small	1
81	OL	Flange Nut 1/4"	1
82	OL	1/4 x 3/4 gr.5 Hex flangeserrated screw zinc	1
83	37377	Fuel Hose	1
84	3780	Fuel Tank, 12-Litre	1



3950 Steffler Rd. • Elmira Ontario • N3B 2Z3
Toll Free: 855-664-2752 • Tel.: 519-664-2752 • Fax: 519-664-3695
sales@mkmartin.ca • mkmartin.ca